THE UNIVERSITY of York

PROCEEDINGS

of the 9th Northumbria International Conference on Performance Measurement in Libraries and Information Services

Proving value in challenging times

Edited by Ian Hall, Stephen Thornton and Stephen Town

University of York, UK | August 22-26, 2011

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Introduction

The 9th Northumbria International Conference on Performance Measurement in Libraries and Information Services was held from 22-26 August 2011, at the University of York, UK.

The conference theme was *proving value in challenging times* and reflected the growing need for libraries to demonstrate value, particularly in times of economic crisis. Around 170 delegates attended the conference from over 20 countries worldwide, with a mixture of participants from information schools, academic libraries, public libraries, commercial organisations and national agencies.

The conference had a varied programme including presentations, posters and workshop sessions covering three main themes:

- Value, impact and outcomes
- Statistics and quantitative measurement
- Quality

A selection of interesting and thought-provoking presentations were provided by our keynote speakers:

- Professor Trevor Sheldon, Deputy Vice Chancellor and Pro-Vice Chancellor for Teaching and Learning, University of York
- Dr. Carol Tenopir, Professor at the School of Information Sciences at the University of Tennessee, Knoxville
- Dr. Michiel Kolman, Senior Vice President within the Global Academic and Customer Relations group at Elsevier
- Dr. Michael Jubb, Director of the Research Information Network (RIN)
- Professor Sheila Corrall, Head of the Libraries & Information Society Research Group and Graduate Research Tutor in the Information School at the University of Sheffield, UK

As is traditional for Northumbria Conferences, a number of social activities took place during the week. These included an evening reception with local folk music and dance, visits to local libraries, historical tours of the City of York, and the conference dinner hosted at the National Railway Museum.

These proceedings represent the majority of papers presented during the week and provide an interesting record of a stimulating week. I would like to thank all presenters, delegates and sponsors for making it such a successful conference, and I look forward to the Conference returning to York in 2013.

J Stephen Town
Conference Convenor
Director of Information and University Librarian
University of York

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Assuring quality using 'moments of truth' in super-converged services

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Background

Converged academic library services are not a new phenomenon. The convergence of academic libraries and IT support services in particular has been in place since the 1980s and depending upon the individual institution has been met with varying degrees of success. Some have implemented convergence and subsequently prospered and grown as a service, whilst others have ended up de-converging and reverting back to the separate services they began with. The drivers behind library and IT convergences have been practical ones and could be regarded as forerunners of the current 'student experience' driver that appears to be the catalyst for many academic library organisational developments. It would be difficult to find an academic library (or any other library) these days that did not provide access to IT and computers and therefore also IT support services. Library resources and computer resources sit naturally together. This is obviously due in part to the development of electronic library resources over the last two decades but also in response to the demand for access to computer software for completion of assignments and coursework. For these reasons, it has therefore made sense to 'converge' library and IT departments (Hanson, 2005), and there have been many examples of further convergences where involvement in IT and computing has led to further involvement in e-learning, learning technology and multimedia. In some instances libraries' support of these areas have led to even bigger strategic convergences where the library is managed as an all encompassing learning, teaching and research resource (Payne, 2005). These are excellent examples of major library convergences, but the focus always appeared to be on learning, teaching and research support with the strategic driver being that of consistency in delivery and management of such activity.

However, in the UK, it is becoming increasingly more common for academic libraries to be subject to some form of super-convergence within their institutions. Super-convergence involves merging or converging academic support departments, which would previously have been run as discrete service areas within the university (Heseltine et al, 2009). Examples of this would include student administration, student services, counselling, welfare, careers, chaplaincy, etc. There are many drivers for such convergence, including economic efficiencies, pedagogic initiatives and organisational change, but more recently, response to changes in student demands and the student experience also appear to be fundamental catalysts for these developments. There are different models of super-convergence, and these range from co-location of student facing services within the same space (eg careers, library, welfare, etc) to full organisational merger of student support services, such as in the case of Liverpool John Moores University (Appleton, 2010).

Super-convergence at Liverpool John Moores University

At Liverpool John Moores University (LJMU) super-convergence meant bringing together the areas of library, IT support, student administration services and programme administration support, along with access to careers, employability and welfare services into a super department to be known as 'Library and Student Support' (L&SS), which would operate from the already existing Learning Resource Centres (LRCs). As part of the development, the LRCs were also refurbished in order to deliver the new service model. This massive organisational change took place during 2009, and the new service area has been in existence since September of that year.

Change management and quality assurance

Bringing together such diverse areas of a University meant that an appropriate change management programme was required. In the first instance this addressed the impact on individual staff and focused on 'managing yourself through change' and 'managing others through change' (Trantom & Reid, 2011). The change management programme then focused on developing common service standards across the new service and involved a large piece of work in developing common professional behaviours and values for staff working in the service. The final part of this first phase change management programme was to address consistency of quality assurance and the measurement of student satisfaction across such a diverse service area.

The newly formed department already had a portfolio of several different quality assurance and user satisfaction measurement instruments in place and these were being used with some effect within the constituent parts of the service area (ie LibQUAL, SCONUL benchmarking exercises, Matrix assessment, and enrolment surveys). Where possible, the service had also consistently responded appropriately to the results of the annual National Student Survey (NSS). However, it became very apparent that the service now needed a way of joining all of these measures up, and further complementing them so that L&SS managers had a quality assurance instrument available to them which allowed them to approach customer satisfaction and quality from a holistic, service wide point of view. Key to this framework would be the development of a consistent approach to measuring satisfaction across the whole service.

Developing the Quality Assurance Framework

In order to fully inform this development, L&SS managers initially tried to look at how an existing performance measurement or quality tool might be applied to the new L&SS service (eg SCONUL Benchmarking) but this proved extremely difficult in that L&SS genuinely felt that there was no other service like them in existence, and as a result no similar quality assurance practice that they could draw upon. After this initial hurdle, L&SS managers consulted two of the University's external corporate partners in order to try to draw some 'good practice' comparisons with other service providers from different sectors. The first organisation consulted was Merseytravel[1], Merseyside's public transport network, who had recently gained huge increases in their customer satisfaction. This was in part due to a leadership behaviours approach to assuring quality. As L&SS had similarly developed service wide values and behaviours and leadership behaviours, there were clearly some comparisons to be drawn from consulting with Merseytravel in this area. The second corporate partner consulted was Shopdirect[2], a national online shopping retailer, who had been suggested as a very high profile local success story with a track record in measuring and responding to perceived customer satisfaction. The company focuses on 'moments of truth' where a customer is either satisfied or dissatisfied and it is the impact of these 'moments of truth' whereby customers are retained or lost. Examples included the quality and choice in browsing products on the company's Website (in effect their shop front) and the interaction between the customer and the person making the actual delivery of the product to the customer's home. Methods of capturing perceived customer satisfaction at these 'moments of truth' included online surveys and telephone calls (eg immediately after delivery of a product).

L&SS managers took some of these methodologies on board and the resulting Quality Assurance Framework now incorporates both the embedding of departmental values and behaviours, and the identification of particular 'moments of truth' within the student lifecycle. By identifying these 'moments of truth' the department is better placed to measure its impact and subsequently assure quality for its customers.

Approach

The task in hand was to develop a Quality Assurance Framework for the service, which would allow L&SS to measure customer satisfaction with its services (in particular with students), seek feedback and have a 'joined up' departmental approach to improving services and assuring quality.

As has been previously mentioned, the formation of Library and Student Support brought together areas of the university which had not previously sat naturally together. In the case of customer satisfaction and quality assurance, bringing together such diverse areas of a university, meant having to work with several different methods and frameworks for measuring and assuring quality and identifying key performance indicators. The focus of this piece of work and the subsequent case study involved the development of a framework by which existing quality tools could be effectively utilised for the constituent parts of the service (eg SCONUL Benchmarking, enrolment surveys, etc.), but ensuring a consistent practice and carrying out a gap analysis where no measure was currently in place.

1 ***www.merseytravel.gov.uk***

2 ***www.shopdirect.com***

How does the Quality Assurance Framework operate?

The Quality Assurance Framework is based around measuring student satisfaction at key 'moments of truth' in their student journey/lifecycle. The six key 'moments of truth' for L&SS are:

- enrolment
- induction
- information skills training
- study support (eg access to resources)
- staff support (eg advice, help, guidance, customer service)
- assessment (eg coursework submission).

Much of the activity required in order to obtain the information to feed into the framework was already in place within L&SS. For example: most service areas were in the habit of keeping appropriate statistics; enrolment surveys were carried out; NSS feedback was collated and responded to; LibQUAL was carried out biannually; the Learning Resource Centres operated a successful comments scheme. However, in looking at all the existing measures it was also possible to identify the gaps. Examples of gaps included a regular measure of the quality of library resources made available for students, measures of satisfaction with the speed and accuracy of enrolment and measures of satisfaction with coursework submission services. In drawing on the good practice already in place, it was decided that similar measures need to be employed for areas in which the gaps had been identified. The resulting Quality Assurance Framework was developed and allowed for a single framework to be applied across all six moments of truth. The framework therefore requires that statistics and relevant metrics are habitually obtained for each moment of truth and then converted in meaningful Key Performance Indicators (KPIs). This then allows for the setting of targets against which each 'moment of truth' can be measured. The framework also allows for the various benchmarking, anecdotal and qualitative feedback channels against each moment of truth to be used for further validation of success or underachievement. The subsequent Quality Assurance Framework is illustrated below:

Enrolment		
Numbers and metrics	**Key performance indicators**	**Qualitative data –surveys/feedback**
Number of enrolments (1. Fast track, 2. Non fast track, 3. Returning students 4. Exceptional enrolments)	Time take to enrol (ie from start of queuing) % of satisfied students	Enrolment surveys (for all 4 different enrolment scenarios) Comments in National Student Survey (NSS)

Induction		
Numbers and metrics	**Key performance indicators**	**Qualitative data – surveys/feedback**
Number of induction sessions	% of eligible students attending induction % of satisfied students	Induction satisfaction survey LibQUAL evidence Comments in National Student Survey (NSS)

Information skills		
Numbers and metrics	**Key performance indicators**	**Qualitative data – surveys/feedback**
Number of Information skills sessions	% of eligible students attending information skills sessions % of satisfied students	Information skills satisfaction survey LibQUAL evidence Comments in National Student Survey (NSS)

Support – resources		
Numbers and metrics	**Key performance indicators**	**Qualitative data – surveys/feedback**
Number of enquiries received by enquiry type / location / time Library Management System generated statistics (eg loans, etc) Electronic resource statistics (eg number of downloads) Record of time taken for re-shelving of books Record of time taken to supply Inter Library Loans	Number of enquiries (by type) per FTE student Loans per FTE student Downloads per FTE student % of students satisfied with service Achievement against targets for Inter Library Loans supply Achievement against targets for re-shelving times	Spot surveys on satisfaction with enquiry service received – focus on quality of support and information received (2 per year) – LibQUAL evidence Comments in National Student Survey (NSS)

Support – staff		
Numbers and metrics	**Key performance indicators**	**Qualitative data – surveys/feedback**
Number of enquiries received by enquiry type / location / time Number of appointments made / attended Record of time taken to respond to enquiries and referrals	Number of enquiries (by type) per FTE student % of referred appointments attended Achievement against target for referral response time % of satisfied students	Student Finance survey Spot surveys on satisfaction with enquiry service received – focus on customer service received (2 per year) – LibQUAL evidence Comments in National Student Survey (NSS)

Assessment		
Numbers and metrics	**Key performance indicators**	**Qualitative data – surveys/feedback**
Number of coursework submissions Record of time taken for process and despatch	Achievement against target for process and despatch time % of satisfied Faculty Office Administrators	Periodic survey of satisfaction with Faculty office staff. Comments in National Student Survey (NSS)

What next?

Implementing the Quality Assurance Framework is a priority objective for L&SS for 2011-12. It is an innovative approach to measuring customer satisfaction and assuring quality in a relatively new service area, which had not previously tried to measure satisfaction in a coherent way. However, at this stage it is difficult to report on any comparative findings until at least two years' worth of L&SS Quality Assurance Framework data have been compared (ie target setting against KPIs and ascertaining whether improvements had been achieved). This is due in part to the separate elements of the services area, namely Library, IT Support, Student Administration and Programme Administration having no similar channels (if any at all) for gathering such feedback and data prior to their convergence. It is also due partly to students now no longer being unable to discern between the constituent parts of the converged service area (eg attitudes and behaviours of staff working within the converged library services and student administration areas).

However, all areas of the service had previously demonstrated the good practice of responding to student feedback and this will continue to be the case whilst the Quality Assurance Framework takes shape. What the Quality

Assurance Framework will allow for in the first instance is a holistic approach to this responsiveness. The next steps for L&SS will indeed be joining up the feedback received in the first year of operation and ensuring that the following takes place:

- systematically report on the results of the information and data collected through the Quality Assurance Framework
- join up feedback received though the variety of instruments which the Quality Assurance Framework makes use of
- collate and respond to feedback as it is received
- inform all customers of the improvements and actions undertaken as a result of feedback
- set realistic targets for Key Performance Indicators for 2012-13.

Conclusion

Super-convergence of university support departments is becoming increasingly more common, and existing quality and performance measurement channels now appear less and less meaningful within this new paradigm. The case study presented by Library and Student Support at Liverpool John Moores University should present itself as one of the first studies of a 'whole service' approach to quality assurance within this new environment. Whilst the case study does not provide any evidence of the success or benefits of a converged service quality assurance framework, this particular initiative demonstrates the underpinning research and theory behind the development of such a model. The model can claim to be innovative in that it addresses issues which have arisen directly as a result of a new order of student support service 'super-convergence' and should be of great interest and value to anyone else currently working within the business, planning and quality areas of super-convergence, particularly from a library services perspective.

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Performance measurement in a changing environment – the SCONUL e-measures project 2010

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Introduction

Measuring provision, spend and use of electronic resources has long been a concern for libraries. Data on provision are complicated by the variety of formats and packages available, while spending figures are often subject to institutional finance systems which were designed in a more straightforward age. Providers offer a plethora of usage statistics for different resources, which Project COUNTER[1] has done much to standardise. While these are, generally, excellent as management statistics on which to base collection development decisions, they can be less useful on an aggregated basis, to describe the library collection, or to present the wider picture for UK higher education libraries.

In the UK, e-measures questions were last revised for the SCONUL return in respect of 2003/4. Successive years have seen an increase in the number of UK academic libraries able to report on their use of e-resources and a higher level of consistency in responses. At the same time, increased use and changes in the way e-resources are delivered has led some libraries to question the detail of some of the original definitions used and particularly to suggest that statistics required by SCONUL (Society of College, National and University Libraries) do not always match the requirements or practice of the libraries themselves. E-resources are now so important in academic libraries that, in 2009, SCONUL initiated a review of the definitions used for e-journals, e-books and databases, to ensure that the data collected for SCONUL matched as far as possible the way libraries are themselves recording their use of e-resources. A set of new definitions for the data to be collected was devised and piloted during the 2009-10 academic year. The aim of the pilot was to ensure that the e-measures questions in the SCONUL *Annual Statistics* were sufficiently robust to give confidence in their use in a national/international context and in assisting SCONUL members to benchmark their own results. There was also a desire to bring the data collected by SCONUL in line with international standards.

Two key issues informed the development of the new measures. Firstly, how would the new statistics be used? While some aspects of the new e-measures questions were appreciated by pilot members as reflecting more accurately actual library practice, there was a question over whether the amount of detail involved in establishing a set of performance indicators for e-resources was worth the effort required. There was a strongly held view that the considerable amount of time and effort that went into the collection of the statistics was not always fully appreciated by library directors or justified in terms of the use to which they were put. Pilot members were often unsure how the statistics were used within their own institution, whether the performance indicators were used and more worryingly whether the statistics that had been collected were viewed with confidence. This issue was beyond the scope of the e-measures review to address.

A second issue was the maintenance of longer term trends. As an organisation, SCONUL is often required to provide trend information about various aspects of library activity. Many individual members also use trend analyses as part of their regular performance monitoring and benchmarking exercises. It was therefore essential that the changes

1 ***www.projectcounter.org***

introduced should be compatible with the previous regime, and this led to some of the detail that was included – to maintain the integrity of trends during the transition period.

Four key areas of change were introduced, described in detail by Barclay *et al* (2011):

1. inclusion of e-journals and e-books held within databases in the count of serial and e-book titles
2. addition of free titles or titles purchased in previous years
3. addition of database searches as a usage measure
4. separation of costs of different types of e-resource.

The first year

After thorough testing by the pilot group, the revised e-measures questions were introduced into the 2009/10 return, recognising that not all libraries would be in a position to answer them in the first year. In the event, the number of replies was encouraging and the comments, while varied, showed recognition of what SCONUL was trying to achieve. Out of 148 UK respondents, in most cases at least 140 were able to answer the new or revised questions and give the detailed breakdowns requested. As libraries outside the pilot group had had little advance warning of the new questions, this strongly suggests that the revision fitted in with the way libraries were themselves already collecting statistics on e-resources.

E-books in databases: EEBO or not EEBO?

The e-books stock provision questions were generally well completed, by between 133 and 143 respondents. The decision to include both e-books and e-journals that were contained within databases led, as anticipated, to a large increase in the numbers reported in both these categories. The inclusion of e-books within databases in question C6 (number of e-books purchased) attracted one of the largest number of comments in the statistical return. These comments mainly revolved around the inclusion of titles within e-book databases such as Early English Books Online (EEBO), where a JISC Collections agreement makes around 125,000 titles available to UK HE libraries for a modest access fee:

- *The increased return for this year is due to not counting e-books contained in aggregator databases or free e-books made available to our users in previous SCONUL returns*

Not everyone agreed with the decision, however:

- *I have included EEBO or EECO in the count because that is the instruction but we have not added bib records to the library catalogue so I feel it distorts our EBook count*

Yet for others, the increase could also be explained by a policy decision to increase spend on e-books:

- *Significant increase due to extra funding for purchase of e-books & inclusion of the EEBO database with 125,000 titles.*

Now that e-books are established it could be argued that the inclusion of large collections, such as EEBO, does not have the same distorting effect that they would have done some years ago, when e-book numbers were smaller. The number now recorded reflects more accurately the extent of provision across the HE sector and provides a better basis from which to chart future growth.

Use of E-books

For e-book section requests, the difficulty of providing accurate figures when some suppliers provided the COUNTER BR1 report (title requests), and others the BR2 (section requests), which had been acknowledged in the notes to the relevant question, was remarked on by several respondents. A conversion ratio between BR1 and BR2 was provided, to provide a measure of consistency, and several libraries had made use of this. There is also the issue of the number of e-books for which usage statistics are not COUNTER compliant, or are not available at all. Despite these reservations, 118 libraries provided data.

Serials

Detailed data on serials purchased were provided by between 141 and 145 libraries. Rather fewer had detailed data available on titles received but not purchased – between 121 and 123, while 132 libraries provided overall figures. A number of libraries again drew attention to the increase in figures here due to the new definitions, including the addition of titles in databases, inclusion of free titles and journal back runs.

- *The increased return for this year is due to us not counting e-journals contained in aggregator databases or free e-journals made available to our users in previous SCONUL returns.*

Double counting?

The question of 'double counting' of serial titles in particular which are available from more than one platform was discussed during the pilot. It was agreed not to introduce complex rules to try to prevent this, but rather to accept that a degree of duplication was inevitable. Some respondents pointed to the problem of double counting where titles are available in different packages:

- *There is a considerable amount of duplication between content of backfiles and current subscriptions, and between titles available on a number of different platforms. It is impossible to deduplicate these titles with any accuracy, and the total … is therefore not the total of unique titles.*

Serials received but not purchased

There were fewer responses to the questions on serials received but not purchased (121-123). An interesting by-product was that for the sake of completeness, a new question on print serials received but not purchased was also included. Although we had not expected this to be of interest to all libraries, 121 provided a figure.

As with e-books, there were variations in numbers given, again perhaps reflecting different library approaches. Some libraries had used their link resolver to find the number of free titles:

- *The number of full text titles within our SFX link resolver denoted as free.*

Though at least one was aware of the extent of duplication that is likely here:

- *Our response to C14 is based on the data provided to us in our Article Linking Software – the Serials Solutions Knowledge Base. Some open access titles that we track will be duplicated across large collections. For example the 'Directory of Open Access Journals (DOAJ)' and 'J-Gate' do track some similar content.*

Databases

In the past, the "definitions table" used to distinguish databases from e-journal or e-book collections had been a source of some controversy. As already indicated, it was felt necessary to ask libraries to divide databases into 'journal, e-book and other' in order to arrive at meaningful cost ratios. Some libraries provided a note of the databases they had included in a particular category, but there were no comments indicating difficulties in dividing up databases in this way, and most libraries were able to do this rather than just providing the total. This was gratifying, indicating that one successful outcome of the revision of the e-measures questions was the disappearance of the definitions table. Between 136 and 147 libraries were able to provide information for the set of database questions on levels of provision.

Database use

The question on database searches was new this year and the number of replies was lower (108) compared to those for e-journals (120) or e-books (118). There were a number of comments on the lack of search data, or indeed, lack of any data at all, for a number of databases:

- *No data available for 14 databases. In addition, 24 databases did not provide search data.*

- *Statistics for D9 are lower than reality since many of our databases are not COUNTER compliant and only record number of visits or sessions.*

One library drew attention to the effect on database searches and sessions figures of using different federated search tools:

- *This figure is about triple last year's figure. This is primarily because our searches and sessions figures for databases have increased enormously since replacing Metalib by EBSCO Discovery Service (EDS) and EBSCO host Integrated Search (EHIS) as our federated search tool.*

Should free items be included?

The decision not to include free or previously purchased items in the usage data requested was made both in relation to doubts as to reliable figures and also to the wish to provide 'cost per download' figures which would have been distorted by the inclusion of free/previously purchased items. This decision may need to be revisited in future and a way found to include these items. It provides a further illustration of the continual dilemma between minimising work and improving the range of statistics available.

Costs

The data sought on the costs of the various resources appeared very different from previous years, and the detail was not well completed compared to data on resource provision. Between 115 and 124 libraries provided figures for spending on journals and databases broken down in any degree of detail. For example, a number of libraries were unable to separate out expenditure on print and electronic journals. While 145 UK libraries provided a figure for 'total serials' only 115-123 were able to provide any breakdown:

- *Shows the total expenditure on serials in print and electronic form. It includes expenditure that should be entered in H2 and H4, but is not possible to separate.*

Where libraries are able to provide such a breakdown it clearly has advantages in enabling them to demonstrate, both internally within the institution and for benchmarking, the effect on their costs of the move from print to electronic resources.

What difference did it make?

This section quantifies some of the differences on a national scale, for SCONUL members as a whole.

Resource provision

Figure 1 shows that numbers of e-journals had been rising steadily from 2004-05 to 2008-09. The dotted line shows a projection of where this might have been had figures for 2009-10 been collected on the 'old' definition – ie excluding titles in full text journal databases. Adding these has resulted in a figure some 70% higher than it might have been without. Perhaps more interesting is the effect of titles not purchased in the current year – backfiles for which no current subscription is held, open access titles catalogued by the library, and titles purchased by others or via consortia with no direct subscription cost to the library. These represent some 33% – one in three – of all journal titles available electronically.

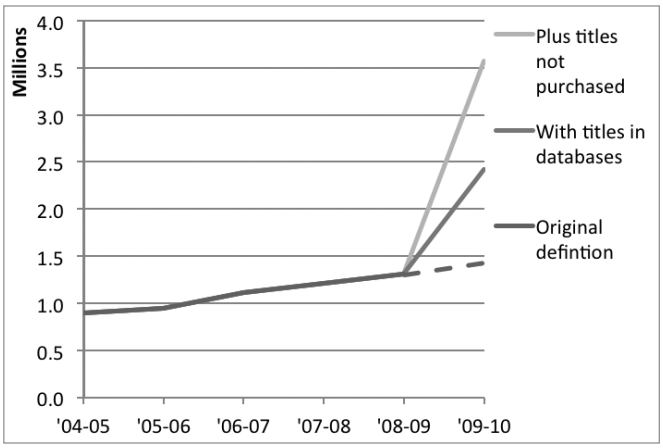

Figure 1: Electronic journal titles

The picture for numbers of e-books was very similar, although here databases made most difference. The total number of e-books was estimated at 3.3 million under the original definition. Adding databases gives an estimated 13.5 million, while free titles add a further 3.3 million.

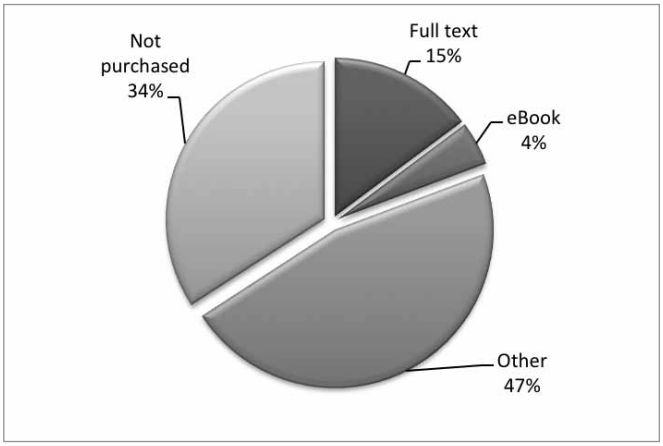

Figure 2: Types of databases

Details on databases by content was collected for the first time in 2009-10, with an estimated total of 22,000 for UKHE overall. Given the impact of databases on the numbers of journal and e-book titles, it might be expected that e-book databases would be a significant component, but figure 2 shows that this is not the case – e-book databases contain vast numbers of individual titles. Interestingly, around one third of databases available were not purchased in the current year.

Spending

The main change in the data collected on information resource expenditure was to seek separate figures for spending on the three categories of database. The intention was to be able to cut the spending cake in a variety of different ways to suit different performance indicators and reporting requirements. The most basic distinction might be between print and electronic expenditure (figure 3a). Another likely to be of interest is to group spending by content – journals vs. books, for example (figure 3b). There is also the capacity to map to the old definitions, to look at spending trends over time (figure 3c).

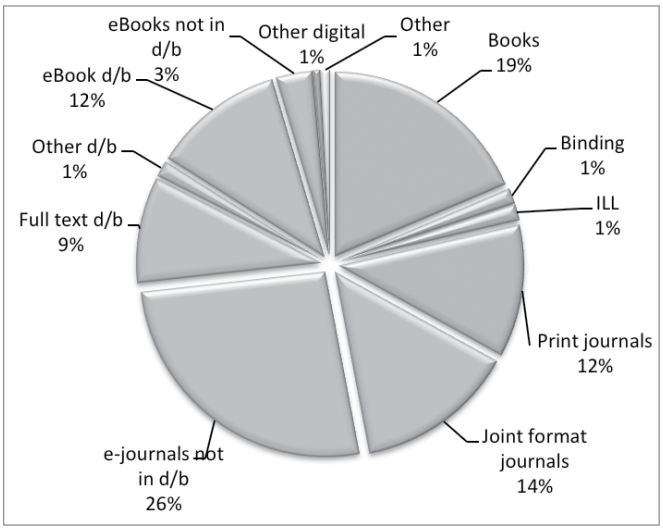

Figure 3a: Print vs. electronic

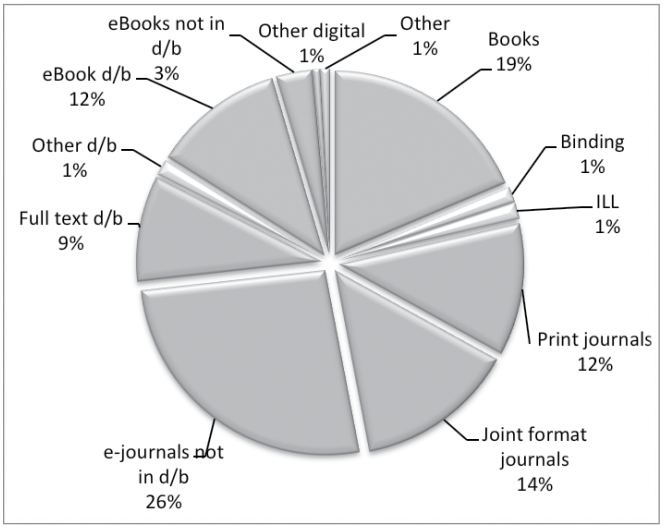

Figure 3b: Books vs. journals vs. other

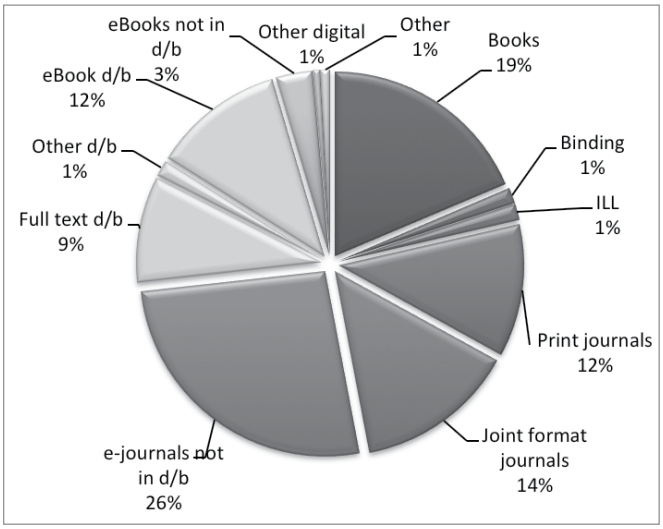

Figure 3c: The original definitions

Performance indicators

It was thought to be too onerous to ask libraries to report usage in as much detail as spending – it is a sufficiently difficult task to provide data without needing to know whether a title is available in a database or not, or whether it was purchased outright. So three basic usage figures were collected – full text downloads of journal articles, section requests of e-books, and searches of databases, all based on COUNTER definitions, or the nearest equivalent for non-COUNTER compliant vendors. In all cases, libraries are asked to include all subscribed titles, so it is important to include the relevant database costs in the performance indicators. The usage and cost figures still might not marry up completely, but this is a step in the right direction. The general trends have been downwards, and for e-books in particular, including the database costs does little to affect the general downward trend (Figure 4).

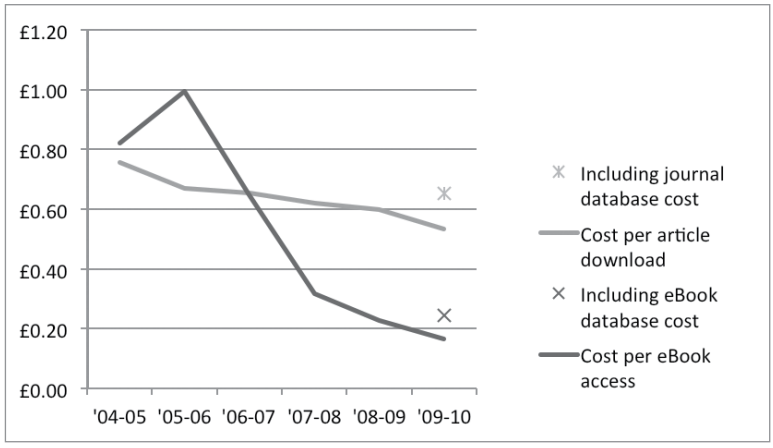

Figure 4: Trends in cost per use; journals and e-books

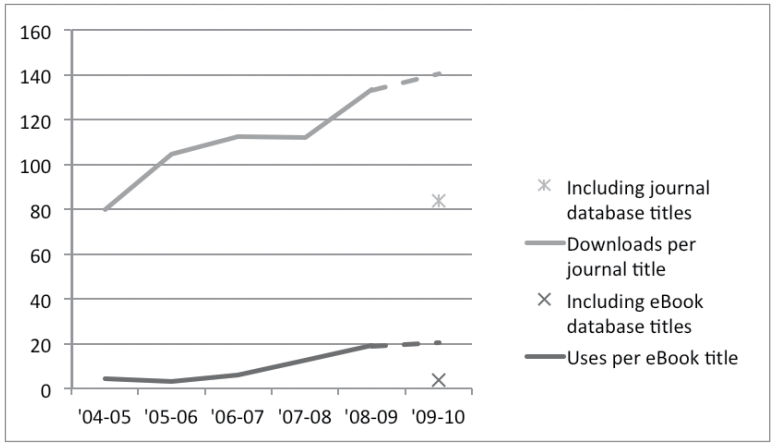

Figure 5: Trends in use per title; journals and e-books

Figure 5 illustrates the trends in use per title, and shows the likely impact of including titles in databases in the count of what is available. The dotted lines show the projections for 2009-10 under the old definitions. The changes have reduced overall levels of use per title, as expected, but these figures are now more realistic in terms of what is actually going on in libraries.

Conclusions

SCONUL did not expect that every member would be able to give figures in all the new categories sought without time to prepare. There are many more categories than there were before, because the landscape of e-measures has become increasingly complex in recent years, and providing figures which can be compared between libraries and aggregated across them to give the headline figures needed for strategic advocacy on a national scale has necessitated a more detailed breakdown than in the past.

While the numbers able to provide answers to the new or revised e-measures questions suggest that the questions more clearly reflected existing practice in libraries than had previously been the case, one important test of how successful the new questions have been is how well they stand up to being used to derive ratios that will have meaning across the sector. One striking factor is that it has been possible to derive a range of ratios using some of the new or revised questions based often on responses from 140 or more libraries. With existing ratios, the numbers on which they are based are generally higher than in previous years. New ratios provide a clearer picture of the percentage of spend on e-resources, and the percentage of spend on print, print and electronic and electronic only journals.

The statistics and ratios may be there, but questions remain, particularly on how accurately they reflect usage across the sector. As has been pointed out, there are often wide variations in the numbers reported, for example in the number of free or previously purchased e-resources. Numbers of requests, particularly for e-books or databases, will be affected by lack of COUNTER compliant statistics for all resources, and sometimes lack of any statistics. The actual number of items may be difficult to pin down at any given time as new resources are added during the course of the year. Items will appear in a variety of different formats and may well be double counted.

In spite of all these provisos, it is more important than ever to have a picture of the use of e-resources across the sector. Clearly these new questions will require time for libraries to adjust to what is required. Feedback received this year has been used to adjust and clarify the definitions for the 2010-11 return. SCONUL will continue to monitor trends, both in the data that are reported, and in the changing environment of electronic resource provision, to ensure that the data collected remain in tune with library requirements and practice.

The SCONUL statistics are a tool and servant of the members, helping libraries to run more effectively, and at the same time providing valuable evidence on UK academic libraries and their activities to the wider world. It is hoped that the new e-measures questions will provide a reliable picture of the use of e-resources across the sector and will be useful to libraries individually or in benchmarking groups in assessing their own usage. The ways in which libraries will respond to the new questions over the next few years will demonstrate how successful this aim has been.

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Student information search skills and help acquisition – differences across three faculties

Linda Bedwell
Reference & Instruction Librarian, Dalhousie University

This paper is largely based on an internal report prepared for Dalhousie University's Killam Memorial Library.

Introduction

This student interview survey was one of three student studies conducted by Dalhousie University's Killam Library in partnership with a fourth-year class of Sociology and Social Anthropology (SOSA) majors. A number of post-secondary libraries have recently applied ethnographic research methods to the study of students' work behaviours, their perceptions of and interactions with library space, resources, and services, most notably the University of Rochester's Undergraduate Student Study and the ERIAL project at Illinois (Foster and Gibbons, 2007; ERIAL Project, 2011). Inspired by these studies, the author sought the assistance of the university's SOSA department to gain a similar understanding of students at Dalhousie. It was anticipated that the findings of the studies conducted through this unique partnership could point to discrepancies between student perceptions and work behaviours and library services, resources, instructional methods or outreach.

The purpose of this interview survey was to learn more about students in the faculties served by the Killam Library (Dalhousie's main library): their information-seeking behaviours, how they learn information search skills, who they consult with for help, and the impact that librarian-led research instruction has on their information-seeking knowledge or confidence level. This information would enable the library to measure the impact of information literacy efforts and better align these services with student work habits. As experienced by the University of Rochester's research team, whose studies showed "over and over again how much [they] did not know about [their] students and their academic endeavours", (Foster and Gibbons, 2007, p. 82) we, too, were enlightened by our study results.

A review of the literature supports the study of student culture by students, themselves. Northey and Tepperman (2007, p. 81) state that students "claim a general interest without having to commit themselves to any particular belief or faction". By having the SOSA majors conduct the interviews, we may have improved the quantity and quality of the data gathered as not only were they well-versed in the methods of ethnographic study and with the interview method in particular, but had an understanding of what it was like to be a student at our university and therefore had a natural rapport with the students being interviewed. Adler and Adler (1987) define their position as one of "complete membership" in the culture under study. Furthermore, this type of "complete membership" is described as "opportunistic" since the SOSA majors were members of the student culture before they chose to study it (p. 67). While some may argue that this position would interfere with scientific detachment, Adler and Adler strongly insist that "the depth of data gathered via this role is a valuable compensation" (p. 81).

Methodology

Since we were using a grounded theory approach, we chose a semi-structured interview survey method in order to elicit more complete responses from students. The survey consisted of 15 to 17 questions, including 5 demographic questions and 6 open-ended questions, and was formulated by the SOSA majors and their professor, in consultation with the author, a reference and instruction librarian. This study was the last conducted by this partnership, so by this point in time the SOSA majors had participated in lengthy discussions regarding student experience with library services, information literacy, and student work patterns, and had great knowledge about the mission of the library. In turn, they provided great insight into the student perspective during this process, sharing their opinions on how certain questions may elicit more information.

The interview surveys were conducted by the SOSA majors on two days in February, 2010, in two buildings located near the Killam Library: the Student Union building and the Management Building, which houses many classes within the different faculties. The survey was set up in the Opinio software so that interviewers could type responses directly into the survey program. By positioning the interviewers in neutral locations near the library we aimed to interview students who studied in the faculties served by the Killam Library, regardless of whether or not they visited the library building. We did, however, accept interviews from students outside of these faculties. In total, 97 students were interviewed, 83 of whom were studying in the areas primarily served by the Killam Library. (Computer Science, however, is not represented in this study as we did not receive any interviews from these students.) We removed the remaining 14 respondents from the other faculties from our data analysis, which was conducted using Excel and SPSS.

Results

In total, 83 students were interviewed: 36 in the faculty of Arts and Social Sciences, 19 in Management, 23 in Science, and 5 were Arts and Social Sciences and Science double majors. (When analysing differences by discipline, the 5 respondents who were enrolled in both Arts and Social Sciences and Science were eliminated from the analysis.) 64 were undergraduate students, while 17 were graduates; 46 were female and 36 male. This sample is fairly representative of the of the student body for these faculties, except for the percentage of Science students which is somewhat low.

For the sake of brevity, not every result of this study is presented in this paper. Instead, overall results and distinct differences between respondent categories are reported herein.

In-class library instruction

Question: *We are interested in how you have learned to find the books, journal articles, etc. you may need to complete your assignments. Have you received instruction on this during any of your classes here at Dal/Kings? (yes/no)*

73.5% of total respondents indicated that they had received in-class library instruction. Not surprisingly, a higher percentage of grads than undergrads reported to have received in-class library instruction (89.5% versus 68.8%). Interesting differences, however, appeared between the faculties: a higher percentage of Management students (84.2%) than Arts and Social Sciences (69.4%) and Science students (69.6%) reported that they had received in-class library instruction (see Figure 1 below).

Question: *Who provided this instruction? (someone from the library/professor/TA – choose all that apply)*

78.7% of respondents who had received in-class library instruction were taught by library staff, 34.4% were taught by a "professor", and 8.2% were taught by a "TA".

A higher percentage of Management students (73.7%) received in-class instruction from library staff than did Arts and Social Sciences (61.1%) and Science students (39.1%), while a higher percentage of Science students received library instruction from a professor (34.8% vs. 16.7% of Arts and Social Sciences students and 26.3% of Management students). These results indicate that faculty in the Sciences rely less on library staff for this type of instruction and more equally share this responsibility. (See Figure 1.)

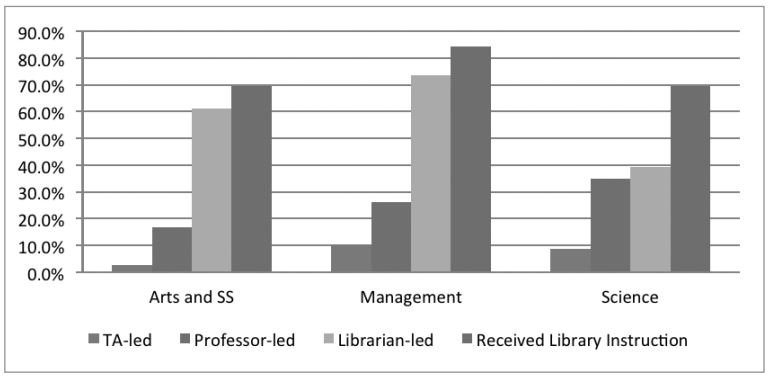

Figure 1: In-Class Instruction by Faculty

Other learning methods

Question: *How else have you learned how to find information/sources? (open-ended)*

Responses to this open-ended question all fell within 9 codes listed in Figure 2 in order of percent of total responses. The top three responses were "self-taught" at 33.7%, "through friends" at 19.3%, and by "professor or TA" at 15.7%.

Students from the three faculties differed in their responses to this question. "Self-taught" was still the most popular response from all three faculties, however it's quite clear that Arts and Social Sciences students rely on friends much more than do Management and Science students. 30.6% of Arts and Social Sciences students said that friends have taught them how to find information, but only 10.5% and 13.0% of Management and Science students, respectively, rely on friends. After self-teaching, learning from professors and TAs was the second most used method by Management and Science students. Management students' third method was learning via the internet, while Science students learned from friends. See Figure 2 below for a comparison of responses from students in the three faculties.

Knowing that our students are learning from peers (in the case of Arts and Social Sciences students), and professors and TAs (particularly Management and Science students) should persuade library staff to teach library instruction to these individuals in a way that better empowers them to forward this learning to their students and peers. Perhaps the library should also consider involving Management and Science teaching staff in the classroom teaching of information literacy and in the creation of digital learning objects, for example, a well-known Science professor could provide the voice-over for online tutorials geared toward Science students.

Very few students (6.0%) reported learning via online instruction but it's possible that this form of learning may have also been captured in some of the "library website" or "internet" answers. Google Analytics indicate that over the past year, only some of our current tutorials have received considerable use. Further study of online tutorial usage would reveal if better promotion, placement, or structure of these tutorials would increase usage or if this method of instruction simply does not appeal to our students.

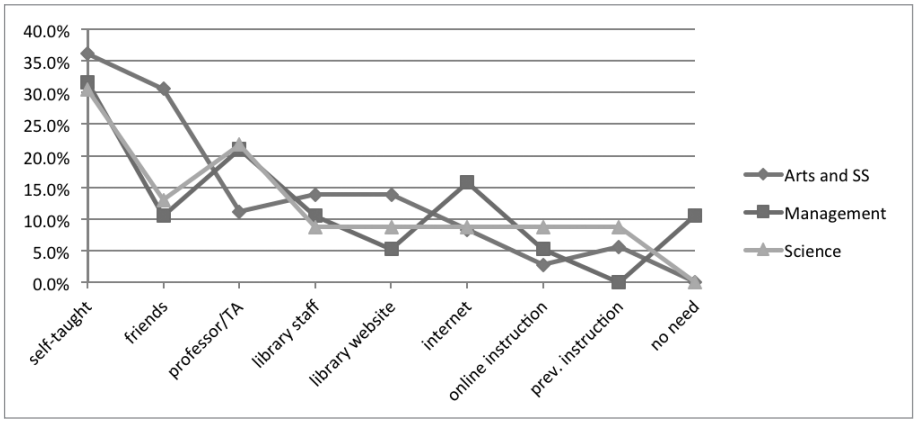

Figure 2: Other Learning Methods by Faculty

Who students go to for help

Question: *Who do you go to for help with finding information/sources? (open-ended)*

Answers to this question all fell within 5 codes, in order of percent of total responses: library staff (61.4%), professor/TA (18.1%), friends (14.5%), no-one or n/a (8.4%), and internet (3.6%). The fact that 61.4% of the students interviewed stated that they consult with library staff for help with finding information is particularly heartening in light of other studies, such as the ERIAL project, which revealed that Illinois university students rarely seek help from librarians (Asher et al, 2010).

As they do for learning how to find information, Arts and Social Sciences students rely much more on their friends for help than do Management and Science students. 25.0% of Arts and Social Sciences students said they go to friends for help, but only 5.3% and 8.7% of Management and Science students, respectively, rely on friends. Again, Management students consult with professors and TAs, 36.8% responding that they do so. This is an indication that the library should ensure that teaching staff, in this faculty in particular, have up-to-date search skills and knowledge of library resources to ensure that they are passing on the best knowledge and skills to their students. Figure 3 provides percentage of responses by discipline for each help option students provided.

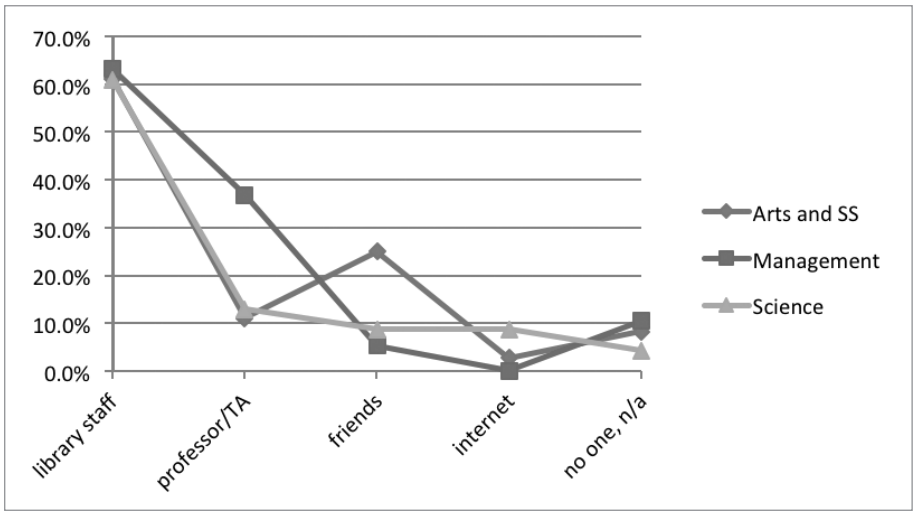

Figure 3: Who Students go to for Help by Faculty

Method of seeking help from the library

Question: *Have you sought help from the Dalhousie library in person, online, and/or through email? (Select all that apply: in person, online, email, never.)*

In-person help was the most used method for all three groups. 74.4% of respondents sought help from the library in person, 26.8% online, and 14.6% by email. 18.3% stated that they had never sought library help. Because different forms of help (reference assistance, instruction, circulation-related questions, citing, writing, IT help, etc.) are provided at various service points in the Killam Library – and, according to the experience of the SOSA majors and that of the author, students may expect and receive various types of assistance at these service points – we did not attempt, in this survey, to differentiate between the different service points when referring to in-person help. 74.4% does not represent the percentage of respondents who sought help at our reference desk, only, nor would all the percentages represent those who sought reference and research assistance.

Responses differed across the faculties with a higher percentage of Management students (26.3%) requesting help via email (versus 14.3% of Arts and Social Sciences and 8.7% of Science students), and a higher percentage of Science students (30.4%) who had not sought help from the library (versus 14.3% of Arts and Social Sciences and 15.8% of Management students). Students from all three faculties nearly equally availed themselves of online help.

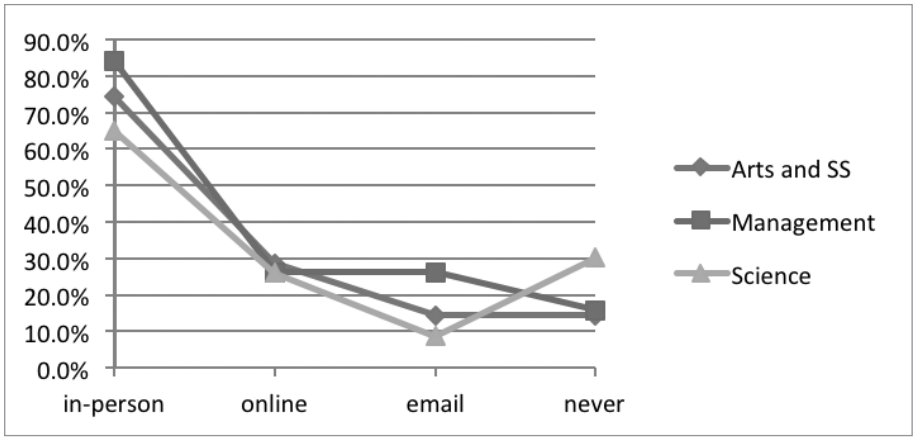

Figure 4: Methods of Library Help by Faculty

How students feel about asking library staff for help

Question: *How do you feel about asking library staff for help with finding information? (open-ended)*

86.1% of responses to this question were positive.

While students from all three faculties felt positive about seeking help from library staff, Science students were more uniformly positive at 95.5%. 83.3% of Management students and 80.0% of Arts and Social Sciences students felt positive about asking library staff for help.

Those who were self-taught and those who went to friends for help were the least likely to feel positive about consulting with library staff – only 71.4% of those who were self-taught and 72.7% of those who went to friends for help gave a positive response to this question.

How students find information for their academic work

Question: *How do you approach finding information to complete assignments? (open-ended)*

Answers to this question fell within several codes, listed in order of the percent of total responses in Figure 5 below. Nearly half of the students interviewed (47.6%) stated that they used journal article databases, often naming the databases in their subject areas. This is an indication that, regardless of their learning method, many of our students know about and use journal article databases in their subject areas. "Novanet" (our OPAC) was the second most mentioned resource (36.6%).

A higher percentage of Arts and Social Sciences students (57.1%) than Management (42.1%) and Science students (43.5%) mentioned using journal article databases as well as Novanet (57.1%, 21.1%, and 17.4%, respectively). Management students' second most used source was the library website at 31.6%, using it significantly more than the Arts and Social Sciences (8.6%) and Science students (4.3%). See Figure 5, below.

There is potential for some of the responses to overlap. For example, those responding that they use the library website may have specifically used any combination of the resources provided via the site, such as databases, Novanet, Prowler (our single search), and the subject guides. It should also be noted that very few (7.3%) of respondents stated specifically that they use the library subject guides. This echoes responses in website focus groups also conducted by the SOSA majors. LibGuide usage statistics have indicated a wide range of total hits to the individual subject guides. Further analysis of usage statistics for the author's subject guides clearly indicate that the Key Databases tab is used far more often than any other tab within the guides, save the Home (or landing) tab.

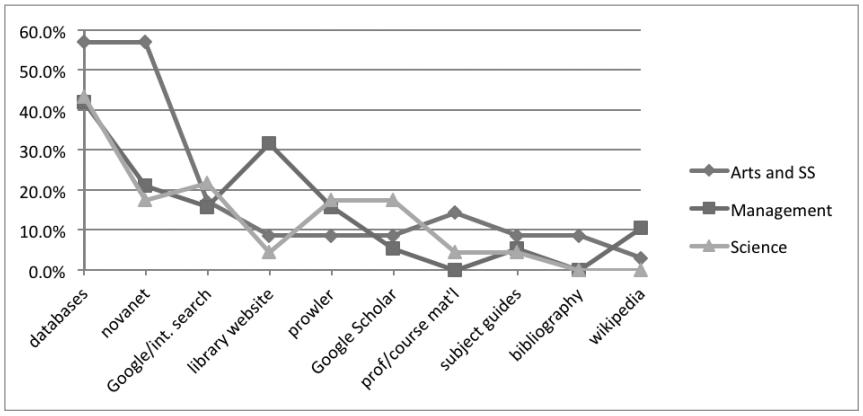

Figure 5: How Students Find Information by Faculty

Self-reported knowledge scale

Question: *Where would you place yourself on a scale from 1 to 10, with 1 being you know very little about how to find the sources you may need and 10 being you know everything you need to know about how to find the sources you may need?*

The overall mean score from the entire set of responses was 6.77 (s.d. 1.946).

Amongst the faculties, Arts and Social Sciences students scored themselves the highest with a mean of 7.43 (s.d. 1.42). Management students' mean score was 6.00 (s.d. 2.73), and Science students' mean was 6.39 (s.d. 1.59).

It appears that library instruction provided by library staff is having a positive effect on how students rate their information-seeking skills. On average, those who had received library instruction from library staff scored themselves significantly higher in their information-seeking skills than do those who had not received such

instruction. A t-test of the two means, 7.23 (s.d. 1.97) and 6.15 (s.d. 1.75), respectively, is statistically significant at .018, which is certainly noteworthy given the small sample size. The most substantial increase in mean score is among the Management students. Science students appear to be somewhat more confident even without the library instruction. The differences in mean scores from students in each faculty – between those who have/have not received library instruction from library staff – are depicted in Figure 6, below.

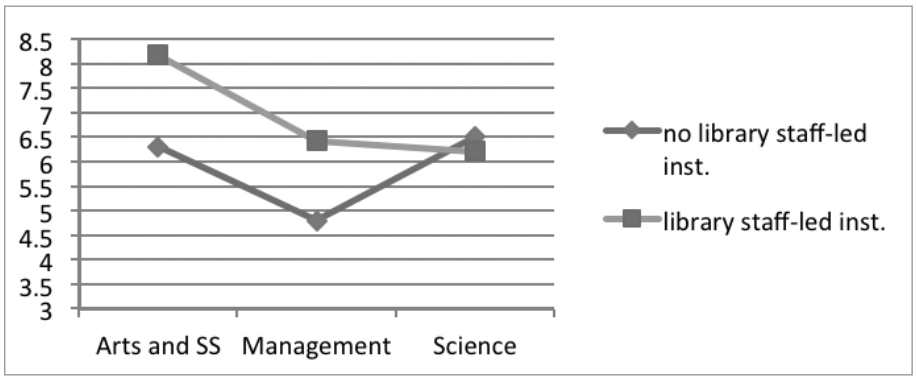

Figure 6: Knowledge Scale Means by Faculty, With & Without Library Staff-led Instruction

Conclusion

Based on the findings of this study, different approaches to teaching students how to find information should be applied to the different faculties. Instructional methods that empower Arts and Social Sciences students to help and to teach each other could help ensure that these students transfer the best skills to one another. Providing instruction to Management and Science faculty and partnering with them to co-teach and co-produce online tutorials will ensure that they provide the best guidance to their students. Self-teaching should be better supported by the library, perhaps through clearly-marked "how-to" resources (brief step-by-step guides and online tutorials) placed within online courses for students who do not use the library website. Overall, findings indicate that students' confidence with information seeking increases significantly when they receive librarian-led instruction – this indicates a great value in the library's information literacy efforts and should encourage additional outreach efforts.

Although our respondent group consisted of 83 students, the faculty groups were fairly small and not representative of all disciplines within the faculties. Conclusions drawn from this study cannot be applied at the discipline level and should be verified by further studies. Observational studies could confirm or contradict the findings of this study, which, by nature of the method, are based on self-reported data (ie, do students do what they say they do?).

This study's originality lies within the partnership between the library and the SOSA majors to design and conduct this study. The SOSA majors applied their socio-ethnographic research skills and provided a student-perspective. They helped formulate the interview questions, providing insight into the student experience and how certain questions may elicit more information. By conducting the interviews, they may have increased the participation rate and the amount and quality of data through their rapport with fellow students. The findings are heartening as they reveal a significant value in the library's information literacy efforts and their positive impact on students' information-seeking confidence.

Ackowledgements

The author wishes to formally acknowledge the great depth of work contributed by the Dalhousie University SOSA Majors Seminar Class of 2009-10 and their instructor, Dr Margaret Dechman.

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Utilizing LibQUAL+® to identify best practices in academic research library website design

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Background

LibQUAL+® was developed with the intent of assessing user perceptions of service quality. The long-standing goals of LibQUAL+® are to:

- foster a culture of excellence in providing library service
- help libraries better understand user perceptions of library service quality
- collect and interpret library user feedback systematically over time
- provide libraries with comparable assessment information from peer institutions
- **identify best practices in library service** (emphasis added)
- enhance library staff members' analytical skills for interpreting and acting on data .

(Association of Research Libraries, What is LibQUAL+®?, 2011)

Very little research to date has addressed the use of LibQUAL+® to "identify best practices in library service." Despite the voluminous literature about the survey, there are very few references to the achievement of this LibQUAL+® goal. One exception is a 2004 article which points out that "by relying on peer information, LibQUAL+® data leads eventually to an understanding of best practices" (Shedlock and Walton, 2004).

There is also anecdotal evidence that many libraries make use of peer comparisons for internal management purposes. However, there appears to be an absence of studies that have applied a methodology for utilising LibQUAL+® to identify best practices. Hence, the purpose of this research was to empirically explore and achieve a key LibQUAL+® goal, by investigating if an appropriate benchmarking methodology might be applied to evaluate a relatively homogeneous sample of academic research libraries to profile potential institutional best practices.

Typically, a best practice is defined as "a method or technique that has consistently shown results superior to those achieved with other means, and that is used as a benchmark." (WebFinance, Inc., 2011). Benchmarking practices are well described in the business literature. Camp, for example, describes the benchmarking process as a set of ten steps across five phases. In the Planning phase of benchmarking, which has been undertaken in this study, the process involves identifying what is to be benchmarked, identifying comparative companies, determining data collection method and collecting data. The other benchmarking phases include Analysis, Integration, Action, and Maturity. (Camp, 1989)

One of the cautions about benchmarking is that differences in institutions, performance expectations and other considerations must be acknowledged. APQC, the American Productivity & Quality Center, in its Glossary of Benchmarking Terms defines best practice with the caveat that "[T]here is no single 'best practice' because best is not best for everyone. Every organisation is different in some way -- different missions, cultures, environments, and technologies. What is meant by 'best' are those practices that have been shown to produce superior results; selected by a systematic process; and judged as exemplary, good, or successfully demonstrated. Best practices are then adapted to fit a particular organisation." (APQC, 2008)

This caution about benchmarking has been extended to LibQUAL+® and may explain the reluctance to use the survey data for the identification of best practices. It has been noted that certain unique types of institutions tend to achieve among the highest LibQUAL+® performance scores. For example, six professional military education libraries that administered the survey in 2003 found that "military respondents did not perceive that service levels were less than minimally acceptable in any dimension…respondents gave the highest scores for perceived levels of service in all four dimensions, resulting in the largest positive adequacy gap in all dimensions for all institutional groups…[and] for all questions in the Affect of Service dimension Military Institution scores resulted in a superiority gap – meaning that service quality was perceived to be even higher than desired". The authors of this report "discussed possible explanations of the positive perceptions of library service within the [military education] institutions, including homogeneity of the user population, self-identification with the library, the small school environment" and more. (Nicula and Laseter, 2004)

As this example demonstrates, utilising LibQUAL+® for benchmarking must be approached with the appropriate cautions in mind, since there are differences among the populations of users who complete the survey and the institutions that administer it. Since LibQUAL+® has been implemented by more than 1,000 libraries in more than 20 countries and 20 languages during the past decade, an early design consideration for the present research involved selecting a subset of libraries to include in the study. The sample of libraries selected included the 30 ARL libraries that participated in LibQUAL+® in 2010. This sample, which excluded the health science and law library respondents, represents a largely homogeneous group of North American academic research libraries. These research libraries typically provide services to relatively similar groups of users, including undergraduate students who major in a variety of academic subjects, graduate students who study in many different disciplines as well as faculty who are engaged in research and teaching.

While any number of LibQUAL+® survey items could have been considered for a best practices study, LibQUAL+® results indicate that the research library's website is among the most important issues to academic audiences. A study of library users' service desires by Thompson, Kyrillidou, and Cook found that "A library Web site enabling me to locate information on my own" was rated among the top five desired library service items across all user groups (faculty, graduate students, undergraduates) in three successive years, 2004 – 2006. (Thompson, Kyrillidou, and Cook, 2008) Additionally, since the LibQUAL+® survey instrument began utilising 22 core items in 2004, the website survey item has consistently ranked among the top three desired service items for all respondents from ARL universities. In 2010 and the first half of 2011, this item even surpassed the much discussed "Print and/or electronic journal collections I require for my work" within the ARL university library population included in this study. LibQUAL+® data also reveal that since 2008, ARL library performance on this website survey item is least superior (according to the superiority mean) among all items, except for the item on "library space that inspires study and learning". (Association of Research Libraries, LibQUAL+® Data Repository, 2008-2010)

There is considerable literature on recommendations for website design. Lynch and Horton's Web Style Guide: Basic Design Principles for Creating Web Sites is particularly useful in outlining the primary elements of design, such as universal usability, information architecture, interface design, page structure and design, typography, graphics, and media. Jakob Nielsen, who's been called the "king of usability" and "the world's leading expert on user-friendly design", suggested 113 guidelines for homepage design. Some of Nielsen's points include:

- emphasise the highest priority tasks so that users have a clear starting point on the homepage
- group items in the navigation area so similar items are next to each other
- categories need to be immediately differentiable from each other – if users don't understand your terminology, it will be impossible for them to differentiate categories.
  (Nielsen, 2001)

A number of researchers have developed instruments to assess user perceptions of website quality. For example, Aljukhadar and Senecal's scale considers attributes from a user's point of view including such features as visual attractiveness, ease of use, and site information. One theoretical approach to a website design study proposed a two factor model. For instance, the authors suggest that the presence of "hygiene" factors make a website functional and serviceable and their absence causes user dissatisfaction (with features such as attractive screen background and pattern and logical structure of information presentation), whereas "motivation" factors add value to the website by contributing to user satisfaction (with features such as presence of eye-catching images on the homepage and attractive overall color use). (Zhang and von Dran, 2000)

Methodology

This study utilising LibQUAL+® to identify best practices selected the 30 ARL libraries that administered the survey in 2010 and the respective websites for these libraries. Limiting the sample to these participants permitted analysis of both the LibQUAL+® scores and the websites on which the scores were based in a relatively current timeframe. This approach minimised deviations in the libraries' websites, respondents' minimum or desired expectations, or perceived scores over time.

To focus the current study on best practices, the LibQUAL+® data was used to rank the ARL libraries with the best results in terms of the website's ability to allow the user to locate information independently, using the superiority mean score. Even among the small sample of 30 academic research libraries, perceptions on how well the libraries' websites enabled respondents to locate information on their own varied considerably, with service superiority mean scores ranging from -0.64 to -1.85. The authors then looked at the websites from the five libraries with the highest service superiority gap scores (ranging from -1.40 to -1.85) as well as the websites of the five libraries with the lowest service superiority gap scores (ranging from -0.64 to -0.94). Only the home page for each of the libraries was examined in-depth. The authors were unaware of the LibQUAL+® score associated with the home page that they were viewing at any given time during the data collection session.

The authors scored each of the ten ARL library websites based on criteria suggested by one of authors of this study, Dr Carolyn Lin, a former Head of the Communications Department at the University of Connecticut, the 24th most productive advertising researcher (2008), a recipient of a University Distinguished Research Faculty award for work in new media technologies and the founder of the Communication Technology Division at the Association for Education in Journalism and Mass Communication. Three major functional criteria of Visual Layout, Information Architecture and Content were examined; each of these criteria included several defining attributes as noted below:

1. **Visual layout**
   a. color – is there a primary color and a limited number of accent colors
   b. space – is white space minimised and do your eyes move without cognitive overload barriers?
   c. focal point – where does one look first?
   d. layout – where are the highest priority tasks located?

2. **Information architecture**
   a. Information Location – related to the site's purpose, is important information in the right place?
   b. Content Categories – are the key content categories emphasised? Can you get to important information in two clicks?
   c. Labels and Titles – are they intuitively and effective presented?

3. **Functionality – is the site easy to use, interactive, and understandable?**
   a. Content
   b. Clarity – has jargon been eliminated?
   c. Instructions – are they needed? Are there any missing?
   d. Writing Quality – is it clear, concise, and straight-forward?
   e. Readability – did the designer(s) think and comprehend like a user?

Findings

The analysis of the websites revealed that libraries with higher superiority mean scores on the LibQUAL+® item – "a library Web site enabling me to locate information on my own" – satisfied more of the criteria for effective website design than did the lower scoring libraries. Three separate summary tables of this analysis for each of the three functional criteria are show below.

Visual layout	Five highest scoring websites	Five lowest scoring websites
Color	Used a limited number of colors	Three of the five used multiple colors
Space	All five had minimal white space	All five had too much white space. Some exhibited display problems on a normal workstation and one had to scroll down to see the whole page
Focal point	Eyes were drawn to the search box	Issues in four of five cases, including eyes being drawn to a decorative image, to multiple search boxes and/or to search box competing with a graphic
Layout	Search box was prominent on all five sites	Several had distractions such as too large a central image or unnecessary graphics

Table 1: Visual Layout

Information architecture	Five highest scoring websites	Five lowest scoring websites
Information location	Search box well situated and fairly easy to use	Search box was complicated on three of the five websites
Content categories	Discovery was emphasised, primary content was emphasised with secondary content off to the side	Various issues identified, such as secondary functions in prime locations, images that distracted from the sites' discovery and service functions, and tabs stacked on top of each other
Labels and titles	Intuitive and effective on all five sites	Some labels used inconsistently; others missing or don't visually stand out
Functionality	Good on all five sites	Generally okay, with one site having vocabulary issues

Table 2: Information Architecture

Content	Five highest scoring websites	Five lowest scoring websites
Clarity	Four did not use jargon; one used WorldCat and ILLiad references	All five used jargon
Instructions	Instructions not typically needed	Tended to have too many instructions; some were wordy and difficult to follow
Writing quality	Generally concise, one was wordy, one not straightforward	Three were not concise; two were not straightforward
Readability	Generally reflected web designers thinking like a user, were readable and easy to comprehend	Various issues such as difficult for undergraduates to understand, designers didn't think like a user, or made it too laborious for users to comprehend

Table 3: Content

During the review of the ten websites, the authors also considered a relatively standard template for text-oriented informational websites that has emerged in recent years as outlined in the work of Lynch and Horton. This template contains design features that can facilitate user efficacy to locate information on their own and quickly focus on the content they are seeking from the website as they become acclimated to the web interface design. One example of this concept is illustrated in the following table:

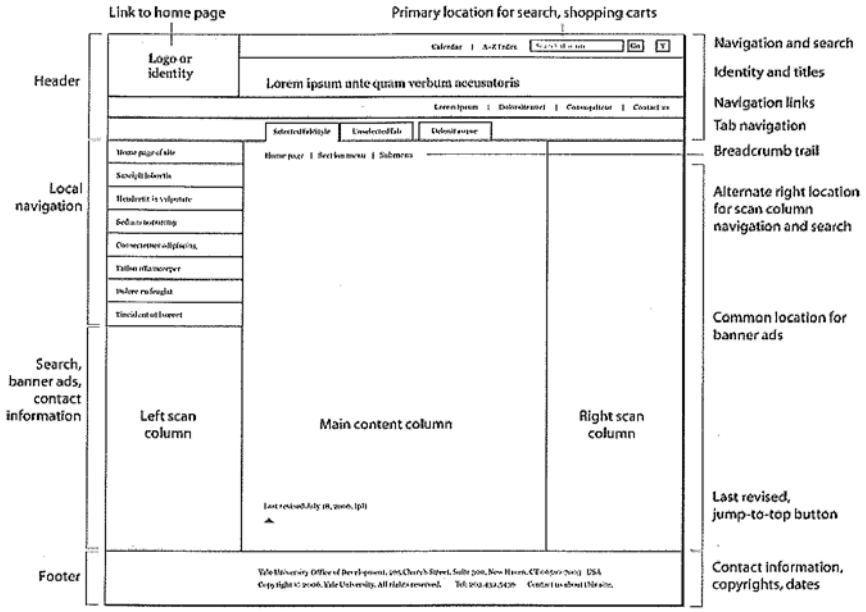

Table 4: A Canonical Webpage Layout (Lynch and Horton, 2009)

Lynch and Horton underscore that the header on a website page is where users expect to find the organisational identity and, if it is not the homepage, a link back to it should be provided. On an informational website, the header also commonly provides a site search capability and navigation links to related web pages, organised horizontally as tabs. Beneath the header, informational websites are typically organised into three columns: (1) Left scan (2) Main content and (3) Right scan. Lynch and Horton point out that the main content for the page should be placed in the center column. For an academic research library webpage, the main content column should feature the primary search box for searching library content and should highlight the primary library services offered. The services to feature in the main content column can be determined by reviewing webpage analytics that indicate which links to library services are used most frequently. Left scan columns are commonly used for navigation links that allow users to explore other useful information relevant to their library interests. Right scan columns, because they have come to be associated with advertising, can be effectively used to publicise news, events and new library services.

Applying the findings from the review of the ten ARL websites, in combination with the elements of effective website design identified by Dr Lin and the interface design conventions cited by Lynch and Horton, the authors constructed a prototype homepage that might reflect a "best practice" in contemporary academic research library website design shown in Table 5.

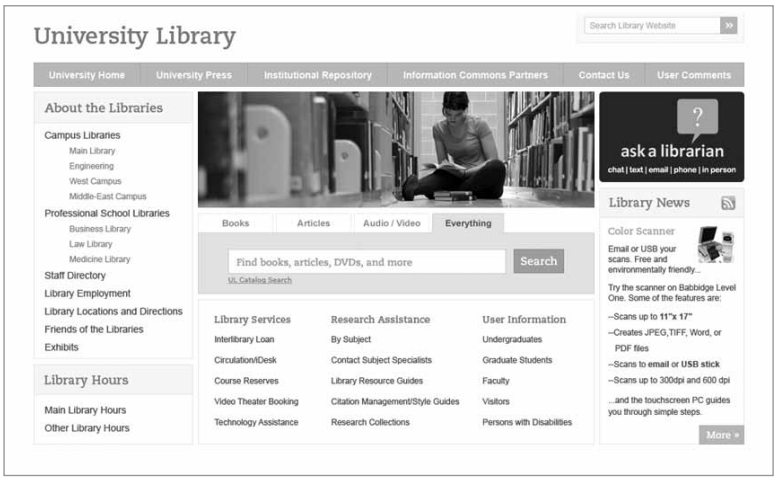

Table 5: A Prototype of a "Best Practice" in Academic Research Library Website Design

Conclusions

This research embraced an original goal of LibQUAL+® to "identify best practices in library service" via a systematic procedure to utilise the survey data. As reflected by LibQUAL+® scores, website design is an important consideration for academic research library users. The findings of this study demonstrate that, using LibQUAL+® 2010 scores as one gauge, there are common characteristics among those ARL library websites with the highest scores on the item "a library Web site enabling me to locate information on my own." Applying a set of sound evaluation criteria commonly used to assess the effectiveness of website design, as demonstrated in this study, may give other ARL libraries insight into best practices for contemporary academic library website design. This research may inspire libraries serving other missions and communities (eg, law libraries, health sciences libraries, and community college libraries) to use a similar methodology to discover and adopt best practices in website design to better serve their users in this digital library era.

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What business are we in? Value added services, core business and national library performance

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Introduction

Reported in this paper are the results of a research project undertaken in 2010/11, examining issues in relation to demonstrating the relevance, value, worth and impact of National Libraries in contemporary society within the context of a global economic recession. In particular, the investigation focused on how these libraries define their core purpose (or business), together with an assessment of the role and relevance of additional (or value-added) services in their strategic thinking, future planning and performance measurement.

Background, scope and context

Measuring and determining the distinctions between core business and value-added services has received scant attention in the literature of the discipline. This may in part be due to a degree of ambiguity in relation to the meaning and interpretation of such terms. Essentially, core business comprises those activities and services deemed fundamental to the continued existence of the library, categorised as "core functions" (Brophy, 2007; Gottfredson, Puryear & Phillips, 2005). In contrast, value added services are deemed to be those which are additional to the core functions, undertaken to add value to library operations (De Chernatony, Harris and Riley, 2000; Green, 2008).

Given the contemporary economic climate, it may appear at first glance that such categorisations and distinctions may prove helpful to the library manager in prioritising activities and services, planning and allocating resources, and evaluating service performance. However, whilst our study shows this to be true to some degree, nonetheless such categorisations are by no means as straightforward as they may appear initially, reflecting wider philosophical concerns with the concept of definitions per se. As Schiappa (2003) suggests, disputes and attribution of meaning should be viewed from a socio-political as opposed to a philosophical perspective. Hence, the questions are not 'what is core?' and 'what is value-added?' per se, but rather such definitions are reliant for their validity on a specific context, situated within prevailing organisational or cultural needs and priorities. Thus, it is arguably more helpful to adopt the definition most suited to a particular purpose as the authoritative term in any given context; an approach Schiappa terms "pragmatic essentialisation" (Schiappa, 2003, p. 176). Similarly, whilst Walton rejects the Platonic view of 'essence' ie one of forming a fixed unchanging independent reality and thereby obstructive to inquiry, he nonetheless suggests that "some notion of essentiality is useful" (Walton, 2005, p.174).

Whilst there are significant numbers of studies examining concepts such as value, worth and impact in the context of academic and public libraries (see for example, Association of College and Research Libraries, 2012; Broady-Preston and Lobo, 2011; Museums, Libraries & Archives, 2012) comparatively little research attention has been directed towards an examination of such issues in the National Library context. Therefore, such an investigation was timely for a variety of reasons. Firstly, whilst the role of the National Library differs from country to country, in the UK, all three National Libraries (the British Library (BL), the National Library of Scotland (NLS) and the National Library of Wales (NLW)) have very similar roles and responsibilities, including (but not uniquely) that of legal deposit. Legal deposit is

the act of depositing published material in designated libraries. Publishers and distributors in the United Kingdom and in Ireland have a legal obligation to deposit published material in the six legal deposit libraries (Agency for the Legal Deposit Libraries, 2011).

Additionally, all three UK libraries produced new versions of their strategic vision and plans in 2010, looking ahead ten years in the case of the BL and NLW, and twenty years in the case of Scotland, all of which address issues in relation to purpose, performance, worth and value.

Design, methodology and approach

This study is in the qualitative interpretive tradition, with the aim of examining social phenomena and thereby understanding social behaviour in context (see Pickard, 2007, p.11; Bryman, 2008, p.394). National libraries were chosen for the reasons outlined above, and also to reflect the fact that their purpose is more complex than that of either academic or public libraries viewed singly. The UK was chosen as the focus for reasons of language, geographic convenience and accessibility amongst others.

A collective case study methodology was employed, using the NLW and NLS as the core cases, thereby enabling each case to be examined individually, but also allowing for an integrated and comparative layer of analysis (Pickard, 2007, p.88). Both libraries are members of the International Federation of Library Associations and Institutions' (IFLA) "small, smart countries" informal network, consisting of countries that are politically, educationally, socially and technologically advanced, but by their own definition are relatively small on the "world stage" (NLS, 2010, p.2). Through networking and information sharing activities they are able to provide mutual support by

> *identifying and tackling issues of common concern...bringing solutions to the larger stage (NLS, 2010, p.2)*

The BL is excluded from the case study research. As the largest of the UK National Libraries, its scale means that its remit differs markedly from that of NLS and NLW, having much more of a leading role internationally. However, its strategic vision and associated documentation served as a referent to that provided by Scotland and Wales (Sanderson, 2010).

A range of qualitative data collection methods were employed, ensuring the collection of 'rich data', thereby allowing for interpretation to create meaning, and thus in line with the qualitative research tradition (Patton, 2002, p.341). Semi-structured interviews were conducted with senior managers in both institutions, together with focus groups with librarians and library assistants, selected using purposive sampling, as it is the

> *theoretical issues and the purpose of the research [which] guide the sampling procedures (Glaser & Strauss, 1967 cited in Klenke, 2008, p.64).*

Additionally, an extensive analysis of publicly available organisational documents was undertaken, together with observation. Observation is important in this context as it is through

> *direct observations [that] the inquirer is better able to understand and capture the context within which people interact. Understanding context is essential to a holistic perspective (Patton, 2002, p.262).*

All instruments were piloted; data from the respondents were recorded, coded, classified and cross-checked to ensure validity and rigour, using themed interview schedules to facilitate analysis (Bryman, 2008; Patton, 2002). Aberystwyth University research ethics guidelines were followed throughout the project (Aberystwyth University, 2005).

Data were coded manually using the themes outlined in the interview schedule. Extracts from the interviews and focus groups are designated as such and further differentiated according to staff category and case study, for example "NLW Interview SMT 1" and "NLS Focus Group LBN 1", where 'LBN' indicates a staff member employed on a professional grade, 'LA' one on assistant level grade, and 'SMT' a member of the Senior Management Team. Furthermore, each respondent has a unique numerical suffix, with individuals from the National Library of Wales designated 'NLW', and those from the National Library of Scotland, 'NLS'.

The results are presented thematically with literature interwoven with document analysis and field data, grouped by topic (see Pickard, 2007, p.88). As Patton observes

> *the case study can be told chronologically or presented thematically (sometimes both)...[and] offers a holistic portrayal, presented with any context necessary for understanding the case (2002, p. 450).*

Moreover, inductive thematic analysis

> *is flexible enough to be employed across a range of epistemologies and in relation to differing research questions... [and] prevents unnecessary repetition of ideas and concepts originally outlined in the literature review by creating a coherent, analytic, narrative account, weaving together extracts from the data with insights from the literature (Farler & Broady-Preston, 2012, p.3)*

Three major themes are identified and presented below, namely:

1. Defining core business and value added services
2. Making a distinction between core and value added services
3. Change and perceptions of core and value added service

Defining core business and value added services

As indicated above, at its most basic, core business may be defined as an examination of why the organisation is in existence, and the purpose it serves. In the literature, the term "core business" is also interpreted as 'core competencies' (Mullins, 2010, p.52), 'core functions' (Gottfredson, Puryear & Phillips, 2005, p.132), 'core capabilities'and 'distinctive competencies' (BusinessDictionary.com, 2011). Additionally, it is categorised as 'purpose' (Brophy, 2007, pp. 21-22), rhetorically as 'what business are we in? 'or 'what is our business? ' (Corrall, 2000, p.82; Mullins, 2010, p.543; Drucker & Maciariello, 2008, p.101), and strategically as, 'stick[ing] to the knitting' (Peters & Waterman, 2004, p.292). As indicated in the final definition, there is self-evidently a relationship between the term and issues in relation to organisational strategy and planning. It is beyond the remit of this paper to explore these in depth, but this will be achieved in companion papers.

Similarly, the phrase 'value added' has numerous meanings in the literature, and acknowledged to be a "multidimensional construct" (De Chernatony, Harris & Riley, 2000, p.46). Arguably, to derive a meaningful definition, the concept of value itself should be examined. A detailed examination of the construct itself is outside the scope of this paper. Clearly 'value' is subjective, contextually and culturally dependent, and within a service environment, perceived differently by customers and stakeholders (Broady-Preston and Lobo, 2011). Nonetheless, 'value' is a central concern for contemporary library services (see for example, Association of College and Research Libraries, 2010; 2012; Besara & Kinsley, 2011).

One dimension of relevance here is that of value in the sense of organisational values linked to basic business purpose.

Organisational values

As Selznick states

> *the formation of an institution is marked by the making of value commitments, that is, choices which fix the assumptions of policy makers as to the nature of the enterprise, its distinctive aims, methods and roles (cited in Peters & Waterman, 2004, p. 281).*

NLW and NLS both outline organisational values in their strategic documentation currently and in the versions which were contemporary when the fieldwork was undertaken for the project. NLS specifies five distinct values using the acronym SLICE: service, learning, innovation, commitment, and excellence (2008, pp. 2-3; 2011). Less pithily, NLW outlines its principles and values in greater detail, including its roles as a contributor to national cultural identity, collector and keeper of cultural and intellectual material in all formats, contributor to a wider network of recorded knowledge, supporting study and learning, ensuring its services and collections are accessible to the public without direct charge, and a leadership role vis-à-vis the library and information profession (2008; 2011).

Participants at both institutions demonstrated limited knowledge of the relevant organisational values and principles, with differing levels of awareness observable according to their roles in the organisations. Members of the NLS SMT knew there were 5 values, but not everyone could list all 5. Similar difficulties in total recall were experienced by NLS librarians and library assistants, viz:

> *I seem to remember a discussion about it (NLS Focus Group LBN.2.).*

There are four or five key words (NLS Focus Group LA.)

The results in relation to NLW reflected broad awareness as above, but again, staff were not able or chose not to specify the principles and values as published

We place enormous value on sharing our collections with people, giving them what they want hopefully, or trying to ascertain what they want and giving it to them (NLW Interview SMT.2.).

[Customer care courses] keep you reminded of what is expected and you know the values with regards to dealing with the customer...and the level of service we are expected to keep up as well because with the Charter Mark it gives us a benchmark of where we need to stay (NLW Focus Group LA.1.).

Creating awareness and knowledge of organisational values is clearly a strategic issue for both organisations. Values help to create an organisational culture by defining expectations of employee behaviours such as 'commitment'and 'excellence'(NLS, 2008, pp. 2-3; 2011). Moreover, values and principles are usually viewed positively, and when adhered to, facilitate the delivery of an effective and efficient service, establishing the reputation of the library within the community, thereby helping to fulfil basic organisational purpose (see Mullins, 2010). As one senior staff member remarked

objectives and values are something that we want to portray to our readers and our users, our non-users, our non-readers, but I think we also need to demonstrate that within our own complement of staff...so [they are]both internal looking and externally focused as well (NLS Focus Group LBN.1.).

However, not all staff viewed the existing organisational values as relevant to basic purpose

[They are] so generalised, sound bitey words, they could mean anything; it could apply to anything (NLS Focus Group LA.).

You could pretty much take them and plop them onto any company I think, and they would apply (NLS Focus Group LA.).

Other participants expressed the view that whilst values are important in informing business conduct, the underlying ethos is more important than perfect recitals of the values themselves

I think [it is] important that people understand the spirit, rather than whether people can actually repeat them one by one as a test...if [you are] working well and with mutual respect towards each other and with a customer focus you will do these things anyway (NLS Interview SMT.1.).

Making a distinction: value added services and core business

As indicated earlier, value added services are those which add value or worth to the business but are ancillary to the core functions of the organisation. Key examples in the National Library context are shops, cafes, and restaurants; these being largely standard services offered by a wide range of national libraries, including Australia and the BL, for example, in addition to Scotland and Wales (Green, 2008, p.3).

Both NLW and NLS have visitor centres, with these being central to their current service strategy. Such centres, including shops, cafes and permanent or temporary exhibitions, are good examples of how the boundaries between core and value added services may become blurred or more diffuse, illustrating the fluidity of these concepts. Moreover, it is apparent from the study that categorisations may not only become less distinct, but may change markedly and significantly over time, and when viewed from differing perspectives. Thus, whilst to some, such services may appear ancillary to basic purpose, nonetheless they may serve to raise awareness of the library and its services amongst difficult to reach customer groups, viz:

The audience development plan...talked about paddlers, swimmers and divers...people who come in and dabble, but they might then go on to swim and they might end up getting full value [from] our research services...having been attracted by...an exhibition...more of a hypothesis than anything demonstrable, but some of these services may bring people into the library or may increase awareness (NLS Interview SMT.3.)

Similarly, as one member of the NLW SMT observed

Although there is a link, which sometimes is denied, between the provision of somewhere to eat and drink or indeed to shop, and things which definitely are core services, like reading rooms, or exhibitions...there are people who

> *perhaps [would not] come on outings if there was absolutely nothing to eat or drink...in the main, the shop and the restaurant are obviously different from core activities (NLW Interview SMT.1.)*

Whilst such services may appear ancillary, customers increasingly come to expect these to be available as a norm or baseline of service provision. The presence or absence of such facilities may even constitute "critical incidents" when customers evaluate the quality of their service encounter (see Palmer, 2011, pp 71-73). As one staff member remarked

> *Once you are doing it, people start to expect it, so you know people now expect us to provide a cafe, whereas fifty or sixty years ago a national library [would not] have a cafe (NLW Focus Group LBN.)*

This illustrates the changing nature of customer perceptions of value; a customer focussed service strategy requires

> *active participation by and partnership with customers as co-creators of service value and quality...to determine the future direction and shape of service provision (Broady-Preston & Lobo, 2011, p. 125)*

However customer expectations may also make it difficult for service providers to change or alter their activities. Decisions must be tailored to the needs of an individual library and its circumstances; it is not always appropriate to imitate exactly what other providers in the profession are doing. In their study of added value, de Chernatony, Harris and Riley concluded that it is

> *a multidimensional construct, playing diverse roles, and interpreted in different ways by different people (2000, p.39).*

Therefore, one person may view a cafe in a national library as an ancillary service, whilst another perceives it to be core, as illustrated below:

> *I think [the visitor centre] is fantastic...There were quite a lot of sceptics about spending money on what some people see as non-core, frivolous, shallow material like comfy chairs and agreeable coffee (NLS Focus Group LBN.1.).*

Similarly, as an SMT member observed:

> *Events, education and exhibitions...we have some interesting debates about how central those are to what [we are] doing or whether [it is] a glossy shop window but not really the core...we feel quite a lot of political pressure... whether [it is] real or not, [I am] not sure [in relation] to...these kind of public...visible services (NLS Interview SMT.3.)*

Tensions may arise from interpretations and distinctions made in relation to core business and value added services. Additionally, external influences such as government policy may appear instrumental in strategic decision-making. However, the wider pressures and the necessity of certain decisions are not always understood by staff.

Change and perceptions of core and value added services

Changing emphasis on the perceptions of the importance and centrality of the roles staff perform within the library may also influence their reactions to and definitions of core and value added services. Staff were more likely to view the area in which they worked, be it reading rooms, cataloguing or exhibitions, as a core activity, and to resist attempts to downsize or cease such services, viz

> *Inter-library loan services...I personally think we maintained that service at least five years too long but it was a fear of ditching what some people may have perceived as a core service even though its relevance I think was blatantly declining, I think [we are] quite slow and reluctant to stop doing things that we have done historically, this goes back to agility (NLS Interview SMT.3.)*

The research revealed that general staff attitudes towards change in service priorities are mixed. There was less resistance to the establishment of the visitor centre in Wales than in Scotland, for example. One possible explanation for this discrepancy may relate to the timing of their establishment; the visitor centre in NLW opened in 2004, but five years later in Scotland, in 2009. Therefore, NLW staff have had more time to become accustomed to such an innovation, and to assimilate the impact of any resultant changes, whereas in Scotland it is still a relatively new development, as the following survey responses indicate

> *[There is] still some deep seated resentment among staff...that bums on seats in the cafe is not the same as bums on seats in the reading rooms (NLS Focus Group LBN.2.).*

> *I really revered this place I was going into and this collection because it seemed exclusive...I personally feel that a lot of these things like the shop and the cafe in a way conversely undermine perhaps the way the collection is seen, it's devalued it rather than adding value (NLS Focus Group LA.).*

> *We are trying to become much more open in that we are moving away from just being a library to being a visitors attraction through our exhibitions, through all these extra services that [we are] providing, so that we can reach different audiences (NLW Focus Group LBN.).*

> *Getting numbers through the doors and getting all kinds of individuals involved rather than just academics and historians...they offer tours and art exhibitions...it is more than just a library (NLW Focus Group LA.1.).*

The awareness of the geographical isolation of Aberystwyth may be a further factor in the greater acceptance of the visitor centre in Wales. NLS is in Edinburgh, the capital city of Scotland, whereas NLW is in Aberystwyth, a relatively small-sized university and market town in Mid Wales.

Digitisation

Digital innovation and developments, social media, web 2.0 and beyond, are creating specific opportunities and challenges for memory institutions such as libraries and archives (Gibby & Green, 2008). However, such developments also increasingly blur existing distinctions between core and value added services. As Hughes remarked in 2004

> *more institutions are unleashing the 'added value' of their collections by developing digitisation initiatives (Hughes, 2004, p.6).*

Changing customer needs, expectations and behaviours, together with the rise of commercial competition, have resulted in the preservation and management of digital objects, including records and documents, being viewed increasingly as core activities for National Libraries, As one librarian at NLW commented

> *If you asked the question ten years ago, [I would] imagine everyone would have said that digitisation was an additional service...an extra...but now it seems a core function in giving access (NLW Focus Group LBN).*

Furthermore, the key challenge

> *that national libraries must meet if they are to maintain a role as information providers in 20 years is to demonstrate the value of information they offer access to: they will provide intermediation, helping to guide people through the information landscape (Scotinform, 2009, p.66)*

Thus expertise in information navigation and connectivity is of increasing importance and centrality to National Libraries, and one which was recognised by the respective SMT members

> *Our draft strategy talks about connectivity and ensuring that not only do we enable or connect with our audiences and connect material to our audiences but we also provide the opportunity to help our customers connect to other material not necessarily within the National Library of Scotland (NLS Interview SMT.2.).*

Economic imperative

Whilst value added services are of increasing importance in gaining an edge over competitors, and in meeting increasingly sophisticated customer demands and expectations, there are also economic drivers to be considered. As stated succinctly in the 2010 version of the NLW vision

> *economic pressures force a retreat to core activities (2010)*

Categorising services as either value added or core may be less than helpful in a period of resource constraints; rethinking or reconceptualising services as contributing to basic organisational purpose to a greater or lesser degree may therefore be a more helpful measure of significance. As one member of the NLS SMT suggested

> *I think there is an overlap...and I think they [core business and value added services] should be integrated really... they should be seen as mutually beneficial... I think they should all be part of a changing national library (NLS Interview SMT.2.).*

Moreover, the inherent tension between progress and change, due largely to economic pressures, may result not only in ancillary services being re-categorised as core or vice versa, but also in certain historic services being deemed no longer necessary or viable. However, as the following example illustrates, National Library managers exhibited extreme caution when considering axing services completely, especially ones which have a lengthy history

> *The map library only gets less than two hundred visitors a month now...some days they may not get any visitors... it may be an example of an area where the availability of the online information really is much more convenient and accessible...there is a big question mark about the sustainability of our map library because there are a lot of overheads (NLS Interview SMT.3.).*

Despite difficulties in making distinctions with regard to categories of services, contemporary economic realities have resulted in recognition of the need to focus activity and to deliver services as efficiently and effectively as possible. As one NLS senior manager observed

> *Clearly one person's additional service is another person's core and there [is not] an objective answer to it...there is definitely a fuzzy line between them...I think it is a key responsibility of senior management to articulate clearly core, because particularly over the next few years [we are] really going to have to focus in a very disciplined way on core and explain why when people are unhappy about it...why are we doing it or why are we not doing it. This may involve us having to release staff (NLS Interview SMT.3.).*

Similarly, in Wales

> *I am looking at getting a business transition program in place in the department and will be appointing a Business Transition Manager...he'll be looking at lean management...so streamlining a lot of the processes and procedures... looking at ways of delivering those more efficiently (NLW Interview SMT.3.).*

Staff engagement and the use of volunteers

In a recession

> *public sector organisations will have to maximise the realisation of the potential of all their staff (Alimo-Metcalfe & Alban-Metcalfe, 2011, p.227)*

This has led to at least two developments; namely greater emphasis on creating a stronger culture of staff "engagement" (see Alimo-Metcalfe & Alban-Metcalfe, 2011), and the increasing use of volunteers within libraries. In 2010 the Council of the Chartered Institute of Library and Information Professionals (CILIP) issued a policy statement in relation to the use of volunteers in public library services, including advice on their deployment (Chartered Institute of Library and Information Professionals, 2010). However, as of March 2012, a search failed to identify any guidance or policy statements governing their use in National Libraries by relevant professional associations.

NLS has a volunteer program and Wales does not. However, this should not necessarily be interpreted as a policy stance per se, rather that in the current financial context introducing such a scheme is problematic

> *We have never had volunteers in the library and we really missed...an opportunity to develop a relationship with volunteers and to embed that in our business. But I am leading at the moment on establishing a policy and trying to identify projects that we could deliver with the help of volunteers...the timing is very poor because of course with cutbacks, our staff will see this as a threat, so we have got to be very clear in terms of definition of the projects that are being proposed (NLW Interview SMT.3.).*

Using Volunteers would be one means whereby customers could become more actively engaged with the National Library and thus become more effectively co-creators and co-producers of services and service quality (see above). Furthermore, it also offers promotional opportunities via word of mouth, together with potential economic benefits, given that sources of funding are available to organisations employing volunteers. The key challenge is to obtain acceptance of such a change by salaried staff; as one member of NLW SMT commented:

> *Change is something that is expected of staff now and those are the people we want to keep (NLW Interview SMT.2.).*

Resistance and ability to change in public organisations

As Atkinson (2005) outlines, a major problem in managing change effectively is dealing with, and managing resistance to, change. Moreover, as Reeves and Knell suggest

> *leaders understand that change provokes an emotional response, that successful change involves allowing people to feel angry, resentful and afraid as well as excited, hopeful and energised (2009, p.60).*

Moreover, organisational strategy, and by extension, change, is

> *governed by broader public policy issues such as politics, monopoly supply, bureaucracy and the battle for resources from the government to fund the activities of the organisation...[which means] decision-making may be slower and more complex (Mullins, 2010, p.544).*

Thus, the process of change may be slower, making it difficult for National Libraries to be lean and agile when operating in a complex and dynamic environment where the ability to anticipate change rapidly and proactively is crucial to organisational survival and sustainability (see Buchanan & Huczynski, 2010). Recognition of the importance of change and adaptability was quite apparent amongst NLS staff, viz

> *Adapting to change...certainly [there is] quite a lot of truth [in the analogy that] this library and the British Library are quite...like the tanker they [do not] turn around on a sixpence... [and are] not very agile (NLS Interview SMT.3.).*

> *The National Library is like a super tanker, [it is] very slow, slow to change...[we are] still constrained by being somewhat civil service like and [there is] an awful lot of hierarchy even now in the organisation so it remains difficult for our National Library...to change direction or even just slightly move course (NLS Focus Group LBN.2.).*

However, recognising the need to institute change quickly and positively, and actually being able to implement it culturally, are quite distinct and different, as was acknowledged by one SMT member with regard to the future of the map library which is

> *currently under discussion, but like the inter-library loan services...the reason that we provide them is because there is quite a lot of institutional caution about dropping services (NLS Interview SMT.3.).*

Conclusions

Libraries must demonstrate efficiency and effectiveness in service provision, and in relation to achieving primary purpose and resource priorities in order to survive. Examining the relevance of defining and distinguishing core and added-value services in relation to performance assessment and strategic vision addresses a gap in existing knowledge. However, such terms are of limited value if viewed as rigid definitions or categorisations, as in practice, it is difficult to draw distinct lines between core business and value added services. Views of service priorities change over time, in relation to external pressures and developments and are, moreover, subject to individual interpretation, depending on perspective.

Furthermore, politically, managers need to exercise caution in labelling services; in an economic recession especially, categorising an activity as core or value added has significant implications for planning future service delivery, staff morale, and customer perceptions of worth and value. Defining an activity as central to basic purpose may curtail the future freedom of managers to redefine strategic priorities to meet changing customer needs and expectations and to adapt service delivery in line with technological developments. Once activity is defined as 'core', it may take significant longer to change service priorities in response to market forces, thus making institutions less agile and less able to compete in a dynamic and complex environment. Therefore, reflecting the views of Walton (2005), as outlined earlier, whilst there is some validity in the use of such terminology, rethinking or reconceptualising services in relation to their ability to contribute to basic organisational purpose to a greater or lesser extent may be a more helpful measure of significance.

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Using performance indicators to improve technical service in an academic library: a study at São Paulo University Law School

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Background

The Ribeirão Preto Law School Library is one of the 44 libraries on the several campuses of São Paulo University (USP). These libraries are administered by the Sistema Integrado de Biblioteca – SIBi (Integrated Library System), which is also responsible for the university's libraries online catalogue, Dedalus.

Ribeirão Preto campus was created over 50 years ago, on an old coffee farm called Monte Alegre, which nowadays is a solid biomedical and health complex. Since 1992, important Humanities courses have been introduced, such as Education, Administration, Music, Information Science and documentation, and Economy. The Ribeirão Preto Law School was added in March 2007, with only 7 employees and 5 professors. By 2010 it had increased to 37 employees and 31 professors.

In January 2008 the Library occupied in a small room inside the Central Library while the permanent building for the law school was being constructed, and consisted of just two computers, two working desks, two studying desks and nine shelves. After a year, due to delays in construction the library moved to a temporary accommodation inside the Law School building, which comprised 250 square meters, six working computers, three research computers, five working desks, eleven studying desks and eighteen shelves. In January 2011, we finally moved to the new library, with 880 square meters, twelve research computers, eleven working computers, twelve studying desks, and nine group studying rooms, which occupy two floors.

The library is still forming its collection, and our priority is increasing the books and periodicals collection. There is no organisation structure.

The library services that we provide are: Inter-library loans, Bibliographic Commuting (a program to obtain copies from all libraries from Brazil and abroad), a research skills program and a digital library.

As a new library we decided to start using just two performance indicators, namely collection use and the speed of technical processing, which provide us with trustworthy information to evaluate and change the procedures needed to achieve our goals. We already have 3 years of data and the results are based on this period.

Approach

The objectives of our performance measurements are to quantify the organisation's performance for each indicator. The traditional models were financially oriented but nowadays they should represent a balance between several different aspects. (Correa and Correa, 2009)

The International Standard Organisational (ISO), ISO 11620 – Information and documentation – Library performance indicators was created in 1998, a standard to conduct performance measurement in libraries, with a second edition published in 2008. The International Standard provides a standardised terminology, methodology and description of 29 performance indicators associated to one or more methods to obtain data and results analysis.

Performance indicator is defined as an expression (which may be numeric, symbolic or verbal) used to characterise activities (events, objects, persons) both in quantitative and qualitative terms in order to assess the value of the activities characterised, and the associated method. (ISO, 2008)

The ISO 11620 is not an evaluation manual; it concentrates on the practical aspect of building the indicators. Renard (2008) says that some goals are defined to achieve a level of realisation or evolution and auxiliary on the performance diagnosis.

From the library's point of view, the using of performance indicators provides us with a self-diagnostic tool, enabling us to identify and solve problems quickly. Performance evaluation informs the quantity and quality of actual performance, showing where it should be improved and what are the priorities. It is a simple way to evaluate whether an improvement has been achieved, and in future provides, as an example, the comparison over time within the same and/ or other libraries.

Findings

Performance indicator: collection

Two indicators were used to evaluate the collection:

1. Loans per capita

The objective of this performance indicator is to assess the rate of use of library collections by the population to be served.

The Ribeirao Preto Law School Library results proved to be what we expected due to the increase in numbers of students.

Year	2008	2009	2010	2011
Rate	19	20	28	38

Table 1: Loans per capita rates

The interpretation for this indicator following ISO is that the higher the number, the higher the result. The loans data is obtained monthly from the ALEPH 18.01 software.

2. In-library use per capita

The objective of this performance indicator is to assess the amount of usage of materials within the library. The sampling period was 2 terms/year, which is about 9 months.

The in-library use per capita is:

IIUC = (A/B x C)/D

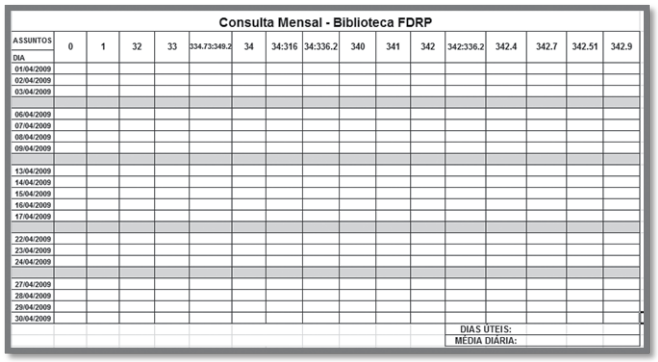
A: nº of documents counted during the sampling period
B: nº of opening days in the sampling period
C: total nº of opening days in the full year
D: nº of persons in the population to be served

Year	2008	2009	2010	2011
Rate	9.5	24	37	28

Table 2: In-library use per capita rates

The results have tripled due to the increase in students, because as previously stated there were 100 new students each year, until 2012 when the first class will graduate.

The Ribeirão Preto Law School Library created a spreadsheet where information data from consulting books classification was collected. The spreadsheet is filled in 3 times a day at the end of each working shift (morning, afternoon and evening). All users are instructed to leave books on the study tables, so a staff member can collect data from them daily.



Consulta Mensal - Biblioteca FDRP

ASSUNTOS / DIA	0	1	32	33	334.73:349.2	34	34:316	34:336.2	340	341	342	342:336.2	342.4	342.7	342.51	342.9
01/04/2009																
02/04/2009																
03/04/2009																
06/04/2009																
07/04/2009																
08/04/2009																
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29/04/2009																
30/04/2009																
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Figure 1: Monthly in-library use spreadsheet

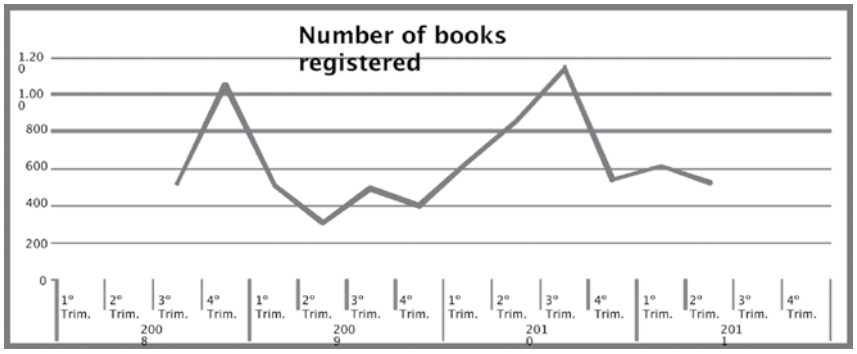
The data collected from the spreadsheet also indicates those subject areas that are more consulted, which helps inform the acquisition of new books.

Our results had increased as the School increased in size. It was predictable and expected, but to achieve our goals, we needed to continue with our collection update. Another point that contributes to the increase in this indicator is the improvement to the study environment following our move to the new building, which we will expect to attract more users and keep them satisfied.

Performance indicator: median time of document processing

The objective of this performance indicator is to assess whether the different forms of processing books procedures are effective in terms of speed and represents the average number of days between the day a document arrives at the library and the day it is available for the user.

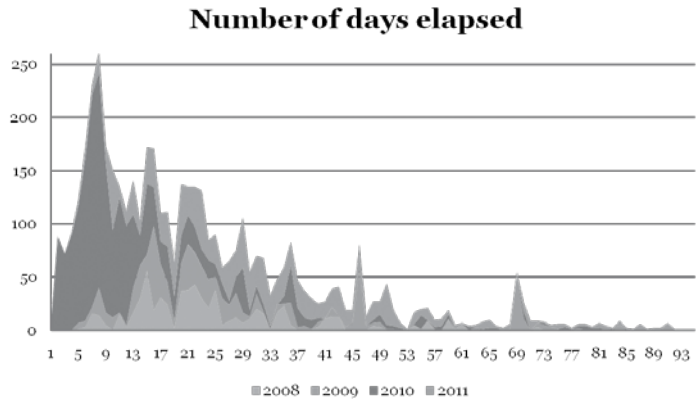
The library started with no books at all and until June 2011, we had almost 10,000 books registered, as can be seen in Graphic 1.



Graph 1: Number of books registered

Therefore the number of books registered is considered satisfactory; it is noticeable that the quantity of books registered by semester is not linear. One of the reasons suggested to explain it is related to the commitment by the employees, as it is not part of the Brazilian public service to be measured individually or collectively. Regular monthly meetings are held with all staff to help minimise the problem.

Analysing the performance indicator we had the opportunity to know what is happening in all stages of the processing of books.



Graph 2: Number of days elapsed

Year	2008	2009	2010	2011
Days	17,5	18,5	8,5	17,5

Table 3: Median time of document processing rates

From 2008 to June 2010, a spreadsheet for data collecting was used, which followed the book from shipment to shelving.

Type	
Procedure	
Classification	
Restoring	
Shipment	
Information Treatment	
Accession	
Preparing	
Database entry	
Shelving	
1 new, 2 Sysno, 3 OCLC, 4 duplicate	

Figure 2: Spreadsheet used to collect data, until June 2010

In 2008, the number of books registered was not a linear standard, as can be seen in Graph 1, the monthly median was 262, which, considering there were only two members of staff working (one librarian and one non librarian) it is a good number. As it was the first year of the library the amount of books received, both by donation and acquisition, was very high. In October of the same year, the library asked for more employees from the administration area to help with some stages of the processing.

In 2009, the median number of books registered was 143. In May some employees from São Paulo University went on strike, and the Central Library where we were based was closed and the students from Ribeirão Preto Law School could not enter the building. The books received from the acquisition process were also affected because the Integrated Library System building was closed as well. In June the library moved to its temporary premises inside the Law School building, due to delay of the construction. In October number of books received by donation was huge and they had to be housed separately for selection and to be cleaned. In November another librarian started working in the library.

In March 2010 our human resources increased by one librarian and one non-librarian employees. In August another member of staff joined the library. Until June 2010 the median time of document processing was 17.5 days. From July to December 2010, the median time was 8.5 days. There are many reasons to explain the huge difference between the two results, as during the first period the number of staff was very low, and the collecting data and processing data were all manual. During the second period, the members of staff increased and the data collecting was automated by the Argos Program. Although training new members of staff during 2010 was very demanding, we were still able to achieve our best rate in this performance indicator.

The Argos System was developed[1] using Microsoft Excel with Visual Basic Applications (VBA), where all the information that is captured from barcodes in the application is saved in Access. The objective of the system is to record the number of books processed, the number of days spent on each stage and the individual performance of all employees, in a less time consuming way.

The Argos System was created to optimise time during the collecting datasets and preparing all reports and graphics to analyse the performance indicators.

Figure 3: Argos System first screen

Each employee has a login and a password to enter the System and register all stages of the technical process for shipment of books, classification and cataloguing, accession number, stamping and attaching labels, database entry and shelving.

The data collection has to be really precise due to the information that is reported, and the interpretation from these reports. With the new System the Library is able to evaluate each member of staff individually (by date, hour and productivity) providing data for statistics analysis.

The basic principle of the System is an Excel interface where every employee can enter data at the same time, due to the quick extracting of information, and doesn't cause any kind of system conflict.

Practical implications

Stages

All stages from processing books are described below.

Shipment:

There are two distinct ways for receiving books: donation or acquisition.

If it is a donation the processes are: clean up the book based on the restoring practices and label it with the barcode.

If it is an acquisition the processes are: check all books to make sure they match the titles and quantities listed in the invoice, and check with the original order. Inspect all books, page by page, if any damage is found, return them to the vendor for the item to be changed. Label with the barcode.

After these processes enter the System and register the receiving information. All stages are connected, so it is impossible to go forward without this information. Person receiving the book, when and the kind of shipment (acquisition or donation) and if the book was cleaned are all registered.

1 Argos System was developed by Eder dos Santos Rocha

Figure 4: Shipment screen

Classification and cataloging: or information treatment

Set the call number, searching our own catalog first. If there is not a number, match one from Universal Catalog Classification. Then search the type of cataloging (1 – New, 2 – Sysno, 3 – OCLC, 4 – duplicate register), preparing a sheet with MARC principles. Input the information through the barcode, adding the type of cataloging and if it is a new classification.

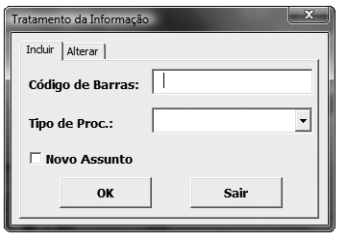


Figure 5: Information treatment screen

Accession number:

It is a unique number given to all books individually. This is recorded in a Access database where all information is saved, such as the call number, the type of shipment (if is acquisition fill with the invoice number, the acquisition process, the price, the Professor who asked for the book, etc; if it is a donation, fill in the name of the donator and estimated price). Input the information through the barcode.

Figure 6: Accession screen

Stamping and attaching labels: or preparing

After the accession process the labels (spine and stock labels) are created using the Access database. Stamp the book in several places and attach the labels. Input the information through the barcode.

Figure 7: Preparing screen

Database entry:

Register all books that have undergone the previous processes into the Dedalus database using the software ALPH 18.01. Input the information through barcode.

Figure 8: Database entry screen

Shelving:

Input the information through barcode. Shelve the books.

Figure 9: Shelving screen

The datasets indicate the number of days spent on each activity and as final information the number of days spent on all stages (from shipment to shelving). This performance indicator enables us to identify any flaws in the processing sequence.

In January 2011 the library moved to the new building. From March to June the turnover of employees was high, and there was a gap before the admission of new employees, therefore the number of books processed decreased.

It is known that many variables can interfere with the final result, as staff training, the number of books to be processed, the number of users using the library, the amount of donated books to be cleaned and repaired and the number of loans. The type of cataloguing and where the books come from also interferes with the time elapsed to complete the task.

The provenance of the books has a high interference on the median time of document processing. In our collection 67% are donation and 33% are acquisition with money from the University. All donated books are cleaned up based on the restoring practices and in some cases it is cleaned page by page. The books purchased are generally the ones that should be shelved faster, and because of this urgency they are processed first. Although there is priority given to purchased books, most of them require cataloguing and new call number, so this represents an upper median time.

Conclusions

The Law Faculty's Library has been using performance indicators for three years: the results obtained until now are preliminary, as it is a library under construction.

The experience of using performance indicators has encouraged the Ribeirão Preto Law School Library to extend the indicator median time to all types of documents, and to other indicators related to our collection, such as acquisition and user satisfaction.

The Argos System needs to be updated, as some activities take less than a day to be concluded.

In terms of human resources, staff motivation needs to be investigated because we suspect that commitment is affecting our rates, and we are planning to carry out in depth research on this topic.

The evaluation was positive in these first years and highlights the importance of using the performance indicators from the beginning, considering our size, how we started and how we have progressed. Based on these results the Library now has information to evaluate and to change some of its procedures to reach its goals.

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Assessing the value of ebooks to academic libraries and users

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Abstract

In 2010, the University of Illinois at Urbana-Champaign (UIUC) Library agreed to take part in a global study of Elsevier electronic books (ebooks) sponsored by Elsevier Publishing. Ultimately, 129 UIUC faculty and graduate students participated in a logbook study that examined the ebook discovery process, detailed the way in which this group of researchers used ebooks, and queried users on the value they assigned to Elsevier ebooks. Going beyond the Elsevier survey, this study examines the value of ebooks both to UIUC users and to libraries, and it reports on an assessment of the ebook collection at UIUC including cost and use statistics. The results show that UIUC users assigned a high value to Elsevier ebooks for research purposes; this paper also determines that, in the broadest sense and as a collective format, ebooks offer libraries a better economic value than print books (pbooks) when comparing the cost of activities such as processing, circulation, storage and preservation.

Introduction

In 2010 the opportunity to participate in an ebook study conducted by Elsevier Publishing was offered to the UIUC Library, among other universities in the United States and around the world. Because the study intended to look at not only ebook users' activities but also their perceived value of ebooks, the UIUC Library was immediately interested: value assessment was also the goal of another opportunity, our participation in the IMLS Lib-Value Grant (http://libvalue.cci.utk.edu/). The UIUC Library determined that data from UIUC participants in the ebook study could be separately analysed to determine our users' assessment and use of the Elsevier suite of ebooks.

This study's focus is on value, and it adds to the mounting evidence supporting ebook implementation and acceptance. Why should libraries be interested in measuring value, particularly ebook value? Will knowing even the ballpark value of an ebook collection result in a change in library collections concerning ebooks? Simply put, yes. If ebooks are acknowledged to provide value to both users and libraries, it is likely to affect how libraries build monograph collections now and in the future.

What is value? For the purposes of this research, ebook value is defined as the benefit someone receives through the purchase by the library of an ebook or a collection of ebooks. The purchase is not enough of course; the ebook must be accessible by the library's patron base and stable for single or multiple users over time. It must reside on a virtual shelf, available for access and use. According to dictionary.com, there are three different connotations to "value." They are:

- to calculate or reckon the monetary value of; give a specified material or financial value to; assess.
- to consider with respect to worth, excellence, usefulness, or importance.
- to regard or esteem highly.

This study applied these three types of value assessment to ebooks at UIUC. Monetary value and "usefulness" were based on cost, use and cost-per-use data for ebooks at UIUC from FY2008-FY2011; "esteem" was measured using data from the Elsevier ebook study which asked users to rank the value they associated with the use of ebooks on the Elsevier platform (ScienceDirect).

The value of ebooks to libraries

Previous research

Libraries are very aware of the cost of doing business. Numerous articles have been written and research has been conducted to determine what libraries cost; a seminal work in this area, a study of the cost of owning and maintain library collections, was conducted by Lawrence, Connaway and Brigham in 2001 (Lawrence et al, 2001). The authors found that not only are life cycle costs for library collections many more times the purchase costs of materials, but that library long-term costs are largely driven by their monograph collections. They conclude that "if research libraries want to control their costs, they must work to control the life cycle costs of maintaining their monograph collections" (Lawrence et al, p. 549). Although written in 2001, before the most recent surge in ebook purchasing in libraries, the authors do note that ebooks may be one way to control library costs, therefore creating a better value for libraries. They also note that the cost of electronic access and storage has been in decline over time, meaning costs are not only difficult to estimate, but may also be reduced in the future.

A follow-up study conducted in 2002 by Lawrence and Connaway (Lawrence and Connaway, 2003) explored library costs associated with paper and digital resources. Eleven librarians affiliated with the Association of Research Libraries (ARL) were asked to allocate resources to both an all-print and an all-digital hypothetical library. Participants were given a list of 43 tasks associated with seven major categories: selection, acquisition, cataloging, maintenance, circulation, warehousing/storage and deselection. Further compartmentalised to four major resource allocation areas (labor, space, materials and equipment), the authors found that, as a mean forecast, librarians predicted that labor costs will be less in a digital environment (a mean forecast of 59% of print costs), space costs will be less (a mean forecast of 29.2% of print costs), materials costs will be lower (a mean forecast of 34.2% of print costs) and finally that equipment costs will be lower (a mean forecast of 69.6% of print costs). This study ultimately found that "labor, aggregate space requirements, and material resources are estimated to be less in an all-digital library than in a paper library" (from Conclusions section). There is economic value to be found in moving from a paper-based monograph collection to a digital-based monograph collection.

In the most recent study available to date, Courant and Nielsen took on the task of updating the storage cost model for libraries (Courant and Nielsen, 2010). They conclude that "the costs associated with a print-based world, often assumed to be small, are actually large." Citing the successful migration journals have made from solely print to mostly electronic, the authors find parallel arguments can be made for moving from pbooks to ebooks.

Other costs that must be evaluated to determine the cost-effectiveness potential for ebooks and pbooks include staffing, circulation, preservation and storage. Table 1 duplicates Courant and Nielsen's Table 3 (pg. 101) and shows, in relative terms, how ebooks compare to pbooks in these areas. This table shows that there are long- and short-term savings to be had by purchasing ebooks rather than pbooks.

Cost element	Print	Electronic
Space	High	Much less
Cleaning	Low	Much less
Maintenance	Medium	Much less
Electricity/climate control	Low	Somewhat less
Staffing	Low	Somewhat less
Circulation/Access	Low	Much less

Table 1: "Comparison of per-object cost of print versus electronic storage (relative to print cost)" from Courant and Nielsen (p. 101), 2010.

UIUC library quantitative ebook results

Data were collected to measure the size, cost and use of the UIUC ebook collection. Thanks to the efforts of acquisitions, e-resources and cataloging staff, data were available from fiscal years 2008 to 2011. As shown in Table 2, the UIUC Library currently has access to over 600,000 ebooks. The data were based on Voyager acquisition module coding, and while not considered absolutely precise, they do provide a ball-park sense of the size of the ebook collection and its growth over time.

Table 3 shows approximate cost and cost-per-ebook for fiscal years 2008-2011. These data reflect the large packaged collections the UIUC library has purchased over the past few years, leading to very low costs-per-ebook.

Fiscal Year	#Ebooks Added Per Year*	Cumulative Ebook Total	Percent Increase Per Year
2007		292,002	NA
2008	27,531	345,186	9%
2009	66,178	411,364	19%
2010	73,404	484,768	18%
2011	129,435	614,203	27%

Table 2: Number of ebooks added to the UIUC library collection by fiscal year, 2008-11.
**Counts are per volume, not per title*

Fiscal Year	$ Spent	#New Ebooks	$ per Ebook
2008	$224,047	27,531	$8.14
2009	$204,678	66,178	$3.09
2010	$383,167	73,404	$5.22
2011	$732,725	129,435	$5.66

Table 3: Cost of ebooks purchased and cost-per-ebook by fiscal year, 2008-11.

Ebook use data were also collected by using COUNTER statistics provided by ebook publishers.

For the purpose of this study, a "use" of an ebook was counted when a user successfully viewed or downloaded a section (generally by chapter) of an ebook through the vendor's portal. This definition of use follows COUNTER Book Report 2 (Number of Successful Section Requests by Month and Title) for most vendors. Of the vendors for which we could get information, 75% used COUNTER-compliant statistics; however, only 82% (33 of 40) of ebook publishers were able to provide use data, resulting in an undercounting of ebook use.

Fiscal Year	#Ebooks (Cumulative)	Amount Spent	#Ebooks Added from Previous Year	Avg. $ per new Ebook	Total Uses	Cost Per Use
2007	292,002	$185,991				
2008	345,186	$224,047	27,531	$8.14	151,089	$1.48
2009	411,364	$204,678	66,178	$3.09	251,273	$0.81
2010	484,768	$383,167	73,404	$5.22	563,871	$0.68
2011	614,203	$732,725	129,435	$5.66	709,944	$1.05

Table 4: Cost and use data for UIUC library ebooks, FY 2008-2011.

Table 4 shows the cost, use and cost-per-use for UIUC ebooks from FY08 to FY11. While the cost-per-use fluctuates between $1.48 and $.68, both are low and highlight the exceptional cost effectiveness this collection provides to UIUC users. There is, however, a large portion of the ebook collection that is not used, or not yet used. Figure 1 shows collection use and non-use for four of UIUC's top eBook publishers (by holdings and use: Elsevier, Springer, Wiley and Royal Society of Chemistry). These data show that while the collection is growing in terms of percentage of ebooks used (from 20.2% used in FY2008 to 36.9% used in FY2011), there remains a large portion of the collection that was not used during the study periods. However, this is also true of our print collections.

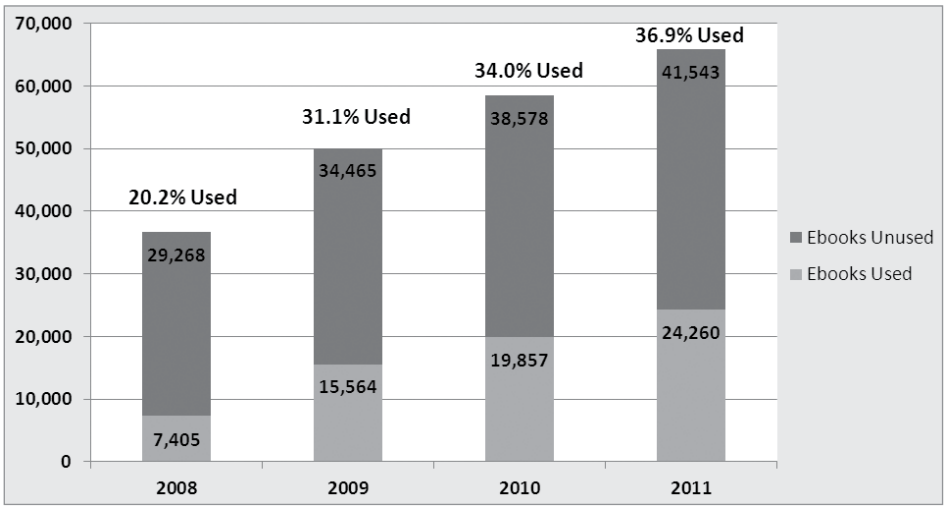

Figure 1: Percentage of ebooks used and unused during the study period based on four of UIUC's "top" ebook publishers (by holdings and use: Elsevier, Springer, Wiley and Royal Society of Chemistry).

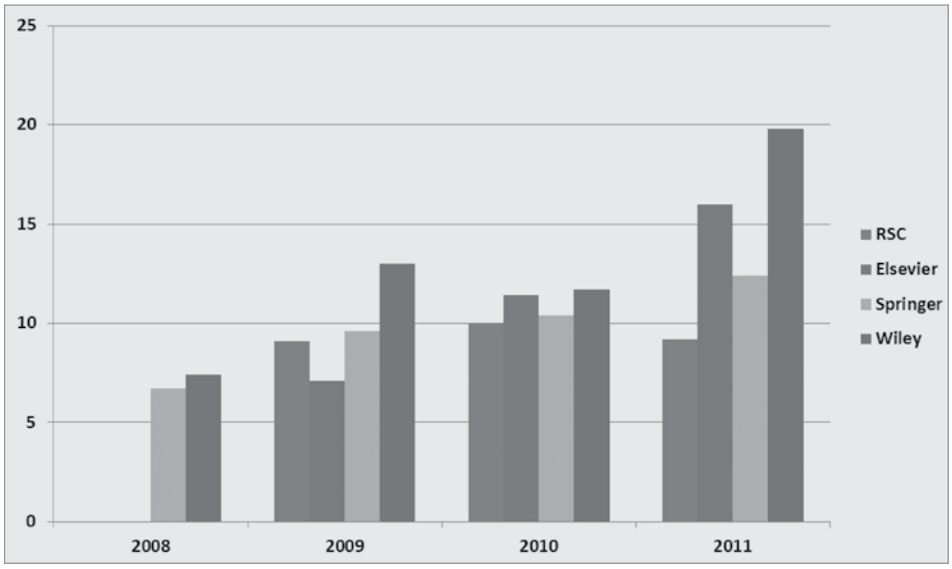

Figure 2: Average number of uses per ebook per year for four publishers: Elsevier, Springer, Wiley and Royal Society of Chemistry.

Figure 2 shows the average number of uses per ebook per fiscal year for the Royal Society of Chemistry, Elsevier, Springer and Wiley ebook collections held at UIUC. These four publishers' total downloads represent 49% of total uses for ebooks at UIUC in 2011 and 11% of total ebook holdings; these are four of the "top" (by holdings and by use) ebook publishers at UIUC. These data help to confirm that ebooks are not used like print books (mostly due to their accessibility) and more closely resemble online serials, meaning that they can and do garner multiple uses while print books are often checked out by one user and made inaccessible to others. However, COUNTER ebook use data do not show if use represents the same person returning repeatedly to one source, or many different users using the source. Figure 2 represents averages, meaning that there are some very high- (and low-) use ebooks in our collections. For example, Figure 3 shows frequency of ebooks use for the Royal Society of Chemistry ebook collection as UIUC (numbering over 800 titles). The data show that the ebook "Food Flavors and Chemistry" was accessed 317 times in 2011, and in other years ebooks from this and other collections are often used hundreds of times in one fiscal year. Only reserve books in print could match this use level, and in fact most ebooks are on "permanent reserve" since they are nearly always there for the next patron to access.

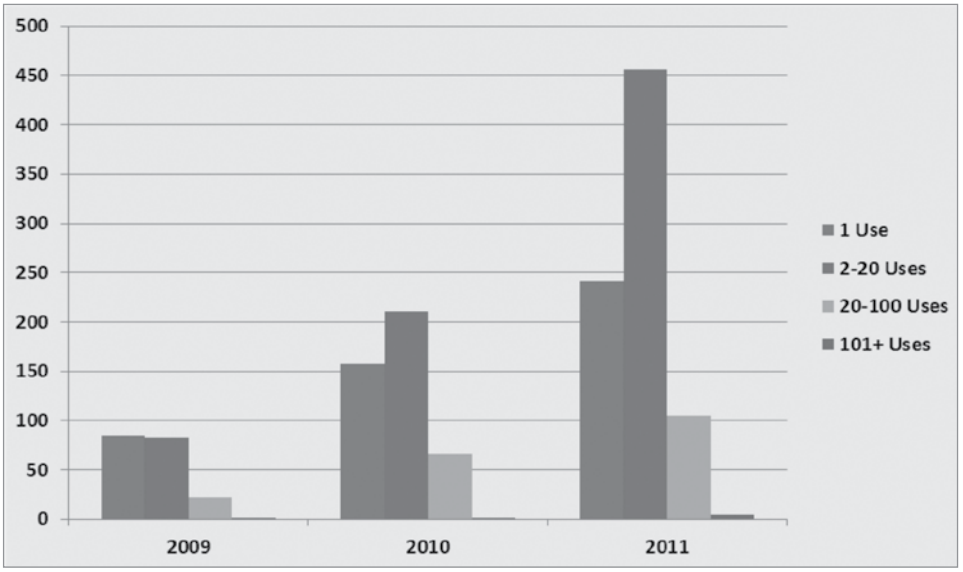

Figure 3: Ebook use by frequency for the Royal Society of Chemistry ebook collection at UIUC.

The UIUC ebook data show that ebooks in our 600,000-plus collection are growing in popularity, have a low cost-per-book and a cost-effective, low cost-per-use. In addition, they offer greater accessibility to users (24/7 anywhere), greater availability to users and can provide our users with a broader, more diverse collection due to low-cost package purchases. As a result of licensing that permits multiple users, buying ebooks often means no need to purchase multiple copies since one copy is accessible to all users.

Taken altogether, a good case can be made from the library's perspective to continue to invest in ebooks and make them accessible. But of course this is not as simple as choosing a book format based on the financial value to libraries. Libraries have long been trusted to do the right thing, anticipate needs, and cover both "just in time" and "just in case" scenarios. Libraries have not often made decisions based on economic value but rather on the public good. Each book format has associated costs, and while the data do show that ebooks may provide a value incentive for libraries, the most important question is, do our users value ebooks? Do they serve the public good? The recent Elsevier study on the value of ebooks to users helps to answer that question.

The value of ebooks to users

Background of the study

The University of Illinois at Urbana-Champaign Library (UIUC) was invited by Elsevier Publishing in 2010 to participate in a global study of ebook use and value. The Elsevier research plan included user interviews, pre-surveys and a series of ebook searches and retrievals on the Elsevier platform, which was followed by a logbook questionnaire and follow-up survey. Researchers from UIUC participated by taking the pre-logbook questionnaire, using the ebook platform, finding and using Elsevier ebooks, reporting on their experiences in logbook diaries and completing the final survey. This study centers only on responses from UIUC faculty and graduate students.

Previous research

Ebook studies in libraries are substantial in number and cover a wide range of methodologies, vendors, and types of libraries. Spiro and Henry offer an extensive review of the ebook literature to date (Spiro and Henry, 2010). Studies that examine ebook value, however, are few. Shelburne (2009) measured ebook usage at the University of Illinois at Urbana-Champaign and, among other questions, asked users to estimate the "usefulness" of ebooks; 85% of users (from over 1500 respondents) believed the ebooks they used were "useful;" 75% of faculty found ebooks useful and 86% of graduate students found their ebook experience to be useful. While this may not correlate directly to the concept of value, it does show a very high percentage of satisfied ebook users who are also UIUC faculty and graduate students (Shelburne, 2009, p. 62).

Not surprisingly, ebook publishers have been at the forefront of value research concerning ebooks, presenting a marketing perspective that often focuses on the idea of value. Springer's White Paper on ebook costs and benefits (Renner, 2007) surveyed librarians at six academic institutions around the world. The report, while containing no quantifiable statistics, qualitatively demonstrates that librarians are well aware that ebooks offer a cost-savings component to libraries as well as a benefit component to users. The Elsevier Publishing perspective on the value of ebooks (which arrives at similar conclusions) is found in a series of commissioned reports beginning in 2006 (Hughes, 2006) as well as a 2009 NASIG presentation (Bunkell and Dyas-Correia, 2009) and the current research. Before this study, Elsevier's research has relied on librarian interviews and student focus groups to note the positive characteristics of ebooks for both libraries and users. The 2010 study appears to be the first to gather quantitative data on the value users assign to ebooks.

Methodology

Following approval by the UIUC Institutional Research Board (IRB), the UIUC Library sent a mass email to our faculty and graduate students on October 1, 2010 inviting their voluntary participation in an Elsevier ebook study. The final number of UIUC participants totaled 129 faculty and PhD students. The number and breadth of participant disciplines are found in Figure 4. The response group was mostly populated by PhD students; 88% (114) identified themselves at doctoral students and 12% (15) identified themselves as faculty.

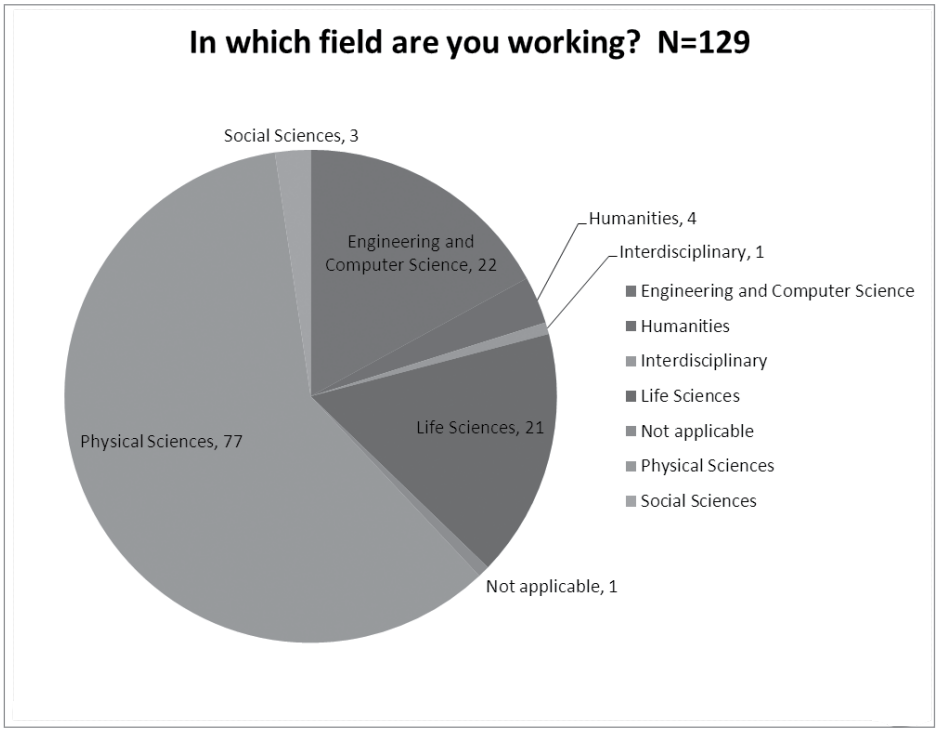

Figure 4: A breakdown of UIUC participants in the Elsevier study by discipline.

After an initial questionnaire, which established users' familiarity with and previous use of ebooks, participants were asked to conduct one of their normal searches for information in their discipline on the Elsevier ebook platform. Following each search, and after reading some portion of an Elsevier ebook, a logbook diary entry was completed for each ebook interaction. The study asked researchers to fill out logbook diaries for up to four Elsevier ebooks, and participants were given up to four weeks to complete the diaries. After their last logbook diary was completed, a final questionnaire was administered. Three questions concerning value were posed; researchers were asked to rank the value of each ebook used on a 1-10 scale, they were asked to categorise each ebook viewed on a scale from "could have done without" to "need to have," and finally they were asked to rank value on a seven-point scale, from "extremely valuable" to "not at all valuable."

Results

The results for the UIUC/Elsevier ebook study were not surprising and in fact mirrored many of the finding in previous ebook studies. Table 5 shows the participants' perceptions of the main advantages of ebooks; accessibility tops this list.

24 hours/7 days per week access	82	63.6%
online access	79	61.2%
easy to search and navigate	52	40.3%
downloading to laptop	39	30.2%
easy storage	36	27.9%
off campus access	33	25.6%
copying and pasting	16	12.4%
downloading to e-reader	9	7.0%
easy to share with colleagues	8	6.2%
easy to use in an electronic learning environment	6	4.7%
easy to use multiple documents at once	5	3.9%
use ofmultimedia in the E-book	4	3.1%

Table 5: Results for the question, "What are the main advantages of E-books from your perspective? [PLEASE TICK A MAXIMUM OF 3 BOXES]"

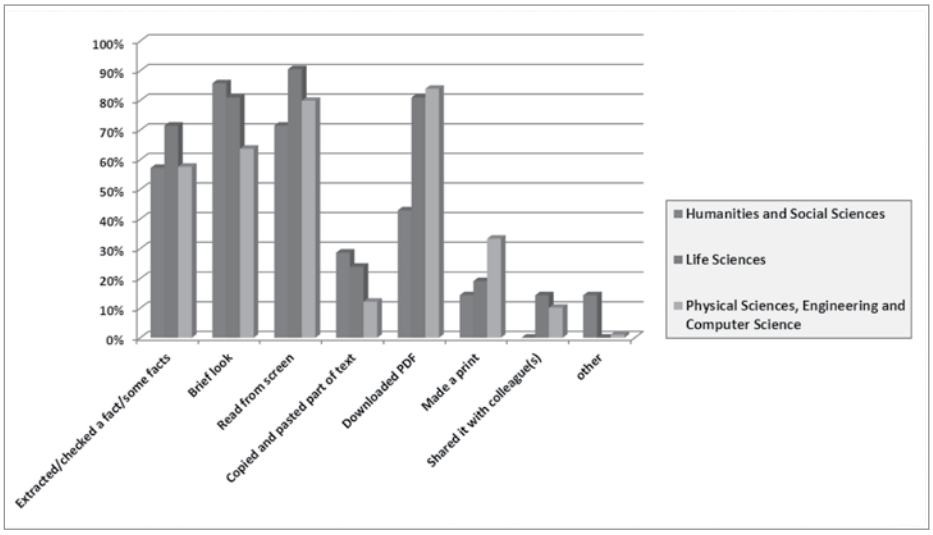

Figure 5: Results for UIUC users answering "My online behavior includes the following characteristics." Results between disciplines are not comparable due to the small number of respondents in the humanities; data are shown to compare within subject disciplines.

Figure 5 shows the characteristics of the participants' online behavior. These behaviors show that UIUC ebook users are not typically using ebooks to copy and paste text, to share with colleagues or to make a print. These behaviors show up again when asked about value; true to form, participants state they do not value the ability to copy and paste or make a print (Figure 6). Users do value the ability to download a PDF and read information from the screen.

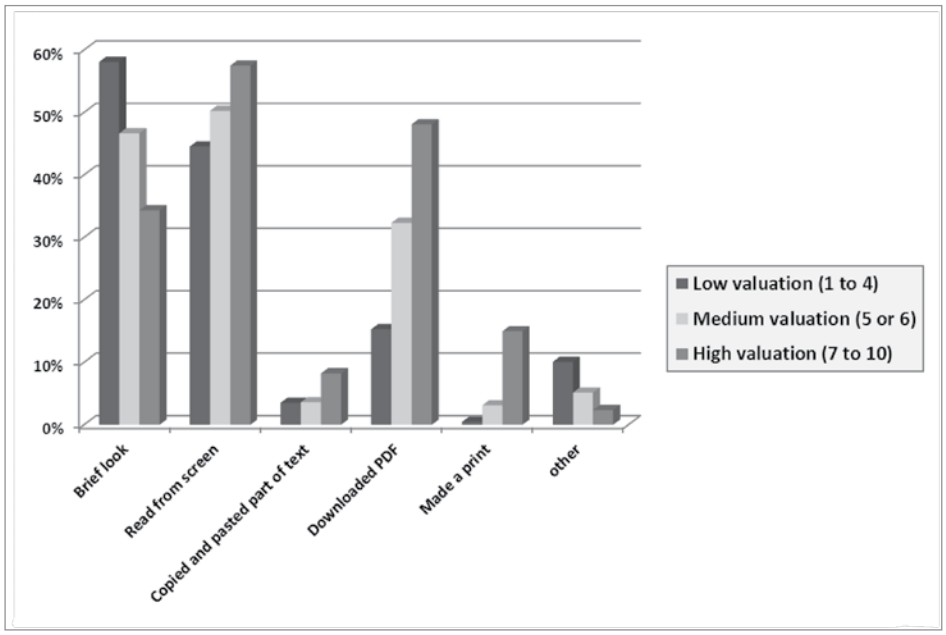

Figure 6: Results for UIUC users answering "How do you value the information from this Elsevier E-book?"

Figure 7 shows the results from the question posed, "how do you value the information from this Elsevier ebook?" Nearly 70% of respondents (67.4%) replied that they either needed to have the ebook or the ebook would be nice to have. While not a rousing cry for ebooks, neither do these results show any serious concerns about the ebook format's use or accessibility.

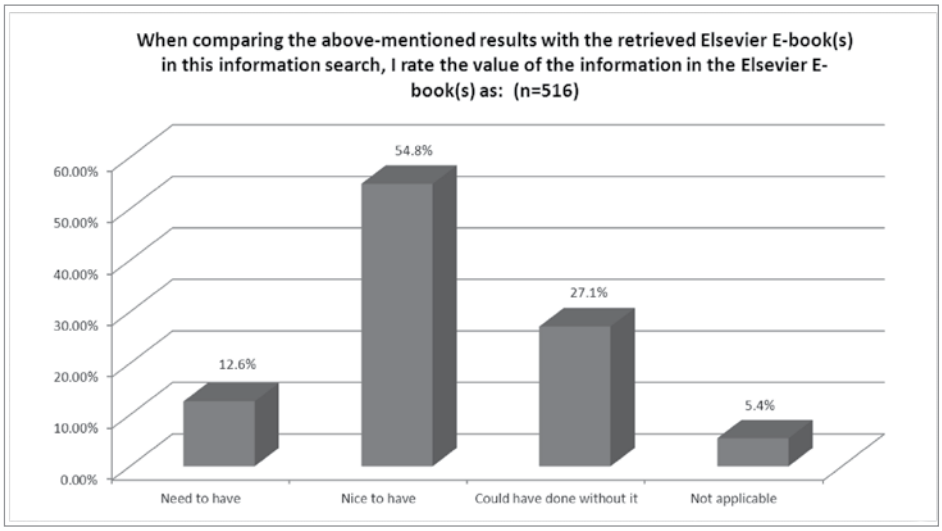

Figure 7: Results for UIUC users answering "How do you value the information from this Elsevier E-book?"

Conclusions

From the library's perspective, ebooks have a low cost-per-ebook; have a low cost-per-use; are more cost effective to lend, store and preserve than print; offer greater accessibility to users (24/7 anywhere); offer greater availability to users (higher uses per ebook than print); and allow libraries to provide a broader collection variety due to low cost package purchases. From the user's perspective, ebooks offer 24/7 accessibility from anywhere, are "Nice to Have" (12.6%) or "Need to Have" (54.8%), are not likely to be shared with colleagues, printed out, or be used in "cut and paste," and are most likely to be read from the screen or briefly reviewed. Users also want to be able to download ebooks in PDF format. These many ebook attributes seem to signal a "win-win" for libraries and library users.

Spiro and Henry believe that even in 2011 it is premature for all libraries to migrate en mass to an e-only monograph collection, but they also note that libraries "must be future oriented in preparing for such a shift" (Spiro and Henry, p. 66). Their paper is a measured review that concludes that ebooks, while perhaps not poised to ever make up 100% of library monograph collections, are an inevitable part of those collections' futures. One reason this migration from pbooks to ebooks may be successful is, as demonstrated by this study, the value that both libraries and users can gain from this format.

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The Journal Usage Statistics Portal (JUSP): measuring use and impact

Angela Conyers and Jo Lambert

Introduction

Increasing pressure on library budgets results in an increasing need to assess the value of journal subscriptions. The use of COUNTER (Counting Online Usage of Networked Electronic Resources) *(www.projectcounter.org/)* compliant data is essential in making a compelling case about the value of subscriptions and forms the basis of the Journal Usage Statistics Portal (JUSP) *(http://jusp.mimas.ac.uk/)*. JUSP is a service built in response to demand from UK higher education libraries to enable them to manage use of their e-journal collections, and to support publishers in providing access to statistics for their customers. Essentially JUSP provides a central point where higher education libraries can access usage statistics reports from multiple publishers. It provides academic libraries with the data they need to help analyse journal usage and to assist evaluation and decision-making. Once the portal is more fully populated it will provide a good overview of journal usage across institutions within the UK.

Background and purpose

The JUSP service is being developed by a consortium involving JISC Collections, Mimas at the University of Manchester, Evidence Base at Birmingham City University and Cranfield University. Members of the consortium have significant skills and expertise following several years' research in the analysis of usage statistics. Members of the team worked on a variety of projects prior to JUSP that aimed to establish the feasibility and scope requirements of such a service.

JUSP provides benefits for libraries in that it avoids the need to visit multiple publisher sites to download usage statistics and allows libraries to quickly and easily compare usage across various publishers and years. JUSP includes data from gateways and hosts such as Swets to provide a truer picture of usage. As well as being able to view and download standard usage reports, libraries can access a range of added-value reports to help them analyse usage and establish value for money to help in purchasing and renewal decisions. JUSP also provides JISC Collections with reports to indicate how the deals they negotiate are being used by participating libraries.

Libraries participating in JUSP

By October 2011, 123 libraries were participating in JUSP representing the majority of higher education institutions in the UK. A list of participating institutions is dynamically updated and available via the website *http://jusp.mimas.ac.uk/participants.html*). Around 160 UK higher education institutions have been invited to participate and new libraries are joining each month. All Research Council libraries have been invited to participate with the Science and Technology Facilities Council the first to join.

Publishers and intermediaries participating in JUSP

Although primarily focused on NESLi2 (http://www.jisc-collections.ac.uk/nesli2/) publisher deals, JUSP is gradually being extended to include publishers beyond this. NESLi2 is a national initiative supported by JISC Collections to license online journals on behalf of the UK academic community. Content from leading academic publishers is procured on behalf of the community resulting in financial savings. Many academic libraries take advantage of the NESLi2 deals and find that they offer good value for money compared to the time and cost involved in setting up individual subscriptions.

At October 2011 the JUSP team were working with 15 publishers and 3 intermediaries. These include American Association for the Advancement of Science (AAAS), American Institute of Physics (AIP), Annual Reviews, British Medical Journal Publishing Group (BMJ), Edinburgh University Press (EUP), Elsevier, Emerald, IOP Publishing, Nature Publishing Group (NPG), Oxford University Press (OUP), Project MUSE, Royal Society of Chemistry (RSC), SAGE, Springer, Wiley-Blackwell, Ebsco EJS, Publishing Technology (IngentaConnect) and Swets. We expect further publishers to join JUSP in coming months and to see membership extended to a greater range of non-NESLi2

publishers. Participation in JUSP is contingent upon publishers accepting the terms and conditions of membership and being able to supply COUNTER compliant data.

Standardised Usage Statistics Harvesting Initiative (SUSHI)

We collect data using the Standardised Usage Statistics Harvesting Initiative (SUSHI) protocol. This is a machine-to-machine way of gathering usage statistics from publishers and it removes the need for libraries to visit individual publisher sites to download their stats. Libraries in JUSP only need to provide us with a few account details and once we have that information, we're able to gather and update their usage data on a monthly basis, so this offers some real time saving benefits for libraries. We've currently got a variety of JUSP SUSHI clients available and in use and several more in development. The SUSHI development process was outlined in an article in Learned Publishing (Craddock, Meehan and Needham, 2011).

We have also developed a SUSHI server that enables libraries to gather their own statistics from the portal via SUSHI. This means that sites only have to configure their SUSHI client to work with 1 server, which has been fully tested, as opposed to numerous publishers' servers. An added benefit of using the server is that JUSP data has been quality checked. We collaborate with vendors to provide interoperability between JUSP and other applications. For example, Ex Libris' UStat customers are able to gather their usage data via JUSP and load this data into UStat.

Data presentation

JR1 and JR1a reports

As new libraries and new publishers join JUSP we aim to collect reports via SUSHI back to January 2009 as well as routinely collecting current data on a monthly basis. Once the JR1 and JR1a usage reports are collected via SUSHI, they are available in JUSP for libraries to view or download. Users can select the publisher and the time period (month and year) using drop down menus. Lists can then be sorted by title or by number of requests. The top five titles for each publisher are presented in the form of a graph.

It is worth adding also that though our primary aim has been to show usage of the NESLi2 deals, once libraries have joined JUSP we also collect JR1 reports for those publishers in JUSP with whom they have subscribed titles rather than a deal. This enables libraries to keep track of a whole range of titles and not just those included in a particular NESLi2 deal.

Adding gateways and intermediaries

Some libraries make quite extensive use of gateway and intermediary services such as Swetswise, Ebsco EJS and Publishing Technology (IngentaConnect), with 20% or more of total usage coming through this route. Others may use them more selectively, or they may be found randomly by users searching for subscribed titles using Google or Google Scholar. These three services all produce their own JR1 reports for titles accessed in this way and not picked up in the publisher usage statistics. All such usage therefore has to be added to the publisher JR1 to get a complete picture of usage.

Adding these on a title by title basis is very time consuming for the individual library, yet seeing which titles are accessed through gateways and intermediaries is important when looking at total usage of particular titles within a deal and when looking at usage patterns. In JUSP, the JR1 reports from these gateway/intermediary services are harvested via SUSHI and presented title by title alongside the publisher JR1. In all subsequent tables, the total JR1 figure including gateways and intermediaries is used.

If libraries want just to see a summary table of the amount of usage coming from gateways and intermediaries, then they can look at that too, either for an individual publisher or for all publishers in JUSP, for one year, or all years. This is an at a glance way of seeing what percentage of total requests come through these different routes.

Backfile usage

The JR1a report enables libraries to see what use is being made of any backfile or archive collection that has generally been separately purchased. Backfile usage is also included in the JR1 report. So if the library wishes to know how much use is being made of titles within the current deal subscribed to separately from backfile use, it is necessary to

subtract the figures in the JR1a from those in the JR1 to arrive at a figure for the current deal. Again, a time consuming process. JUSP can do this subtraction and includes a table showing figures against each title, with a pie chart indicating the proportion of use. There is a summary table too, indicating for an individual publisher or all publishers the proportion of total usage that can be attributed to the backfile collection.

Titles with the highest use

The most popular reports in JUSP are the JR1 and JR1a reports and the JR1 reports plus gateways/intermediaries. Next in popularity is the table that shows the 100 titles with the highest use. This can show titles for one publisher or for all publishers in JUSP, the latter being a particularly useful 'added value' feature which would be difficult for libraries to achieve using their own spreadsheets.

Individual journal search and usage

From our discussions with libraries, it was apparent that libraries wanted to be able to track usage of a particular title or group of titles over time. We therefore introduced a keyword or ISSN search. With ISSN, it is possible to look quickly at the usage of one particular title over time; with keyword it is possible to identify either one title or a group of titles in a similar subject area. While this is not a foolproof method of subject searching, it does help libraries to group related titles and view their usage, a particular interest for those working with subject departments or schools. Within a broad subject field, individual titles can be selected for usage records.

Breakdown of publisher usage by title and year

It is possible using JR1 reports to compare usage of titles in a deal over time, but matching up lists is not straightforward as titles may cease or change over the lifetime of a deal. Yet for libraries looking at usage over a longer period is important. Deals themselves often last for more than one year, course modules may be offered in alternate years, new courses begin mid year so for all sorts of reasons being able to see quickly usage over a number of years is another valuable feature of JUSP that has been developed in discussion with libraries. With JUSP, this table shows usage against each title in a deal for each year there is data in the portal, and the table can be sorted by year so that a particular title can be tracked.

User feedback

From previous work for JISC Collections on collecting and analysing usage statistics for the NESLi2 deals (Conyers & Dalton, 2005) and from the Publisher Deal project (Conyers, 2007), Evidence Base already had a number of ideas of what libraries expected to see from usage statistics. The JUSP project with Mimas and Cranfield University provided the ideal opportunity to develop these ideas on a larger scale within a database structure and to move away from the more time-consuming templates and spreadsheets that libraries had previously struggled with. The NESLi2 report back in 2005 had recommended the setting up of a usage statistics portal but it was only with the advent of SUSHI and its inclusion in the COUNTER code of practice release 3 for implementation by 31 August 2009 (COUNTER, 2009) that this became a possibility.

Adding gateways and intermediaries, showing backfile and current deal use separately has already shown how JUSP can add value to the basic JR1 and JR1a reports it harvests. Other reports have been developed or enhanced through the user feedback which we regard as one of the most important features of JUSP. As a community resource, we want to ensure that the reports we are producing meet the needs of the member libraries, and we aim to respond wherever possible to suggestions made to us. We have built up close links with the contacts in JUSP libraries and we collect user feedback in a number of ways:

Surveys

We conducted our first user survey in late 2010 when we had just 22 libraries in JUSP. Since then we have had two further user surveys seeking views of libraries in their first few months of JUSP membership.

Visits

Members of the JUSP team have visited eight libraries to discuss with staff how they were using JUSP and how it fits with their current work patterns and plans. These visits have proved invaluable in getting first hand accounts of the way JUSP is being used, and picking up ideas for future developments.

Informal

Libraries will often come up with ideas while using JUSP for ways it could be made easier for them. Often these are simple ideas that can be implemented without delay. This aspect is explored further in an article published in Serials (Conyers and Lambert, 2011).

User requirements

More publishers

The most frequently requested item is 'more publishers in JUSP'. The focus of JUSP during 2011 has been the inclusion of NESLi2 publishers with aims to include all by the end of the year. In 2012 we plan to include a wider range of publishers and journals and work has begun to identify these. The JUSP publisher priorities survey was conducted to gather feedback on publisher priorities beyond NESLi2. Libraries were asked to respond to a survey listing those publishers they would like to see in JUSP in 2012. The results of this survey will inform our approach to working with more publishers in the coming year and was a useful exercise to help us focus our efforts on providing usage statistics from the publishers of most relevance to libraries. Taylor & Francis is a clear priority for JUSP – taking into account Informa (part of the Taylor & Francis group), it was mentioned by the highest number of respondents and followed by Emerald Publishing. Taylor & Francis have already been invited to join JUSP and Emerald Publishing joined in August 2011. We are also hoping to include journal titles held within databases such as JSTOR as these were also requested by libraries.

More trend analysis

One report in JUSP shows monthly usage for any specified period for each publisher, presented as a table and as a graph. This enables libraries to see how usage varies over a year, and more importantly to compare usage over a longer period. It was apparent from case study visits that the original libraries in JUSP had appreciated being able to look at trends over time, and as a result a decision was made to harvest data back to 2009 for all new libraries and new publishers as they are added to JUSP.

More information on data available

Usage reports are harvested via SUSHI on a monthly basis and libraries notified via the JUSPlibraries mailing list and via a note on their welcome screens when new data is available. A table on each library's welcome screen also shows the data available in JUSP for each month, so that any missing data can quickly be spotted.

Integrating with other packages

We are aware that libraries have a number of different means of analysing their own usage reports. Some use spreadsheets; others use packages such as UStat or Serials Solutions Counter 360. We stress that we are not in competition with the more individual analysis these packages can provide, but we do want to avoid duplication of effort for those JUSP libraries that also use other packages. Access to JUSP data via UStat avoids libraries having to set up SUSHI harvesting separately for those publishers in JUSP, or having to load data manually where it was also available in JUSP.

JUSP enhancements

As we have shown so far, many of the tables in JUSP have either been included or enhanced through suggestions from JUSP libraries. Some new features, though, are much harder to incorporate within the existing funding structure, so

we are very pleased that we have recently been given additional funding to develop two specific enhancements which we know from feedback will be very popular with JUSP libraries. These are:

Publisher deals identification and addition of subscribed journal title reports

Both of these related enhancements will offer support to libraries in dealing with some of the issues that make analysing publisher deals a complex undertaking. The Publisher deals identification will identify which titles within the publisher JR1 report are available within the particular collection that the library subscribes to. This will help particularly in calculating the true extent of nil use where JR1 reports include titles not available.

The addition of subscribed title reports will enable libraries to create and maintain their own lists of subscribed titles within an institutional administration interface. In determining the value of a deal, libraries will then be able to look separately at their use of subscribed and 'non-subscribed' titles.

In putting forward the proposal for additional funding, we have been very pleased to have great support from JUSP libraries and look forward to working with those who have volunteered to help in trialling these new features.

Implications for the community

Although JUSP is a JISC funded and UK based service it has applications beyond the UK. There's interest around the world in the concept of JUSP and we're currently discussing ideas for collaboration with other consortia.

Many of the issues JUSP is dealing with affect libraries around the world and we're keen to share ideas and experience. Sharing knowledge enables us to pass on things we've learnt and avoid others having to replicate work already done. We've had enquiries and requests for support following our experience of developing SUSHI clients. We aim to make the outputs of our work openly available including a free, open source SUSHI client.

We're continuing to consult with libraries to inform development of the service and through discussions we aim to develop tutorials about using and analysing journal usage amongst others.

As a consortium acting on behalf of two thirds of the academic libraries in the country we have the potential to achieve a greater impact than single institutions. We now have well established relationships with many of the publishers we work with and this offers greater opportunities. This breadth of coverage provides an insight into some of the challenges faced by libraries and a unique opportunity to address these challenges.

The JUSP team has a wealth of experience and expertise in understanding and analysing usage statistics and in working with the SUSHI protocol. Various members of the team have positions on groups such as the COUNTER Technical Advisory Group and the NISO SUSHI Standing Committee amongst others. It's this unique combination of expertise that we continue to draw on in order to develop a relevant, responsive and user focused service.

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Capturing business intelligence required for targeted marketing, demonstrating value, and driving process improvement

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Introduction

The ability to demonstrate value of libraries and their collections is becoming all the more important and undeniably challenging in a period of economic turmoil and fundamental shifts in how students engage with information. Not only do we need to convince the university executive and faculty of the value of libraries; our most challenging audience is increasingly that of the student body. Garnering evidence that unambiguously demonstrates improved academic performance through the use of library information resources, is we believe, essential to creating new points of differentiation for the positioning of this library and to optimise marketing and promotion collateral (Jantti and Cox, 2010).

The University of Wollongong Library (UWL), like many libraries around the world, has used client satisfaction surveys extensively to drive continuous improvement through measuring the quality of our services, identifying changing student perceptions and needs, and obtaining clients' unstructured feedback on the things they consider important. The surveys were and will continue to be useful. However, these surveys do have significant limitations, including: they are naturally biased towards library users; they are not run frequently enough to support marketing; and they do not measure the impact of the library on client's success, only respondents' subjective assessment of value and performance (Jantti and Cox, 2010).

With this in mind, UWL undertook a project in conjunction with the University of Wollongong's (UOW's) Performance Indicator Unit (PIU)[1] to develop a tailored database and reporting function (a Cube) that joins Library usage data with students' demographic and academic performance data (similar projects are known to UWL (see the JISC funded Library Impact data project and publications by Stone, G., Ramsden, B. and Pattern, D.)). The purpose of the project is to collect information to help UWL to improve the impact of its resources and teaching activities with respect to student academic performance, and student engagement. More boldly, the Library has set out to unambiguously demonstrate the contribution it is making to institutional learning, teaching and research endeavours (Jantti and Cox, 2010). Linking Library usage to student data has allowed UWL to identify:

- Broad categories of non-users for the purpose of developing targeted promotional and teaching activities.
- The success or otherwise of targeted activities in terms of improving Library usage, student engagement, and academic performance. This information will allow UWL to make more informed decisions about where, when and how to develop, refine, or refocus its promotional and teaching activities.
- The impact of UWL activities on student engagement. This information will allow UWL to inform clients of the value of the Library through promotional and instructional activities, with the aim of further reinforcing the level of student engagement and improving academic performance even further.

1 The Performance Indicators Unit exists to manage and provide accessible and integrated reporting and analysis solutions through the secure, web-based Performance Indicators Portal. It collects and leverages critical data through scorecard, reporting and analysis capabilities providing staff with a one-stop data source that is needed to achieve a clear picture of day-to-day operations. ***www.uow.edu.au/services/pi/index.html***

The first Library cube (the "Value Cube") has been completed, and the second Library cube (the "Marketing Cube") is close to completion. These cubes have provided UWL with solid evidence that we are contributing towards student success. The cubes have also helped to identify some opportunities for improvement.

What is the Library Cube?

The Library Cube is a dataset that joins usage of Library resources with student demographic data and academic performance using students' unique identifier – the student number (for further information on addressing privacy issues, see Jantti and Cox, 2010). This data is contained within an Oracle Data Warehouse with access managed via Business Intelligence Toolset – IBM Cognos 8.4. The entire system is developed and maintained by PIU.

The Library cube was created well after PIU had migrated student, finance and other source system data into its data warehouse. Without these mature and integrated systems, it would have been infeasible to create a sustainable Library Cube.

Due to the nature of the data, it is not practical or possible, to join all data within a single cube. To expedite the project, and to ensure data integrity, UWL decided in conjunction with PIU to create three separate cubes.

The "Value Cube", which is now completed, is structured around academic teaching sessions, and is used to assess the impact the usage of our resources has upon students' Weighted Average Marks (WAM). This cube also allows us to review demographics by level of usage. The Value Cube will be updated after student grades are loaded into UOW's student system at the end of each academic session.

For marketing, UWL needed a cube that could be updated weekly. This information could not be added to the Value Cube, as WAM is tied to a session, not weeks. Consequently, the Marketing Cube does not contain WAM information. A draft version of this cube has been completed, but it will require further testing and refinement before it is ready for User Acceptance Testing. This cube also contains information on which specific databases are being accessed by week and demographics.

The "Process Improvement Cube" is yet to be built. It will be structured around subjects, and will be useful in supporting academic outreach type activities.

Library data sources

The two library data sources fed into the Library cube include loans data, and data relating to usage of our electronic resources. Unfortunately, due to the limitations of our Library Information Management System, the only usable data we can export by client is the total number of items borrowed to date. To build time series data, an export of data occurs weekly, and the differences between two weeks is the borrowing that occurred over that week.

We have used ezproxy logs to capture information on usage of our electronic resources, which includes our subscription databases, ebooks, and eReadings materials (electronic readings uploaded by the Library at the request of teaching academics). The logs contain useful information, such as the students' unique identifier. But they also contain a lot of extraneous data. Counting the number of entries in the log proved futile, as they vary wildly depending upon the database being accessed. Consequently, UWL decided to use the time stamp in the log as a de facto time session measure, using the following business rules:

- the day into 144 ten minute sessions
- if a student has an entry in the log during a ten minute period, then 1/6 (as we are measuring hourly sessions) is added to the sum of that students access for that session (or week in the case of the marketing cube)
- any further log entries during that ten minute period for that student are not counted

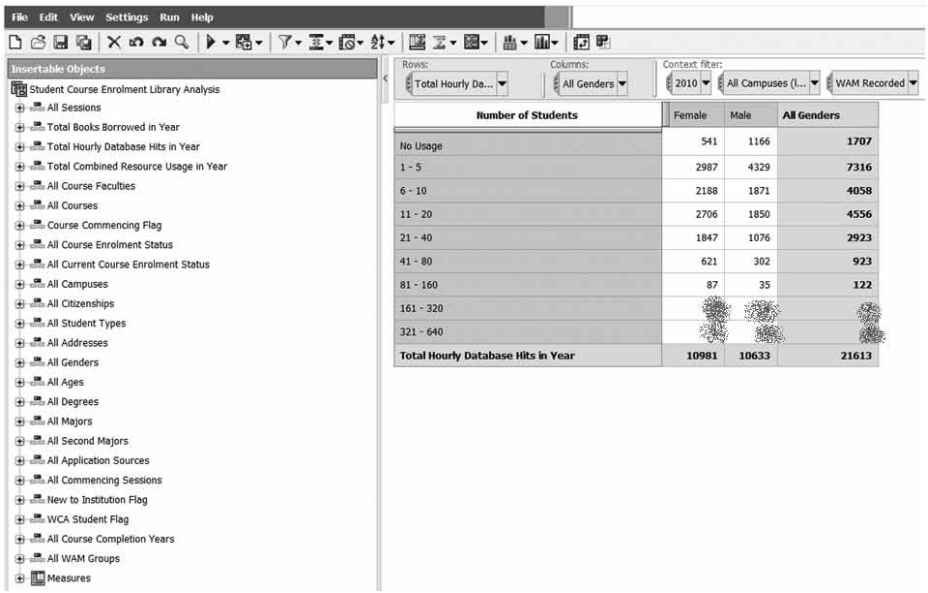
Using this logic, we are able to measure how long students spend on our databases with a reasonable degree of accuracy due to small time periods (ten minutes) being measured.

The Marketing Cube also uses this method, and includes another measure and dimension for the name of the database being accessed by the student. We were able to identify the database being accessed through the forensic task of identifying values ('strings') in the ezproxy log that are unique to the database. The ten minute logic that applies to overall usage of electronic resources is also being applied at the more granular level of database names. We have not attempted to make the two measures reconcile, as a single client may access many different databases in a ten minute session.

The IBM Cognos system is currently being pushed to the limits of its capabilities to mine session and database name data from the ezproxy logs. However, as computing power improves, the authors are hoping to employ some of the methodologies used by Nicholas et al (2006 and 2009) to mine behaviour data from logs.

The Cube itself

Users of Excel pivot tables or OLAP cubes will be familiar with much of the functionality of the IBM Cognos system in which the Library Cube is housed. Users can simply drag and drop the dimensions of the cube, such as gender, faculty, country of origin either as a field in a cross-tab table, or as a filter value. Users also need to select what they wish to measure, for example, student head count, or total number of borrowings. The web-based system allows users to easily slice and dice data, and they can even save views.



NOTE: *Numbers have been greyed out where the total is less than 10*

Stating the obvious

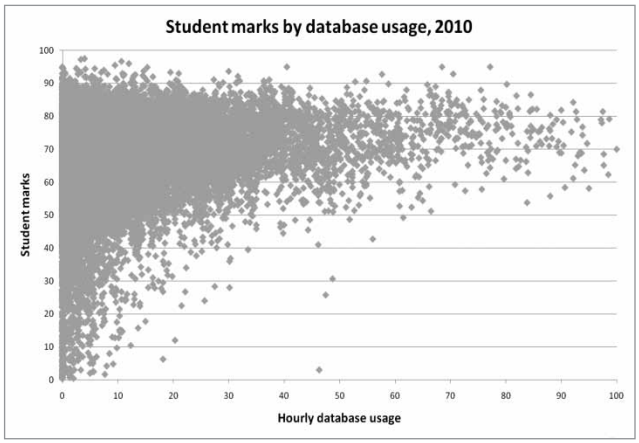
Before looking at the relationship between usage of our resources and student performance, it is important that the authors acknowledge the following:

- Just because someone borrowed a book does not mean they read, understood, or used the book. The same logic applies to electronic resources.
- There are many other factors besides the Library that contribute to students' academic success, not least of which is academic teaching skills and students' attitudes and aptitude.
- Correlation does not prove cause. In our case, for example, good teachers might encourage our students to use the Library more frequently, and therefore the correlation may be a product of teaching skills, rather than engagement with the collection per se. There are many other possible scenarios.
- There are, however, a number of factors that increase our confidence the validity of our findings.
- Sampling error is not a problem as the data is a census, and a census that is updated weekly for loans, and daily for databases.
- There is very little variability within the categories over time.
- There is a very strong relationship between the average marks for each level of resource usage and student marks.
- Finally, with a few notable exceptions, the correlation still holds for many views of the data.

Findings

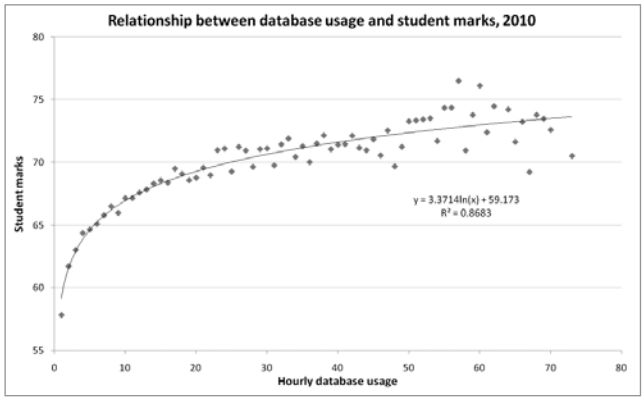
There are so many factors contributing to students' academic performance, that, as we expected to find, there is no direct correlation between use of our collection and academic performance – at least superficially.

Below is a scattergram containing over 21,000 points; one for each student in 2010; plotting students' database usage against their marks. There is definitely a shape to the scattergram, with an obvious floor that rises with increased database usage. Yet, statistically it is unconvincing.



However, there is very strong evidence that the Library makes a contribution to students' academic success. The evidence is simply buried a little bit deeper in the data.

We cannot identify the impact variables such as students' attitudes have on their academic performance. We can, however, avoid the need to do this by looking at the central tendency of academic performance for a given frequency of usage, and compare that to the average for other frequencies of usage.



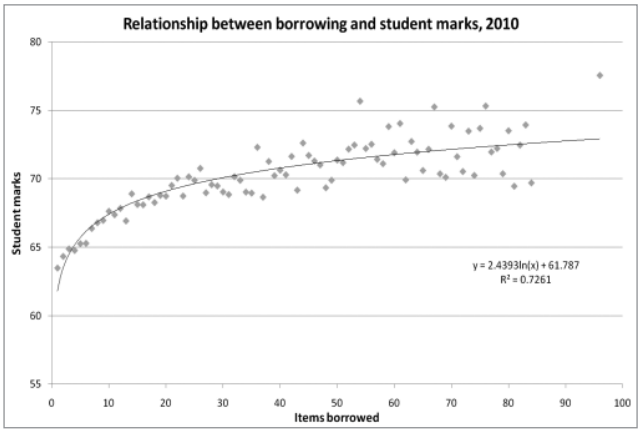
NOTES:

- *Any frequency that had less than 10 students was defined as an outlier, and was excluded. The outliers only constitute half a percent of the total (112 out of 21613).*
- *In order to be able to apply a logarithmic line of best fit, each of the frequencies was incremented by one (it is not possible to calculate the logarithm of zero). However, this has absolutely no impact on the correlation, the shape of the line of best fit, or the relationship of the points to each other.*

The above chart plots the average mark for each and every frequency of database usage. For example, the average mark for students who never used UWL databases is 58. The average mark for students that spent up to 1 hour accessing UWL databases was 62.

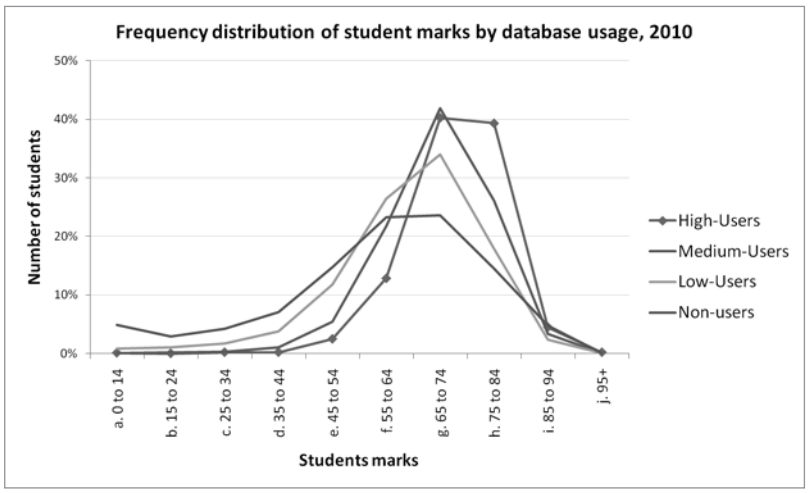
The R squared value measures the strength of the correlation. If all the points sat on the curve, R squared would equal one; whereas if they were randomly distributed, R squared would be close to zero. In our case, the r squared value = 0.86, a very strong correlation.

There are a couple of additional things that are immediately apparent. It is clear that the principle of diminishing marginal returns applies, with the curve flattening with higher usage. It is also apparent that strength of the relationship between electronic resource usage and students' academic performance weakens further along the curve. We believe that this is partly caused by the smaller number of students at these frequencies.



The results for the correlation between borrowing and student marks are similar, but not quite as striking. The correlation is not as tight, and the increase in marks with usage is not as steep.

Another way of looking at the relationship between student marks and usage of the UWL collection is to map the frequency distribution of student marks by various usage levels.



NOTES:

- *non users = zero time spent on databases*
- *low users = 0+ to 10 hours*
- *medium = 11 to 40 hours*
- *high = 41 + hours.*

The above chart shows the diversity of students' marks *AND* the impact of our collection. For example, there are still students that use our collection that fail, and there are some non-users that perform strongly. However, all else being equal, the more students use our collection, the more likely they are to perform better. To put this in perspective, only half of one percent of the high database users fail (0.47%), whereas 19% of non-users fail. In other words, non-users are 40 times more likely to fail than high database users. The story is similar for loans, but not as dramatic.

There is a significant difference between usage and impact of our books versus our electronic resources. As the below table illustrates, nearly one third of our students never borrowed a book in 2010. However, only 8 % of students never used our electronic resources. There is also a large difference between the Weighted Average Mark (WAM) for the

higher users of books compared to electronic resources, with a cumulative difference of 11 and 19 marks respectively between non-users versus heaviest users. Books appear to be used less, and have less impact. Nevertheless, even though the benefit of using electronic resources is very clear, students that borrow books are more likely to do much better than students who do not borrow.

Number of students by resource usage and WAM, 2010 (for subects with WAM, UOW onshore)

	Books				Databases			
Frequency of usage	No. students	%	WAM	Cumulative difference	No. students	%	WAM	Cumulative difference
No Usage	6,902	32%	63	0	1,707	8%	58	0
1 - 5	5,363	25%	65	2	7,316	34%	63	5
6 - 10	2,713	13%	67	4	4,058	19%	66	8
11 - 20	2,751	13%	68	5	4,556	21%	69	11
21 - 40	2,325	11%	70	7	2,923	14%	71	13
41 - 80	1,217	6%	72	9	923	4%	73	15
81 - 160	317	1.5%	73	10	122	0.6%	74	16
161 - 320	25	0.1%	74	11	7	0.0%	77	19
Outliers	0				1			
Total	21,613	100%			21,613	100%		

Implications

Clearly, there is a very strong message UWL can promote to its clients and stakeholders. However, there is a bigger picture. How can UWL differentiate the value it provides when collections across Australia and the world are becoming increasingly similar? If it is the collection that is unlocking students learning capabilities, then what value can the library provide over and above database vendors for example?

Presently, libraries still have a very large role to play in managing access and collection development. Over time, this is likely to become an increasingly tenuous space to occupy. It is not inconceivable to imagine a future where collection development has been largely homogenised, and access and discovery can be administered much more efficiently by external organisations. In this context, selling the message that increased use of the collection translates into improved student performance carries a high risk. If other libraries were to undertake a similar project, and find similar results, would that be a good thing? Or would the credit increasingly go to database vendors at the expense of traditional libraries?

This is an important question, as we need to market ourselves on our unique value proposition.

UWL's value proposition

So what is UWL's value proposition? Ultimately, libraries are about connecting authors to readers. Libraries are the intermediaries, the facilitators in this process, and there are three main points at which we can add value.

While it is self evident that collection development and accessibility will continue to be the critical bedrock of success, the individual library is likely to be cast more and more in the role of consumer rather than producers of these services. Indeed, it could be argued that the outsourcing of academic librarians in Japan is possible because of the changing position of Librarians relative to external vendors and discovery platform suppliers; and that such changes present real risks to the Librarian profession:

> *"The wide use of outsourcing [in Japan] has been beneficial to many library operations… However, the long-term effect on the profession of librarianship raises concerns. Limited budgets, a cumbersome management system, legacy organisational structures, narrow employment opportunity, lack of strong leadership and inadequate LIS education programs all combine to make the future of the profession vulnerable. Since library outsourcing has become widespread, the majority of certified librarians who desire to become academic librarians are compelled to look for job vacancies among commercial vendors. The current library outsourcing environment is building the foundation of a system in which librarians find it almost impossible to further their careers in Japan."*
>
> **Matsuoka-Motleya (2011), p 277**

We believe that "engagement" is an area that with imaginative thinking could become a blue ocean market (see Kim (2005) for a discussion of the concept of Blue Ocean versus Red Ocean strategies) for libraries, one that goes beyond information literacy training.

University libraries have been working on the periphery of engagement for some time:

> *"…the academic librarian's role has become both dynamic and challenging, with librarians frequently involved in outreach and management and "embedded" in the classroom, providing instruction in person or via an online management system. … At the same time, librarians are required to understand and use increasingly sophisticated, rapidly changing technology, as academic libraries move toward fully digital or nearly digital libraries that must be managed, and their patrons increasingly request the help of librarians to navigate the explosion of information available on the Internet"*
>
> **Shupe and Pung (2011) p 413.**

However, what we are proposing is not to occupy another space between the database vendors, search engine providers, and clients, but to occupy a new space altogether outside of this trio. Advents in discovery tools may make traditional information literacy skills less necessary. However, improving discoverability does not mean all students will read more. Nor does it mean that those students who do read more will improve their learning. If the library is simply an intermediary that helps to connect authors to readers, then inspiring a love of reading and learning is a far more rewarding role than showing clients where to click, regardless of how sophisticated such instruction becomes. Inspiring students to read library acquired resources will require a qualitative leap in the role for marketing at UWL; a role that we believe should focus on two main objectives: increasing traction and improving usage.

Improving engagement by through increasing traction and usage

Gaining traction is about ensuring that students get an academic benefit from using UWL's collection.

There are a few groups of users that are not getting the same impact from using our resources as other groups. For example, our domestic[2] female students get a lot more traction from using resources than their international[3] counterparts. The highest domestic female users of databases scored a distinction (75% on average) – which is 15 marks higher than non-users. For international females, however, only the very highest users got any benefit at all from using databases.

Database usage by student type, gender, & marks, 2010 (for courses with mark, UOW onshore)

	Domestic females		International females	
	Mark	Cumulative difference	Mark	Cumulative difference
No Usage	60		64	
1 - 5	66	6	61	-3
6 - 10	69	9	63	-1
11 - 20	71	11	65	1
21 - 40	73	13	66	2
41 - 80	75	15	68	4
81 - 160	75	15	72	8

The Library Cube has revealed a few other areas where UWL could investigate the possibility of improving engagement by addressing poor usage and low traction.

2 An Australian Citizen, Australian Permanent Resident or a New Zealand Citizen.

3 A student who is not a domestic student. This includes students on temporary residence visas.

Books	In 2010, nearly one third of UOW students never borrowed a book. This finding is similar to the findings from a similar research project conducted by Huddersfield University Library (Goodall and Pattern (2011), p 164)[4]. In first session for 2011, 49% of students were non-borrowers. The data points to trends that may suggest loans could decline even faster. In 2009, the older students get, the less likely they were to borrow books – which is counter intuitive. This leaves younger students as a baseline support for demand – however, students aged 22 and below are a growing group of non-borrowers, and now outstrip the 23-29 age group. Given the low traction achieved by books relative to electronic resources, the question has to be asked, should we cut our losses so to speak and focus on promoting electronic resources. We would argue no. The decline in demand for our print material matches national and international trends. However, it is not a uniform phenomenon, neither at UWL or internationally. As Joint (2008) pointed out: "Some US print library collections are being used less, but not all. And there are significant library collections outside the USA with circulation figures showing increases, in direct contrast to North America." p 88. Similarly, the Value Cube has demonstrated that there are still some groups that get a sizable academic benefit from borrowing, such as pathway students, students in particular disciplines (eg Arts) and cohorts (eg international males). Consequently, books will continue to be relevant to these students.
Gender and origin	52% of UOW men used databases for 5 hours or less in 2010, compared to 34% for females. However, data indicates that men, and domestic males in particular, get a lot more traction than women out of increasing their usage of resources, both print and electronic. So, prima facie, there appears to be a good return on promotion effort to be made in targeting males, both in terms of impact and usage. Gender differences in usage are not unexpected, and have been found in other research on information usage behavior. For example Jones (et al 2009) reported that: *"Our data suggest that women are more likely, for example, to report using mainstream information sources than men. ... Male college students spend greater amounts of time pursuing a wide variety of leisure activities online with greater frequency than females, including listening to and downloading music, watching and downloading videos. The data are in line with the trend that Fortson et al. (2007) observed in past literature, suggesting that males see the Internet primarily as an outlet for leisure, while women make greater use of its social and educational functions." pp 259-260.* Another recent study that also cited Jones, noted that: *"Male students tend to use Wikipedia more frequently than female students and follow links on Wikipedia more than their female counterparts." However, the authors found "...no gender difference in the use of authorised information sources, contrasting with Jones et al.'s (2009) finding." (Lim & Kwon (2010) p 218.). Consequently, putting aside the unavoidable risk of sampling error, or methodological problems, it appears that gender differences in the use of the collection may not be uniform – which is entirely expected given the complexity of gender.*
Faculties	When looking at the difference in academic performance of students that do not use our resources, compared to the heaviest users, the Science faculty gets the most out of both books and databases. The improvement for using databases is striking, with non users obtaining an average mark of 47, and steadily rising up to a distinction for the heaviest users (81). Using the above metric, the faculty that gets the least academic benefit from books is Health and Behavioral Sciences, and for databases it is Creative Arts. The two faculties that had the highest proportion of non-users of databases were the Graduate School of Medicine, followed by Engineering. This matches Bridges' (2008) research, who found that: "Although engineering students did not statistically differ from their peers in their use of the physical library, they were significantly less likely to use the online library resources when compared with students from liberal arts." p 194. For books the largest non-users were the Sydney Business School, followed by Commerce.

4 Reading off Goodall and Pattern's chart, they had approximately 47% non book borrowers for their Business School in 2008/9 – whereas for UOW's Sydney Business School, the figure is 45% for 2010.

1st Year	The relative benefit of using the UWL collection is the same for first year students, as it is for other students. This finding poses questions on the relevance of current approaches to information literacy support and how these skills could be promoted throughout a student's academic career to improve traction. Similarly, the increase in usage beyond first year is very marginal, which suggests that ongoing exposure to our promotions is not having the impact we would hope for.
UG & PG	Undergraduates get much more benefit from using the collection compared to postgraduates. For example, undergraduates who spent between 81 and 160 hours using databases in 2010 scored 20 marks higher on average than undergraduates who didn't use databases in 2010. Postgraduates in the same category, however, scored 11 more marks.
Age	With the exception of the 22 year olds and under, the data shows that the older a person is, the less value they get from using the collection, and the less likely they are to use the collection. Students over 39 do not seem to benefit from increased borrowing, and the evidence is also weak when it comes to databases. The students that benefit the most are aged 20 to 29 years, who fortunately are also the biggest group of students at UOW.

There is a picture that is emerging from looking at the data through the lens of year of enrollment, course and age. It appears that UWL is doing a good job engaging with new and relatively inexperienced students. However, increased usage of the collection is not having anywhere near the same impact for our experienced students. This is something we will need to investigate further.

Conclusion

The Library Cube project represents a new milestone in the UWL's quality and assessment journey. Well established measures of effectiveness, efficiency and satisfaction are now being augmented by measures of impact and value. Through the development of the Library Cube, we have established solid evidence that libraries are essential and play a vital role in students' academic success; that students who do not use the UWL information resources are at an academic disadvantage. There is also a lot of data pointing to areas where we can improve, which is always welcomed. Through this knowledge, highly tailored and tightly focussed promotion and marketing strategies and continuous improvement initiatives can be deployed, with immediate feedback on the effectiveness of chosen strategies.

Libraries do need to be careful, however, that they differentiate the value provided by the collection itself, from the value provided by the library itself. The library can add value by improving usage and traction, and this is something no database vendor can achieve.

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New libraries, new users?

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Introduction

This paper presents a case study of a City library authority in the East Midlands region of England, which has been successful in obtaining project funding to provide new libraries in several of its more deprived neighbourhoods. In 2009, we reported on a first project, to provide a community library co-located within a newly built "Healthy Living Centre" (Creaser et al, 2009). The library authority was able to build on that experience and lessons from its evaluation, to make a successful bid for funding from the UK Big Lottery Community Libraries Fund (***www.biglotteryfund.org.uk/about-uk***). The objective of Project LiRA (Libraries in Renewal Areas) was to replace mobile library stops in three areas with permanent service points, and a detailed community engagement plan was devised for the project, to ensure that local communities were consulted and involved at all stages of the development of their new libraries. LISU was commissioned to undertake an evaluation of the community engagement activity in each area during the run-up to the libraries' opening, and their first months of operation.

Approach

Each library was initially considered as an individual case study, undertaken when each had been open for approximately six months. Library A was the first to open, in May 2009; the planned opening of Library B was delayed until March 2010; with the final library, C, opening in June 2010. Each library was visited on at least two occasions, to conduct structured interviews with two members of staff, five members of the Library Panel, and 20 library users. A small number of interviews were carried out by telephone. In all three libraries, Panel members were interviewed in a group setting, as this was considered to be a good forum for the exchange of ideas. Various events held at the libraries were also attended by members of the project team.

A survey of library users was undertaken across all three sites. This short, paper-based survey, conducted concurrently in each of the three libraries, explored users' views. Versions of the survey were available for adults and for young people. All users over a two week period were invited, by library staff, to complete a questionnaire. Completed questionnaires were returned to LISU in batches for analysis.

The case studies were supplemented with background research, including detailed scrutiny of relevant documents provided by the City Library authority, and initial interviews with the Project Manager, and the Community Projects Coordinator. On-going consultation throughout the project was also an important element in meeting the evaluation objectives.

The three libraries

Library A is based on the site of a former school, in a suburban area close to the city centre. From its roots in the Victorian era, when it was built to house local workers, this is the longest established of the residential areas in Project LiRA, and has a relatively high proportion of low-income families. Since opening, the branch has gained 450 new members, roughly split between adults and children. The library averages approximately 2,300 visits per month, and this is showing an increasing trend. The library shares a building with the Adult Education Service, and has a well-established community garden. The garden has become a particularly successful focus for community involvement, with Panel members, local schools and youth group members all being involved. The library does not have its own meeting room, which limits some of the activities that can take place, but there is a meeting room in the adjoining Adult Education Services, and the garden also poses a potential place for meetings and sessions. The library holds a variety of activities, including free craft sessions, a book club, internet taster sessions, local history courses, and family activities including story times, rhyme times, and children's craft sessions

Library B is located at the heart of a large post-war suburban estate. The library is well-located at one end of a busy parade of local shops, and shares its building with a local policing unit Safer Neighbourhood team. The area was described by one interviewee as 'a tough area', where older people predominate, but anti-social behaviour, particularly by young people, has been an issue. The library is a long-awaited development for the area – one was included on the original estate plans in the 1950s, but did not materialise until 2010. The Library has a meeting room,

and hosts a wide variety of events, including IT courses, Surestart, author events, history events, school visits, rhyme time and craft sessions for adults and children. There is a number of partnership organisations involved in the library, including the local police, various council services and some charitable organisations which also use the building.

Library C is based in a large residential area in the south of the city. It benefits from a visible profile in the community, being situated next to the local supermarket and other businesses, and close to the main road. Events and sessions at the library include Rhyme Time, two book groups, craft days, coffee mornings and internet taster sessions. The library has worked in partnership with a number of local organisations to offer some of these, including schools, adult learning, various council services, the local police, and the museum service. It has also hosted drop-in health advice/ health check sessions, and climate control drop-in sessions. Several initiatives are volunteer-led. The library was opened with a new staff team, none of whom had worked in a library before. Each brought their own experience, and the manager's background in retail gives him customer-facing and marketing experience. The library has a meeting room, but this is only available during opening hours, which restricts its use.

Findings

Although the three libraries, and the communities they serve, are very different, there are common themes which run through the development stages of each. As Project LiRA progressed, lessons were learned which were applied in the later stages. For example, at Library A, five 'Library road shows' were held at an early stage in the development, and achieved limited success in terms of publicising the libraries to local people. Holding five events was felt to be too repetitious, and it was decided that fewer were needed at the other libraries. It was also realised that it was important not to hold the road shows too far in advance of the library opening, and to combine them with other events, or hold them in busy places, such as supermarkets, so that they had a 'captive audience'. Events promoting the other two libraries were re-focused as a result.

Engaging potential users

One of the key objectives for the project as a whole was set out as: "Communities are actively engaged in the development, delivery and management of library services". Wide-ranging consultation was planned from the outset.

Strategies for engaging potential users in the development of the new libraries met with varying degrees of success in the three localities. The limited success of road shows in advance of building and opening the libraries has been described above. Use of the local press emerged as an important means of making people aware of the new libraries in the planning stages, with this being particularly well-remembered by users at Library C, and all three libraries have been successful in attracting press coverage since opening.

In two of the three areas, where the new library was situated in a busy area close to other amenities, seeing the library being built was remembered by many users as the way in which they had first heard about the library. This points to the importance of a location at the heart of the community. Word of mouth also featured heavily, particularly for users of Library A, which has a less prominent site within the community. Also successful was promoting the library to young people via local schools; the research was not able to investigate the amount of publicity provided in this way in all areas, but noted that it had been particularly influential for Library A, in terms of the numbers of users who recalled having heard about the library from this route.

All three libraries held formal opening events, which were very well-attended and a good opportunity to celebrate the new libraries, publicise the services available and acknowledge the input of local people.

From the outset, the Project LiRA team was keen to involve children and young people in the project, and take their views on board in the development of the project. However, engaging with young people has proved to be one of the biggest challenges for the project. In the early stages, the Community Projects Manager attended the Youth Forum, and local youth groups to introduce the project and to recruit young people to a Youth Library Panel at each library. This could not be considered a success, and separate panels for young people were not established in any library.

Users

The libraries have all recruited new users who had not previously used the mobiles or any other public library. Library A has been particularly successful in recruiting new users, with 40% of users consulted there not using the library service before the branch opened. The new libraries were all promoted by their mobile counterparts prior to opening, so it is perhaps not surprising that most of those surveyed had used a library before the new branches opened. At

Library B, in particular, a static library was long-awaited by local people, since one had been included on the estate plans in the 1950s – one quarter of users surveyed there had not previously used the mobile, or any other public library. Similarly, just over one quarter of users surveyed at Library C were new library users.

The library questionnaire and interviews with users indicated that library users were generally well aware of the facilities and services on offer, even if they did not use them all. The extent to which the three libraries were found to meet users' needs varied, and was not always associated with the extent of consultation at the outset. In one library in particular, half of the users who said they had been consulted also said that there were things that they would like to see in the library which were not available. However, the majority of users were very satisfied with their library. Users interviewed generally thought opening hours were convenient at their library, although a review of opening hours took users' needs into account in regard to extending hours into the evening.

Despite numerous attempts by the Community Projects Manager, young people remain a hard to reach group, which has limited their engagement with the libraries. However, library staff reported that the number of young people coming into the libraries has improved with time, with computers, magazines, and sessions targeted at this age group, proving particularly popular. Furthermore, youth groups have been invited to be involved in library activities. For example, at Library A, a local group of excluded young people has contributed to an area of the garden.

Although there was limited success in involving young people at the development stages of the project, the libraries have been very successful at attracting children to use their services. Promotion has taken place at local schools and nurseries, and several class visits have taken place at the libraries. There are many activities available for both children and families, and sessions for these groups tend to be well-supported. The libraries have received valuable support and expertise from specialist Children's Librarians based at the City headquarters.

Sustainability

Library Panels, comprising community members, were seen as a key element of the initial consultation, which would follow through to library operation and ensure the sustainability of the libraries by bringing a strong element of community consultation to their operations. This was enshrined in the aims and objectives of project:

- to recruit local residents as Library Panel members to ensure local people have an influence on decision making about the project
- to develop an effective and sustainable Library User Group at each of the new libraries so that local people are actively involved in service planning & development
- to give local residents a high level of involvement and 'ownership' of their library
- to involve members of the community in the delivery of library services.

Initial plans for separate young people panels were not well-supported by the community, so the approach taken was to have one Panel for each library. The libraries have all benefitted from the local knowledge and contacts brought by Library Panel members, and their ideas for developing the libraries. Each library was successful in recruiting Panel members, although in all cases, the libraries would have liked to have recruited more young people. The large majority of members felt that they gained positively from being involved in the Panel, and they were generally very proud of what they regarded as their library.

Library Panels were intended to have a practical function in supporting the library as well as an advisory role, and lessons can be learned from the development and operation of each of the Panels in this study. The Library Panels were most active prior to and during opening, and since then some members feel that they are lacking a purpose and direction. In common with a previous experience (Creaser et al, 2009), maintaining interest and direction in the Library Panel is proving challenging following the successful library openings. None of the Panels have opted to become constituted Library Users Groups, owing to reluctance on the part of individual Panel members to take the lead and formalise their meetings. This decision unfortunately means that it is difficult for the groups to fundraise.

All three Library Managers valued the knowledge of their Panel members and their efforts to get the libraries off the ground. However, there seems to be limited staff involvement with the Library Panels, beyond the Library Managers' interaction. Now that that Project LiRA has come to an end, the Panels can no longer be overseen by the Community Projects Manager, so library staff involvement is important for their sustainability. Members of two panels said they were currently 'feeling our way', pointing to a need for a clearer definition of their role and the relative role of library staff. This view was also borne out by one of the Library Managers, who expressed frustration at Panel members waiting for

staff to tell them what to do. The Library Managers have limited time to do this, so it is important to find ways for the Panels to become more self-sustaining. Involving other members of library staff may be a viable compromise.

With the exception of Library A, awareness of voluntary opportunities at the libraries was not very good, but all three libraries have reported positive impacts of volunteering, both for the libraries and for the volunteers themselves. Volunteers have added value to various sessions and activities in the libraries, and at Libraries A and B, where volunteers had been in place for a while at the time of the research, library staff reported very positive outcomes for their personal development, with several volunteers going on to secure paid work elsewhere, and one overcoming mental health issues to gain a place at college.

Conclusions

The three communities are all relatively deprived neighbourhoods, compared to some other areas of the city, and face broadly similar challenges in terms of engaging local people. However, understanding and responding to the specific needs of each community has been key to the success of the new libraries. The Library Managers have played a key role in the success of their libraries. Each brings to their role experience from other sectors, including retail and Social Services, and this experience is important in interacting with library users and marketing the library. Each of the Library Managers is based permanently at their library, which is important in getting to know the local community and their needs. However, they have regular contact with other Library Managers, which is seen as very helpful for the exchange of ideas and experience. Although the Library Managers have not received any formal training on community engagement, their role in this regard was discussed fully with the Community Projects Manager. They also received 'hands on' training by shadowing other library managers, which they all found very useful.

The Community Projects Manager has been instrumental in developing the new libraries – interacting with the public, initiating the Library Panels, and providing an important source of expertise and guidance for library staff – 'someone to go to', as one Library Manager said. Having the Community Projects Manager in post for the duration of the project has been important in the exchange of experience between the libraries, and meant that lessons learnt could be applied as the project progressed.

Positive user feedback and anecdotal evidence from library staff and Panel members points to how well-received by their local communities the three libraries have been. At all three sites, library staff were praised particularly highly in user feedback, and for many library users, there seemed to be genuine pleasure in visiting the library.

Levels of library use and the extent of what has been achieved at each of the three libraries clearly demonstrate that this model of library development has worked well overall. The libraries have all seen sustained use since opening, and local communities are enjoying using them. Inevitably, whilst many aspects of the project have been very successful, some have not worked so well. Much can be learnt from both the successful and less successful elements of the approach, to inform community engagement in other libraries.

- Library staff have a key role to play in consulting with users, and listening to their needs, as well as marketing the library and the services available.
- Each area is different, with different challenges and different demands of a library. Understanding and responding to these local needs is important, and local knowledge is key to achieving this.
- Each library has had elements which have been particularly successful, and where good practice could be shared with other libraries. Library A, for example, has done particularly well in attracting first-time library users. Library B has worked hard to encourage young people into the library by offering novel activities that appeal to this age group, such as manga drawing sessions. Library C has attracted a high level of use and recruited a large number of Panel members. Further investigation of the factors contributing to how these successes have been achieved will enable good practice to be cascaded to other libraries.
- Sustaining the level of community engagement and consultation of Project LiRA presents a major challenge. Now that the project is finished, it seems likely that there will be less interest in maintaining an existing service. The Panel have a key role to play here, but could benefit from having (a) specific goal(s) to work towards, for example raising enough money to sustain a programme of author visits, or running a book group.
- Library Panels may be more sustainable if they become more fully integrated into the library and its staff. They need to have a clear sense of purpose and clear communication channels within the group and with staff. Two-way communication is important in sustaining the focus of the Library Panel.

The impact of library closures on levels of use has been investigated in the UK by Proctor et al (1997) in the context of the public library strikes in Sheffield, which closed all libraries there for a period of eight weeks. Almost ten years later, in the USA, Koontz and Jue (2006) concluded that more research was needed to quantify the effect on use and users of moving and closing libraries. This project has provided a rare opportunity to investigate the impact of opening new public libraries, and shows what librarians have thought all along – that library services, appropriately directed at their potential user community, can attract, and keep, new users.

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Illumination & support, or, what do libraries do with all that data?

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Introduction

Libraries have been collecting data and evidence for many years and there are many different ways of doing so. Academic libraries in particular are very good at measuring their activities and gathering – and sharing – data about all aspects of their performance. There are national bodies in many countries which coordinate this process, and which publish, for their members if not the wider public, extensive data sets describing the quantitative aspects of academic library operations, which can be used for benchmarking, advocacy, and library management.

However, if this information is to be used constructively, libraries need to make sure that the data collected are used, relevant, and fit for purpose. There is much good practice regarding collecting data and using them to develop strategies. Examples include work promoted by SCONUL on the value and impact of academic libraries, ongoing benchmarking work within groups of academic libraries, and in the area of user surveys. There is probably less evidence that data are used in a systematic way to provide evidence for value for money or realising benefits. In the current economic climate, this is especially cause for concern, as libraries must ensure they use scarce resources effectively and appropriately.

This project arose from a desire on the part of Loughborough and Derby University libraries to utilise the evidence they were collecting in the best possible way, to show value for money to students and management, to justify the staff resource required to collect and process the data, and to bid for resources. They appreciated that the two institutions had different cultures with regard to performance measurement and management statistics, and each felt that they could learn from the other to improve the effectiveness of their use of evidence.

Derby University has a strong culture of using evidence throughout the institution. The library is required to report to the senior management team on a regular basis against its Key Performance Indicators (KPIs), and any request for extra resources requires a formal business case before it can be considered. Loughborough University has not – yet – implemented such formal reporting requirements, although the library does produce an annual report. However, it was thought likely that, in the current financial climate, such a scheme would be introduced in the future, and the library wanted to be well prepared.

The objective of the project was to establish appropriate data that can be used by university libraries to both inform service developments and demonstrate value for money. The libraries agreed to work together towards this goal, sharing information and experiences. LISU, which has extensive experience of performance measurement in academic libraries, was invited to act as an impartial observer and facilitator. The project began in 2010, and the formal programme of activity is expected to be complete by the end of 2011.

Data audit

The first stage of the project was to carry out an audit of data collected across all services in both libraries – an extensive undertaking. The information gathered was collated to give a single overview, and to identify similarities and differences in existing practice. This gave a baseline against which future developments could be set.

Figure 1 gives a summary of the main areas of data collected by the two libraries at the start of the project, and shows the extent of information available. The central block was collected by both libraries, although the detail, particularly with

regard to the methods and frequency of collection, varied considerably. It was encouraging that almost all of the data collected was found to be used by someone! It was less encouraging that some of the staff responsible for gathering the data were unaware of its use, and felt that it was a waste of time. This suggests that there may be a missing link in the communication processes within libraries, and that filling this would result in more reliable and valuable data.

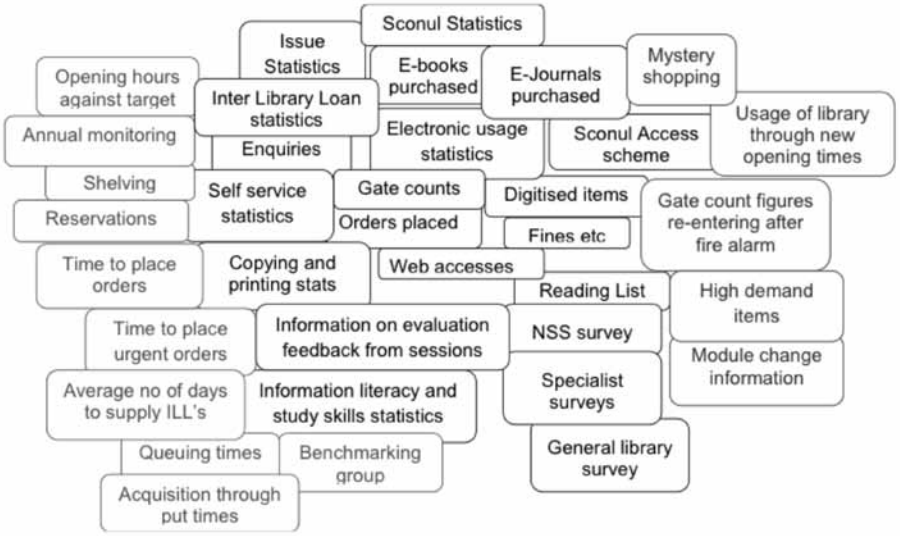

Figure 1: Audit of data collected

The audit found that the approaches and methods used by the two libraries are informed by overarching institutional cultures. A variety of data is collected, by a wide range of staff. One key difference was in the frequency of data collection – Derby generally collects standard data monthly, while Loughborough does so only quarterly.

Standard data, collected and used by both libraries, include data needed for the SCONUL return, self service statistics, reading list data, orders placed, evaluation of training sessions. There were significant differences, however, both in what was collected and how it was used.

- Both libraries collect data on web accesses, but Derby makes no use of these. In Loughborough, the Marketing & Publication Group review the statistics.
- Information literacy and study skills teaching statistics are collected by both (and included in the SCONUL return), but used differently – Derby keep detailed data which are reported to the Student Experience team, while in Loughborough data are not reported internally.
- Derby are required to make a formal business case for all developments and investment, and have successfully used the data they collect in bids to increase their resources budget.
- Loughborough collect data on high demand items, to identify more popular items to assist with decisions to order more copies or change loan statuses
- Loughborough also take gate count figures re-entering after fire alarm, for Health & Safety.

Both libraries collect qualitative data, from general library surveys, the National Student Survey and specialist surveys targeted at specific topics or user groups of interest. Derby appears to make more systematic use of these data: for example, reports are produced at subject level for the learning resources questions from the NSS, meetings are held with subject areas where scores are low and action plans are produced. As part of University quality procedures, Derby also collates feedback from different student programme committees and from Faculty annual monitoring reports from which the library has to produce a joint report and action plan.

Derby also has a set of KPIs, which was not, then, the case at Loughborough. Most of these have arisen as a result of student feedback, with the specific aim of improving the user experience in areas where this was perceived to be poor. Examples include:

- shelving – in normal circumstances books returned to shelves in 24 hours
    - since its introduction the shelvers have owned this and see the data as a way of proving they are doing good work

- queuing times
  - staff can be called to the desk to help if queues get too long
- reservations – items ready for collection within two working days
  - following comments from students that they never get reserved items, figures now show that in the majority of cases, they do.

Derby is also a member of a benchmarking group, which identifies specific service areas and works together on a confidential basis to identify best practices and produce action plans to improve service.

Loughborough undertakes Mystery Shopping exercises, on aspects of the service where there is perceived to be a need to assess quality and identify areas for improvement. Examples of areas investigated to date include levels of customer care, and the library web site.

Workshop

The audit documents were used to design a workshop, facilitated by LISU, involving the senior management teams of each library. This was felt to be a key stage, for the staff to take ownership of the process and so embed it in the culture of both libraries. The context was presented in terms of the tensions between declining resources and the need for good quality evidence on the one hand, with increasing volumes of data but a decline in the time (and skills?) available for analysis and interpretation, on the other (Figure 2). Some data are easy to collect, for example those generated by automatic library systems, but these may not be the figures which are needed. There can be a tendency to use what is available, even if it is not appropriate. Harder evidence, of impacts and outcomes, is also needed, and that can be difficult to gather.

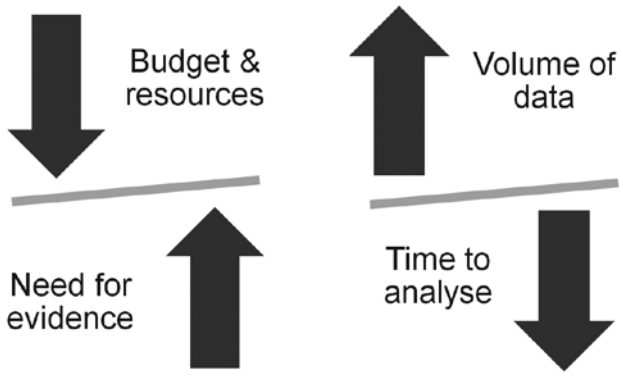

Fig 2: Workshop context

Participants were divided into three themed groups according to their areas of expertise, for two discussion sessions. At the first stage, they were given the scenario that they had been brought together as consultants for a new library service, and invited to suggest appropriate performance measures. Discussion was wide-ranging in all the groups, and often went beyond the initial remit. At the second stage, they were put back into library roles at the new service, and asked to consider how these indicators might be delivered. Again, the discussion was often influenced by participants' current institutions.

Customer services

This group felt that the impact of the service, including levels of use, customer feedback, and helping students improve their grades, was key to meeting a perceived need for justifying the existence, and expense, of the library. They also looked at issues of lack of use – how to get information on why potential users do not make use of services provided – and showing value for money. Suggestions for areas where performance should be monitored included costs of staff and facilities compared to numbers of users; return on investment; service costs for categories of user; and carbon footprint. The issue of whether to benchmark against other libraries was discussed, together with the need for standards to measure against. It was thought necessary to provide justification for the number of service points operated, and to monitor the impact of technologies which can save staff time.

Consideration was also given to marketing of services, both internally and externally. This needs to be done in different ways depending on the audience. With the advent of tuition fees, users as well as managers expect value for money. In all cases, information needs to be delivered quickly and efficiently, perhaps by use of social media. Evidence needs to be easily available to justify innovation, and reviews need to be relevant and timely.

When it came to translating this thinking into a practical implementation plan, a number of challenges were identified, the chief of which was financial – can the data be gathered by existing staff without overloading them? It was also felt to be essential to have buy-in to the process from all staff, including senior library and institutional management, and that awareness should be raised beyond the immediate library staff who would be involved. The final area of challenge was defining robust processes to collect –and use –the data required, and overcoming the technical issues of systems not designed to provide what is being sought, when it is needed.

Suggestions for meeting these challenges included creating a business case to communicate to staff why and how data is used; staff training to encourage buy-in; and careful design of data collection instruments that get to the information needed, with a need to consider both positive and negative feedback.

E-Resources

In some ways, e-resources can be seen as the easiest area for quantitative performance measurement, as there is a wealth of data available – indeed almost too much data. A key issue, however, remains the quality, consistency and fitness for purpose of the data available, often provided by vendors of the resources and so beyond the control, and influence, of the library. The group considering this area came up with a comprehensive framework of performance indicators and ways in which they might be used to the library's advantage:

- cost per use per student, which might include staff costs, to measure usage against performance and inform retention decisions
- use against demand, to inform faculty and librarians, and assess who is using which resources
- costs of purchase compared to alternative supply, for example trends in inter-library loan use, different access methods and authentication, mapping publisher journal deals against institutional subject interests
- student satisfaction – were they more impressed by quantity than quality?
- academic staff – is their (authored) content available?

When considering using the data to advantage, ideas included promotional advertising featuring the top ten resources or other interesting snippets; providing recommender services; pop-up boxes demonstrating the library involvement with e-resources and the associated costs; and use of comparative data when making a case.

When it came to implementing this, a number of issues were identified. Cost per use was thought to be reasonably easy, but different publishers count usage differently, rendering data incomparable. Usage standards were possible – Project COUNTER has gone a long way to achieve this – but it was thought more useful to concentrate effort on cost per use of expensive resources, and to present this in a useful way. Cost per FTE student can be done at a broad level but, this would be difficult to do by department or subject, not least because of the interdisciplinary nature of resource use.

Areas which were thought to be particularly difficult, given the current starting point, included identifying who is using what. One suggestion here was to "Cancel it and see what squeaks!". There was a need to weigh up the effort of doing this against the value of the data, although the group thought it might be worth spending the effort if resource was expensive

Some of the presentation ideas could be implemented fairly readily, although it was pointed out that restrictions by IT services often precluded the use of pop-up boxes. The data to use for such promotional work, such as the top 10 used, or how much is spent on students' behalf, was fairly easy to obtain, and ways could be found to present it.

Information Literacy – Role of an Academic Librarian

A key issue for this group was a perception that skills were not transferred by students between modules, perhaps because the terminology is opaque, and there is a lack of shared understanding. Performance indicators proposed for this area included: attendance monitoring; VLE usage; time spent by staff and students; scores on the National Student Survey; changes in use of resources. This group also spent time discussing what constituted good practice, rather than how to

monitor delivery, and felt that, for their area and in a ideal world, there would be periodic assessment of information skills, both self-assessment and formal assessments, carried out in partnership with academic staff. Qualitative evaluation, such as focus groups and eye tracking, should supplement programme and module feedback and examiner reports.

Data would be needed to show, for example, that the library saves academic staff time and costs; and assists recruitment, retention and results. Quantitative data which would be useful in this context included numbers of attendees and hours of instruction, mapping delivery in programmes, and VLE usage. Library staff should also become involved in staff development, not only through delivering staff workshops and inductions, but also through departmental meetings, for example.

The challenges to implementation identified by this group included knowing what to collect, and issues of resourcing, as the data required were thought to be time consuming to collect. There could also be data protection issues regarding student data, and difficulty in securing the cooperation of academic departments and the academic registry. It was also pointed out that some data would be needed before putting arguments forward to change and collect new data

Cascading the findings

Following the workshop, each library has taken the findings of the data audit and workshop back to their respective teams for development within the context of their institutions. Early indications from Derby are that members of staff are keen to buy in to a more efficient and targeted framework of data collection and those responsible for collecting figures appreciate being given an understanding of how and why they are used. They are developing a new framework for customer resources, and reviewing the existing KPIs to see whether these are still the most relevant and looking at new ones. In the information skills area, the team are reviewing the statistics, and looking at the possibility of developing KPIs. The library has also updated the library charter and developed an academic library charter to set expectations for students.

The Loughborough customer service team is working on Customer Service Excellence and using this as a means of identifying what data are needed. In the area of information literacy, they have completed work on an impact assessment. The library has also developed – and put on the web site – a set of KPIs, undertaken an impact assessment of the academic librarian role, and reviewed data collection around digital resources.

Next steps

The final stage will be a second workshop, planned for September 2011, to compare progress and discuss what has worked well, and less well, and how that has been influenced by the different performance management cultures within the two institutions. This will again involve the senior management teams of both libraries, and will be used to share experiences and outcomes since the previous workshop. The project team will then consolidate the findings, and make recommendations for sustaining the progress and developing the culture of evidence which has been established.

As an example, KPIs are not – or should not be – set in stone, once agreed. Already, there are indications that Derby will end up with a core of KPIs which will continue, alongside some that test specific areas of work. If there are no issues with these then they will be replaced – for example: in the areas of opening hours and queue times, targets have been met for the last two years so this may be an area where the existing KPIs could be dropped, in favour of indicators relating other areas of service. The objective of this would be to then test different areas, find out if there are any issues, and take action to resolve them, thereby improving service.

Conclusion

In 2011, UK university libraries are under intense pressure to show the impact they make and to give evidence on value for money. The unit of resources is declining as a result of Government cuts. The increase in tuition fees will also mean that students become demanding customers of university libraries with high expectations. This study has brought together practitioner, research and national expertise to generate clear and informative ideas on how impact and value can be established in the future.

Measuring use of licensed electronic resources: a second iteration of the MINES for Libraries® Survey on Scholars Portal and other resources for the Ontario Council of University Libraries

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Introduction

As libraries implement access to electronic resources through portals, collaborations, and consortium arrangements, the MINES for Libraries® protocol offers a convenient way to collect information from users in an environment where they no longer need to physically enter the library in order to access resources (Franklin and Plum, 2004). MINES for Libraries® adapts a long-established methodology to account for the use of information resources in the digital environment. The survey is based on methods developed to determine the indirect costs of conducting grant-funded R&D activities (Franklin, 2001), and was adopted as part of ARL's New Measures program in May 2003 (Blixrud, 2003). ARL has implemented MINES for Libraries® in collaboration with OCUL in 2004-2005 (Kyrillidou, Olshen, Franklin and Plum, 2006) and in 2010-2011 (Kyrillidou et al, 2011). This report focuses on the 2010-2011 results and provides a brief description of the differences between the two implementations.

Ontario Council of University Libraries (OCUL)

OCUL (http://www.ocul.on.ca/) is comprised of 21 member libraries that work cooperatively to enhance information services through consortial purchasing, resource sharing, document delivery and other activities and services. These members vary significantly in scope, disciplinary focus and in size from 870 FTE (Algoma) to 68,334 FTE (University of Toronto). Table 1 summarises the enrollments figures for OCUL institutions as of July 2010.

Institution	Enrollment	Enrollment_%	Responses	Response_%	Requests	Requests_%	%Responses / Requests	Clicks	Clicks_%	%Responses / Clicks	Mandatory
ALGOMA	870	0.22	4	0.01	277	0	n/a	7	0	n/a	no
BROCK	14,557	3.66	853	2.45	601,828	1.73	0.14	494,575	3.1	0.17	no
CARLETON	20,743	5.21	823	2.37	344,226	0.99	0.24	255,644	1.6	0.32	yes & no
GUELPH	21,452	5.39	739	2.13	1,137,105	3.26	0.06	938,778	5.88	0.08	no
LAKEHEAD	7,583	1.9	371	1.07	268,805	0.77	0.14	214,357	1.34	0.17	no
LAURENTIAN	7,630	1.92	492	1.41	339,570	0.97	0.14	217,761	1.36	0.23	no
LAURIER	14,054	3.53	1,135	3.26	629,389	1.81	0.18	457,800	2.87	0.25	no
MCMASTER	24,944	6.27	3,432	9.87	2,151,042	6.17	0.16	1,683,937	10.55	0.2	no
NIPISSING	5,535	1.39	370	1.06	134,269	0.39	0.28	88,377	0.55	0.42	yes & no
OTTAWA (Combined)	32,230	8.09	3,317	9.54	5,148,809	14.78	0.06	1,253,532	7.86	0.26	no
QUEENS	20,751	5.21	2,232	6.42	988,976	2.84	0.23	846,918	5.31	0.26	no
RYERSON	26,841	6.74	2,604	7.49	1,162,386	3.34	0.22	799,225	5.01	0.33	yes & no
TORONTO	68,334	17.16	9,557	27.48	14,609,167	41.93	0.07	5,402,897	33.86	0.18	no
TRENT	7,030	1.77	645	1.85	436,249	1.25	0.15	301,185	1.89	0.21	no
UOIT	5,147	1.29	212	0.61	103,411	0.3	0.21	71,364	0.45	0.3	yes & no
WATERLOO	27,674	6.95	2,191	6.3	3,054,847	8.77	0.07	796,361	4.99	0.28	no
WESTERN	33,119	8.32	2,953	8.49	1,650,191	4.74	0.18	883,561	5.54	0.33	yes & no
WINDSOR	14,419	3.62	962	2.77	1,082,477	3.11	0.09	479,514	3.01	0.2	no
YORK	45,235	11.36	1,884	5.42	1,000,089	2.87	0.19	768,603	4.82	0.25	no
Sub	**398,148**	**100**	**34,776**	**100**	**34,843,113**	**100**	**n/a**	**15,954,396**	**100**	**n/a**	**–**

Table 1: OCUL Partner Institutions' Enrollments as of July 2010, Responses to MINES for Libraries(R), and SFX Statistics from 2/16/2010 to 2/17/2011

Scholars Portal

In 2001, OCUL established Scholars Portal (www.scholarsportal.info), designed to serve as an information infrastructure to deliver digital content in support of research, teaching, and learning within the province's universities. In addition to digital content delivery, Scholars Portal includes a number of core services that are shared by all members, including an interlibrary loan fulfillment service (RACER), citation management software (RefWorks), and Ex Libris' SFX open-URL resolver. When MINES for Libraries® was implemented in 2004 for OCUL, the digital content being measured was comprised of e-journals (8.2 million articles from 7,219 full text electronic journals) that had been locally loaded onto the Scholars Portal platform. Since then, the number of e-journals has grown to 20,000,000 journal articles from over 9,000 full text electronic journals. As well, extensive growth has occurred in other formats: over 90 abstracts and indexes, 350,000 e-books, and portals to statistical and geospatial data collections. SFX, the open-URL resolver that connects users to this digital content, is an integral component of the 2010 implementation of MINES since it acts as the delivery mechanism by which the patron encounters the survey.

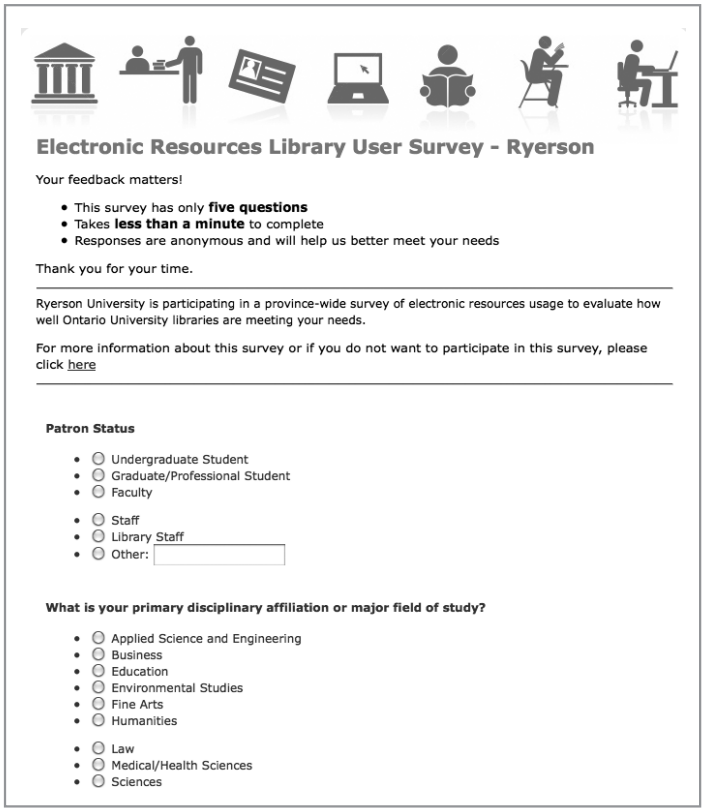
MINES for Libraries® methodology

Briefly, MINES for Libraries® is an online, transaction-based, point of use, intercept, and web survey methodology, in use since 2000, which collects data on the purpose of use of electronic resources and on the demographics of users. In recent years expenditures by libraries on electronic resources has skyrocketed to over 60% of total materials (Kyrillidou, Morris and Roebuck, 2011). As mentioned in Kyrillidou, Franklin and Plum (2010) MINES for Libraries® is a:

- set of recommendations for research design
- set of recommendations for Web survey presentation

- set of recommendations for information architecture in libraries
- set of validated quality checks.

The MINES for Libraries® methodology has been well documented in a series of articles and on the ARL website (http://www.arl.org/stats/initiatives/mines/index.shtml). A bibliography of MINES is found at http://www.arl.org/stats/initiatives/mines/minesresources.shtml.



Electronic Resources Library User Survey - Ryerson

Your feedback matters!

- This survey has only **five questions**
- Takes **less than a minute** to complete
- Responses are anonymous and will help us better meet your needs

Thank you for your time.

Ryerson University is participating in a province-wide survey of electronic resources usage to evaluate how well Ontario University libraries are meeting your needs.

For more information about this survey or if you do not want to participate in this survey, please click here

Patron Status

- Undergraduate Student
- Graduate/Professional Student
- Faculty
- Staff
- Library Staff
- Other:

What is your primary disciplinary affiliation or major field of study?

- Applied Science and Engineering
- Business
- Education
- Environmental Studies
- Fine Arts
- Humanities
- Law
- Medical/Health Sciences
- Sciences

Figure 1: Sample MINES Survey (Ryerson University)

Random moments sampling

In the 2004-2005 OCUL study a random moment research design was implemented, surveying a randomly chosen two hour period each month for Scholars Portal resources. Under the two-hour survey sampling plan, the MINES Web survey protocol was interested in capturing subsequent uses of the databases or e-journals during the same session after the survey is initially filled out by the user.

In OCUL 2010-2011, the two hour session was replaced by an ***every nth intercept randomly generated*** using a random number generator that whenever it hits **nth** it presents the survey. It is an elegant solution for which the Scholars Portal information technology administration and programmers should be acknowledged (Alan Darnell, Bilal Khalid, Vidhya Parthasarathy, and others). The **every *nth* random** solution obviates the need for sessions, since it surveys the user randomly, but does not track subsequent usage in a session. The sampling plan is still a random moments sampling plan securing all the advantages of a random sampling technique.

For the University of Toronto, the frequency was 1 in 500 while for all the other participating institutions the frequency was 1 in 250. The 2010-2011 implementations were influenced more by the local library needs and the variation reflects this shift of balance.

By institution, a lottery selection process occurs every 250 (or 500) times the SFX menu is invoked. Specifically, a random number was selected for each school between 1 and 250 at the beginning of the survey and is drawn every 250th time thereafter. When a user attempts to access content via the SFX menu, their numbered call to SFX is checked against the number randomly drawn. If his or her number matches the random number, he or she will be presented

with the survey, the front-end of which resides on LimeSurvey (http://www.limesurvey.org/), with data being stored in ColdFusion.

SFX implementation and as delivery mechanism

The SFX implementation of MINES for Libraries® in 2010-2011 is more inclusive compared to the Scholars Portal implementation in 2004-2005 as it incorporates all the resources offered by libraries above and beyond the Scholars Portal resources as long as they are included in the SFX Knowledge Base.

The point of interception for the survey is the Ex Libris SFX openURL server, hosted by OCUL at the University of Toronto, but utilised by almost all members of OCUL. Therefore, local resources and consortial resources (Scholars Portal), e-journals and e-books, and any service that the library wishes to configure to link through SFX can be surveyed. Beyond full text resources, users may encounter additional services and resources such as virtual reference, discovery layers, library catalogues, RACER, the consortium's interlibrary loan requesting system, RefWorks, technical support forms and citation capture features via the SFX menu.

Benefits and limitations of the SFX methodology, issues to consider

Though the use of SFX has significantly expanded the resources included in MINES over the first implementation of OCUL, not every resource held by the participating institutions has the potential to generate a MINES survey. For example, there is variation in the extent to which institutions within OCUL have implemented SFX. The degree of comprehensive coverage of a library's actual electronic and print holdings depends on the resources, knowledge and diligence that library is able to dedicate to SFX knowledge base management. Only enabled (or activated) resources have the potential to generate SFX menus, and therefore MINES for Libraries® surveys. A couple of the OCUL schools had only activated a small portion of available resources at the time MINES began, so that the number of surveys seen or completed was much lower than it could have potentially been.

Beyond limitations under the local library's control, there is also a limitation inherent in the SFX software. To date, the content type most represented in the SFX knowledge base is by far the electronic journal. Other resources, such as e-books, data, print journals, audio visual, and other non-textual resources are underrepresented. In addition to the variety in TARGETS (content or service resources) some of the most heavily used SFX SOURCES (starting points) have not been implemented at all schools. The library catalogue, journals by title A-Z list, and Google Scholar are the most notable examples of this. Table 2 captures the variations in the SFX delivery mechanisms across different institutions. There are sufficiently different implementations and variations that one should be careful when making comparisons across institutions. Also, the SFX implementation in 2010-2011 is sufficiently different from the Scholars Portal implementation for 2004-2005 that care should be used in comparing the analysis of the two surveys.

Institution	Uses az list?	SFX from OPAC?	Google Scholar?	Citation linker?	bx?	PRIMO?/ Discovery layer?
ALGOMA						
BROCK	YES	NO	YES	YES		
CAMH						
CARLETON	NO	NO	YES	YES	YES	
DURHAM						
GUELPH	YES	NO	YES	YES	YES	YES
LAKEHEAD	YES	YES	YES	YES	YES	NO
LAURENTIAN	YES	YES	YES	YES	NO	NO
LAURIER	YES	NO	YES	YES	YES	YES
MCMASTER	YES	YES	YES	YES	YES	NO
NIPISSING	YES	NO	YES	YES	YES	NO
OCAD	YES	NO	NO	YES	NO	NO
OTTAWA	YES	NO	YES	YES	NO	NO
QUEENS	NO	NO	YES	YES	NO	YES
RMC						
RYERSON	YES	YES	YES	YES	NO	NO
TORONTO	YES	NO	YES	YES	YES	NO
TRENT	YES	NO	YES	YES	NO	NO
UHN						
UOIT	NO	NO	YES	YES	NO	NO
UOIT	NO	NO	YES	YES	NO	NO
WATERLOO	YES	YES	YES	YES	YES	YES
WESTERN	YES	YES	YES	YES	YES	NO
WINDSOR	YES	YES	YES	YES	YES	NO
YORK	NO	NO	YES	YES	NO	NO

Table 2: Variations in the SFX Delivery Mechanism across Participating Libraries

One of the most difficult problems facing the measurement of usage of networked electronic resources in college and university libraries is the increasing impact of open access journals and articles upon the research process. Open access includes both open access journals and article pre-print, prints, or post-prints found in institutional and discipline repositories. The articles found in discipline repositories, such as arXiv.org, remain difficult to intercept from the library website or using library systems, such as SFX. However, as Collins and Walters (2010) demonstrate more and more libraries are adding open access journals to their A-Z journal lists and open-URL resolvers, and as they do, capturing usage of open access journals, which begins with a library system, becomes more possible.

There are a few unanticipated technology limitations, which allow users to bypass the SFX menu or having their data recorded. These limitations include the use of DirectLink and Verde, or closing the browser window entirely as opposed to selecting the "No Thank You" option within the survey.

Ethics Review

As noted in the 2004-2005 report, all Canadian Universities must comply with the *Tri-Council Policy Statement on Ethical Conduct for Human Research Involving Humans 1998* (Updated 2000, 2002, and 2005) put out by the Medical Research Council of Canada, the Natural Sciences and Engineering Research Council of Canada, and the Social Sciences and Humanities Research Council of Canada. Although a second edition of TCPS was published in 2010 and will guide further studies (http://www.pre.ethics.gc.ca/eng/policy-politique/initiatives/tcps2-eptc2/Default/), at the time of the ethics review by the various research ethics boards (REBs) for this study, the 1998 (with updates) version was the applicable edition.

Only five of the 20 participating libraries in 2010-2011 received permission to run the survey in mandatory mode. This total deviates significantly from the 2004-2005 experience when sixteen of the participating libraries ran the survey in mandatory mode. In 2004-2005 eight of the campuses exempted the study under quality assurance activities and eight campuses received approval after review. Although this difference may not be indicative of a tightening of the reviews of ethics review boards over time, and the anticipation of the new regulations, the fact remains that fewer review boards permitted the mandatory survey, even though the purpose of the survey was to evaluate the effectiveness of a university institution, and could fall under quality assurance activities. Speculations as to why the mandatory studies were acceptable at one university and not at another, when the protocols for the survey submitted to the local university ethics review board were identical for all institutions, may involve the uncertain state of the TCPS at the time and its proposed revisions, which were publicly available.

Mandatory vs optional

This set back has nevertheless provided the research team with an opportunity. For the five libraries that received permission to run the survey in mandatory mode, an optional survey, with an opt-out, was also administered. The surveys in these five schools alternate daily between mandatory and optional over the survey year. A detailed analysis of the differences between mandatory and optional implementation is being studied in depth and results will be forthcoming by the end of the summer. A total of 4,255 surveys were collected from the mandatory protocol and are compared to 2,607 surveys collected from the optional protocol across five institutions. As is evident the response rates are higher in the mandatory protocol, but the quality of the information does not seem to differ in major ways based on an initial examination of the data. The preliminary analysis indicates relatively few differences between the mandatory and the optional protocol for those institutions that implemented both. A fuller technical report on this aspect of the analysis is being prepared and will be presented at a later time.

Institution	FTE, July 2010	OCUL 1 – 2004-05	OCUL 2 – 2010-11
ALGOMA	870	Not part of OCUL	Optional
BROCK	14,557	Mandatory	Optional
CARLETON	20,743	Mandatory	Optional & Mandatory
GUELPH	21,452	Mandatory	Optional
LAKEHEAD	7,583	Mandatory	Optional
LAURENTIAN	7,630	Mandatory	Optional
MCMASTER	24,944	Mandatory	Optional
NIPISSING	5,535	Mandatory	Optional & Mandatory
OCAD	3,010	Mandatory	Optional
UOIT	5,147	Mandatory	Optional & Mandatory
OTTAWA	32,230	Mandatory	Optional
QUEEN'S	20,751	Mandatory	Optional
ROYAL MILITARY COLLEGE	1,792	n/a	n/a
RYERSON	26,841	Mandatory	Optional & Mandatory

Institution	FTE, July 2010	OCUL 1 – 2004-05	OCUL 2 – 2010-11
TORONTO	68,334	Mandatory	Optional
TRENT	7,030	Mandatory	Optional
WATERLOO	27,674	n/a	Optional
WESTERN ONTARIO	33,119	Mandatory	Optional & Mandatory
WILFRED LAURIER	14,054	Mandatory	Optional
WINDSOR	14,419	Mandatory	Optional
YORK	45,235	Mandatory	Optional

Table 3: OCUL and MINES: Optional and Mandatory

Who uses electronic resources?

There were 34,776 complete responses for the Affiliation, User Status, Location and Purpose of Use questions. For this analysis, the results from the University of Toronto are probably underestimated as a result of being treated the same as the results from the other OCUL institutions.

The subject affiliation of the majority of the respondents is medical/health sciences (27%, n = 9,393 respondents), followed by social sciences (21%), sciences (16%) and humanities (9.98%) (Figure 2).

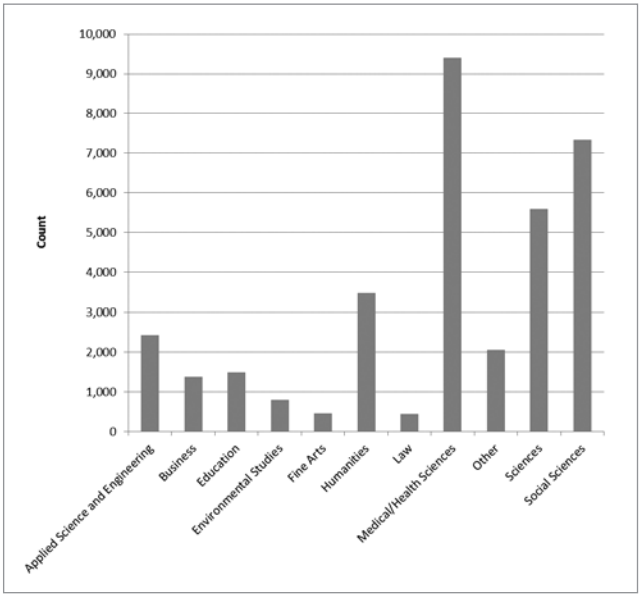


Figure 2: Frequency of Use of Electronic Resources by Affiliation

Slightly more than half of the respondents are undergraduates (51.7%), followed by graduate professionals (32.3%), and faculty (8.56%) (Figure 3).

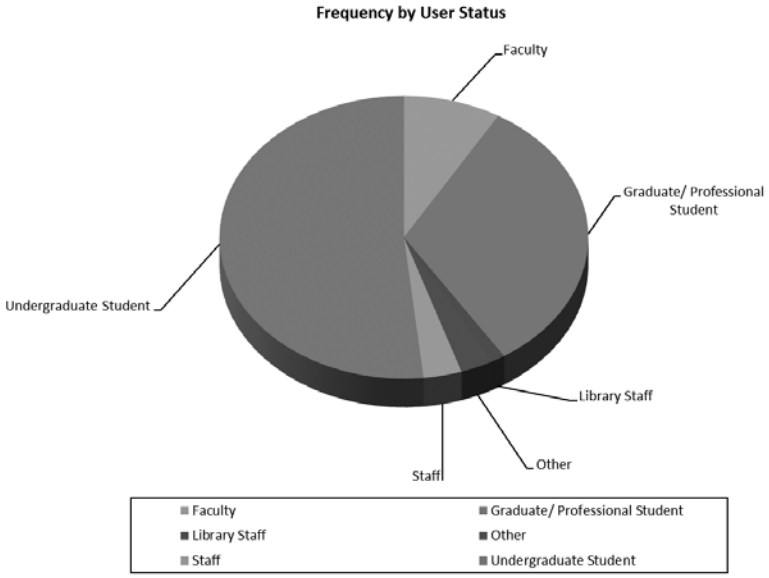


Figure 3: Frequency of Use of Electronic Resources by User Status

Where are the users located at the point of use?

Most respondents use these resources from off-campus (68.75%), while 19.05%, access the resources from on campus locations outside the library, and only 12.2% of them use electronic resources from within a library building (Figure 4). For every user of electronic resources from within a library, there are roughly 7 users of electronic resources from outside the library.

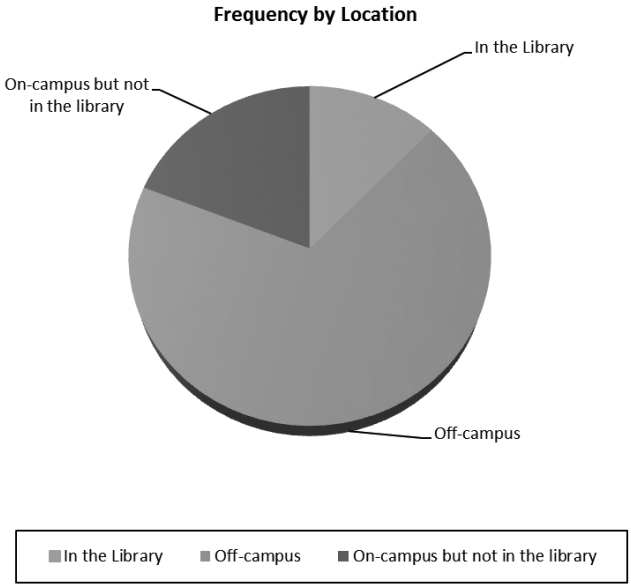


Figure 4: Frequency of Use of Electronic Resources by Location

Yet from the three primary user groups – faculty, graduate professional, and undergraduates, a larger portion of undergraduates (68.73%) use electronic resources from within the library, than graduate/professional students (18%) or faculty (2.5%).

A large portion of uses originated from off-campus locations for all three user groups: 72.31% of graduate/professional uses are from off-campus (the highest percent from all user groups) compared to 68.47% for undergraduate students and 65.83% for faculty.

What is the primary purpose of use?

Patrons could only select one purpose of use of Scholars Portal resources and 56.83% of all respondents selected coursework as their primary purpose of use, followed by sponsored research (16.75%), and other research activities (14.17%) (Figure 5).

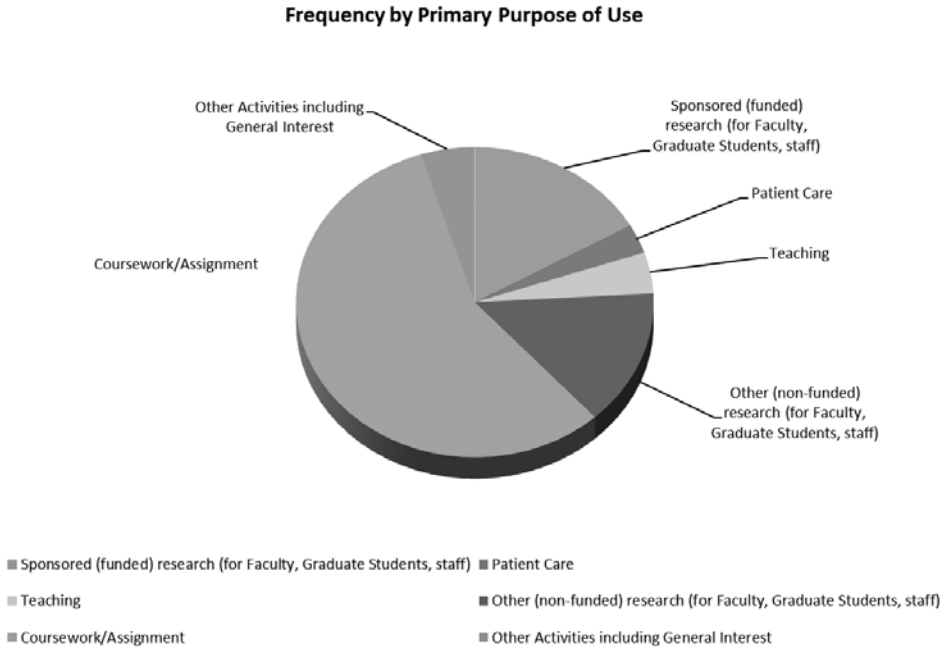


Figure 5: Frequency of Use of Electronic Resources by Primary Purpose of Use

A cross tabulation of purpose of use with affiliation shows that while *coursework* accounts for 56.83% of the total uses of electronic resources (19,762/34,776), it ranges by discipline from 67.88% of the uses in the social sciences to only 31.33% in applied sciences. However, applied sciences (42.3%) and sciences (28.2%) far exceed the rates of *sponsored research* in the other disciplines.

A cross tabulation of purpose of use with users' status shows that 83.13% of the undergraduate uses were for *coursework*. Graduate professional uses showed a bit more variation, with coursework still being the primary purpose for use (39.09%), followed by *sponsored research* (27.97%), and *other research purposes* (22.88%). In contrast, the majority of the faculty use was for *sponsored research* (36.19%), *other research purposes* (25.4%), and *teaching* (24.26%).

A cross tabulation of purpose of use with location shows that the largest portion of the use is off-campus (68.75%) and most of that off-campus use happens for the purposes of *coursework* (59.19%). *Other research and sponsored research* comprise about 14% of off-campus uses. *On-campus but not in the library* is the second most frequent location for users of electronic resources (19.05%). A large portion of these on-campus uses are for *coursework* (43.09%) and *sponsored research* (30.86%). Only 4,241 out of the 34,776 (12.2%) uses take place within the library. Of the uses within the library, 64.96% are for *coursework* purposes, 11.6% are for *other research*, and 9.69% are for *sponsored research*.

Reason for use

Unlike the other questions in the survey, patrons could select multiple reasons for use. *The importance of the resource in my field* was the most frequent reason for use of the 34,776 responses (59.1%). The second most frequent reason was by following a reference or a citation from another source (22.5%). *Recommended by a professor/colleague* (18.8%) was the

next most frequent reason for use, followed by *recommended by a librarian* (7.09%) and *course reading list* (5.75%). This pattern is rather consistent across the different discipline affiliations.

There are some variations across user groups with 66.62% of faculty identifying *important resource in my field* as their primary reason for use, the highest percent across all other user groups. 47.09% of undergraduates also selected *important resource in my field*. Their second most popular reason was *recommended by professor/colleague* (21.3%), which was the highest selection of this reason across all other user groups. Interestingly enough, there were no major differences in the purpose of use patterns based on location *(in the library, off-campus, and on-campus but not in the library)* among undergraduates.

Some comparisons between 2004–2005 and 2010–2011

Interesting differences emerge when the results from the 2004-2005 and 2010-2011 MINES for Libraries® implementations are examined. OCUL and ARL have implemented a slightly different and more inclusive methodology in terms of the resources accessed, and more institutions were included in the 2010-2011 implementation, two factors that have undoubtedly influenced the results of the current study and that should be kept in mind when comparing the current and previous implementations.

In only a few years, use of electronic resources by the health sciences/medical discipline has eclipsed electronic resource use in the sciences and social sciences among OCUL members. The humanities area has increased their use of electronic resources as well.

This may reflect two notable trends. First, the importance of health care issues and issues related to health education in an aging population could explain why use in the health sciences/medical discipline has increased so sharply. Another notable trend relates more to the scholarly publication trends of electronic resources. Five years ago, there were not as many electronic resources in the humanities as there were in the sciences. So, the increase of use of electronic resources in the humanities to some extent reflects the increased availability of electronic resources in this disciplinary area. Although use of electronic resources was wide-spread in the sciences five years ago, the distribution of availability of these resources is shifting. One of the major challenges for libraries is their ability to shift their funding strategies accordingly to support the wider range of disciplinary content that is available electronically. It is not clear how the impact of open access e-journals and repositories, primarily found in the sciences, accounts for differences in results between the two OCUL surveys. Also, it is not clear how changes in student demographics and recent economic trends may have changed the composition of the student body and the habits of students, especially with the introduction and uptake of distance education programs.

More undergraduate students use electronic resources compared to five years ago and graduate professional student use has remained remarkably stable while proportionally faculty use has shrunk.

Off campus use of electronic resources increased from 45.1% in 2004-2005 to 68.7% in 2010-2011, an indication of the importance that OCUL institutions are placing on increasing the availability of electronic resources. The current study reveals that this focus has yielded high return on investment. *On campus but outside the library* use and use from *within the library* decreased proportionately compared to 2004-2005.

Coursework is the primary purpose of use of electronic resources in 2010-2011; and while this purpose of use has increased, the second primary purpose, *sponsored research*, has decreased over time.

The increasing frequency of reason for use due to *recommended by librarian* is an intriguing and promising trend in the 2010-2011 data. Though a small percentage overall, this reason for use is now occurring slightly more frequently than *course reading list*, which may indicate an increasing recognition of the usefulness of librarians as aides in the resource selection process.

In summary

The 2010-2011 MINES for Libraries® study addresses a number of important issues. It builds on the 2004-2005 study and takes advantage of the research environment offered by OCUL's centralised distribution of networked electronic resources. It tracks changes in usage, the makeup of users, and the purpose of use in the same universities over time to reveal differences in the patterns of use. It demonstrates the efficacy of a point-of-use intercept survey enabled through the open-URL SFX server and is an example for other libraries that are considering this commonly used technology to obtain similar information about their user groups. The study also highlights the benefits of utilising an nth intercept methodology as an alternative to a random moment methodology, which, in turn, suggests how the every nth survey

sampling plan could be used continually to create a true culture of assessment that is less invasive and that produces data that are scalable and generalisable. By identifying ever evolving trends in the use of electronic resources, the 2010-2011 MINES for Libraries® study is a sound tool for OCUL to demonstrate the value of electronic resources at the consortial level and for individual libraries to understand and communicate that value to their constituents at the local level. Future studies may consider exploring additional details of the user characteristics including satisfaction as well as the direct value users derive from different electronic resources and potential linkages to teaching, research and learning outcomes.

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Evaluating peer research mentors: a campus collaboration for effective student learning

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University of New Hampshire Manchester

Among the challenges faced by today's academic librarians is providing cost-effective library instruction to a generation of technologically-connected students hooked into Google but not very knowledgeable about library research. In meeting this challenge, the librarians at the University of New Hampshire at Manchester initiated a collaborative project with our peer tutor program to create an innovative approach to supporting student development of research and writing skills with minimal budget impact to either college department. The Peer Research Mentor Program is a partnership between the UNH Manchester (UNHM) Library and the Center for Academic Excellence (CAE) utilising peer writing tutors trained in basic library research skills to assist first-year college students as they navigate the research and writing components of their introductory composition courses. Throughout the semester, peer research mentors work with students one-on-one on research/writing projects, while librarians work with these same students, utilising active learning techniques and exercises to teach advanced research and evaluation strategies.

Based on informal observation, the instruction librarians and the Director of the CAE believed that the program was successful because it "provided students with a network of people dedicated to helping them achieve their academic goals" (White and Pobywajlo, 2005: 194), but without a systematic evaluation there was no evidence to support that belief. A formal assessment of the Peer Research Mentor Program was long overdue. During fall semester 2010, the instruction librarians and the Director of the CAE came together to form a research team and proposed a pilot study to evaluate the program. Through a variety of assessment instruments, the pilot study enables measurement of the program's effectiveness in meeting the goals established and identifies areas for improvement.

The purpose of this paper is to report preliminary findings from the data collected during the pilot study and to examine the lessons learned in conducting this evaluation. In order to continue to provide effective support to students navigating the research process by helping them to develop transferrable information literacy skills, the research team ultimately decided that ongoing assessment of the Peer Research Mentor Program was critical. Therefore, program assessment will continue in subsequent semesters although some adaptations based on the pilot study's results will be necessary.

Background

The Peer Research Mentor Program grew out of an idea discovered by the author at a poster presentation at the 2003 Association of College and Research Libraries annual conference. Two large residential universities described a peer mentor approach to providing library research assistance by scheduling "drop-in" sessions in the dormitories during late evening and week-end hours. The peer mentors were trained in basic library research skills by the university's librarians and were available to offer point-of-need assistance to their fellow students. When the reference assistance need was more sophisticated than these peer mentors were trained to handle, they often accompanied the student to the library, introducing him or her to a reference librarian, thereby reducing student anxiety about asking for help.

The idea was intriguing, but applying something similar at UNH Manchester required adaptation because there are no dormitories at this small commuter campus. UNH Manchester does have a nationally recognised peer tutor program whose practice of assigning a class-linked tutor to first-year writing courses offered the potential for collaboration. The library faculty suggested the possibility of expanding the class-linked tutor role by incorporating basic library research training within the peer writing tutor development course. In collaboration with the Director of the Center for Academic Enrichment and the Director of the First-Year Writing Program, a pilot program was developed in fall 2003. White and Pobywajlo (2006) published an in-depth case study of the collaboration among librarians, faculty, and writing center professional staff in developing and implementing the pilot program. In a second publication, Fensom, McCarthy, Rundquist, Sherman, and White (2006) offered their personal perspectives of the activities and outcomes they experienced as librarian, faculty, or peer mentor during the pilot program.

In the current iteration of the program all peer writing tutors train for the peer research mentor role by completing a one-semester credit-bearing Tutor Development course co-taught by a librarian and the CAE director. In the semester following the completion of the Tutor Development course, peer research mentors are assigned to class-link in a first-year writing course. The peer research mentor's duties include attending all classes; participating in library instruction sessions as directed by the instruction librarian; conducting one-on-one research/writing conferences with tutees; and helping to interpret the class assignments, expectations, and culture for these first-year students making the transition from high school to college. This approach has the potential to increase students' information literacy skills because instructional interactions relating to research and writing occur across the semester and are not limited to just a one-shot library instruction session.

Research methodology

In designing the program evaluation pilot study, one of the research team's first activities was to review the goals established by each stakeholder in order to identify measurable outcomes. The library goals included:

- improving students' information literacy skills
- reducing "library anxiety" among first-year students
- increasing students' confidence levels with the library research process
- enhancing students' critical thinking skills, and
- promoting librarianship as a career possibility.

The CAE goals included:

- improving students' library research and writing skills
- providing tutors with professional development opportunities for CRLA tutor certification
- expanding tutor roles and enhancing their own research skills, and
- facilitating transfer of communication skills from tutor training to the library setting.

The goals identified by each department include some overlap with respect to helping students become critical thinkers and effective consumers of information. In addition, each stakeholder identified a professional development goal specific to the individual department, yet these two goals are not truly exclusive of each other because it is the certified peer research mentors who are the targeted audience for the goal of promoting librarianship as a possible career path.

Next, the team determined that collecting data about and from each of the stakeholders was necessary. Multiple assessments were designed to gather the knowledge, experience, and 'voices' of students, peer research mentors, and teaching faculty. A combination of qualitative and quantitative instruments was developed and Institutional Review Board (IRB) protocol approval was secured. The participants identified for this pilot study included students enrolled in first-year writing courses, instructors teaching those courses, and the peer research mentors. In order to protect participant identity, students were asked to create a unique identification number known only to themselves and to the researchers for use when completing the various instruments.

In spring semester 2011, five first-year writing courses were offered at the UNH Manchester campus. On the first day of each course, an instruction librarian attended the class to present the pilot study to students by explaining the purpose and parameters of the study. A consent form was provided to students informing them that participation in the study was voluntary, that there would be no compensation for participating, and that all reported results would be anonymous. Students were encouraged to participate in the study in order to help evaluate and improve the program and were advised that the majority of the assessments would be completed during scheduled class time. Laptops were distributed and students were directed to a web link where the pre-test instrument was located.

The Peer Research Mentor Program is an initiative offered only at UNH's commuter campus in Manchester; there is no similar program available at the residential campus in Durham. In order to incorporate a small comparison group between campuses in this pilot study, the research team collaborated with a first-year writing instructor who taught two sections of the course on the UNH Durham campus. On the first day of class, an instruction librarian traveled to

Durham to present the study, request voluntary participation, and administer the pre-test instrument in a paper format.

The Durham students participating in the study were asked to complete only the first four measures noted on this bulleted list, while Manchester students participating in the study were asked to complete each of the measures and activities listed below:

- a questionnaire about their research process,
- a pre test of their knowledge about the library and its resources,
- an affective scale about conducting research,
- a post-test of their knowledge about the library and its resources,
- two to three meetings with a peer research mentor while working on the research project,
- an evaluation of the peer research mentor with whom they worked on the research project, and
- a reflective response about the experience of conducting research and writing about it.

Peer research mentors participating in the study were expected to be available to meet with students at least twice during the semester; to write a reflective response about their experiences as peer research mentors and their perceptions of the effectiveness of the program on students, and to complete session reports for each tutorial they had regarding the First-Year Writing research paper in which they rated the student's progress in the research and writing process. The research team intended to invite both students and peer research mentors to voluntarily participate in an interview or a focus group to discuss their experiences in the program; however, by semester's end it was only possible to schedule a single focus group for peer research mentors.

The quantitative and qualitative instruments developed were linked directly to measuring the goals established for the program (see appendices for examples). The pre/post tests measure levels of improvement in information literacy skills and critical thinking skills. The affective scale measures changes in library anxiety and confidence levels with the library research process. Reflective response essays and tutor session reports measure changes in research and critical thinking skills. Interviews and focus groups provide an opportunity to gather first-hand accounts of the program's effect on student learning, peer research mentor roles, and faculty expectations.

The affective scale instrument was administered prior to the scheduled library instruction session and the post-test instrument was administered the final week of the semester. Due to an unexpected problem with the online survey product, both of these instruments were presented to students in a paper format. The reflective response essay prompt was distributed to students by classroom instructors who instructed them to submit the completed essay along with their final research project.

Peer research mentors submitted tutor sessions reports after each tutorial; were asked to complete a reflective response essay; and were invited to participate in a focus group discussion during the final week of the semester.

Preliminary findings

The pilot study's population numbers were small but comparable between the two campuses. On the Manchester campus, 54 students were enrolled in eligible classes, and 31 students agreed to participate in the study for a 57% response rate. On the Durham campus, 48 students were enrolled in eligible classes, and 34 students agreed to participate in the study for a 71% response rate. The post test response rates were not comparable between campuses due to a communication mix-up with the Durham instructor resulting in only nine responses out of the 34 eligible participants. The post test response rates for the Manchester campus were comparable to that campus' pre test numbers resulting in 28 responses out of the 31 eligible participants.

The pre/post test instruments used in this study included six background questions to determine participants' previous research and writing experiences and thirteen questions relating to library resources and information literacy skills. The pre test was designed to probe students' background knowledge of both the library's resources and the research process, while the post test assessed student learning by measuring changes in knowledge levels following library instruction and engagement with peer research mentors throughout the semester. These instruments utilised a

variety of formats, such as multiple choice questions, rating scales, and open-ended short answer responses, to elicit the data desired.

An analysis of the responses to the background questions uncovered a notable difference between campuses. When asked *"have you received previous library instruction at this college or at another college?"* – 61% of Durham students responded no while 65% of Manchester students responded yes. One possible explanation for this difference may be attributed to student completion of a developmental composition course that is only offered on the Manchester campus, since approximately 60% of Manchester students responded that they had taken that course in a prior semester.

The early analysis of the knowledge questions focused on student knowledge in three interconnected areas: using library resources correctly, building an effective search strategy, and evaluating search results with respect to the information need. Each of these skills match to one of the standards outlined in the Association of College and Research Libraries (ACRL) publication, *Information Literacy Competency Standards for Higher Education*, which asserts that the information literate person can "recognise when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (ACRL, 2000: 2).

Three sets of paired multiple-choice questions allowed students to respond to the same concept from two different approaches. First, questions nine through eleven required students to select an answer in response to a direct question about a library tool, a search limiter, and an evaluative criterion respectively. Then, questions thirteen through fifteen required students to select answers about the same concepts but the questions were crafted as situational scenarios. This approach gave students a context for the question. The table below shows the results of the pre/post tests by paired question set and by campus location.

		Pre test Durham	Post test Durham	Pre test Manchester	Post test Manchester
Library Resources	Question #9 Question #13	52% 47%	75% 67%	68% 74%	86% 100%
Search Strategy	Question #10 Question #14	52% 27%	67% 11%	32% 16%	89% 68%
Evaluation	Question #11 Question #15	65% 88%	77% 78%	55% 74%	79% 85%

These findings show improved results on the post tests in most categories regardless of campus, however the percentage of increase is greater for Manchester students for all but one question. Although not conclusive, these results indicate that the Peer Research Mentor Program may have contributed to this increased learning. The validity of the correlation between the pre/post test results for Durham students is compromised by the small post test response rate; however, the Manchester students' comparable response rate for pre/post test results permits a valid comparison even with a small participation pool.

Early analysis of the affective scale results indicate similarities across the two campuses among these first-year students' attitudes towards research and their perceptions of their ability and confidence levels using library resources and information-seeking skills. This instrument included ten statements, and students selected the response that best described their experiences from four possible choices: always, occasionally, frequently, and never. Preliminary findings demonstrated that 64% of respondents prefer to use search engines like Google to complete academic research, while 57% of respondents feel confident using library resources to access information for academic research. Only 15% of respondents admit to enjoying writing assignments that require research but 61% are willing to ask a reference librarian for assistance. The affective scale was not given as a post test, so there is no data to measure possible change.

Lessons learned

The low participation rates point to a limitation of the study, as does the use of convenience sampling. This participation rate may be directly related to the process of administering this study. Perhaps it was ill-advised to begin the study on the first day of class when students are just meeting their professors and are uncertain of their workload. Students found the highly detailed multi-paged informed consent letter and the task of creating an identifying tracking number confusing. Misunderstanding the timing parameters for administering the post test on the Durham campus led to poor response rates.

The pilot study attempted to accomplish more than was reasonably possible given the time and resources available. In order to make the study manageable and sustainable, several modifications were necessary, including:

- Reducing the informed consent letter to essential information,
- Combining knowledge questions and the affective scale for a single pre/post test instrument,
- Administering a call for participation and pre test instruments in the third week of class,
- Scheduling post test administration with faculty on the day the pre test is administered,
- Focusing the study on Manchester campus students only, and
- Ensuring anonymity of student participants by analysing data at the group level only.

Conclusion

This pilot study was an effective tool to gather data about the Peer Research Mentor Program and to gain valuable feedback on this assessment process. The pre/post tests indicate positive progression in student learning, demonstrating improved critical thinking and information literacy skills. In the data sets analysed thus far, the Manchester students' higher percentage increase suggests that the peer research mentor intervention is an effective approach to achieve improvement. In subsequent semesters the affective scale must be a pre/post test instrument measuring change in students' perceptions and confidence levels.

Results of the qualitative instruments measuring process and practice have only been examined as word clouds, providing an interesting visual display of word relevancy but insufficient for assessing learning outcome. Results of the instruments measuring peer research mentors experiences have not been fully examined. Further analysis is needed to completely evaluate the effectiveness of the Peer Research Mentor Program and its implications for student learning. Modifications based on feedback gleaned through the pilot study will enable a systematic assessment that is both manageable and sustainable while providing evidence of student learning.

Appendix I

UNH Manchester Peer Research Mentor Program Evaluation Study – Spring 2011

PEER RESEARCH MENTOR PROGRAM PRE TEST

1. Create your individual ID number by using your initials and the last four digits of your social security number.

ID _____

2. Please select your campus location.

A. Durham
B. Manchester

3. Have you used a library to find sources for an academic assignment?

A. Yes
B. No

4. Have you written a research paper?

A. Yes
B. No

5. Did you take ENGL 301?

Yes
No

6. Are you repeating ENGL 401?

Yes
No
Declined to answer

7. Have you received previous library instruction at this college or at another college?

Yes
No

8. Rank the following strategies for effectiveness in choosing search terms? (Rank 1 as the highest and 5 as the lowest.)

_____ Write out your topic in a few sentences.

_____ Highlight the main terms and phrases.

_____ Brainstorm synonyms, broader terms, and narrower terms.

_____ List abbreviations and alternate spellings of words.

_____ Check an encyclopedia for ideas and concepts.

9. Why would you use a library database? Choose one answer from the list below.

A To find out if the library owns a particular magazine or journal.
B To search the World Wide Web for educational websites.
C To find articles in journals, magazines, or newspapers.
D To find out if the library owns a particular book.
E I don't know

10. Imagine you are searching a library database for articles about forms of bullying among high school students. Choose the best search strategy from the examples below.

A high school students who are bullied
B bullying
C bullying and "high school students"
D forms of bullying in high school
E I don't know

11. In critically evaluating information sources you should consider all but

A the timeliness of the information
B the credentials of the author
C the length of the information source
D the accuracy of the information
E I don't know

12. Martin has a research paper due in his English class on bullying. Martin does not know where to start and is feeling overwhelmed. Of the choices below, which is the best approach for him to begin his research process?

A Review the assignment requirements to gather more information, search for background information on the topic of bullying, and then list possible paper topics based on the information he found.

B Review the assignment requirements to gather more information and then start developing a thesis statement for the paper.

C Do a Google search on "bullying" to find background information and then list possible paper topics based on the information he found.

D Start by developing a thesis statement for the paper and then search for background information on the topic of bullying.

13. Jennifer is looking for sources for her research paper on bullying. The professor requires that students use two academic journal articles, two books, and one web source in their paper. Jennifer has found two books and a web source for her paper but is not sure where to find journal articles. Which choice below is the best place to find journal articles on bullying?

A Go to the library webpage and use the library's online catalog to find academic journal articles on bullying.

B Go to the library webpage and use the library's online databases such as Academic Search Premier to find academic journal articles on bullying.

C Go to Google.com and do a search for academic journals that have articles on bullying.

D Go to the library's Reading Room magazine collection and read through the news magazines such as *Time Magazine* to find academic journal articles on bullying.

14. Mike is doing research for his paper on bullying and is looking for journal articles on the effects of bullying on victims' mental health. He has searched one of the library's online databases using the keyword "bullying" and has gotten thousands of results, many of which are not relevant to his topic. Which choice below would be the best search strategy to narrow Mike's search and provide more relevant results?

A Bullying and schools
B Psychological effects of bullying on victims
C Mental health and bullying and victim
D Students and suicide

15. Kendra needs an academic journal article for her research paper on bullying and schools. She is looking for an article that will help her explain the psychological effects experienced by bullying victims. Which of the sources below is the most appropriate?

A **The Bully as Victim?** By Gillian Patterson
Pediatric Nursing, December 2005, Vol. 17 Issue 10, p27-30
Abstract: This article summarises the causes and implications of aggression and **bullying** behavior, including future outcomes for children who **bully**.

B **Bullying, Depression, and Suicidality in Adolescents.** By Anat B. Klomek, Frank Marrocco, Marjorie Kleinman et al
Journal of the American Academy of Child & Adolescent Psychiatry, Jan2007, Vol. 46 Issue 1, p40-49
Abstract: The study shows that victims of bullying have an increased risk of developing depression and suicidal thoughts.

C **Gifted Kids Vulnerable to Effects of Bullying** by Jean Sunde Peterson
USA Today Magazine, September 2007
Abstract: The article reports that bullying in the U.S. gifted-student population is an overlooked problem that leaves many of these youngsters emotionally shattered, making them more prone to extreme anxiety, dangerous depression, and sometimes violence.

D **Bullying and Smoking: Examining the Relationships in Ontario Adolescents** by Erin B. Morris, Bo Zhang, and Susan J. Bondy
*Journal of School **Health***, Nov2006, Vol. 76 Issue 9, p465-470
Abstract: The study showed that current smokers were more likely to be bullies than nonsmokers.

Appendix II

UNH Manchester Peer Research Mentor Program Evaluation Study – Spring 2011

LIBRARY RESEARCH ATTITUDE SCALE

Determine if the following statements apply to you NEVER (N), OCCASIONALLY (O), FREQUENTLY (F), or ALWAYS (A). Circle the letter that best describes how you feel to relevant to each statement.

1	I have trouble choosing a research topic.	N	O	F	A
2	I wait until the last minute to start my research.	N	O	F	A
3	Working in the library makes me feel nervous.	N	O	F	A
4	I like to do academic research.	N	O	F	A
5	I am confident in my ability to access information through the library online catalog and databases.	N	O	F	A
6	I prefer to do my academic research using a search engine like Google.	N	O	F	A
7	I like writing assignments that require research.	N	O	F	A
8	I avoid courses that require research papers.	N	O	F	A
9	I tend to use the first few sources I find.	N	O	F	A
10	I am willing to ask a reference librarian for assistance.	N	O	F	A

What question(s) do you have for the librarians at this point?

What would you like to know about library research by the end of a library instruction session?

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It's their library, not ours: how value comes from a philosophy not a purse

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Introduction

Academic Libraries are all facing challenging times in terms of declining income, difficult decisions and changing student expectations. In this paper, the perception that student satisfaction is closely related to expenditure on resources and collections is challenged. Instead, through examining the case study of Leeds Metropolitan University Library, it is suggested that it is provided through a customer-centred approach to service delivery and that this is a principle that could be extended to all libraries.

This case study outlines how one library has provided high value without high spending on resources. Unusual in its university because of its consistently high ranking levels of satisfaction, and in the sector because of its high scores in comparison with its low spend, it tells an interesting story of how it is possible to provide value in these challenging times and one that could be applied to a range of contexts.

Comparisons were undertaken with academic libraries in the sector and with benchmark partner libraries in relation to spend on information resources. Levels of student satisfaction were also examined with these groups. An examination of student feedback was undertaken to determine what students valued about Library services and why they rated it so highly.

Leeds Metropolitan University has almost 30,000 students and 3,000 staff. There are over 4,000 international students and 300,000 associate students through its network of 24 partner colleges. Predecessor institutions date back to 1824 when Leeds Mechanics Institute was founded, and in 1992 the institution became Leeds Metropolitan University and was given degree awarding powers. There are two Libraries of almost equal size with a total of 95 full-time equivalent staff. The buildings contain library and almost all the institutional IT facilities and the department is responsible for front-line library and IT support, the virtual learning environment and printing as well as traditional library facilities. The Libraries are open 24 hours a day 365 days a year with self-service and security staffing overnight and during summer weekends.

High levels of satisfaction

Levels of student satisfaction remain consistently high as evidenced through national and international higher education surveys. International students are particularly satisfied, scoring Leeds Metropolitan University 6% above other International Student Barometer institutions for satisfaction with the Library in the Autumn 2010 survey. In other satisfaction surveys, the Times Higher score for "good library and library opening hours" in 2011 was 6.2, down 1 point from the previous year but still 0.2 over the benchmark partner average. The National Student Survey result for "library resources and services are good enough for my needs" in 2011 was 84%.

Internally within the University, the Library is seen as an area of good practice and consistently scores the most highly of all areas in the National Student Survey results. The overall score for the University, although rising, is 77% so it is not the case that the Library is benefiting from high levels of satisfaction from across the University. Satisfaction ratings have also been high for a long period of time. Throughout the past decade the Library has scored as one of the highest areas in the University for satisfaction in its Annual Student Survey of 1st and 2nd year students, with the most recent showing a satisfaction rate of 83% for "library resources and services are good enough for my needs" compared with 77% for the overall question of the quality of the course.

Leeds Metropolitan University does not undertake a Library specific survey as it is policy that surveying students should be operated at an institutional level, but the Library works with the Students' Union and the Strategic Planning Office to include library-related questions in University-wide surveys. Additionally, the Library has developed a wide range of other mechanisms to gather feedback.

What leads to high NSS scores?

There are several possible reasons for these levels of satisfaction. In March 2011 the analysis of NSS/Times Higher data by CIBER for Research Libraries UK identified 5 SCONUL measures which correlate positively with NSS scores:

- professional staff as a percentage of total library staff
- gross library spend per full time equivalent user
- net library spend per full time equivalent user
- spend on information per full time equivalent user
- library floor space per full time equivalent student.

plus two library-related predictors of overall course satisfaction:

- staff training hours per full time equivalent student
- annual loans per full time equivalent user.

How does Leeds Metropolitan University compare?

Leeds Metropolitan University benchmarks itself against eight of the Post-92 universities in the North of England for its business activities and the Library uses the same benchmark partners to compare information. Comparisons are also made against approximately 150 SCONUL institutions in the sector who submit statistical returns. In comparison with these institutions, Leeds Metropolitan University Library is below average amongst its benchmark partner group and in the sector for almost all categories. SCONUL statistical returns for 2009-10 for expenditure on information provision per full time equivalent user indicate that it is the lowest amongst its benchmark partner group and 133rd in the SCONUL rankings. Leeds Metropolitan University Library is also below average amongst its benchmark partners and 133rd in the SCONUL rankings for library floor space per full time equivalent student (which, unlike other universities, also includes almost all the University's IT provision).

In relation to the two library related predictors of overall course satisfaction, Leeds Metropolitan University Library is below average in its benchmark partners for the number of staff training hours per full time equivalent student and 128th in the SCONUL rankings. It is slightly above the average in the sector for loans per full time equivalent user in common with many of the Post-92 universities who have low levels of expenditure on stock.

For both gross and net user spend, Leeds Metropolitan University Library is above the average of its benchmarking partner institutions, but these figures include spend on buildings and utilities which none of its benchmark partners includes in their SCONUL submissions so a like-for-like comparison cannot be made. It is the highest amongst it benchmarking partners for professional staff as percentage of total library staff, but this figure also includes a high proportion of technical staff who work within the department, such as the University virtual learning environment team, and are who not dedicated to information provision and skills development. However, even including these, it only ranks 128th in the SCONUL rankings. A recent consultancy report indicated that the institution has low levels of library professional and support staffing in comparison with 6 peer group institutions.

In conclusion, it can be seen that Leeds Metropolitan University Library has lower levels of resources and expenditure in many areas than its benchmark partners, and is below average in the sector.

Do Leeds Metropolitan students have lower expectations?

It could be argued that levels of satisfaction depend on students' initial expectations of the Library and that Leeds Metropolitan University Students arrive with lower expectations than those at benchmark institutions. It is not

currently possible to measure the expectations of Leeds Metropolitan University's students against those of other universities, but it can be assumed that they will be similar to those of the University's benchmark partners who attract students from similar backgrounds and experiences.

Adding value

Because expenditure on resources is relatively low, Leeds Metropolitan University Library has to add value through other methods. Firstly, it adds value to whatever resources are already available. With few information resources, it is important to maximise access and turnaround of stock wherever possible through, for example, 24/7/365 opening, offering as many services as possible as self-service, and improved use of management information to target scarce resources. Links between the Faculties and the Library are strong, and Academic Librarians are included as members of Course Development Teams, an approach which is supported at the highest level in the University. This enables them to understand emerging trends and, as they are responsible for purchasing, to target resources appropriately. The availability of materials in heavy demand is increased by automatically purchasing additional copies, the short loan collection at Leeds Metropolitan University Library is small but active, and all materials are purchased in electronic format where possible, also improving access. However, these approaches are not unusual, especially in Post-92 universities, and would not, in themselves, account for high levels of satisfaction.

Customer orientation

Following a study of companies with a good reputation for service, Bates et al (2003) suggest that "in terms of productivity, the findings suggest that provision of better service is staff intensive but yields significantly greater profit per employee. The better service providers have significantly better return on investment and return on total assets than the poorer ones."

It has been seen that Leeds Metropolitan University Library does not have high levels of investment, library space or information skills training, or combination of these factors. However, it does have a strong, long-term customer-service culture and it is argued here that this is the underlying reason for high levels of customer satisfaction. At the Library, this is not interpreted as providing good face-to-face customer care (although that is important). It is rather an approach based around marketing principles, that is knowing who your customers are, understanding their needs, developing services around those needs and delivering them in a timely and efficient way. This is predicated on engaging and communicating with them, another method of satisfying customers in itself. The approach is also embodied in the Cabinet Office Customer Service Excellence standard, formerly the Charter Mark Award, which the Library has held since 2001.

Customer orientation is embedded at every level and has been for many years. Almost all staff work on the front line service as part of their duties. This could be considered an expensive approach and is sometimes difficult to manage, but it provides three major benefits; firstly that staff keep in touch with customers, they understand their concerns and queries, their approach to Library use and their methods of engagement. Secondly, front line services are highly valued and are prioritised in departmental planning and individual objectives. Finally, all staff understand that customer service is of primary importance to the department. Customer service experience is included almost all job descriptions and employee specifications at every level. Front line staff form part of every project and development group and they are further able to engage and disseminate their experience through a staff suggestion scheme. This approach enables staff at all levels to put themselves in the shoes of the customer and consequently to use those experiences to shape the delivery of services.

The Library uses a range of different methods of communication, both formal and informal. As well as University and Course Committees the Library carries out mini surveys, exit polls, focus groups to gather feedback and mystery visiting. A customer comments system allows for the collection of unsolicited feedback. There is an annual Libraries and Learning Innovation Strategy for Customer Consultation and Feedback which outlines the importance of customer consultation and the different methods that are used and is discussed and agreed with the Students' Union. Regular meetings with the Students' Union Executive ensure that issues are discussed at an early stage and that the Library can present and discuss proposals for new services. A recent example was when fines were raised and the Student Union Executive was involved in the decision making process. Results of actions taken are made available to complete the loop. The strategy for consultation is part of the Library's governance process and has been used by the University as an example of good practice.

Overall approach and philosophy: it's their library not ours

The concepts outlined above of customer-oriented service and of accepting the importance of consultation and discussion are not new and individually may not be enough to account for the exceptionally high levels of satisfaction amongst customers. Palmer (2008) states that 'merely maintaining customers' level of perceived quality is insufficient if their expectations have been raised over time' and suggests either improving the service offer or restraining customer expectations. The key area where Leeds Metropolitan University Library differs from its benchmark partners and from others in the sector is its overall philosophy of 'it's their library, not ours'.

Leeds Metropolitan University Library provides the types of space and facilities that the students need and enables them to own them. It gives students the choice of when and where they study and allows them to manage the environment as much as possible themselves. An information commons style integrated study environment has been in place since refurbishments in 2005 which offers library, IT and study rooms in one building. 24 hour opening has been in operation since 2001 with 24 hour opening for 7 days a week throughout term time since 2004. The Library has been open 24/7 every day of the year since 2007. Between Christmas and New Year in 2010 there was an average of almost 1000 visits per day and this element of the service is particularly popular both with international students who have not returned to their country and with home students preparing for examinations after Christmas.

There is no access control to the Library (which on the negative side means no corresponding management information) which gives an open impression, and notices about how to use the zoned study environment are advisory rather than prescriptive. There is a move away, wherever possible, from the traditional library concepts of staff 'managing behaviour' and of 'policing the Library' which conflict with the concept of ownership of the environment. Security staff patrol on a regular basis as part of their standard campus patrol and are particularly valuable to protect personal security during overnight opening but, on the whole, students manage their own behaviour. Areas are set aside for eating and drinking in the Library in order to maximise the availability of 24 hour opening. The approach of 'providing spaces for the way they actually work not the way we think they ought to work' has been in place since 2005. One mature student commented 'It's just like studying in your front room' (Young & Finlay 2006, Everest & Morris 2008). Pressure on study spaces at peak times means that occasionally there are times when students cannot find their preferred kind of study environment and some customer comments indicate that students would like a more proactive staff presence. However, from 1,459,168 visitors entering the Library in 2009/10, 11 customer comments were from students who considered the Library to be too noisy (SCONUL return 2009/10, Leeds Metropolitan University Library Customer Comments 2009/10). This is addressed when necessary by arranging extra security patrols and adjusting the ratio of silent to group seating.

The concept of students managing their own study and environment and of being able to choose when and where they study are highly regarded by students, and referenced in open comments in course and survey feedback. Students consistently report that they like 24 hour opening and that the staff are helpful. Different customer groups feel that the services they need are tailored around them.

The positive perception of the Library among students is seen as an asset by the University and the Library is seen as central – Open Days and University Welcome and events are held in the Libraries, Graduation processions are launched from there and the spaces are frequently requested for events. Positive survey ratings for a number of years have, not only improved the perception of the Library service in the sector, but add value to the University as a whole.

Conclusions

It is difficult to prove a direct correlation between what students value, their levels of satisfaction, and customer-centred service delivery. However, the premise that high levels of satisfaction have to derive from high levels of investment or substantial existing collections can be refuted as evidenced by this case. Instead, amongst a range of potential influencing factors, it is posited that a customer-oriented philosophy and service are the most important.

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Quality management in special libraries

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Introduction

Special libraries provide a client focused library and information service. Special library staffs obtain, organise and provide access to selected relevant, current and authoritative information sources for their organisation. In the last 20 years, Special Libraries have been involved in quality management process as their parent organisation is often pursuing quality systems to reach business excellence. "Quality Management" is considered more formally as part of organisational and departmental policy and planning. A quality management system gives manager the framework they need to monitor and improve performance in any area they choose. A number of different approaches to the introduction of quality management can now be observed in special libraries in the recent years. The purpose of the present paper is to review quality management and its complexities, and later review the quality approaches such as TQM (Total Quality Management), EFQM (European Foundation for Quality Management), SERVQUAL, and LibQUAL in especial libraries.

Quality management and Its complexities

Quality management can be considered to have three main components: quality control, quality assurance and quality improvement/enhancement. Quality management is focused not only on product/service quality, but also the means to achieve it. Quality management therefore uses quality assurance and control of processes as well as products to achieve more consistent quality.

The distinction between quality assurance and quality improvement/enhancement is not easy to recognise. Jennifer Rowley (2005) differentiates between quality assurance and quality enhancement as follow:

- Quality assurance is a widely used term that refers to the processes associated with ensuring that quality adheres to some externally or internally set standard. Through quality assurance, the organisation and external stakeholders can be assured that the performance of the organisation is of an appropriate standard. The processes whereby the organisation collects the data to demonstrate that these targets have been met are quality assurance. Quality assurance requires standards of performance to which organisations must aspire, often, but not always articulated as quantitative performance measures. Such performance measures are often based on the collection of benchmarking data from across a sector.

- Quality enhancement focuses attention on those processes associated with enhancing or improving quality. Again performance measures are a necessary representation of quality; organisations will not only seek to make improvements, but also will want to be able to monitor that improvements have been made. Quality enhancement programmes may also embrace standards and targets and the various other elements of quality assurance, but improvements are not constrained by, or restricted to achievement of these targets. In addition, the focus is on the processes that lead to quality enhancement.

She also summarises the difference between quality assurance and quality enhancement on a number of dimensions: focus, measures, primary audience/stakeholder, level of staff ownership, and consequences. Perhaps the most important differentiation is at the level of consequences. In terms of branding, quality assurance is concerned with brand recognition, whereas quality enhancement is concerned with creating the reality and credibility of the brand through quality service delivery (See Table 1).

Dimension	Quality assurance	Quality enhancement
Focus	Output standards	Internal processes
Measures	Performance measures	Assessment of processes
Primary audience/stakeholder	Funding body	Customer/employees
Level of staff ownership	Low	High
Consequences	Funding/accreditation, achievement of quality marks and branding	Quality service delivery

Table 1: Comparing quality assurance and quality enhancement

Quality in the library world

Libraries as public organisations have tended to define quality in terms of richness of resources. Most often total number of volumes owned, number of best-selling books per site, size of professional staff, and similar measures have been taken as indicators of quality.

According to Babalhavaeji, library quality revolves around information resources, environment in which services are provided, staff delivering services, equipment by which process of service delivery is facilitated and paying attention to changing needs of users, ie constant users' need assessment to adapt services as a whole to their demands (Babalhavaeji, et al, 2010).

Quality approaches in special libraries

Over recent years there has been a great emphasis on the "quality management" in all types of libraries including special libraries. Here we review quality approaches (as a part of quality management systems) which are applied in special libraries.

TQM (Total Quality Management)

The concept of quality management originated in Japan and later moved into the USA and the UK, initially in the manufacturing sector. Since then, the theory of quality management has been growing fast. It has become a management philosophy in its own right and has taken shape in a series of international standards in the ISO 9000 series. The philosophy is increasingly being applied in the service sectors, including libraries (Galyani-Moghaddam and Moballeghi, 2008).

Use of TQM in the library sector started in the late 1980s, though early studies show that the TQM approach was not successful in some libraries.

The reasons for implementing TQM models can be seen in Figure 1 adopted from Heras et al. (2006).

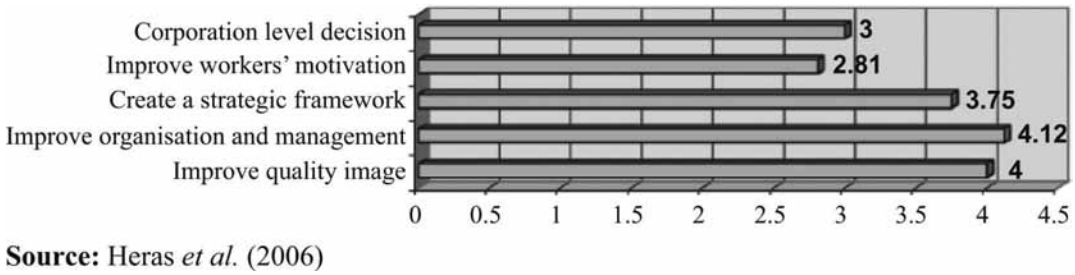

Figure 1: Reasons for implementing TQM models

Literature review shows that some special libraries applied TQM in their libraries and found interesting results. For instance, a paper published in Library Management addressed the process of implementing TQM in libraries, stating that it involves a conceptual change in library professionals and a cultural transformation in the organisational operations (Wang, 2006). Teamwork is important for the successful implementation of TQM. Every step of the process depends on the constant support of top management. Their role determines how far the implementation can

go. Therefore, once a decision is made to apply TQM, strong leadership is required. TQM provides a model and a benchmark as guidelines in making new strategies in libraries facing today's great changes. It is arguable whether it is feasible to apply the principles without reservation, but it is reasonable to adopt the techniques with adaptations suitable to the library environment.

A study of TQM in Indian special libraries was carried out by a TQM based approach and using a modified form of European, Quality Model. The results of the survey reveal that (or proper performance measurement of LIS sector), Quality Management Level depends upon a TQM oriented instrument. The study concludes that QML is closely associated with innovation and reorganisation process rather than streamlining and securing routine functions and processes which would be a conservative approach for successful Quality Management in libraries (Verma, 2002).

EFQM

Following the idea of TQM, libraries have witnessed the emergence of the European Foundation for Quality Management (EFQM). The European Foundation for Quality Management (EFQM) has developed a widely used framework for quality enhancement, the EFQM Business Excellence Model, that not only embeds the principles of TQM, but also provides a mechanism for accreditation of an organisation's quality processes. All UK government departments are required to use the model to improve their businesses. The model is based on nine criteria for excellence:

- five "Enabler" criteria relating to what the organisation does, and how it runs, including leadership, policy and strategy, people, partnerships and resources and processes; and
- four "Results" criteria relating to what the organisation is actually achieving, in the eye of its stakeholders, (ie customers, employees or people, society and funders) (Rowley, 2005).

Results are always based on enabling factors. The distinction of these both analytical concepts, between results as effects and enablers as causes builds a basic principle of EFQM. Management can achieve excellent results in performance, customer service, staff and society by utilising leadership, partnerships and resources, staff, policies and strategies and processes. The EFQM Model is based on this requirement, as can be illustrated in the following graph (Introducing Excellence, 2003) (Figure 2)

There are five distinguishable competency based criteria (enabler) and four results based criteria. Competency based criteria are concerned with the modus operandi for achievement of objectives. Results based criteria relate to the tangible results that follow from the procedures. This distinction is the determining factor of this model as it prevents the one-sided and limited concentration on results. Good results always have a cause that needs to be identified and amplified in order to increase excellence. The EFQM Model accommodates for this by evaluating both competency and results based criteria equally.

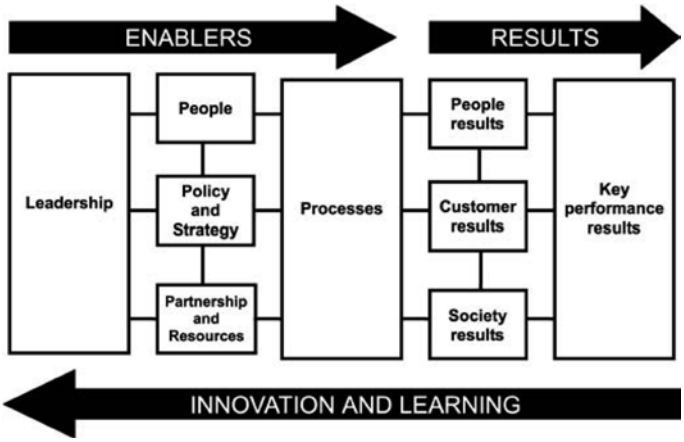

Figure 2: The EFQM Model

Herget and Hierl (2007) believe that EFQM Model can be successfully applied for analysing the status quo as well as identifying the strengths and weaknesses of a library. It is also a comprehensive approach covering most of the demands for the above-mentioned multidimensionality of measuring quality and the possibility of delivering options for action that are needed for library excellence can be found in the Excellence in Libraries EFQM Model (Herget and Hierl, 2007).

SERVQUAL

As an instrument or service quality framework, the SERVQUAL instrument measures the gap between customer's expectations for excellence and their perceptions of actual service delivered, so service providers can understand both customer expectations and their perceptions of specific services. It was originally measured on ten aspects of service quality (http://en.wikipedia.org/wiki/SERVQUAL (accessed 18 June, 2011):

1. reliability
2. responsiveness
3. competence
4. access
5. courtesy
6. communication
7. credibility
8. security
9. understanding or knowing the customer; and
10. tangibles.

A review of literature shows that SERVQUAL has been vastly used in library studies. A recent study on the service quality perceptions of professional information system users in an engineering research environment in U.S carried out by using SERVQUAL. Landrum and his colleagues (2009) also examined the relationship between the relative importance allocated by the system's users to each of the five SERVPERF dimensions and the ratings provided for the individual items of the dimension. They concluded that (1) companies that provide client services and (2) designers of information systems that interface with users should emphasise responsiveness and reliability; in cases of limited user resources, responsiveness and reliability should be emphasised over other SERVPERF performance dimensions. They also conclude that the use of SERVPERF is nuanced and that moderating influences may affect measurement results (Landrum, H., et al, 2009). Although the SERVQUAL instrument is ubiquitously employed, it has received some criticism from both a theoretical and practical perspective (Landrum, H., et al, 2009).

A case study in Iran by using SERVQUAL model in an academic library showed that that there is no equal importance between library service quality indicators. After prioritising indicators it was found that having the ability to find information 24 hours a day has the most importance and a secure and safe place is the least important indicator for making a high quality library (Jamli and Sayyadi, 2009).

LibQUAL

The Association of Research Libraries (ARL) in collaboration with Texas A&M University was undertaken a major project to develop a standardised measure of library service quality in 1999. The result of this project is an instrument named LibQUAL, which measures library users' evaluations of service quality on four dimensions (Roszkowski et al., 2005):

1. affect of service
2. library as place
3. personal control; and
4. access to information.

LibQUAL derives from the Gap Theory of Service Quality, and the SERVQUAL instrument (Cook et al., 2003). LibQUAL has been attracted by many libraries around the world and many studies have been conducted by means of

this emerging quality-service model. In this regard, Kalb (2007) points out that more than 500 academic and research institutions around the world have participated in LibQUAL since it began in 2000.

A study examined the experience of six military libraries in US using the LibQUAL+™ assessment tool. The results showed that in every dimension of measured service quality the military school libraries met or exceeded users' expectations. The study explores the military library environment to identify factors that may contribute to the positive perceptions of library service, and examines practical applications for other special libraries. The authors discussed possible explanations of the positive perceptions of library service within the MERLN institutions, including homogeneity of the user population, self-identification with the library, the small school environment, the course length, the narrow focus of the curriculum and cost level of materials, the integration of the library into curriculum development, and the experience of the library staff (Nicula and Laseter, Accessed 2011).

A study by Hariri and Afnani in Iran was conducted using a LibQUAL+™ survey at the central library of Iran University of Medical Sciences and Health Services. The results did not show significant differences between mean values of gap scores for female and male users. The library exceeded female users' minimum acceptable level of service quality in 16 aspects of LibQUAL+™ survey, while that library fulfilled the minimum level of acceptable quality in just nine aspects for male users; however, according to statistical analysis, female and male users held similar opinions in relation to the quality of the library services (Hariri and Afnani, 2008).

Conclusion

Special libraries have been faced increasingly with decisions about performance and quality. Such concepts are being considered across organisations, involving all departments and functions. Quality Management System (QMS) provides a management framework that gives libraries the necessary controls to address risks and monitor and measure performance in their business. It can also help libraries to enhance their image and reputation inside their parent organisations. "Quality Management" is considered more formally as part of organisational and departmental policy and planning. This has required the setting up of a variety of quality-related procedures and performance measures. However, quality management is not a simple but a complex process. Any public organisation is willing to apply quality management system to reach excellence need to continually evolve quality management processes at different levels. Librarians at special libraries should seek to balance the tension between processes, measures and activities that promote quality enhancement, at the same time as responding to expectations of users and parents organisations too.

In this paper, a number of different approaches to the introduction of quality management in special libraries are reviewed. Literature review showed that though most quality studies were reported from academic libraries, but TQM and EFQM are two quality models which are used in some special libraries around the world and librarians found enough positive results to justify their application. Two most used quality instruments to measure library performance are SERVQUAL and LibQUAL. The SERVQUAL instrument measures the gap between customer's expectations for excellence and their perceptions of actual service delivered, so service providers can understand both customer expectations and their perceptions of specific services. LibQUAL measures library users' evaluations of service quality. In spite of some criticisms, these two instruments have been vastly used in library studies for measuring quality.

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Do school libraries make a difference?: some considerations on investigating school library impact in the United Kingdom

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Introduction

The *"Do School Libraries Make a Difference?"* research project is a two-year study, across the four home nations of the UK, looking at secondary schools. The pilot phase has been funded by CILIP's Wendy Drewett Bequest Fund, and some observations from this phase are discussed below. The research combines two approaches: firstly a mapping of library presence and activity in relation to schools' national league table standing based on GCSE results and secondly an investigation of how head teachers, teachers and pupils perceive the contribution of a school library or learning resource centre (LRC) and school librarians to student learning and development. This is further complemented by sampling higher education students on their perceptions of the contribution of the school library to their preparedness for university study.

The research seeks to build on the seminal USA school library impact studies, within the UK context. It aims to identify whether there are key contributions afforded by a LRC and by a school librarian, and if so, to offer case models and approaches which may be used to inform strategy and practice. Based on the findings of the American impact studies, it is hypothesised that a correlation will emerge; however, should the research discover success stories in schools without an active LRC or a librarian, this will be useful in identifying the critical factors in these instances, towards informing school library advocacy action. Equally, the UK-wide scope offers comparison of both statutory and non-statutory LRC contexts, which may offer insights relevant to policy choices in response to recommendations made in reports such as the School Library Commission's *School libraries: a plan for improvement* (School Library Commission, 2010) or DEMOS' *Truth, lies and the internet* (Bartlett & Miller, 2011), curriculum review planning in England, and the implementation of the Scottish and Welsh information literacy frameworks (Irving & Crawford, 2008; Welsh Information Literacy Project, 2011).

The project aims to identify

- whether there is any identifiable positive difference to pupil learning experience between schools having active, resourced libraries and librarians, and schools with limited or no library resource or librarians;
- if found, how and where school libraries and school librarians make any such positive difference, with a view to supporting policy-level strategic targeting of resources and service development;
- models and good practice examples which may be shared and used to inform and support strategic activity, at national or at individual school policy levels.

The research context

A substantial and ongoing set of state-based studies in America (School Libraries Work, 2008, Kachel et al, 2011) Australia (Lonsdale, 2003; Hay, 2005, 2006) and Canada (Haycock, 2003; Klinger et al, 2009) has demonstrated that children benefit from good libraries staffed by qualified librarians working in partnership with teaching colleagues The key findings of the presence of a skilled librarian, a strong and varied range of resources and robust collaboration between the librarian and teaching departments have been reiterated across the various projects and by the findings of a comprehensive literature review carried out in the UK at the Robert Gordon University, Aberdeen (Williams et al, 2001). In the UK, Ofsted (2006) has shown a positive link between the school library and pupil skills and a research

study of 17,089 school pupils carried out in 2009 by the National Literacy Trust found that a correlation could be traced between library use and pupil achievement and interest in reading and writing (Clark, 2010; Clark & Hawkins, 2011).

The international PISA (Bradshaw et al, 2007 and 2010) and PIRLS (Twist et al, 2007) studies of school children's reading skills and motivation have shown that UK children have technically sufficient literacy skills, but that the UK comparative performance and engagement overall has been dropping in the last ten years, and worryingly that the gap in achievement between high and low achievers in Britain has been expanding. UK performance at primary level, as indicated by SATS results, has also largely plateaued (Rogers, 2010). The PIRLS 2006 study identified a positive association between pupil self-identification of reading attainment, reading for pleasure and the amount of reading done (Twist et al, 2007, pp 31, 35, 38). This is reflected in the National Literacy Trust's UK research findings (Clark, 2010, p4).

The CIBER Information behaviour of the researcher of the future research, carried out at University College London for the British Library, showed that UK pupils have poor digital research skills, and that although teachers might be 'information savvy' these skills were not effectively being transferred to their pupils. The researchers noted that close partnership between schools, libraries and parents is needed to address this effectively well before the further or higher education stage, and that there is a significant lack of current research in the UK informing understanding of children's information behaviours and their impact (Rowlands et al, 2008, CIBER Executive summary).

The concept of information literacy has been an area of concern and research for the education sector, from further and higher education institutions and their librarians to schools for more than forty years in the UK. Nevertheless, despite many aspects of research skills being present in the English national curriculum and a Personal Learning and Thinking Framework established in 2007 (QCA, 2007), pupil confidence in information exploitation remains a problem. In a 2011 survey of 507 teachers in England, DEMOS investigated perceptions of pupil competency in seeking information online and evaluating its quality and usefulness. The researchers found that as many as a quarter of 12-15 year-olds made no quality checks of any kind when visiting a new website, a third assumed that information found through a search engine must be truthful and 15% are influenced more by the attractiveness of websites than any reliability of their content (Bartlett & Miller, 2011, p5). The teachers consulted noted that only a third of pupils actually received any teaching in web resource evaluation, despite more than three-quarters of the teachers asserting confidence in teaching 'digital fluency', nearly 60% setting internet-based research for homework and the majority regarding internet-based content and research as important for schoolwork. Key inhibitors were identified as lack of training, resources, time and a cross-curricular perspective (Bartlett & Miller, 2011, chapter 3). It is relevant, therefore, for this research to identify what strategies successful schools have in place and the extent to which school libraries are seen as making a positive contribution to addressing these problems.

In 2010 the National Literacy Trust and the Museums, Libraries and Archives Commission together instituted a School Library Commission, amongst whose priorities were identification of the school library place in promoting and supporting literacy and exploration of the strategic relationship of local authorities and school library improvement. The Commission identified that too often libraries are under-exploited within schools, and proposed a wide-ranging set of recommendations aimed at enabling maximum benefit to be obtained from this key resource (School Libraries Commission, 2010).

There is an urgent need for concrete evidence now on exactly how school libraries and librarians do – or don't – add value to pupils' educational, social and developmental wellbeing within the United Kingdom context. We are at a point of significant redevelopment of school curricula in both primary and secondary phases, with an ever-increasing emphasis on pupil personal learning and thinking skills, broad thematic approaches to subject learning, and independent project work. Both higher education institutions and employers are looking for young people well-equipped with literacy, numeracy and the ability to handle information effectively. Research studies such as that at Huddersfield (Goodall & Pattern, 2011) have identified a correlation between the amount of use higher education students make of library resources and the degree class achieved. It is relevant therefore to discover whether school libraries contribute to preparing students for this university library resource engagement and correlated achievement.

At the same time there has been considerable debate over the last year both within the political arena and amongst professional and policy bodies about the position of school libraries. Notably, there is currently a strong lobby for school libraries to be made a statutory requirement in England and Wales, as is already the case in Scotland, which has the backing of CILIP and the School Library Association, and yet there is a steady trend of loss of professionally qualified school librarians, of reduction of library resources and discontinuation of school library support services (Streatfield et al, 2010). The Minister of State for Schools, Nick Gibb, has stated that he believes "every school should have a library" and that it is vital teachers have "a deep knowledge of children's literature" (Gibb 2010). The library profession is embarking on Shout About!, an advocacy campaign for school libraries in 2011-12. It is therefore important to be able to identify how libraries do make a difference to their school communities, and whether there are schools exploiting effective alternatives to the traditional LRC model, in order to be able to target resources.

Approaching impact assessment: challenges for establishing methodology for this research

The first challenge here is establishing the distinction between measurement of service *outcomes* and *impact:* the terms are often interchanged or blurred. In this project we are defining 'outcomes' as the results generated from particular service activities and the effects of activities. By contrast, 'impacts' are the differences experienced by the consumers of the services as a result of outcomes, and the combined results of school library engagement overall. School library impact relates to the fundamental contribution of value to pupils and the wider school community.

The family of research ('Colorado') studies conducted by Keith Curry Lance and his colleagues correlated surveys of school library provision, including staffing, hours of availability and resource levels, and specific programme activity with overall pupil educational test results. The Indiana study (Lance et al., 2007) extended this model with consultation of library media specialists (school librarians), principals and teachers to identify their views on the contribution of their relationship to impact. Through this approach, the researchers have identified both the extent of identifiable match between library activity and wider pupil performance and perceived value gained by head teachers and teachers from their school library – a combination of tangible and intangible impacts.

By contrast, the Ohio research (Todd, 2003) and the related studies in other American states and in Australia employed two survey instruments directed at pupils and at the teaching teams in selected schools, identifying how helpful each group saw the library towards pupil learning. The instruments gathered profile information about the respondents and provided blocks of scale-response questions around areas of pupil study and reading. This family of research therefore makes a 'community impact' contribution by providing benefit narratives.

The small-sample study carried out by the English schools inspectorate Ofsted (2006) drew its conclusions from inspection visits to primary and secondary schools looking at the quality of teaching and learning and specifically assessing school commitment to and use of the library. As such, this research offers a standards practitioner perspective and case examples which demonstrate improvements in pupil achievement when measured against previous inspections.

The UK National Literacy Trust research (Clark, 2010) used an online survey to pupils at 112 primary and secondary schools which were committed to the Trust's Reading Champions programme. The survey addressed pupil profile, reading and writing activity, self-judged ability and attitudes. As part of this there were questions relating to school and public library use. As an approach for measuring school library impact, the findings capture pupil perception rather than teacher views on effect. However for a subset of the sample, the researchers were able to correlate individual pupil reading attainment data to responses to identify very specific patterns of correspondence to support impact assessment.

The *"Do School Libraries Make a Difference?"* research seeks to combine these differing methods of measuring impact. Ideally for true international comparability it would make sense to repeat the specific methodology for a given study. However, the UK testing regime is different from that used in the 'Colorado'/Indiana models. A precondition for the 'Ohio' model is that participating schools already have a school librarian and active library programme; arguably by starting from a strong library basis, there might be a bias towards positive findings. It is possible that a predisposition to positive responses could arise from the question-bank format which presents a set of statements in the form of "the school library has helped me ..." and for which no "Does not help" or "Not at all" option is offered in the response set.

In the same way, it would be attractive to attempt consistency with the UK study examples. However, Ofsted looked only at English schools, and the sample was chosen from positive models recommended by local school library support services or identified from previous inspection reports; arguably the findings, although useful, did not therefore reflect a wide picture of the situation in schools. The National Literacy Trust survey exploited the *Reading Champion* connection; thus although there was no guarantee of an existing good library in place, the participating schools all were committed to fostering literacy and reading engagement. The *"Do School Libraries Make a Difference?"* research also does not have access to personal pupil attainment data, as was available to Clark and her team, but relies on publicly available school examination summaries and Ofsted reports. It is recognised therefore that it will not be possible to draw any direct causal link between school library effect and pupil learning and attainment.

The UK school library context is somewhat more complex than in the USA impact studies: in the latter, studies have been conducted on state-by-state basis whereas the UK education context varies considerably across the constituent home nations and within given local education authorities. Additionally, there are several types of school model involved in the secondary sector (eg comprehensives, academies, subject specialism schools, grammars) as well as a variety of funding structures (including state-funded, voluntary-aided, public-private partnerships and fully- independent).

The PIRLS 2006 findings (Twist et al, 2007) identified that the gap between strongest and weakest reading performers was greater in the UK than in any other participating nation; that the UK had the highest percentage of pupils self-rating themselves as having low confidence in reading; and that there was a significant negative correlation between socio-economic status and achievement. The PISA 2009 study (Bradshaw et al, 2010) found that the UK has the highest percentage of immigrant population of any participating nation. This research therefore sets out to look at a range of contexts, including more and less successful schools, to identify whether there is any difference in impact of library engagement in these contrasting situations.

The methodology

Taking all of this into consideration, the "Do School Libraries Make a Difference?" research adopts a mixed method approach:

- online survey of UK secondary school head teachers
- mapping of survey responses received against Ofsted reports and national league tables of school performance as defined by GCSE scores
- online survey of UK School Library Support Services
- interviews with head teachers and staff in a selected sample of schools
- survey of Year 8 and Year 11 pupils in sample schools
- focus group interviews with pupils within sample schools
- survey of parents within sample schools, where possible
- survey of students in sample universities.

Survey instruments for pupils and students incorporate questions about library use and value within a set of wider context questions. The rationale for this is to identify whether there are patterns of use and perception related to personal profile; it is also to try to make the questionnaires as accessible to those without a school library or without motivation to use one as to those who are library users.

Library staff, both in the sample schools and more widely, are being consulted, but not as the prime route into this research process. This is because within the UK the main impetus for investigation of libraries within schools has tended to come from library practitioners and advocates and it is hoped that this research can offer a neutral perspective.

Rationale for focus on Years 8 and 11:

The intention is to look at pupils at a relatively early stage in their secondary schooling, and also at those who are at a key point (GCSE) in their education. It is felt that Year 8 pupils are likely to have become settled into their school environment, to be more relaxed about sharing views in the focus group environment, and to be in a better position to reflect on any engagement they may have had with libraries through primary school and their first year of secondary school, than pupils in Year 7 who will only recently have made the transition to secondary school. Students in Year 11 will be pursuing a narrower range of subjects, more in line with their interests, than the Year 8 pupils, and will be approaching a further specialisation of studies which may influence their views on library relevance. They will also be at a key examination stage, which might affect their perception of any library contribution to research behaviours. This stage is also the test point tied to school league table ranking which is part of the research mapping process. (Equivalent year targeting will be applied across the four home nations' different education systems.)

Selection of sample schools:

The sample is planned to include a mix of school models and funding structures in England, Wales, Scotland and Northern Ireland. The schools are being selected to include some in and some not in areas served by school library support services. The sample will include schools with high and low free school meal roll counts. The sample will include schools with high and low attainment as measured by school league table position. The total sample will be approximately 60 schools, with the potential to reach approximately 30,000 pupils.

Predicted limitations of methodology chosen:

Even with 60 schools, given the range of contexts and variety of models across the UK, this will only allow a very small number of case representations within each of the identified parameters. Without substantial detailed evaluation of the background of each pupil, it will only be possible to make a relatively superficial analysis of the effect of prior primary school experience, family influences and other socio-economic factors which may impact on student perceptions. As parental consent will be required for any participation of pupils and parents in this research, it is possible that a bias may be introduced if a number of pupils are unable to contribute their views.

Piloting has shown that it is harder to engage participation from schools who are at the low end of league table standing and who are not committed to some form of school library. Whilst the study is concerned to maintain neutrality, some schools feel threatened by any investigation which might be perceived as implying a criticism. Evidence from other research studies also suggests that parental response to surveys can be poor, so this approach may only be able to add to the community narrative rather than be of any statistical significance.

Findings from the pilot phase

Clark (2010, p8) noted that pupils who used their school library did so for a variety of reasons. In particular girls liked it because it had interesting books and activities whereas boys placed greater value on non-book materials and computers. Pupils also felt it was a friendly space. Those who did not use it tended to have correspondingly opposite perceptions of the library. We have found that pupils value the school library for a range of reasons, but that there was insufficient data at this stage to make any gender-related distinctions. Pupil comments support the role of the school library in helping to meet digital fluency challenges:

> *I like it that they give us useful [web links] for my subjects … it's difficult to know what is the right stuff by myself"*
>
> **(Boy – Y8)**

> *"I had to do a debate in class on fashion brands and sweatshop labour … Mrs [ ] helped me find information online and in the LRC and showed me how to choose bits to make my case"*
>
> **(Girl – Y9)**

and the development of the link between library, reading enjoyment and literacy:

> *"I read a lot – I think my writing is stronger because I like reading"*
>
> **(Boy – Y9)**

> *"The books are labelled so that you can find ones at your level… I can read better now... I remember more of the story when I read now"*
>
> **(Boy – Y8)**

Primary school pupils we spoke to who used their school library extensively tended to enthuse about the choice of books and to report active encouragement by teachers to be reading, fiction or non-fiction.

We found pupils who were not interested in using the library. Generally they felt no need for it or had other activities which occupied out-of-class time within the school day. At this pilot stage of the study it was not possible to map any correlation between pupil learning achievement and non-library use. However we also found pupils who were not motivated to read but still felt they gained from having the library:

> *"I don't really like reading but the LRC has DVDS, stories on CD and sports magazines"*
>
> **(Boy – Y8)**

As found in other studies, pupils also indicated the importance of the library as a space for private study, for games club, for computer use and for socialising – particularly when there was little other space available to them during out-of-class time in school.

> *"My school library is a place I can go to do homework"*
>
> **(Girl – Y9)**

> *"I go with my friends to the library …we like to talk about what we are reading"*
>
> **(Girl – Y8)**

A number of pupils recognised library contribution into their learning growth:

> *"The LRC has helped me to study better. Sometimes in tutor period we go to the LRC and the librarian shows us how to use different resources"*
>
> **(Boy – Y11)**

> *"I'm better at working by myself now. I know how to plan my work."*
>
> **(Girl – Y9)**

> *"In history we've been shown how to use our research to write our own paper and not just copy. We had a lesson from the librarian on how to put together a bibliography. We will need to use these skills at university"*
>
> **(Girl – Y12)**

It was noticeable that pupils found this reflection on the qualitative relationship of the library and librarian on their learning hard to articulate; they were more confident discussing how they used the library or the study site as a source of information than in considering how library engagement improved understanding and skills. This was particularly true of the younger pupils. Arguably this might be expected, as pupils gradually develop information literacy competency; for some, however, it was clear that they struggled to find the language to express such reflective concepts. We are concerned that without the vocabulary and framework to scaffold their reflection, not only will it be harder for pupils to build skills but to get the most from library services in school and at university.

Interestingly, this was paralleled to some extent in discussion with teachers who also found it hard to express what they were expecting from pupils in terms of their information skills, either as existing competencies or to be demonstrated in work set. Few actively seemed to plan to assess evidence of research skills at Key Stage 3 though more saw this as a skill they aimed to develop further up school. Where there were interesting collaborative initiatives between teachers and librarians these generally seemed to have been initiated by the librarian or stemmed from a keen interest by the head teacher in research skills across the school.

Harzell (2002) found that head teachers (and by extension therefore teachers) were often not aware of what the school library and librarian could offer. We have found that while there are excellent examples of librarians providing annual reports to the school management team, sometimes these are not framed within the context of the school's learning goals. Equally there are positive instances of librarians regularly updating teaching colleagues with professional information and with summaries of pupil engagement. The best mapped activity to school priorities, included vignettes of pupil 'comment' and were in a form which could easily be communicated to the wider school community. These examples tend to be initiated by qualified library professionals. However there are also a number of schools where teachers were not aware of any library contribution to their departments, and there was infrequent communication of reading and information literacy engagement and development of pupils.

Equally, most of the teachers and librarians we spoke to at this pilot stage were unable to say how they saw the contribution of the library being communicated to parents. A few schools featured their library prominently within the publicly visible face of their website or had a clear link in the parent/home section. Quite a number placed their link on internal pages only. Those with an outward presence were more likely to be providing snapshots of ongoing activities and participation in school events.

The School Library Commission, when taking evidence from practitioners, found that the substantial majority of the case material supplied had never been publicly shared. Lonsdale (2003), reviewing Australian studies, identified a lack of systematically aggregated research. In talking with teachers and librarians during the pilot phase of this project it is evident that a number of practitioners lack the time and the confidence to share their experiences and activities beyond the workplace. A key goal of this research is to facilitate such sharing in a more structured evaluation-based form. We had originally intended to work in collaboration with the Museums, Libraries and Archives Council and to contribute all case material arising from the *"Do School Libraries Make a Difference?"* research into the MLA case bank. However, following the closure of MLA, we are setting up an impact resource bank which will hold case studies and community narratives of pupil, student and teacher 'stories'. It is our intention that this material will be added to beyond the immediate life of this research project.

Conclusion

The findings of the pilot phase suggest that the hypothesis that school libraries do have a positive impact on pupil learning and development will be demonstrated. The research cannot however expect to show any direct cause and effect relationship on pupil attainment because there are so many external factors which impinge upon pupil experience and the study does not map individual pupil test results to library participation. The full study will now

take place across 2011-12. There remains a risk that participation will be greater from schools predisposed to positive library involvement which could skew the final picture.

However it is hoped that the expected project outputs of an open-access case bank of good practice examples where libraries are contributing impact to pupil learning, and of teacher, pupil and student 'stories' will be of value to practitioners and to decision-makers in deciding how to target time and resources.

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Using lean to teach the technical services value stream: a course proposal

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Introduction

The course, *Using Lean to Teach the Technical Services Value Stream*, was the outcome of a capstone project for the University of Alaska's online graduate certificate program in Supply Chain Management with a concentration in Lean Operations. Throughout this program, I applied lessons learned within two library technical services departments, a community college and a research university, to resolve process problems and improve the quality and turnaround times of library materials. Lean techniques and principles were applied to streamline operations and encourage a culture of continuous improvement. Supply chain management and logistics concepts were used to reframe issues and to encourage a common vocabulary as staff across departments, or units, learned to improve cross-functional process performance and demonstrate where and how value is created. As I evaluated process performance results I realised the need for this proposed course.

This course will be of value to those interested in learning how to evaluate and improve the technical services processes critical to the library's success in achieving the core values and initiatives related to resource discovery and access. Learning about the supply chain of information, the book publishing industry, and the library, encourages a larger view of the role technical services plays in facilitating the flow of information from the source to the customer. Logistics concepts provide an alternative view of the movement of inventory from department to department or from process to process. Reframing backlogs into inventories provides a neutral way to begin discussion of problems related to slow moving or inaccessible materials. Lean provides affordable and easy-to-understand principles and techniques that can be applied in small steps, moving the department towards a culture of continuous improvement.

Definitions

Supply chain management (SCM) is a concept used to describe the activities surrounding the management of a system of organisations and the processes involved in transforming raw materials into finished products or services delivered to the end customer. SCM is a term frequently associated with the private sector, but in today's complex economy, all sectors are involved within this realm. Libraries, for example, are an integral part of the information supply chain, acquiring products and services from an assortment of private sector vendors that will be delivered to the library's end users. The technical services department, being the most influential and knowledgeable of how content is acquired, processed, and delivered, typically acts as the focal supply chain of a library system.

Logistics pertains to the movement of inventory from organisation to organisation or department to department. Libraries are in the business of managing various forms of inventory, eg, print books, media, electronic resources. Logistics concepts and strategies serve as a neutral way to develop more effective policies and practices as well as to consider the implications surrounding, or understanding, a library's Just in Time or Just in Case collection management decisions or initiatives.

Lean is a process improvement method that first defines value from the customer's perspective and then designs processes that maximise customer value while minimising waste or removing steps in a process that don't add value. The Lean Enterprise Institute (2009) identifies the following Lean principles:

- identify steps in the process that add customer defined value
- identify waste in transportation, wait, overproduction, defect, inventory, motion, or extra processing

- eliminate the steps in the process that don't add value or are unnecessary
- make sure steps flow in an efficient sequence
- establish pull, ie, make sure the steps in the process don't create bottlenecks
- continue to improve the process

Through the use of a variety of Lean tools, techniques, and strategies, library technical services staff can measure, improve upon and demonstrate the extent to which key processes help a library meet its core values, mission, or initiatives related to resource discovery and access.

Rationale

Libraries depend on their technical services staff to acquire, process, catalog, organise, and make accessible the resources and materials needed to support the library's mission and core values (eg, access to information, intellectual freedom, democracy, and education). But, if technical services processes are inefficient or costly, backlogs can form, processing times can slow down, funds can be wasted, information may be inaccessible, and service levels compromised – putting at risk the core values the profession is charged with advocating and supporting.

The most common problems in technical services typically surround inventory management – slow moving inventory, slow turnaround times, and the formation of backlogs. Howarth, Moor, and Sze, (2010), published an extensive literature review regarding the perception and causes of cataloging backlogs from 1940 through 2010. The authors found that little progress had been made over the decades in terms of defining, quantifying, measuring, or resolving cataloging process problems. The 2009 Library of Congress *Study of the North American MARC Record Marketplace, (LC Study)*, is cited in their literature review and affirms that despite the introduction and evolution of automation technologies and shared bibliographic databases of catalog records, backlogs in U.S. libraries continue to grow. A survey of 972 libraries found that 56 percent of libraries reported cataloging backlogs that were increasing in size in spite of adequate cataloging capacity (Fischer, Lugg 2009, p 11). Both the literature review and the LC Study point to the 2004 article, "Cataloging: how to take a business approach," which recommends that catalogers understand current cost structures, establish production goals, and measure performance in order to improve cataloging processes and resolve backlogs (Fischer, Lugg & Boese 2004).

Similarly, Shelley Phipps, in 2004, outlines several method neutral process improvement steps in her article, "The system design approach to organisational development: the University of Arizona Model," as a means to understand cost structures and measure performance. Process improvement is defined as "a research system that supports the organisation's ability to assess what customers' value, to analyse performance and to use the analysis to make improvements" (90). Phipps acknowledges that as necessary as these methods are to achieving stated objectives, they are not widely understood in the library profession. Library schools do not teach this skill set. "Faculty do not prepare students to understand library organisations as a set of processes that produce outcomes. Data-gathering and analysis is usually limited to one course in basic research methods. Statistical process control methods are seen as complex and undoable, even though simple applications are available" (95).

This course, while focusing on technical services functions and processes, uses the application of Lean to teach the skills necessary to analyse and measure process performance – addressing the knowledge gap referenced by Phipps and others. Readings and case studies from the library, logistics, and supply chain management literature are used to reframe technical services functions, providing students and staff a means to demonstrate how they create, and continuously improve, the value that is core to a library's professional mission and purpose.

Course overview/description

Learning goals of the course include both conceptual and tools-based outcomes. The course teaches the application of Lean principles, logistics and supply chain management concepts to build technical services staff competencies in the areas of adaptability, communication, customer service, organisational awareness and participation, critical thinking and problem solving. Lean techniques and statistical tools are taught to build skills in the areas of process measurement and analysis. Students will learn to benchmark processes and to improve and measure process performance. An important outcome of the course is staff, (ie, students), acquiring the ability and the confidence to articulate and demonstrate how processes in the technical services department create the value stream libraries depend on to deliver quality services and achieve organisational values, goals, or initiatives.

Audience

The target audience for this course includes library professionals or paraprofessionals who currently work in a library and are interested in learning a process improvement methodology that can be directly applied to the technical services environment.

Format

The online format of the course is conducive to knowledge sharing and discussion among peers from a variety of technical services settings. The online environment provides easy access to a repository of resources and sample work, eg, process maps, case studies, etc.

Recommended texts

Goldsby, TJ & Martichenko, R 2005, *Lean Six Sigma logistics: strategic development to operational success*, J. Ross Publishing, Boca Raton.

Madison, D 2005, *Process mapping, process improvement, and process management: a practical guide to enhancing work and information flow*, Paton Professional, Chico.

Maskell, B & Baggaley, B 2004, *Practical lean accounting: a proven system for measuring and managing the lean enterprise*, Productivity Press, New York.

Learning objectives and outcomes

At the conclusion of the course students will be able to:

- articulate and demonstrate, through the use of process data, how technical services functions help a library achieve core values and initiatives related to resource access and discovery
- describe the information supply chain and the role of the library and of technical services within the information supply chain
- identify the various customers and stakeholders within the supply chain
- understand logistics concepts that relate to technical services: categories of inventory, Just in Time and Just in Case, Work in Process
- recognise the similarities and differences of some of the more common process improvement methodologies, eg, Lean, Six Sigma, Total Quality Management
- use appropriate Lean analysis techniques to identify waste or diagnose process problems
- determine the metrics that will enable measurement of processes and understand the options available for gathering process related data
- redesign a process according to Lean process design principles
- understand the concept of value stream mapping and how it can be used to link technical services process goals to the goals, mission, and vision of the library and/or the larger organisation.

Evaluation and assessment

The case study approach is used to assess student learning and provide students with a tangible report at the end of the course. All of the assignments and exercises focus on specific concepts, competencies, and skills that can be utilised in the individual case studies.

Course outline

Unit 1: The Role and Value of Technical Services

Unit 2: Technical Services within the Information Supply Chain

Unit 3: Logistics of Technical Services

Unit 4: Introduction to Lean: Principles, Tools and Techniques

Unit 5: Process Mapping 1: Introduction

Unit 6: Metrics and Measurement

Unit 7: Process Mapping 2: Metrics and Analysis

Unit 8: Quality at the Source/Root Cause Analysis

Unit 9: Process Mapping 3: Redesign

Unit 10: The Technical Services Value Stream

Sample units

Unit 2: Technical services within the information supply chain

Objectives and outcomes:

- describe the information/book industry supply chain
- understand the role of libraries within the overall information supply chain and articulate the role the technical services department plays as the library's 'focal' supply chain
- identify the range of customers and stakeholders within the supply chain.

Sample discussion:

Describe the library's role and placement within the book industry supply chain.

The book industry supply chain includes authors, illustrators, publishers, printers, distributors, wholesalers, retailers, libraries, and individual consumers. The SCM can be envisioned as a series of processes beginning with ideas drafted to paper, transformed into a book and finally sold to a bookstore's customer or loaned to a library's patron (Rogers & Tibben-Lembke 1998). At each stage of the supply chain, value is created according to the organisation's strength or competitive advantage. Successful authors create value through their writing, publishers add value to the process through marketing and promotion, printers will produce in bulk when possible to keep costs down, vendors or wholesalers will decide on an inventory strategy according to customer demands.

Explain why an awareness of the book industry supply chain is important.

Library personnel, as both customers and stewards of public funds, should be as aware of the library's role and place within the book industry supply chain as their for-profit partners, the authors, publishers, and so on. An awareness of the library's supply chain partners will aid in negotiations with book vendors on matters of price, discounts, and returns. An understanding of the vendor's relationships with publishers, their inventory management practices, any value added services offered, eg, cataloging or collection analysis, and their distribution center locations will provide insight into selecting the most appropriate vendor, predicting fill rates, and turnaround time.

Readings:

Cope, B 2001, 'Making and moving books in new ways, from the creator to the consumer' in *Digital book production and supply chain management*, eds B Cope & D Mason, Common Ground Publishing, Altona, VC, pp. 1-20.

Dugan, RE, Hernon, P & Nitecki, D 2009, 'Assessment and evaluation' in Viewing library metrics from different perspectives: inputs, outputs, and outcomes, Libraries Unlimited, Santa Barbara, pp. 45-75.

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Porter, M 2001, 'The Value Chain and Competitive Advantage' in *Understanding business: processes*, ed. D Barnes, Routledge, London, pp. 50-64.

Rogers, DS & Tibben-Lembke, RS 1998, *Going backwards: reverse logistics trends and practices*, University of Nevada, Reno, Center for Logistics Management, Reno.

Assignments:

Create a library supply chain map that depicts the supply chain of your library

Using the supply chain map of your library, identify and describe the customers and suppliers involved with your process, internal and external

Unit 5: Process mapping 1: introduction

Objectives and outcomes:

- understand the purpose of process mapping and the benefits (communication, visual management, view of upstream and downstream activities or processes and how they interact)
- understand the difference between process mapping and value stream mapping
- create a functional-activity and task procedure process map.

Sample discussion:

Describe the purpose of process mapping.

Depending on your source, process mapping can depict various levels of process detail. Madison's (2005) text details three levels, beginning with the macro level. The macro level process map provides the least detail, illustrating between five and seven steps. The intention is to provide the big picture and show where a process begins or ends (21-23).

The functional-activity flowchart is the next level of detail and highlights the function and activities within a process. Benefits and advantages of this flowchart include:

- easy to spot problems without getting caught up in the details
- disconnects between individuals and departments can be revealed
- they can be used to calculate process, cycle, wait, and move times
- activity and process costs can be generated (25).

The task-procedure flowchart is the most detailed-- scrutinising one box or diamond from the functional-activity flowchart. Madison explains that this flowchart is used in four situations:

- when a problem re-occurs in one of the functional boxes within the functional-activity flowchart
- when new activities are created as a result of a redesign

- validation or testing purposes
- training (30)

Readings:

Madison, D 2005, 'Process mapping' in Process mapping, process improvement, and process management: a practical guide to enhancing work and information flow, Paton Professional, Chico, pp. 19-46.

Assignment:

Create and post a macro and a functional-activity flowchart that accurately depicts the current state of your selected process

Implement traveler or other mechanism to begin collecting data on selected process

Unit 6: Metrics and measurement

Objectives and outcomes:

- understand the difference between an input, output, and outcome, etc.
- understand how performance measurements differ at various process levels (macro vs. functional or task)
- learn about and apply techniques to gather process related data

Sample discussion:

How does process data demonstrate value and list methods for data gathering.

From the text: *Viewing Library Metrics from Different Perspectives*, "Institutional accountability is demonstrated in part, by the development, compilation, review, and analysis of effectiveness and efficiency metrics. These metrics are continuously applied to quantify and qualify the library's progress toward meeting its stated mission and purpose…

- inputs are resources used to support the library's infrastructure, ie, collections, staffing, etc
- processes refer to what each program does with inputs to fulfill mission, ie, order, catalog, and shelve collections
- outputs are the direct products of the process – and identify how much work is performed, services provided, etc
- outcomes focus on the results (impact of programs of study on customers) and the quality of services provided" (Dugan, Hernon & Nitecki 2009, p 15).

Data that can be gathered about a process includes: Processing time, lead time, batch size, flow rate, customer expectations, Takt time, percentage of output complete and accurate, reliability, unit cost, and so on. Methods of gathering data include: travelers, cycle time sheets, Gemba walks, customer report cards, ILS reports, and so on.

Readings:

Madison, D 2005, 'Process mapping' in *Process mapping, process improvement, and process management: a practical guide to enhancing work and information flow*, Paton Professional, Chico, pp. 19-46.

Voyles, JF, Dols, L & Knight, E 2009, 'Interlibrary loan meets Six Sigma: The University of Arizona Library's success applying process improvement,' *Journal of Interlibrary* Loan.vol. 19, no. 1, pp. 75-94.

Assignment:

- gather customer feedback and convert feedback into process metrics
- compile process related data, benchmark and document…

Conclusion and Unit 10: the technical services value stream

The final unit looks at sustaining the seeds of continuous improvement that have been planted by focusing on a single process improvement project. Students, at this stage of the course, have acquired the basic skills and knowledge to further apply lessons learned on additional processes and consider performance measurement of the entire technical services value stream. A value stream is the sum of all related processes that deliver (or provide access to) a product or service. For example, the value stream of books would include the processes of selection, acquisition, cataloging, and shelving.

Objectives and outcomes of this unit involve consideration and practices of the value stream management (VSM) framework outlined by authors Maskell and Baggaley (2004). The value stream performance measurements are similar (or the same) as the single process measurements but reported less frequently. The results are used to benchmark the departments' current state and illustrate continuous improvement and progress towards the performance goals that lead to achievement of the library's larger organisational goals or initiatives, especially those related to discovery and access.

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An outcome study on the learning programs at the Novartis Knowledge Center (NKC)

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Introduction

Novartis was formed in 1997 with the merger of two large Swiss firms, Sandoz and Ciba. Both firms were based in Basel, Switzerland and had large operations in New Jersey, USA. To answer the challenge of a competitive environment, Novartis transformed itself into a lean global company. Currently Novartis has 100,000 employees in 140 countries, and offers a wide range of healthcare products through the Pharmaceutical, Vaccine and Diagnosis, Sandoz (generics) and Consumer Health divisions.

The Novartis Knowledge Center (NKC) is the only library & information service hub in the global Novartis community. NKC has 5 physical locations: East Hanover, NJ, Cambridge, MA, Emeryville, CA as well as Basel, Switzerland and Horsham in the United Kingdom. Novartis users can access e-library services 24/7 from anywhere in the world. The collection consists of electronic journals (3000+), e-books (4000+) and databases (nearly 200) delivered via the library portal.

The NKC Learning Program outcomes study is part of a continuing process improvement of the Novartis Knowledge Center's global e-library service portfolio. The e-library model was initially presented at the ICDL 2010 conference in New Delhi, India (Chaudhuri, B., He, L., Juterbock, D. 2010). The presentation of "Global Library Services in Novartis Knowledge Center – meeting worldwide information need at Novartis", introduced the goal of the NKC learning programs. The goal is to enable users to better utilise the e-library for their job performance, as learning plays an important role in execution for business growth (Edmondson, A. 2008) in the Knowledge Economy (Business Dictionary.com) (see Figure 1).

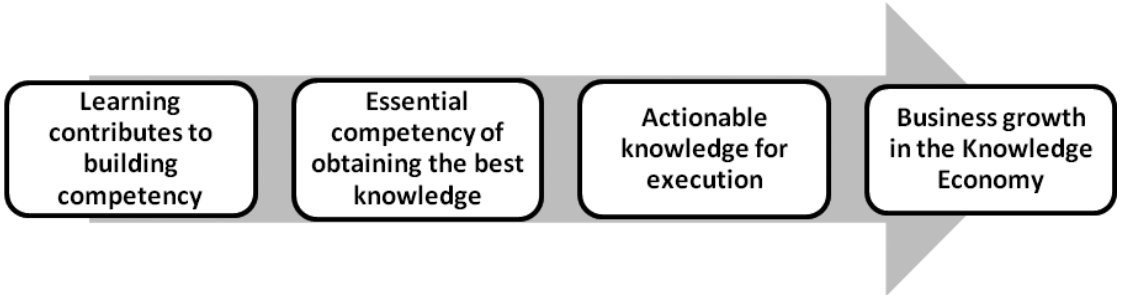

Figure 1: Role of learning for business growth in the Knowledge Economy

While generally accepted that a good learning program adds a competitive advantage at the human capital level, we sought to measure the reality.

In March 2008, Outsell Inc. conducted an "Information Needs Assessment & Customer Satisfaction" on behalf of NKC. This survey concluded that one of the most valuable NKC roles is to "Provide training and advice about searching and effective use of information sources" (Lustig, L, McShea, J, and King, S. 2008). This learning program study analyses, using quantitative methods, how well the NKC Learning team has performed in addressing this expectation.

Methodology

NKC offers three types of learning programs. NKC Orientations are geared primarily for new hires. This learning program provides an overview of NKC information resources that is suitable for different job functions and disciplines. The second program is Database Targeted (DT) learning. This program is tailored for specific customer groups with an emphasis on their special information needs. The third program is either vendor led sessions on a specific product or one-on-one training sessions and is classified as "Other". This study focuses on measuring outcomes of the first two types of programs.

The expected learning outcomes are based on the following hypotheses:

After engaging in an NKC learning program,

1. Novartis associates return to the NKC portal and utilise the resources more and search them more efficiently

2. For users, who rely on information for decision making, the amount of time spent on utilising NKC information resources, correlates positively with an improvement in their job performance

To measure this hypothesis, a core survey template was designed according to the Key Performance Indicators (KPIs) on behavior, attitude and results based on Kirkpatrick's four level learning evaluation model (Winfrey, E. 1999). The KPIs were observed and evaluated by questionnaires focusing on the following attributes:

1. Information searching efficiency

2. Decision making process/business impact

3. Behavior/attitude change–return more often o use NKC information resources

4. Job performance improvement

A web based survey tool was created and sent out on a routine basis after each learning session. The survey covered the three learning programs as well as three delivery types, Distance, Classroom, and Other. 671 associates participated in NKC learning programs in 2009. 507 of them were surveyed and 360 completed the survey (70.87% response rate).

The survey data was collected, extracted and analysed in a standardised/normalised format for this study. Participants' business functions, divisions and geographical locations were also mapped for analysis.

Findings and discussions

1. **40% of total attendees were distance learners (see Table 1).**
   It indicated that distance learning is the most utilised way of delivering NKC global learning programs.

Number of attendees – NKC learning sessions – 2009				
	NKC Orientation	**DT group**	**Other**	**Total (%)**
Distance Learning	112	33	125	270(40.2)
Classroom	125	105	0	230(34.3)
Other	5	35	129	171(25.5)
Total	242(36.1)	172(25.6)	254(37.9)	671(100)

Table 1: Number of attendees – NKC learning sessions – 2009

2. **93% and 82% of participants in the NKC Orientation and Database/Targeted groups had an overall positive learning experience. We need to further investigate the "Neutral" responses to plan for future improvements.** From the NKC Orientation group, 93% (152/163) responded to Agree or Strongly Agree and 6% (10/163) claimed Neutral to "Overall experience of the learning session was positive"; From the DT group, 82% (145/176) responded to Agree or Strongly Agree, to the positive experience while 16% (28/176) were Neutral.

3. NKC's main client groups come from the **Research (46%), Development (22%), Marketing (14%), Generic and Consumer Health (7%) departments** (see Figure 1). NKC learning programs also reach more than 30 locations across 20 countries

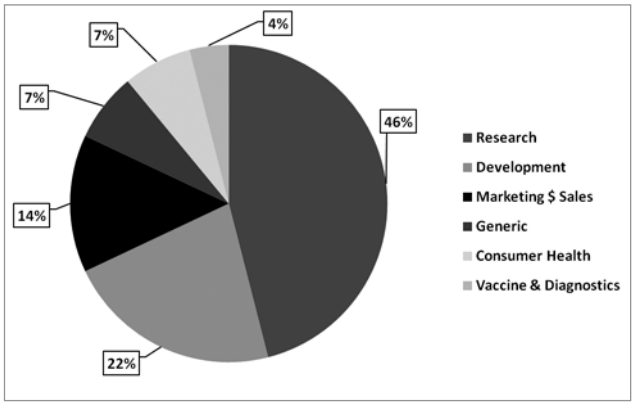

Figure 1: NKC 2009 Learning program division distribution

4. **93% of the participants** (290 out of 311, see Table 3) **need information for decision making.** This indicates that NKC learning programs, potentially, can have a large business impact on its leaning client groups

Responses to "In my job, I rely on information for decision making"						
Learning programs	Several times a week (%)	Several times a month (%)	Once a month (%)	Less than once a month (%)	Not at all (%)	Total
NKC Orientation	54 (34.2)	53 (33.5)	19 (12)	16 (10.1)	16 (10.1)	158
Database/Targeted	80 (52.3)	45 (29.4)	16 (10.5)	7 (4.6)	5 (3.2)	153
Total	134 (43.1)	98 (31.5)	35 (11.3)	23 (7.4)	21 (6.8)	311

Table 3: Responses to "In my job, I rely on information for decision making"

5. **Database/Targeted (DT) learning programs produce a higher business impact for the participants**
5.1 There is a significantly higher potential business impact from DT learning programs compared to NKC Orientation s ($p<0.05$, see table 4) as the DT groups rely more on information for their decision making.

Z-test on two categories on "Rely on info for decision making"					
	rely on info from all frequencies	not at all	Total	Z value	p value
(N_1)NKC Orientation	90	10	158	2.2	<0.05
(N_2)Database/Targeted	97	3	153		

Table 4: Z-test on response to "I rely on information for decision making" from two NKC learning programs

5.2 On average, DT participants have spent significantly more time per week, in the past 12 months, on information gathering compared to NKC Orientation participants. ($p<0.001$, see table 5). This implies that NKC should engage more with DT groups as potentially, they have more information needs.

T tests on L&T programs on the time spent on info gathering in past 12 months						
	N(i)	Mean X(i)	SD(i)	conf level(%)	Test(95%)	P value
NKC Orientation	148	4.76	24.7	95%	1.64	>0.005
DB/Targeted	139	9.55	3.11	100%	16.13	<0.001

Table 5: T test on time spending on information gathering in past 12 months

5.3 Information needs are different for the two learning groups. DT participants spend time gathering information on a steady basis while NKC Orientation participants spend less time gathering information time as time passes (see Figure 3). This shows that DT participants have a higher dependency on information for their jobs.

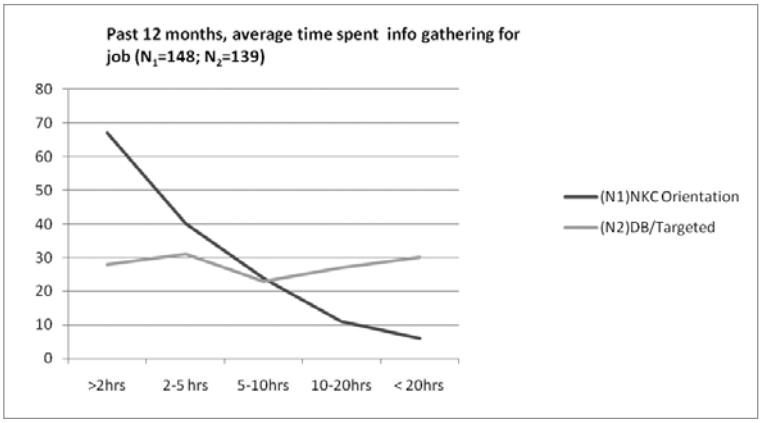

Figure 3: Average time spent on information gathering

6. **NKC learning programs have improved the participants' information seeking efficiency and effectiveness.**

Overall, NKC information resources in learning programs were relevant to their jobs. As information is needed for decision making, the survey asks two questions regarding the finding of relevant information effectively for job performance.

- ~90% (147/164) of NKC Orientation participants "Agree or Strongly Agree" that they learned how to find information to improve their job performance. 10% (17/164) of the participants were still not able to find the information they needed.
- ~90% (148/164) of participants indicated that NKC resources presented to them would be useful for their job. 9.8% (16/164) of participants replied "Neutral"
- ~88% (152/173) of DT participants "Agree or Strongly Agree" that the DT programs have improved their information seeking skills. 12% (21/173) of participants replied "Neutral or Disagree"
- ~85% (124/146) of the DT participants "Agree or Strongly Agree" that the information resources presented to them were relevant to their jobs. 15% (22/146) of participants replied "Neutral (or Disagree)"

7. **All the participants who rely on information for decision making indicated that they would spend more time using NKC information resources after their participation in the learning programs.**

- NKC Orientation participants claimed that they were likely to devote 66% of their information gathering time (3.14/4.8 hours per week) on utilising NKC information resources (see Table 6)

Time spent on information gathering after a NKC Orientation and in the past 12 months							
Survey questions	<2 hrs	2-5 hrs	5-10 hrs	10-20 hrs	< 20 hrs	total responses	average hours/ wk
Q 3. After this orientation, during an average week, I am likely to use NKC resources for...	64	41	18	1	0	124	3.1
In past 12 months, on a average wk, I spent hours	67	40	24	11	6	148	4.76

Table 6: Time spent on information gathering after a NKC Orientation and in the past 12 months

- After the DT learning programs, the participants claimed to utilise more NKC information resources for their job need. This confirmed the hypothesis that users would return to utilise NKC information resources more on a continuing basis.

NKC will produce significantly more business impact by working with DT participants as they will use NKC resources more for decision making after their participation in learning programs. ($p<0.0001$, see table 7)

X^2 test Comparison on before and after the DT programs					
	Use NKC resource	Not at all	Total	X^2 value	P value
Before	69	75	144		
After	138	2	140		
Total	207	77	284	92.17	<0.0001

Table 7: X2 test comparison on before and after DT learning programs

- The number of users in the DT group with information needs for decision making, correlate positively to their NKC information resource utilisation according to Spearman Non-parametric co-relation test (R=0.90, see Figure 4)

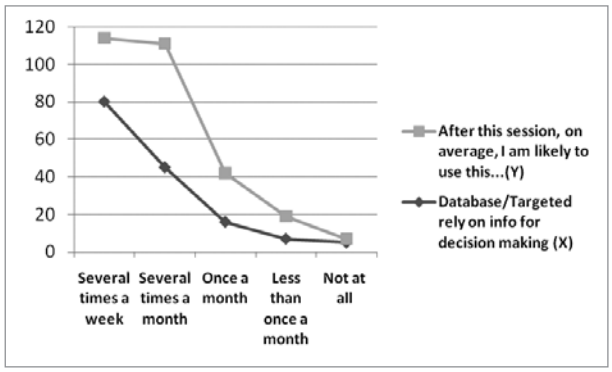

Figure 4: Spearman Non-parametric test on Co-relation between dependency on information in DT group for decision making and using NKC resources

All the key findings from the post learning survey data, have confirmed the outcomes defined in the key performance indicators used in this study.

Conclusions

1. **The key performance indicators on Behavior, Attitude and Results were confirmed this study.**

KPI on Behavior and Attitude change after NKC learning programs

- 90% of NKC Orientation participants learned how to find useful information for their job needs (Key finding 6.1). According to their comments, they will spend 66% of their information gathering time in using NKC information resources (see Table 6);

- 88% of the DT group indicated that they have improved their information resource searching skills (Key finding 6.1), and they indicate that they will devote significantly more time on information gathering using NKC resources($P<0.0001$, see Table 7)

KPI on Results, business impact, job performance and decision making process

- 93% of all NKC learning participants need information for their job performance (Key finding 4)

- 90% of the Orientation participants claimed that NKC resources will be useful for their job (Key finding 6.1)

- 82% of DT participants responded that the NKC resources presented were relevant to their jobs (Key finding 6.1).

2. **NKC produces higher business impact (Results) as the user utilises more NKC resources in the Database Targeted learning programs.**

- DT groups claimed to utilise significantly more NKC information resources ($p<0.001$, see Table 7) in a steady fashion (See Figure 3). It not only improved users' job performance, but also improved their efficiency in using NKC resources

- The amount of time spent by the DT group on utilising NKC resources correlates positively to their job performance ($R=0.90$, see Figure 4.)

NKC should continue to invest more time and energy in delivering targeted programs as it produces higher business impact.

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Appendix

Learning Session Evaluation – Databases

1. *This session improved my searching skills in this database*
   Strongly agree
   Agree
   Neutral
   Disagree
   Strongly disagree

2. *This database is relevant to my job*
   Strongly agree
   Agree
   Neutral
   Disagree
   Strongly disagree

3. *Before this session, on average, I used this database*
   Several times a week
   Several times a month
   Once a month
   Less than once a month
   Not at all

4. *After this session, on average, I am likely to use this database*
   Several times a week
   Several times a month
   Once a month
   Less than once a month
   Not at all

5. *The instructor communicated session material well*
   Strongly agree
   Agree
   Neutral
   Disagree
   Strongly disagree

6. *The length of the session was appropriate*
   Strongly agree
   Agree
   Neutral
   Disagree
   Strongly disagree

7. *In the past twelve months, to gather information needed from any information sources for my job, per week, I have spent an average of*
   Less than 2 hrs
   2 to 5 hrs
   5 to 10 hrs
   10 to 20 hrs
   20+ hrs

8. *In the past twelve months, to gather information needed from NKC information sources for my job, per week, I have spent an average of*
   Less than 2 hrs
   2 to 5 hrs
   5 to 10 hrs
   10 to 20 hrs
   20+ hrs

9. *In my job, I rely on information for decision making*
   Several times a week
   Several times a month
   Once a month
   Less than once a month
   Not at all

10. *My overall experience of the session was positive*
    Strongly agree
    Agree
    Neutral
    Disagree
    Strongly disagree

11. *Comments/suggestions?*

12. *The online session was easy to launch*
    Strongly agree
    Agree
    Neutral
    Disagree
    Strongly disagree

13. *The online session was easy to understand*
    Strongly agree
    Agree
    Neutral
    Disagree
    Strongly disagree

Orientation Learning Session Evaluation

1. *During this orientation, I have learned how to find the information I need to perform my job*
   Strongly agree
   Agree
   Neutral
   Disagree
   Strongly disagree

2. *This orientation has helped me to recognise that NKC resources will be useful in my job*
   Strongly agree
   Agree
   Neutral
   Disagree
   Strongly disagree

3. *[For those who agree or strongly agree with question #2. Others skip to question #4] after this orientation, during an average week, I am likely to use NKC resources for*
   Less than 2 hrs
   2 to 5 hrs
   5 to 10 hrs
   10 to 20 hrs
   20+ hrs

4. *The instructor communicated session material well*
   Strongly agree
   Agree
   Neutral
   Disagree
   Strongly disagree

5. *The length of the session was appropriate*
   Strongly agree
   Agree
   Neutral
   Disagree
   Strongly disagree

6. *In the past twelve months, to gather information needed from any information sources for my job, per week, I have spent an average of*
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   Several times a week
   Several times a month
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   Less than once a month
   Not at all

9. *My overall experience of the orientation was positive*
   Strongly agree
   Agree
   Neutral
   Disagree
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10. *Comments/suggestions?*

11. *The online session was easy to launch*
    Strongly agree
    Agree
    Neutral
    Disagree
    Strongly disagree

12. *The online session was easy to understand*
    Strongly agree
    Agree
    Neutral
    Disagree
    Strongly disagree

Technology-based quality evaluation instrument for teaching and learning: UNISA Library Services

J C Henning
Deputy Executive Director: Unisa Library

1. Introduction

1.1 Open Distance Learning (ODL)

Open Distance Learning (ODL) applies a set of methods or processes for teaching a diverse range of students[1] located at different places and physically separated from the learning institution, their tutors/teachers, and other students. An ODL model entails a student-centred approach that is built on integrated systems and engaged learning. ODL involves learning-teaching interaction, and students actively engage and interact with the institution, their lecturers, study material and fellow students. The learning-teaching interaction complements well-designed independent study packages as well as the required learner support throughout their studies.

Some institutions use the terms ODL and Distance education/learning interchangeably. However, Unisa chooses to combine the characteristics of distance education (a mode of instruction) and the approach of open learning into open distance learning. This will be discussed in the next section.

Internationally, ODL has experienced phenomenal growth. Current trends in ODL internationally display the use of resources, especially technology, in a radically different way from first and second generation approaches. The trend is further to create an environment of participation and self-help, away from the industrialised, centralised, 'counter service' type of approach. This goes hand in hand with the shift from remote learning to a learner-centred approach to learning (Tripathi 2009).

1.2 University of South Africa

Unisa is a comprehensive Open Distance Learning university with a headcount of more than 350 000 enrolments from all over the world. Unisa offers vocational, professional and academic qualifications across all fields of study at undergraduate and postgraduate levels. These qualifications are offered in six academic colleges: the College of Agriculture and Environmental Sciences, the College of Economic and Management Sciences, the College of Education, the College of Human Sciences, the College of Law and the College of Science, Engineering and Technology (Subotzky 2010).

Unisa acknowledges that an integrated library service is the key to successful teaching and learning and has therefore made ample provision for the development of library services and resources. The Unisa Library has been developed in accordance with international standards for distance education libraries and within the strategies of the university. The Library currently has nine branches in South Africa and one in Ethiopia; it provides services on mobile devices, has implemented self-help services (employing Radio Frequency Identification (RFID) technologies), offers postal and e-reserve services, and information resources – its services are integrated into the university student portal (myUnisa). To expand its services to decentralised students, the Library has introduced mobile libraries (a first for academic libraries). The Library stocks more than 2.6 million items, 50 000 e-books and more than 60 000 electronic journal titles.

1 Note: While the international literature on ODL favours the use of the term 'learner', feedback from Unisa learners indicates that they prefer to be known as 'students'.

1.3 ODL library services

A more technology-enabled environment is acknowledged to be necessary for successful Open Distance Learning; this is known to present specific requirements and challenges for the services provided by libraries in such institutions (Beaudoin 2002).

Modern ODL institutions also have to establish systems for the distributed facilitation of learning after registration: this includes provision of tutors, equipped learning centres, libraries, information and communication technologies. Libraries have been very successful in acquiring and promoting their online resources, thus enabling students to access these from any location (Jones 2001).

1.4 Standards for ODL libraries

The guidelines developed by the Committee of the distance Learning Section of the Association of College and Research Libraries (a division of the American Library Association) have been reviewed on an ongoing basis since their inception in 1963 (ACRL 2011). The guidelines were developed into standards owing to one critical factor, this being that non-traditional study has rapidly become a major element in higher education. Furthermore, there is a growing number of unique environments for educational opportunities, an increased recognition of the need for library resources and services at locations other than main campuses, an increased demand for equitable services for all students in higher education, no matter where the 'classroom' is, and an increased demand for these services at distance learning sites. The advancement and developments in technology have also required the setting of standards for the delivery of library services for distance education.

The standards are designed to apply to all categories of distance users and, in addition to the entitlement principle these standards are founded on the precepts of access for achievement of superior academic skills. It also promotes direct human access, additional investments to the services and support (funding, staffing, etc.). The provision of technical linkages between the library and other resources bases is important and it also emphasises the need for written agreements with partnerships, strategic planning for the services, assessments of outcomes and the provision of information literacy instruction programmes.

The standards include specific requirements regarding the institution's fiscal responsibilities to its distance library services, allocation of staff to the services, facilities and equipment, resources, services, documentation and management. The requirements for management of distance libraries define the specific functions to be carried out, whether a function is undertaken by a dedicated librarian-administrator (in an institution that offers both residential and distance teaching) or is dispersed between a number of librarians. In the case of Unisa, which offers only ODL and no residential teaching, the Library provides dedicated distance education library services. In other words, the Library's management, resources and services are therefore totally allocated to the provision of distance education.

The Unisa Library's strategic and operational plans include goals, targets and performance measures for the delivery of services in regional libraries and collaboration with partners. The utilisation of Radio Frequency Identification (RFID) to enhance service by ensuring optimal retrieval of resources and short turnaround times for requests is central to the developments. The plan also focuses on enhanced research services, institutional repository services, e-strategies, online services (including Web 2.0 and other technologies), automation of manual processes, capacity building and quality assurance measures to ensure equitable services to distance learners.

Quality assurance includes the planned and systematic actions required to ensure that a facility, structure, system or component will perform satisfactorily and safely. Quality assurance is defined as the systematic management and assessment procedures adopted by higher education institutions and systems to monitor performance against objectives and to ensure the achievement of quality outputs and quality improvements (Harman 2001).

The Commonwealth of Learning indicates that a framework for managing ODL quality should include a general philosophy (policy and mission statements, institution's ethos and culture, staff attitude and commitment), products (learning materials, courses, resources, media, outcomes), services (registration and advisory services, tutoring, counselling, feedback and guidance on learning, support for learner progress, provision and management of study centres, customer services, ICT help desks) and support processes (delivery systems, record keeping, electronic backup, QA procedures).

2. Quality assurance at the University of South Africa

2.1 Statutory and Open Distance learning requirements

Through the Higher Education Quality Committee (HEQC), Unisa has a statutory responsibility to deliver on its undertaking to provide a learning experience of the highest quality whilst taking ODL requirements into account (CHE 2004a, CHE 2004b, CHE 2004c). In accordance with its Vision and Mission, Unisa is committed to the ongoing improvement of the quality of its activities. The university pledges to deliver a unique and quality student learning experience and remains committed to developing a culture of quality and transparency (Unisa 2011b). The approved Unisa Quality Assurance Policy and the Integrated Quality Management Framework provides the context and direction to quality assurance at the university (Unisa 2011a).

Unisa furthermore has an obligation to all its stakeholders to monitor and evaluate the quality of its modules in order to address those areas in need of redevelopment and continuous improvement. The student learning experience at Unisa can be evaluated on the basis of an integrated set of ODL standards and criteria (Unisa 2008).

Quality is a shared responsibility between colleges and all professional and administrative support departments. Quality management and quality assurance are layered and functional across multiples sites and focused around integrating the critical institutional policies, processes, procedures and systems and translating these into criteria and standards. A disconnection between these value adding processes and systems will manifest, over time, to dissatisfaction and disbelief in our products and services.

2.2 Unisa Integrated Quality Management and Assurance Framework (IQMAF)

The revised and approved Unisa Quality Assurance and Management Policy informed the development of the Integrated Quality Management and Assurance Framework. This framework facilitates the development and implementation of quality assurance within the required legislation and in accordance with Unisa's ODL requirements. This framework is an integral part of quality management and quality assurance at the university. Quality management for teaching and learning is defined within this Framework. Furthermore, within the three core areas of teaching and learning (ie research, postgraduate education and community engagement) a tactical distinction is made between quality management and quality assurance in each core area. The IQMAF provides for creating a supportive environment where expectations and standards are defined, continuous improvement and innovation are encouraged, and development and training opportunities provided. Feedback is actively sought from students and other major stakeholders (Unisa 2010b).

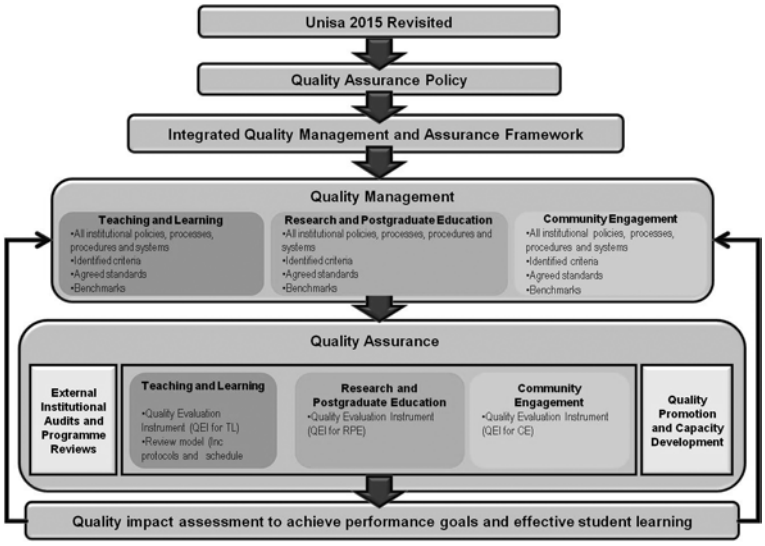

Figure 1: Integrated Quality Management and Assurance Framework

2.3 Challenges in evaluating modules

Unisa's approved Programme and Qualification Mix consists of more than 3000 modules. Subjecting these modules to rigorous internal scrutiny with the aim of implementing viable improvement strategies is obviously an impossible task. After a comprehensive and reflective internal module review exercise, it was decided that the turnaround time and the amount of resources utilised to produce effective improvement strategies do not yield the immediate impact needed to sustain our value for our stakeholders.

A need was therefore identified to develop a comprehensive technology-enhanced quality evaluation instrument that is aligned with the curriculum/module development cycle to inform Unisa's continuous improvement strategies.

3. Quality Management and Assurance for Teaching and Learning

Quality management for teaching and learning is developed within the Unisa Quality Assurance Policy and the Integrated Quality Management and Assurance Framework (IQMAF). The IQMAFIt is also aligned with the Higher Education Quality Committee (HEQC) criteria and accepted Open Distance Learning practices (Unisa 2010a).

The complexities and size of Unisa as an ODL institution mean that adopting the current process for internal audit reviews is cumbersome, time-consuming, costly and unsustainable. This is why a technology-based Quality Evaluation Instrument (QEI) was developed which is aligned with the curriculum and module development cycle to effect continuous improvement strategies (Unisa 2010a).

This QEI provides strategic information for the Programme and Qualification Mix and curriculum renewal exercises and evaluates the student's total learning experience, ensuring ODL quality in the design development and delivery of approved modules (including the library services). The instrument is based on paper-based evaluation and has been developed according to the principles of the HEQC process and in line with the targets and criteria set by the National Association of Distance Education and Learning in South Africa (NADEOSA) (Unisa 2010a).

Following an intensive consultative process with all stakeholders in the teaching and learning value chain, a set of standards was developed to ensure a quality learning experience for the student. The QEI is therefore an integrated instrument of academic and non-academic processes, systems and policies that can evaluate the quality of the student's total learning experience. The QEI accommodates all approved and active modules within a specific development cycle and aims to have an immediate impact on the design, development and delivery of academic courses (Unisa 2010a).

The objectives of the QEI are as follows:

- To design an integrated instrument (academic and non-academic processes systems and policies) that can effectively evaluate the quality of the student's learning experience.
- To accommodate all approved and active modules within a given development cycle.
- To have an immediate impact on the effective design, development and delivery of academic courses.
- To be integrated and aligned with approved institutional frameworks and policies.
- To be cost-effective.
- To evaluate quality rather than satisfaction.
- To ensure that the standards, as evident in the instrument, are supported by internationally recognised ODL standards.

3.1 Quality dimensions, criteria and standards

Given that the overall focus is on the student's learning experience, the unit of evaluation is a module. The following three quality dimensions (see below) are used in the teaching and learning QEI that informs the Library's quality framework.

3.1.1 Planning, resource allocation and quality management

This dimension includes all quality arrangements (policies, procedures, processes and systems) that relate to effective planning and the allocation of adequate resources. It helps to create an enabling and efficient environment for effective institutional and curriculum planning. Criteria and standards in this dimension have to be used in developing the quality management arrangements for the various colleges and departments. Within this dimension a total of 10 criteria and 104 standards were identified for teaching and learning.

A total of 71 standards within the criteria identified for dimension of planning, resource allocation and quality management for teaching and learning was integrated into the Library's quality framework. These include, for example, standards within the criteria of planning, resource allocation, capacity planning, procurement of products and services, policies, procedures and systems, integrated performance management, transformation and effective people management, risk management, technology capacity and innovation, management and administration of partnerships, collaboration and licencees and the management of the quality of teaching and learning.

3.1.2 Design and development of learning material

This dimension includes all quality arrangements (policies, procedures, processes and systems) that relate to effective planning and curriculum development. The framework for curriculum and learning development forms the foundation for the design and development of quality learning material. As pointed out above, the criteria and standards in this dimension have to be used in developing the quality management arrangements for the various colleges and departments. Within this dimension a total of 13 criteria and 78 standards were identified.

Four standards within criteria identified for the dimension of design and development of learning material for teaching and learning were integrated into the Library's quality framework. These include standards within the criteria of curriculum planning and design, design and development of course material, and prescribed and recommended material.

3.1.3 Delivery of quality learning experience

This dimension includes all quality arrangements (policies, procedures, processes and systems) that relate to the quality delivery of Unisa's products and services to the students with the aim of enhancing the student learning experience. This experience depends on effective admissions and administration of students into the university's system, effective teaching and learning, and concomitant administrative support processes as well as formative and summative assessment. The criteria and standards in this dimension have to be used in developing the quality management arrangements for the various colleges and departments. Within this dimension a total of 21 Criteria and 115 standards was identified.

A total of 37 standards within the criteria for the dimension of delivery of a quality learning experience was integrated into the Library's quality framework. These include standards within the criterion of effective library services.

4. Library quality assurance procedures

The Unisa Library established the Library Quality Committee within the IQMAF of the university. This committee oversees, coordinates and monitors quality assurance in the Library. It is responsible for coordinating the task analysis of the library business processes and for preparing quality assurance reviews.

4.1 Library quality assurance framework

The Library participated in the development of the teaching and learning QEI and, within the boundaries set by this instrument, developed the relevant criteria and standards. To this end, the Library also considered the criteria developed by the Committee for Higher Education Librarians of South Africa (CHELSA), the Standing Committee of National and University Libraries (SCONUL), the International Federation of Library Associations (IFLA), and the standards for distance libraries developed by the Association of College and Research Libraries (ACRL).

5. Conclusion

The Library has definitely benefited from participating in the development of the teaching and learning QEI and, during its participation, ensured that issues related to the library services and resources were included in the QEI.

The Library considered the standards set for teaching and learning within the criteria and dimensions prescribed to identify those relevant for evaluating the service provided by the Library. The QEI therefore provided the context for the Library's quality management framework. The QEI has been developed using an extended consultative process (including information sessions, workshops and focus meetings) and will therefore contribute to ensuring an integrated evaluation tool. This will ensure that all aspects of the learning experience (including library services and resources) are covered in the evaluations.

The quality evaluation instrument is primarily designed to include the quality dimensions that not only impact on students, but also reflect on the ratings of other key stakeholders. These triangulated views, which need to be integrated as part of the broader quality measurement process, will add immense value and improve the authenticity of the findings and deviations that signal problem areas.

The development of a technology-based QEI enabled the university to conduct quality surveys in shorter period by simulating stakeholder interviews (eg participation in a quality audit interview of the programme review process). It has also produced equivalent and triangulated outcomes in a more cost-effective manner. The QEI reduces the amount of resources required by a paper-driven process (a large part of the review is automated and reports are generated through web-based technologies) and therefore means major cost savings. Finally, the instrument offers the university the capacity to facilitate the review of all modules within a given seven-year cycle in a manner that provides quality inputs to curriculum renewal cycles.

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Building and sustaining a community of assessment practice: the role of the library assessment conference

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Introduction

During the past decade library assessment has become an integral, ongoing practice in many North American academic libraries, a distinct change from just a few years earlier when assessment and performance measurement were relatively rare and infrequent guests. A number of factors are associated with this change, including the development of new standardised assessment tools such as LibQUAL+®, the importance of digital content delivery, usability and use, increased accountability to customers and stakeholders, and the growth of a dedicated and passionate community of practitioners. This paper addresses the role of the biennial Library Assessment Conference, which started in 2006, in furthering good assessment and building a vibrant community of practice. The paper will draw upon and analyse a variety of sources that demonstrate the value and impact of the Library Assessment Conference including library registrant data, published conference programs and proceedings for content, conference evaluation results, and follow-up on how the conference assisted in local assessment work and service improvement at their institutions. This is the first in-depth review on the contribution of a cyclical conference to the development and growth of the practice of library assessment and performance measurement and may have implications for use in other regions or in other subfields.

Conferences

Conferences can play a key role in helping to build and nurture a newly emerging subfield or practice. Recent studies in management science have looked at field configuring events (FCE's) "in the context of ongoing research addressing the growth and evolution of institutional, organisational and professional fields." (Lampel and Meyer 2008, p. 1025) Conferences are a form of FCE that can help provide the critical mass and focus that can trigger field evolution that leads to both individual interaction and resultant institutional change as well as the emergence of newly defined body of inquiry and practice.

Yet, the role of conferences both in the development of new fields or subfields and in the growth and dissemination of knowledge have received relatively little attention: "Professional conferences, both academic and non-academic, are an under-researched domain. Given their importance and frequency in the life of those who attend, it is remarkable that they have been the focus of so little study." (Jacobs and McFarlane, 2005) Jacobs and McFarlane and others have tried to articulate what makes for a "good" conference. Factors include:

- new research, developments and information presented
- participants balanced between new & experienced

- time for informal exchanges, gossip & networking
- mix of papers, panels, posters, discussions & workshops
- provocateurs and contrarians for different perspectives
- interesting and desirable location
- great organisers and smooth logistics
- buzz!

Library conferences

Much of the literature on library conferences is concerned with individual professional growth and development and rarely speaks to the role of the conference in developing a new field or building community. Boissonnas (1996) has come the closest to addressing the latter. He reviewed the development of the annual Charleston Acquisitions Conference (the largest North American acquisitions conference) during its first 15 years providing both conference data (registration, speakers etc.) and a methodology for evaluating the effectiveness and success of such conferences.

Such conferences are especially important for specialised areas and subfields as they provide an opportunity to present results, activities and new developments where there is a lack of strong publishing tradition, especially for practitioners. Conferences also counter the isolation of sub-fields within individual libraries by bringing people with shared interests together and through discovery of related efforts at other libraries. Finally, conferences can serve as both catalyst and framework for the development of new learning communities.

Library assessment in North America

Library assessment as a field of practice and inquiry has developed rapidly in the past fifteen years. Building on a long-standing interest in library statistics and measurement, the emergence of the user-centered library concept in the 1990's led to a focus on customer needs and success and the acknowledgement that library effectiveness is based on evidence not assumption. (Hiller and Self, 2004) While service quality and "new measures" became more frequently used within the library lexicon, there was neither a cohesive community of practice and support nor a sustainable or integrated approach to assessment. North American library associations had provided occasional programs and workshops dealing with library assessment related issues but these were usually one-time efforts focused on such areas as research methods (eg surveys) or statistics and generally not oriented towards an ongoing program.

The establishment of the biennial Northumbria International Conference on Performance Measurement in Libraries and Information Services in 1995 provided the first ongoing international forum for these issues. In North America, the Association of Research Libraries (ARL) sponsored a two day symposium in October 2000 on "The New Culture of Assessment in Academic Libraries: Measuring Service Quality" (Kyrillidou and Heath, 2001) that brought together an international group of leading researchers and practitioners in the library service quality evaluation field along with interested library administrators. These conferences served as both structured approaches for a more systematic approach to library assessment as well as a venue for both formal and informal exchange of information.

The 4th Northumbria Conference (2001), held in Pittsburgh USA, was the first such multi-day conference in North America to focus exclusively on assessment and performance measures with a formal call for paper proposals. This Conference had a substantial impact on the North American assessment community with fifty percent of the papers (22/44) presented by North Americans. The Conference theme "Meaningful Measures for Emerging Realities" focused on demonstrating the value of libraries – a theme that has grown in importance during the past decade. As Joan Stein wrote in the Conference Overview:

> *"Since the first Northumbria conference in 1995, library professionals have recognised that the traditional library measures of "goodness" that count collections and transactions no longer provide an adequate picture of the library's contributions to its constituents. Each successive conference has focused on the evolving research and practice in the developing and testing of new measures…and the importance of presenting the library's contributions in terms of impacts and outcomes."(Stein, 2002)*

By 2005, the scope of assessment activity continued to increase highlighted by the success of several programs spearheaded by the Association of Research Libraries (notably LibQUAL+®), presentations at national library conferences, the growth of outcomes-based assessment within higher education, and a veritable flood of usage data on electronic resources. The authors saw the need for a different approach to building this community and developed the idea for a library assessment conference in July 2005. They saw the conference as an opportunity for those interested in library assessment to get together in a focused environment where they could learn, share, connect and apply. The authors persuaded their organisations (Association of Research Libraries, University of Virginia Library, and the University of Washington Libraries) to sponsor the conference and established a date and venue for the first conference: September 2006 in Charlottesville, Virginia.

By the end of 2005 the outline for conference structure and content as well as logistical, marketing and cost support models had been developed. Conference registration costs (which included most meals) were kept as low as possible to encourage practitioners to participate. The conference would run two days and include plenary sessions, contributed papers, posters, and panel sessions. There would also be half-day sessions for workshops before and after the conference. The authors served as conference co-chairs and also appointed a program committee to assist with proposal reviews and general planning.

The articulated conference goals were to:

- nurture an active learning community for library assessment
- focus on practitioners
- provide a forum for high quality presentations on effective, practical and sustainable assessment
- encourage informal interaction among participants,
- build the knowledge base of participants
- make it fun!

The first conference notice and call for proposals were released in January 2006:

Library Assessment Conference

Building Effective, Sustainable, Practical Assessment

Charlottesville, VA

September 25–27, 2006

Join us in historic Charlottesville to help build a learning community of practitioners and leaders interested in library assessment. The conference will focus on using data to improve library service and will include sessions on customer surveys, focus groups, learning outcomes, organizational climate surveys, performance metrics, evaluating electronic services and resources, and related marketing and management issues.

Co-sponsored by the University of Virginia and the University of Washington.

Register now at: **www.arl.org/stats/laconf**

Association of Research Libraries

www.arl.org

The Library Assessment conferences

As Table 1 shows, the conferences have been quite successful in attracting registrants and presentation proposals. Anticipating a maximum of 125-150 registrants, the 2006 conference attracted 217 attendees and registration was ended six weeks before the closing date due to space constraints. The general model established for the 2006 conference was kept in place for subsequent ones. The 2008 conference (Seattle, Washington) saw 375 registrants and in 2010 (Baltimore, Maryland) registration reached 460. The number of proposals submitted (including posters) nearly doubled from 106 in 2006 to 210 in 2010, indicative of the growth of library assessment as well as the value of the conference. Conference length (without workshops) has ranged from two days in 2006, three days in 2008 and 2.5 days in 2010.

While the number of papers presented grew from 44 in 2006 to 68 in 2010, this required the use of 3 concurrent sessions for the peer reviewed papers which made for some "conference overload" according to a number of participants. Posters were used as an outlet to increase information presentation although this also presented logistical issues in terms of space and time allowed. The proceedings of each conference were published by ARL within twelve months after the conference.

Table 1: Library Assessment Conference basics

	2006 Charlottesville, VA	**2008 Seattle, WA**	**2010 Baltimore, MD**
Registrants	217	377	460
Registration Fee	$375	$390	$390
Presentations (papers)	44	60	68
Poster sessions	20	40	80
Conference length	2 days	3 days	2.5 days
Workshops	3 (half day, offered 2x)	6 (half day)	2 (full day) 4 (half day)
Proceedings (published within 12 months after the conference)	452 pages	552 pages	788 pages (PDF only)

Tables 2 to 4 show registrant information. The 2006 conference saw 70% of registrants from ARL institutions and more than 90% from the United States. The percentage of registrants from ARL institutions has dropped to under 50% for the next two conferences which also attracted greater participation from outside the United States. The overwhelming majority of registrants came from higher education; conference presentations and posters were concerned primarily with academic libraries.

Most registrants worked in libraries or library related organisations, with relatively few educators and students or participants from public libraries. While the conference was oriented towards practitioners about a quarter of registrants held administrative positions. Note that the number and percentage of registrants with "assessment or evaluation" in their title rose substantially from 2006 to 2010, clearly an indication of the growth of library assessment within academic libraries. Slightly more than half the registrants fell into the "other" category which included reference, instruction, collection development, and technical services in their job titles. It is likely that a number of these either had formal responsibility for assessment or served on an assessment-related group. A balance was sought after between people who are presenting their work and professionals new to assessment who would feel comfortable learning from and meeting with others more experienced. As the conference grew the event has attracted larger numbers of non-presenters.

Table 2: LAC registrants			
	2006 217 registrants	**2008 377 registrants**	**2010 460 registrants**
ARL Institutions Other higher ed Other organisations	70% 25% 5%	45% 48% 7%	47% 43% 10%
USA	92%	85%	85%
Canada	5%	8%	10%
Outside USA & Canada	3%	7%	5%

Table 3: registrant positions by conference						
	2006 (n = 217)		**2008 (n = 377)**		**2010 (n = 460)**	
Library administrator	61	28%	84	22%	111	24%
"Assessment" in job title	15	7%	32	8%	61	13%
Educators/Students	8	4%	10	3%	17	4%
From the organisers (ARL, UVA, UW)	25	12%	38	10%	25	7%
Others	111	51%	218	58%	247	54%

Table 4: registrant program participation						
Number of registrants who:	**2006**		**2008**		**2010**	
	#	**%**	**#**	**%**	**#**	**%**
Presented papers or led workshops	82	38%	97	26%	99 (53 ARL)	24%
Presented posters only	24	11%	47	12%	89 (39 ARL)	19%
Did not present	107	51%	23	62%	272	59%

Library assessment themes

The conference program and proceedings provide a unique history of the growth and development of library assessment from 2006 through 2010. While the 2010 conference did have five general themes, papers were accepted based on quality and relevancy to library assessment as a whole. Table 5 shows the distribution of presentation sessions by topic. Workshops were also held at each conference (before and after the formal conference and at additional cost) and the topics shifted from more general ones at the 2006 Conference (qualitative methods, surveys, and data presentation) to ones focused on specific themes: learning outcomes (2008, 2010), space (2008), performance measures/balanced scorecard (2008, 2010), LibQUAL+® (2010), usability (2008), return on investment (2010), telling our story (2010) as well as others dealing with data presentation/visualisation (2008, 2010).

Table 5: number of presentation sessions by theme			
	2006	2008	2010
Collections		1	1
Data/Statistics		2	1
Digital library	1	1	1
Effective library assessment programs	3	3	3
Evaluation and assessment methods	1	1	
Information services		1	1
LibQUAL+®	2	2	1
Organisational climate/culture	2	2	1
Organisational planning/performance	2	1	3
Place	1	1	2
Qualitative studies	2	2	2
Teaching and learning	2	4	2
Value and impact	1	2	3

Something special

In addition to the formal aspects of the conference concerted effort was made for 'fun' opportunities to connect with others. In 2006, we had an evening of drinks with library "luminaries" where registrants could sign up to join a small group headed by someone well known in the assessment field. In 2008, we featured an author on wine who talked about qualitative assessment of wines and wineries. Also in 2008, we started a new tradition of recognising and honoring those who have made seminal contributions to library assessment with our Library Assessment Career Achievement Award. Our first honorees were Shelley Phipps, Amos Lakos, and Duane Webster for their work in developing and fostering a culture of assessment in libraries. In 2010, we honored Gordon Fretwell, Roswitha Poll, and Kendon Stubbs for their contributions in developing accurate, consistent library statistics and performance measures.

Conference evaluation and assessment

Conference attendees were asked to evaluate the conference on a Web based form after the conference end. Questions dealt with range of topics, presentation quality, usefulness, informal opportunities to learn and connect, logistics (including conference meeting spaces), and an overall rating. The responses are summarised in Chart 1.

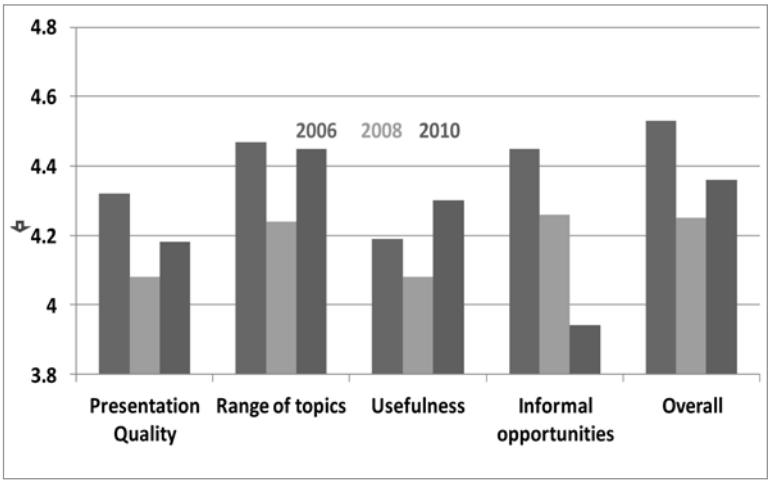

Chart 1: Conference ratings 2006 – 2010 scale of 1 (poor) to 5 (excellent)

Evaluation results are used to improve the next conference. Changes were made in the 2010 conference to enhance presentation quality and the range of topics covered. However, there was a decline in informal opportunities to learn and connect that year. Comments also supported the need to build in more "down time".

> *"As wonderful as the conference was, I felt like it was almost too densely packed. I would prefer that we have some unscheduled time--we were booked morning, noon, and night. The time was very well spent, however."*

> *"The pace was quite hectic – lots of information and long days – sometimes I felt overwhelmed and unable to process another word yet I didn't want to miss a thing!"*

As a result, the 2012 Conference will run a full three days (not including workshops) and will include more opportunities for informal learning and connections or just time to relax.

When asked about the most valuable aspects of the conferences, among the most frequently used words were: colleagues, ideas, networking, learning, opportunity and practical (Chart 2)

Chart 2: Most valuable aspets of 2010 LAC

Personal and institutional value

While the conference evaluations were invaluable in getting input on both conference value as well as areas for improvement, they generally did not cover the longer term impact on professional development or how the information was applied in libraries. For this paper, we followed up with 12 people who have attended all three conferences and asked them a series of questions about overall conference value, including how conference attendance benefitted them professionally as well as their libraries and institutions. Some of the responses are shown below

> *"You almost always learn something that is unexpected, and in a way I think the unexpected things are most memorable"*

> *"I learn that almost anything can be assessed and learn new techniques for looking at and thinking about our work with users, our use of space, and our in-house infrastructure"*

> *"A presentation spurred us to develop a set of personas that have been useful in designing web pages & addressing virtual access issues"*

> *"The conferences offered me the opportunity to share information with our assessment committee, the entire library staff and our University Office of Institutional Effectiveness"*

> *"Being assured that there is no magic bullet that I alone am missing"*

> *"Bottom line: I would not have had the career I've had if it weren't for the LAC and the support of the assessment community. This community has enriched and informed my professional life in profound ways. I feel indebted*

to the community, and am committed to continuing my participation and contributing any value I can while it continues to grow and evolve"

"It's been a major opportunity to connect with people…find research partners, meet with people who have read my work, etc. So it's really made a unique and hugely significant contribution to my professional work."

"What I take in at the Library Assessment Conference is all "grist to the mill"

"Conference proceedings and accompanying online presentations are my assessment encyclopedia"

Conclusion

Conferences are an important component in building a community of learning and practice in new and emerging fields, especially where there is no established publishing outlet or community focus. However, it takes more than the right idea at the right time for a conference to provide both the spark and flame. Logistics, branding, understanding the potential audience, providing meaningful content and stimulating speakers, and a knowledgeable planning committee are all critical for success. The focuses on practitioners, presentation of methods and results that can be applied in different types of libraries, and conference locations/facilities that are desirable were important for furthering this community of practice. So are the contributions of the three sponsoring organisations: Association of Research Libraries (ARL), the University of Virginia Library and the University of Washington Libraries. In particular, the participation of the Association of Research Libraries was essential to conference success. ARL has done so much for library assessment through programs, tools and consultations and the support of the conference through use of ARL name, handling registration and the financials, providing Web hosting facilities, publishing the proceedings (DeFranco et al, 2007; Hiller et al, 2009; Hiller et al, 2011) and helping to publicise the conference that were instrumental to success.

The three Library Assessment Conferences have played a substantial role in building an active knowledgeable community of practice. The rapid growth in the number of participants and presentations are ample indication of the vitality of North American library assessment.

The conference goals and outcomes of connect, share, learn and apply are being accomplished. Participants have been able to use what they have learned at this practice-centered conference to move assessment efforts forward in their local libraries. Many were encouraged to present results from local assessments that otherwise would have been unavailable. The papers and posters presented also show the evolution of library assessment interests and actions from an earlier emphasis on organisational culture and assessment methods to the more recent focus on strategic organisational performance and value.

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Note: For the conference website, see: ***www.libraryassessment.org***

The value of academic libraries initiative: a briefing, a discussion, and an opportunity for engagement

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The Value of Academic Libraries (VAL) Initiative of the Association of College and Research Libraries (ACRL) is a multi-year initiative designed to build capacity for evidence-based and data-driven decision-making and advocacy. Librarians are increasingly called upon to document and articulate the value of academic libraries and their contribution to institutional mission and goals. The VAL Initiative builds on ACRL's strengths as a member-driven organisation that serves all types of academic and research libraries in order to create a fully informed academic librarian profession, comprised of individuals who are conversant with higher education assessment and accountability issues; who have the skills to engage in performance measurement, data collection, and analysis; and who are able to contribute to campus conversations on accountability and impact.

Context and background

In the United States, the quality of higher education has become a major focus of debate in the last decade. Stakeholders are increasingly demanding that institutions be accountable for the outcomes they are claiming. Institutions are required to demonstrate through data, evidence, and analysis – not just assertions – that they have achieved their goals. Pressure is mounting, increasing in urgency, and emanating from multiple fronts: from the federal government, though the Spellings commission (Spellings, 2006) and seemingly continuous Congressional hearings; from state governments; though regulatory scrutiny; from the private sector; through foundations such as the Lumina Foundation for Education, the Carnegie Corporation of New York, and The Teagle Foundation; and from students, parents and local business communities. Long gone are the days of deferential respect for higher education institutions. If policymakers in the United States emulate the Bologna process, with student learning as the primary measure of quality, it is likely that government regulation and calls for accountability will only increase (Lederman, 2010).

In a context in which higher education administrators are grappling with how to best demonstrate the value of the institution, librarians are increasingly called upon to document and articulate the value of academic and research libraries and their contribution to institutional mission and goals. As Sarah Pritchard states:

> *Few libraries exist in a vacuum, accountable only to themselves. There is always a larger context for assessing library quality, that is, what and how well does the library contribute to achieving the overall goals of the parent constituencies? (Pritchard, 1996)*

ACRL has long understood the need for libraries to contribute to institutional goals and outcomes and has placed considerable focus on assisting academic librarians developing their abilities to engage campus efforts to enhance student learning and improve learning outcomes. But now, more than ever, as campus administrators are forced to make difficult decisions regarding the funding of programs and units at their institution, particularly in the current economic climate, the relevance and usefulness of investments in libraries are questioned. Academic librarians are finding that the impact of investments in library resources and services is not well-understood or documented. Claiming the library as the "heart of the institution" is not enough.

ACRL members understand that academic libraries must demonstrate their value in clear and measurable ways. The association's most recent membership survey found that the top concern for ACRL members is demonstrating the value

of academic libraries and librarians at their institutions. Members called on ACRL to assist them in addressing this concern. ACRL responded to the calls for library accountability and member needs in this area with the VAL Initiative.

The Value of Academic Libraries Initiative

The VAL Initiative has its formal beginnings in memo from John Lehner (2009), a Director-at-Large on the ACRL Board, addressed to the ACRL Executive Committee. The memo builds on previous Board discussions on the topic and "briefly outlines the recent research on the return in investment in academic libraries and attempts to frame some of the possible directions for future research on this topic." The Executive Committee decided "to bring together a focus group of knowledge experts to help ACRL develop next steps on the value of academic libraries" (Association of College and Research Libraries, 2009a). That focus group took the form of a two-day "Value of Academic Libraries Research" invitational meeting in July 2009.

The invitational meeting's purpose was "to come to a shared understanding of ACRL's role in helping academic libraries demonstrate their value, including methods and resources needed to advance that role" (Association of College and Research Libraries, 2009b). While a number of specific research questions were identified, the group determined that a comprehensive literature analysis and state of the research report was needed to serve as a foundation for moving forward with an ACRL VAL Initiative. Only by knowing what evidence already exists about the value of academic libraries and what that evidence is would ACRL be poised to gather additional evidence and help the profession develop the necessary research and advocacy skills to further the knowledge base.

In fall of 2009, ACRL issued a competitive RFP for a comprehensive review of the quantitative and qualitative literature, methodologies, and best practices currently in place for demonstrating the value of academic libraries and to identify a research agenda. The RFP required that the resulting report define value in terms of institutional, not library, goals, identify measurable surrogates that demonstrate the library's impact on institutional goals, provide best practices on measuring identified surrogates, and explain how the findings should inform data collection decisions of academic libraries going forward. Dr. Megan Oakleaf of the iSchool at Syracuse University was selected to conduct the analysis and author the report. *The Value of Academic Libraries: A Comprehensive Research Review and Report* (Association of College and Research Libraries, 2010) was issued in 2010 and has been made freely available online.

Simultaneously with the drafting of the report, the ACRL Board of Directors created the following purpose and objectives for the VAL Initiative:

To build capacity for data-driven advocacy by:

- enabling librarians to apply and extend the research base on the value of academic and research libraries
- align libraries with institutional outcomes
- empower libraries to carry out work locally
- create shared knowledge and understanding
- contribute to higher education assessment.

The Value Report

The Value of Academic Libraries: A Comprehensive Review and Report (Association of College and Research Libraries, 2010) identifies what research exists that documents library impact and also suggests where gaps occur in research about the performance of academic libraries. It strives to help librarians understand, based on professional literature, the current answer to the question, "How does the library advance the missions of the institution?" In addition to a literature review on the value of school, public, special, and academic libraries, the report includes an extensive list of recommendations as well as a research agenda.

The specific recommendations detailed in the report include next steps for individual librarians, individual libraries, the profession, and ACRL as a professional association. The recommendations include:

- define outcomes
- create or adopt systems for assessment management

- determine what libraries enable students, faculty, student affairs professionals, administrators and staff to do
- develop systems to collect data on individual library user behavior, while maintaining privacy
- record and increase library impact on student enrollment
- link libraries to improved student retention and graduation rates
- review course content, readings, reserves, and assignments
- document and augment library advancement of student experiences, attitudes, and perceptions of quality
- track and increase library contributions to faculty research productivity
- continue to investigate library impact on faculty grant proposals and funding, a means of generating institutional income
- demonstrate and improve library support of faculty teaching
- create library assessment plans
- promote and participate in professional development
- mobilise library administrators
- leverage library professional associations

The research agenda suggests approaches to investigating the library's impact on: student enrollment, student retention and graduation rates, student success, student achievement, student learning, student experience, faculty research productivity, faculty grant proposals and funding, faculty teaching, and overall institutional reputation or prestige. For each area of impact, the research agenda identifies potential surrogates of library impact on student retention and possible areas of correlation or data that might be used in investigating the impact.

Complementing the *Value of Academic Libraries* report is a number of other ACRL documents and activities. In June 2010, ACRL released *Futures Thinking for Academic Librarians: Higher Education in 2025* (Staley and Malenfant, 2010), an empirical, scenarios-based investigation into how academic librarians see higher education developing. Also published in June 2010 was the *Top Ten Trends in Academic Libraries* (ACRL Research Planning and Review Committee, 2010a), which highlights the increasing accountability pressures in higher education. A year later, ACRL released its *Environmental Scan* (ACRL Research Planning and Review Committee, 2011) which explores the current atmosphere in the world of academic and research libraries along with trends emerging issues that will define the future of academic and research librarianship and the research environment. Finally, *ACRL's Standards for Academic Libraries in Higher Education* (Association of College and Research Libraries, 2011a) are undergoing revision to align them with institutional outcomes and evidence-based approaches to documentation.

Empowering librarians

While ACRL as an association is engaging the challenges of showing the value of academic libraries, the Board recognised early on that the ultimate goal is to empower librarians to do this work locally within their institutions. In addition to the above-mentioned publications, ACRL is sponsoring many opportunities for professional development on the value of academic libraries, including the information literacy immersion program "Assessment: Demonstrating the Educational Value of the Academic Library," as well as making available a Value of Academic Libraries toolkit.

An ACRL priority

In 2011, the ACRL Board of Directors adopted a new strategic plan, the Plan for Excellence (Association of College and Research Libraries, 2011b). The VAL Initiative is one of three strategic goals for the association:

Value of Academic Libraries

Goal: Academic libraries demonstrate alignment with and impact on institutional outcomes

Objectives:

- leverage existing research to articulate and promote the value of academic and research libraries
- undertake and support new research that builds on the research agenda in The Value of Academic Libraries: A Comprehensive Review and Report
- influence national conversations and activities focused on the value of higher education
- develop and deliver responsive professional development programs that build the skills and capacity for leadership and local data-informed and evidence-based advocacy.

In addition, to insure member involvement and leadership for the VAL Initiative, the Board of Directors also created the Value of Academic Libraries Committee in 2011. The VAL Committee is being co-chaired by Lisa Hinchliffe and Megan Oakleaf and has as its charge:

> *To oversee and coordinate ACRL's value of academic libraries initiative; work with the ACRL board and other ACRL units in creating a comprehensive effort including professional development, publications, research, and consultation services and in developing the ACRL value website; and monitor and assess the effectiveness of the value initiative.*

The VAL Committee will work in tandem with the Board and the ACRL staff in providing leadership for the VAL Initiative and developing a multi-year action plan for achieving the stated objectives.

Conclusion

The Value of Academic Libraries Initiative has accomplished much in its short history. ACRL members are excited about the opportunities it presents and the proactive approach to creating a vibrant future for academic libraries. ACRL invites all interested librarians to contribute to this effort through sharing best practices, publishing research findings, and submitting suggestions to the VAL Committee. Updates to ACRL's VAL initiative may be found on it Value of Academic Libraries website: ***www.acrl.ala.org/value***.

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Reconfiguring the researcher–librarian relationship: evaluating South Africa's 'Library Academy' experience

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Introduction: The Library Academies, 2007–2011

The Research Libraries Consortium (RLC) was founded in South Africa in mid-2006. Funded by the Carnegie Corporation of New York, the project aimed to improve university library service to post-graduate students and faculty members in South African research universities. A key component was the improvement of librarians' research skills and domain knowledge, and by mid-2011 the RLC had held four 'Library Academies', in September 2007, October 2008, April and October 2010, with the last of the series scheduled for October 2011. These events were two-week residential programmes for mid-career professional librarians, usually subject specialists. This paper describes the implementation of the Library Academy concept in the South African context, and analyses the problems involved in developing rigorous evaluation criteria for the Academy as an intervention and for the performance of individual participants.

Three universities took part in the first phase of the project from 2006 to 2009. In the second phase, starting in mid-2009, three more institutions joined the RLC as full members. Two other universities have sent a total of six librarians at their own expense.

The Library Academies were two-week, full-time residential courses held at a secluded conference venue, 50 kilometres from Cape Town. Participants applied to take part and were selected by their own institutions; they were normally but not invariably subject specialists supporting students and researchers. The Academy differed from comparable initiatives in its emphasis on exposing participants to research content and methodologies in a range of subject domains, and in requiring the production by each individual of an original and publishable research paper (Darch and De Jager 2009). Most continuing professional education initiatives in LIS have focused on *leadership development*, eg the Leadership Academy hosted by the Carnegie Centre for African Library Leadership in Pretoria, the ARL Academic Library Leadership Fellows Program (German et al. 2009) or the Peabody Academic Library Leadership Institute (Weiner et al. 2009). Upgrading domain knowledge and research skills has not commonly been emphasised.

The Academies aimed to improve participants' understanding of how research works in a range of epistemologies, and their experience of research through writing a paper; to foster an understanding of trends in academic librarianship; to facilitate the building of peer networks; to confer professional distinction by taking part in this prestigious programme; and to develop a cohort of trained research librarians to confront the challenges of the coming decades.

By mid-2011, 78 librarians from seven universities had attended the Academies; 63 were women, and 34 were black. A further 18 were scheduled to participate in the final iteration in October 2011. Selected on the basis of their performance at Academy sessions, 24 participants subsequently visited major research libraries in the United States for six to eight weeks. By June 2011, 11 librarians out of the 78 had left for other employment.

The Academy is an example of 'continuing professional education' or CPE (CEPLIS 2010: 2). In the information professions, CPE has been defined as 'educational activities primarily designed to keep practicing librarians and information professionals abreast *of their particular domain* in the library or information centre, and to provide them with training in new fields' (Pors and Schreiber 1997: 133, emphasis added). There seems to be no reason not to read the term 'domain' to mean subject knowledge.

Designing the Academies

In the project proposal to the Carnegie Corporation, the RLC argued that there was evidence that library users wanted to deal with 'librarians who have a real command of the subject matter under study' (RLC 2006: 38). Thus the most

basic aim of the Academy was to expose participants to high-level research across disciplines in as much depth as time allowed. Houle calls this the principle of 'concentrated impact', meaning 'exposure to knowledge in some depth during a relatively short period of time' (1980: 217).

The cross-institutional team that planned the programme worked for several months to structure sessions and identify speakers. In the first week of each Academy, South African researchers of international standing talked about their discipline and their work within it. They located their research in the range of disciplines, outlining its significance and explaining its epistemology and methodology. In the second half of the course the details of research production – writing, publishing in the developing world, problems of quality evaluation, research funding, and the impact of new technologies on scholarly communication – were discussed in detail.

Speakers were grouped under themes. In the first week of an Academy, under a rubric such as 'Different Domains, Different Epistemologies', a dean of science might speak about research in physics; a professor of mechanical engineering introduce materials research; another engineer talk about radio telescopes; and a political scientist describe her research journey. Other speakers would present work in law, gender studies, sociology or psychology. Another theme asked 'Is the Library a Place?' and speakers addressed issues around educational technology and virtual libraries. This was followed by 'Becoming a Researcher', sessions on the experiential and emotional nature of the research journey, and to conclude participants might hear about 'The South African Research Environment', introducing the national approach to guaranteeing research quality.

In the second week, the focus shifted to actions needed to support researchers who may not have completely mastered necessary technical skills. Topics covered included the nature of subject knowledge; publishing a paper; research ethics; intellectual property; and research motivation. Other sessions were devoted to the evaluation of library research support; freedom of information; and how research library services might differ from those to undergraduates.

Weingand argues that 'delivering a paper, or writing an article' – a fundamental part of the Academy – should be considered an integral part of CPE since it involves 'considerable research and study' (2000: 200). Participants found this difficult. Minimal support was provided at the 2007 Academy and it quickly became clear that many could not cope, finding the requirement daunting or overwhelming. They were especially unprepared for any criticism of their work in peer reviews. From the second Academy onwards, the two authors of this paper were identified as 'research mentors', and visited each institution, speaking to participants collectively about the formal requirements, and individually about the design of each research project. During the Academy, each participant had a scheduled 30 minute session with the mentors to discuss progress.

Houle identifies mentoring as necessary for successful adult learning; he describes it as providing 'on an interactive basis instruction that is directly related to the specific needs of the person who seeks assistance' (1980: 212). In fact, one participant in the first Academy chose the implementation of a peer-mentoring project as her research topic, possibly in response to the need for support (Finlayson 2009).

Another characteristic of a successful adult learning intervention is what Houle terms 'varied and complementary learning patterns,' which he explains as 'not itself a major guiding principle for the design of education but a useful corrective to a too-heavy reliance on any specific principle' (1980: 223). IFLA's CPE principles specify that 'those responsible for providing CE programs or in-service training and development [have to] create and/or make available a wide range of activities and products designed to meet identified learning needs' (Varleijs 2008: 2). After the 2007 Academy – when feedback noted an over-reliance on lectures – we attempted to provide learning by 'varied patterns of instruction' (Houle 1980: 224). We opted for different platforms, including workshops, conversations, self-directed working groups, and reading circles.

Houle advocates a 'broadening of content' to include a 'recreational component' (1980: 214). The tranquil venue went a long way to meeting this requirement. In addition, we included activities such as basic yoga, picnics, mountain walks, volleyball, competitive quizzes, professionally-led drumming sessions, dinners at restaurants and a weekend sightseeing expedition, in an attempt to provide a platform for 'transformative learning to occur' (Weiner et al. 2009: 838).

Approaches to evaluation

Houle argued that every 'consideration of continuing professional education must ultimately be concerned with the appraisal of its quality' (1980: 237). Weingand characterises evaluation of CPE as the 'final piece of one event and the first piece of those to come' (2000: 201), and the planning of each Academy relied on participant feedback from previous iterations. In this paper we present an impact analysis based on three kinds of data: the results of the research exercises, participant self-evaluation, and a post-Academy assessment survey completed by senior managers.

The self-assessment component of our evaluation was carried out in real-time as well as retrospectively. Participants wrote down their expectations on the first morning, and evaluated whether these were met in the final session. Ongoing feedback was developed, using *Post-It* notes on a wall during or at the end of sessions. After each Academy, participants provided an evaluation of their experience and a report detailing impact on work performance.

In mid-2011, a preliminary impact assessment survey was addressed to library directors at each institution, to evaluate participants' progress. The first two Academies were formally evaluated in an independent project assessment required by the funders, the Carnegie Corporation (Veldsman 2009). A final project evaluation, covering all components, will be carried out in June 2012.

Writing research papers

Preparation for the research project began before the Academy and continued for some months afterwards. To be eligible for the US visits, participants had to have completed and submitted their papers. Each paper was evaluated and a short peer review sent to each participant and to library directors. A special issue of the peer-reviewed South African journal Innovation was published in December 2009 under the rubric 'Papers from the Library Academy' consisting of eight of the best texts from the first two Academies in 2007 and 2008.

From 37 participants in the first two Academies, 35 submitted papers. Although they varied in quality, all bore evidence of considerable effort. The librarians learned experientially too, going through the gamut of emotions familiar to researchers:

> *'… having carried out the Research Report writing exercise [participants] were far more sympathetic towards the researchers in what they experience, the support they need, and the continued guidance necessary' (Veldsman, 2009: 13).*

After the subsequent Academies 36 papers were submitted; 17 were considered good enough (after revision) to be submitted to specified journals, and participants were encouraged to take this further step. One has already done so (Coetsee 2011). A cohort of librarians now have an intellectual and experiential grasp of the research journey and are better qualified to support researchers.

The short-term value of self-assessment

Feedback was required a variety of ways during and after the Academies. The 'individual expectations' exercise produced few surprises. Most librarians expected to learn more about the research process, the rationale of the intervention. Other expectations concerned networking; understanding the role of librarians in research; how to improve service and develop professionally. Encouragingly, almost all participants reported that their expectations were met or exceeded.

Participants were required to engage in all activities. The use of *Post-It* stickers – an 'analogue tweeting' back-channel – was immediately popular:

> *I like the idea of posting comments after each session as I noticed that some of the comments had immediate action. If something was not right and within reason, the organizers attended to it immediately.*

Stickers were kept to provide a daily record of perceptions of the programme as it unfolded. Unsurprisingly, the comments were mostly personal and immediate responses to individual speakers, and were mainly useful in planning and selecting speakers for subsequent iterations. But their analytical value was low, and they told us nothing about medium or long-term impact, as others have found in similar situations:

> *[a]lthough the daily evaluations provided good insights into program strengths and weaknesses, they did not provide information on what happened after participants returned to their campuses (Weiner et al. 2009: 8).*

After the final session, participants had to reflect on the impact that the experience had had on them professionally. These reflections were characterised by expressions of gratitude, and acknowledged that a great deal was learned, not only about research and the support of research. Participants affirmed that they had been motivated and inspired; that they had gained insight into their own positions and the roles that they played. Many of these responses closely matched the aims of the Academy and demonstrated the extent to which they were perceived to have been achieved.

The first week's emphasis on gaining a concrete understanding of how research is conducted and how it differs in various disciplines elicited enthusiastic responses. Participants appreciated the expertise of the presenters and understood (some with surprise) that there was no single transferable approach to the research enterprise:

> *The presentations … gave me an insight into the processes and relevant issues in the knowledge production process … I also learnt about the different theories which underpin research. Equally important were the different viewpoints on the same issue from different presenters …*

Participants responded positively to the second week's focus on challenges in academic librarianship, and on supporting research. They acknowledged insights into their own work:

> *… the Academy was successful in exposing me to 'cutting edge' issues and practices within academic librarianship, such as changing collection practices and paradigms of information access … digitization and other publishing initiatives, the library as 'place', multi-disciplinary research, and, of course, the challenges of providing quality academic research support.*

One of the consequences of a small group living and working in an isolated setting is the building of community, a fluid network of supportive relationships. This was recognized and appreciated:

> *To meet with our counterparts at other universities, to interact and build professional relationships is a long term investment and a win-win situation.*

The Academies aimed to help develop a cadre of research librarians able to participate in research projects and competent to provide meaningful support. It would be over-reaching to claim that a handful of two-week interventions could achieve such an ambitious goal. Nevertheless, the assessments showed that the Academies had been a transformative experience, with a significant impact on work:

> *Before going to the academy I was just a librarian doing my job. After the academy I am no longer just a librarian. My job has purpose and meaning. I know now that I can make a difference in my institution that will have an influence in my country … When I returned home I was a transformed librarian. I know now what I am meant to do to make a difference in the research community …*

Personal and professional development

Self-assessment exercises needed to be articulated with a perspective on the medium- to long-term impact on workplace performance. An instrument was designed to collect quantifiable data from directors or senior managers charged with Academy liaison in each institution, and data were collected online in June 2011. The instrument assessed behavioural changes in individual participants since attending the Academies, along the lines of growth originally identified. Respondents were requested to evaluate their own institution's subset of the 67 Academy participants individually.

Table: Research Proficiency and Personal and Professional Development

	N=67	%
Personal Development		
Leadership	56	84
Much more confident	48	72
Slightly more confident	15	22
Research proficiency		
Active contact with researchers	44	66
Informal gain in subject knowledge	43	64
Conference presentations	20	30
Publication	18	27
Promotion	17	25
Some contact with researchers	15	22
Professional Development		
Promotion of new technologies	40	60
Active communication	28	42
Proactive Communication	24	36
Job Promotion	17	25
Passive communication	13	19

The survey focused on three axes. *Personal development* was addressed in two dimensions; a perceived increase in confidence, and leadership beyond the demands of the job. Research proficiency was addressed in four dimensions: publication, subject knowledge, contact with researchers, and conference participation. *Professional development* was addressed in three dimensions: use of new technologies; communication with library staff, and promotion. The table summarises the extent to which these objectives were achieved.

It is important to acknowledge, as some respondents pointed out, that it is impossible to attribute these developments *solely to the Academy*. Professional librarians are expected to grow and develop; and 36 participants had spent several weeks in research institutions in the United States, itself a transformative experience. It is hard to isolate the Academy's impact in an environment with so many variables. It was nevertheless probable that many differences were attributable to the Academy, and this was acknowledged in the comments attached to each question.

Personal development

The most remarkable change was the sharp improvement in leadership development. Directors were asked whether Academy participants on their staff had demonstrated better leadership since attending. Responses showed that 56 (84%) librarians had improved. Interestingly, leadership development was not originally an Academy objective, but it was gradually recognized as a likely outcome: the proposal for Phase 2 of the project acknowledged that several participants in the first two Academies had 'subsequently assumed leadership positions in their own institutions' (RLC 2009: 23).

There was a marked increase in the confidence of nearly all participants. Senior managers were asked whether staff members had shown a significant increase in professional and personal confidence since the Academy. The options were: much more confident; slightly more confident; less confident, or no change. Four respondents (6%) were rated not to have changed at all; 48 (72%) were much more confident and 15 (22%) slightly more confident.

Research proficiency

We asked whether participants had become pro-active in pursuing closer contact with researchers, up to active collaboration in research projects. Options were no contact; some routine contact; actively seeking contact; and participation in projects. Results showed that 44 (66%) were actively pursuing research contacts and 15 (22%) were making routine contacts.

Participation in research projects was virtually unknown, probably because most subject specialists clearly needed to improve and update their subject knowledge. Possible responses to our question on what had been done to improve this were: nothing; informal steps; or participants had enrolled in a course. Disappointingly, 17 participants (25%) had done nothing, but 50 (74%) had taken informal steps.

The other dimensions of research proficiency reflected the extent to which participants were involved in presenting papers at conferences or publishing papers. Some had become enthusiastic about taking part in such activities. Others had not yet had time to present at conferences or to complete their papers for publication, but several were preparing to do so.

Professional development

Professional networking, communication and sharing were objectives built into Academy programmes and participants were encouraged to establish networks among themselves and to share their experiences with colleagues when they returned. The survey asked if participants had improved in communicating with colleagues since the Academy. The four options were: no change; passive participation; active participation; and taking the initiative. Here the results were encouraging; 28 (42%) communicated actively and 24 (36%) proactively for a total of a 78% increase in engagement and sharing with colleagues. Disappointingly, a substantial minority of 13 (19%) participants had not developed beyond passive participation, and two (3%) were judged not to have changed.

There is evidence from outside South Africa that older librarians in less developed countries may be slow adopters of new technologies (Warraich and Ameen 2010: 111). To test this, we asked whether participants had 'pro-actively used existing or emerging Web or Internet technologies to promote library or research activity' and our results showed that 40 (60%) participants were doing so. A key component of the RLC project is the development of a research portal underpinned by a sophisticated technological infrastructure, so it was encouraging to find that such technologies were being used by the majority of participants, although with 27 (40%) participants not yet fully engaged there was scope for improvement.

Our final dimension in the area of professional development was whether participants' progress had been sufficiently recognized by formal job promotion. Seventeen participants (25%) had been promoted. This indicator is not completely dependent on individual performance, especially in the absence in South African university libraries of *ad hominem* promotion. Institutional circumstance is likely to determine whether promotional positions or structures allowing for salary increases are available, eg

> *[these] promotions are not necessarily a consequence of the Academy. They are part of a larger library reorganization exercise as well as an appointment to a vacant management position.*

Nonetheless, 17 participants (25%), had been promoted since attending, and – when combined with other evidence – this points to the Academy's impact on the professional development of librarians in South African research universities.

Conclusion

These results show that a short, intensive intervention can make a measurable difference to the way librarians perceive their role, as well as how they perform and the impact that they have on the national research enterprise. At the same time, we recognise that some impact may occur within an unpredictably longer time-frame, and we intend to continue to monitor the activities and careers of participants in future.

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Quantitative measurement of library services: a reflection of services in the library of higher education commission, Pakistan

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Introduction

Higher Education Commission (HEC) was established in Sep 11, 2002 by an Ordinance of the Government of Pakistan for the uplift of the higher education and research activities in Pakistan (Ordinance No. LIII, 2002). The UGC library was established in 70s to support and assist parent organisation in its activities and getting goals with limited resources. HEC Library is in a spacious rectangular hall near the main gate of the Higher Education Commission set in a relaxing lush green environment. Air conditioning and a UPS facility provide a comfortable and welcoming environment for the users.

It serves research scholars, teachers and students on one hand and services to HEC employees on the other. The library subscribes to 18 International and 19 national dailies in English and Urdu as well as local journals and magazines. It is a central repository for collection of PhD theses and HEC recognised Pakistani research journals. Its PhD theses collection is a national treasure and an unrivalled intellectual resource. Online full text access of more than 2800 theses is available on HEC website (***www.eprints.hec.gov.pk***) which allows retrieval by subject, title, name of researcher, year and name of the university. The Library also provides the facility of CCS (Current Contents Services) to users and also plays a pivotal role providing full access to National Digital Library Resources to its users.

Quantitative measurement

Quantitative Measurement is a combination of two words Quantitative and Measurement. In order to understand its true meaning we should have a look on the meanings of the words Quantitative and Measurement separately. Some of the definitions of these words retrieved from the online & other sources are expressed as under:

Quantitative:

The term **quantitative** refers to a type of information based in *quantities* or else quantifiable data (*objective* properties).

1. Pertaining to the *describing* or *measuring* of quantity.

2. Associated with the objective quality of a thing or phenomenon that is measurable and verifiable, such as lightness or heaviness, softness or hardness, and thickness or thinness.

Measurement:

1. Measurement is the process or the result of determining the magnitude of a quantity, such as length or mass, relative to a *unit of measurement*
2. Measurement is the process observing and recording the observations that are collected as part of a research effort
3. Measurement is collection of quantitative data
4. The action or act of measuring ii A dimension ascertained by measuring a size, quantity or extent measured by a standard. iii A system of measuring or of measures. (*The New Shorter Oxford Dictionary*)
5. The amount, quantity or extent ascertained by measuring (*Webster Dictionary*).

Quantitative measurement:

Bordens & Abbott (1997) defines that it is the collection of information that is numeric in nature. While Leskes (2002) says that Quantitative data is that in which the values of a variable differ in amount [in numeric terms] rather than in kind [in descriptive terms]. This data can be analysed using quantitative methods and generalised to a larger population.

Quantitative measurement in library and information science

Quantitative measurement is an effective technique to aid improvement of services in the field of Library and Information Science. It provides a framework enabling the Library professionals to practice new concepts of quantitative forms in the area of Library and Information Science permitting the calculation and measurement of its services in quantifiable terms. A monthly progress report covering the different services of Library in a quantitative form is used as a main mean of quantitative measurement. The categories are defined in the qualitative form while the results and achievements are reported in the monthly quantitative form. Observation and recordings are made by the staff on day to day basis about the different services provided in the Library. The progress reports are sent to the Higher Management for analysis and improvement of the Library services. So in this way, the monthly progress reports serve as continuous feedback about the working of library in various categories.

Nature of services offered in HEC Library

1. Digital Library Services
2. Preservation and conservation of PhD theses.
3. Preservation of back volumes of journals.
4. Current Content Services (CCS).
5. Availability of local and international journals/magazine.
6. Availability of English and Urdu national dailies.
7. One year preservation of newspapers.
8. Research Reports.
9. HEC monographs.
10. Books available on varied subjects.
11. Provision of photocopy facility.
12. Availability of reference books.
13. Ulrich International periodical directory.

14. Availability of high reputed encyclopaedia.

15. Cataloguing in Publication (CIP).

Monthly progress reports of HEC Library

Monthly progress reports from Sept. 2010 to Nov. 2010 are presented as current form of quantitative measurement to view the recent progress in HEC Library.

Monthly progress report of September 2010		
Sr. No	Description of Tasks/Activities	Progress Under Month Reported
1	No. of journals received in library	62
2	No. of newspapers received	532
3	No. of library visitors	584
4	No. of Internet/Digital library users	273
5	No. of Internet users helped	28
6	No. of books, journals, etc shelved	78
7	No. of photocopies arranged for users	335
8	No. of email received and disposed off	232
9	No. of PhD theses received	3
10	No. of PhD theses processed for shifting	495
11	No. of Reference Services (general, specific subject etc.)	33

This report explains the data for September, 2010. Key tasks and activities are described in it. Progress on key task is described in quantitative terms. Number of Library visitors is an important category which stands at 584 while the no. of internet/digital library user is 273. Another important achievement in this month is PhD theses shifting (Hard Form) to the National Library of Pakistan which stands at 495.

Monthly progress report of October 2010		
Sr. No	Description of Tasks/Activities	Progress Under Month Reported
1	No. of journals received in library	66
2	No. of newspapers received	589
3	No. of library visitors	733
4	No. of Internet/Digital library users	360
5	No. of Internet users helped	31
6	No. of books, journals, etc shelved	262
7	No. of photocopies arranged for users	2110
8	No. of email received and disposed off	142
9	No. of PhD theses received	100
10	No. of PhD theses processed for shifting	300
11	No. of Reference Services (general, specific subject etc.)	49
12	No. of PhD theses shifted to National Library of Pakistan	781
13	No. of journals current contents updated	37

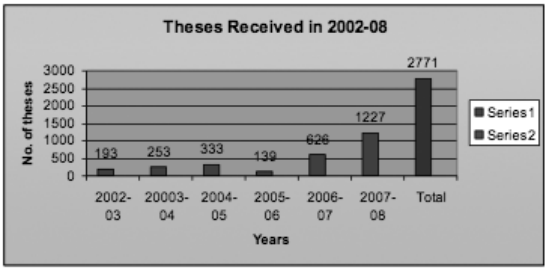
This report explains the data for October 2010. Key tasks and activities are described in it. Progress on key tasks is described in quantitative terms. Number of Library visitors is an important category which stands at 733 while the no. of internet/digital library users is 360. Another important achievement in this month is PhD theses shifted (Hard Form) to the National Library of Pakistan which stands at 781. No. of photocopies arranged for the visitors is 2110 which is a remarkable achievement.

Monthly progress report of November 2010		
Sr. No	Description of tasks/activities	Progress under month reported
1	No. of journals received in library	53
2	No. of newspapers received	544
3	No. of library visitors	625
4	No. of Internet/Digital library users	345
5	No. of Internet users helped	22
6	No. of books, journals, etc shelved	145
7	No. of photocopies arranged for users	530
8	No. of email received and disposed off	98
9	No. of PhD theses received	6
10	No. of PhD theses processed for shifting	185
11	No. of Reference Services (general, specific subject etc.)	49

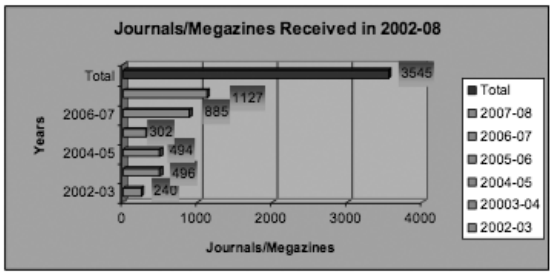
This report indicates the performance in the key areas of number of library visitors, number of internet/digital library users. Number of Library visitors is an important category which stands at 625 while the no. of internet/digital library user is 345. Another important achievement in this month is PhD theses shifting (Hard Form) to the National Library of Pakistan which stands at 185.

Graphical forms of activities in HEC Library (2002–08)

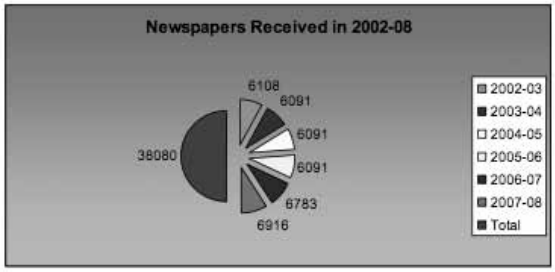
Some of the prominent activities are presented in graphs in order to have a view of quantitative measurement in HEC Library.



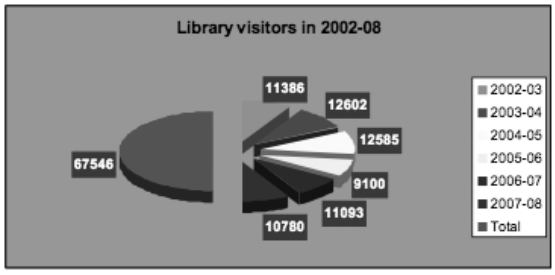
This graph presents the information about the PhD theses received in the HEC Library from year 2002–2008. HEC Library is a pioneer in preserving theses. At the start receiving of PhD theses was slow with just 193 theses received in year 2002–03. But gradually it improved up to 2007. In year 2007–8 it stands highest at 1227. Universities were reluctant to send theses to HEC, but Director Library then took the initiative. He personally contacted the library heads of the universities and requested their support for this service. Assuring them this task was taken up for the preservation of research data across Pakistan a total of 2771 PhD theses were received and preserved from 2002-03 to 2007-08, which is a remarkable achievement in our context.



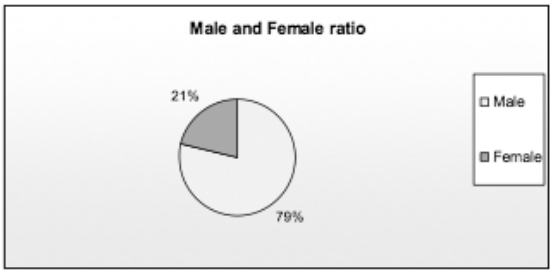
HEC Library purchases national and international journals and magazines on weekly and monthly basis. These journals and magazines serve as a rich resource of current knowledge. This bar graph summarises the information about journals and magazine received from year 2002-03 to 2007-08. This graph represents an upward trend overall. In the start, just 240 journal/magazines were received in year 2002-03 but it reached the figure of 1127 in year 2007-08, improving the service year by year.



Access to quality newspapers of Urdu and English is another critical services being provided in the HEC Library. Every day readers are provided access to 19 English and Urdu dailies of Pakistan. Copies of these newspapers of last one year are also available as record. The graph sums up the record of newspapers received from year 2002-03 to year 2007-08. This graph indicates upward trend almost every year. In year 2002-03 the figure of newspapers stood at 6108 but by 2007-08 it reached the figure of 6916, which shows a remarkable progress.



The number of Library visitors is another important category where employees of HEC and students of various universities visit the Library for their purpose. The graph represents the number of visitors from 2002-03 to 2007-08. Significant progress can be noted from year 2002-03 to 2004-05. In year 2004-05 more visitors consult the Library as compared to other years and the number of visitors stands at 12585. But downward trend was seen from year 2005-06 to 2007-08 in the category of visitors. The reason of this trend is that in these years HEC was funding the universities in the area of strengthening the facilities. So as the facilities improved in university libraries, the number of visiting students to the library fell.



Male and female ratio is another critical category. Here the visitors were categorised on the basis of gender. Male and female students from the public and private universities visit the HEC Library on regular basis. This data shows the percentage of visitors from year 2002-03 to year 2007-08 on the basis of gender overall. It is reported that mostly male visitors consult the Library as the percentage stands at 79% while the percentage of female students is only 21%. In recent years, however, the participation of female students is increasing.

Experience based reflections

These reflections are presented on the basis of experiences gained through the working of the HEC Library.

- Facilitation to the visitors, readers, scholars and digital library users is a key management strategy adopted to improve the services. Our reader or the visitor is our priority. The trained staff always welcomes the scholars and help and guides them properly.
- Rapid access to the information is another aim which is followed in the provision of services to the users. Whether you need an old reference book or you ask for an older international journal, or you require specific information, you would be helped and guided in a professional way.
- PhD theses are considered an important foundation for research and source of information. The preservation of PhD theses has been adopted as a key role for the HEC Library. PhD theses on all the subjects are received by our staff from universities and degree awarding institutions, are properly checked, processed and indexed before being dispatched to the National Library of Pakistan.
- The Library has developed a website of its own, ***www.hec.gov.pk/InsideHEC/Divisions/RND/HLIB/Pages/HECLibrary.aspx***, where a visitor can search Digital Library Services, PhD theses, and other services. Electronic access to the Library is another reflection of increasing services.
- The Library is equipped with the latest computers in order to facilitate searching the internet and accessing the digital Library and various databases. As visitors are increasing day by day, it is sometimes necessary to control access to computers by allotting them for a specific time.
- The categories in the progress reports suggest that the number of users and visitors is increasing. Moreover the access to information is changing forms as varied type of services is offered to the users.
- There are some gray areas in the working of HEC Library. We are facing the constraints of resources and we need more library staff to improve our working facility. We also want to increase our shelved stock, but for all this we need more funds and support from the senior management.

Conclusion

This paper provides a reflection of working of Special Library in the Pakistani context, and can be seen as a model for developing countries in order to improve services of Library & Information Science. This reflects a traditional library that is swiftly changing into a modern library using latest technology.

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Leadership competencies: a reference point for development and evaluation

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Introduction

To improve its capacity to respond to the issues associated with an ageing workforce within the library and information sector and subsequent leadership drain, the imperative for the University of Wollongong Library (UWL) was to create a transparent, integrated approach to succession management and leadership development through the clear articulation of opportunities and expectations for staff wishing to progress to different roles as well as improvement opportunities for those currently content in their existing role. Underpinning these aims was a need to:

- clarify of our intent and strategies for succession planning
- establish a process for staff with leadership interest or potential to be independently assessed and provided with feedback
- implement a process to develop career strategies and opportunities for those with aptitude, capability and commitment
- consider different approaches to leadership development training and opportunities for existing team leaders
- assess availability of external and internal coaching and mentoring for targeted staff
- determine indicators of success, ie what could be considered evidence of effective implementation of a leadership development framework.

Approach

Attracting leaders, developing leaders and succession management are issues consistently at front of mind for many executives, including those responsible for libraries (Intagliata, Ulrich, Smallwood, 2000). The University of Wollongong Library (UWL) is no exception. This case study outlines the approach undertaken by UWL to better understand the competencies required to be an effective leader and describes the evaluation and assessment activities used to test the success and impact of efforts.

The Library has a long history of using business excellence frameworks and standards, eg Australian Business Excellence Framework, Investors in People (IIP) (McGregor, 2004 and Jantti, 2007) to guide staff development within the context of an organisation that values and supports: equitable access to development opportunities, empowerment, capacity for change, initiative and leadership.

We have used these guiding principles to create at their time, innovative approaches to supporting leadership development. UWL is considered an early mover in the development of values and attributes to describe desired workplace behaviours, the use of career plans and support for targeted training and development. These principles of good practice coupled with knowledge of gaps in the recruitment market were the catalyst for the creation of a successful professional cadetship program; designed to grow leaders from within (Wright and Lombardi, 2006). Six new professionals have completed or are progressing through the three year program, and all graduating cadets to date have secured positions within the organisation.

Succession management has been a focus for several iterations of the business plan. Staff are actively encouraged and supported to participate in leadership programs, undertake secondments and other professional development

activities. In spite of these efforts, filling leadership vacancies, at both middle and senior levels has lately proved difficult. Like many academic libraries, we are facing the issue of an ageing workforce (Williamson, 2009 and Whitmell, 2006) and the subsequent loss of knowledge, skills and experience. Due to the limited uptake by internal staff for senior level positions, it was perceived that there lacked appetite and ability to engage with leadership; and despite aforementioned efforts, a climate of leadership inertia was emerging.

This situation identified the need for a much needed recalibration of existing approaches to leadership development and succession management. It was imperative that new approaches be considered on how UWL could support and develop its existing team leaders and managers. It was apparent that external expertise was required and a consultant was secured. In 2009, in collaboration with the consultant, a new leadership strategy was introduced.

To guide the leadership development and evaluation strategy, clarity was needed on what a successful leader looked like within the context, purpose and philosophy of our organisation (Intagliata, Ulrich, Smallwood, 2000). The Lominger Leadership Architect®, a compilation of 67 competencies drawn from research of the characteristics possessed and demonstrated by successful leaders (Lombardo and Eichinger, 2009) became the foundation of establishing success profiles for UWL leaders.

Through workshops led by the consultant, the Library Executive Committee (LEC), made up of the University Librarian and Associate Librarians and the Coordinators Action Team (CAT – made up of team leaders and managers), the 67 competencies were assessed in light of existing goals and future challenges (Charan, 2005) and were then shortlisted to 9 to establish a success profile for each of the two leadership groups.

The success profiles for each group differed considerably as depicted in the table below. This is to be expected, as 'the lines of sight are, in fact, different and the competency architecture needs to reflect this' (Intagliata, Ulrich and Smallwood, 2000, p. 21). A validation exercise conducted by the two leadership teams affirmed that the competency profiles were both desired and expected for success.

Library Executive Committee (LEC)	Coordinators Action Team (CAT)
• Perspective • Managing Vision & Mission • Political Savvy • Strategic Agility • Business Acumen • Self Knowledge • Developing Others • Comfort Around Top Management • Negotiating	• Building Effective Teams • Performance Management* *(confronting direct reports) • Organising • Drive for Results • Intellectual Horsepower • Organisational Agility • Innovation management • Managing Vision & Mission

Table 1: Leadership Success Profiles developed from the Lominger Leadership Competencies

A key point to note is that the competencies do not reflect technical skills, knowledge or expertise of a library professional as such, rather the competencies describe the 'measurable characteristics of a person that are related to success at work' (Lombardo and Eichinger, 2009, p. i).

The success profiles have provided useful information to guide development. Notably, competencies are described, providing clarity of expectations (some examples will be provided in this paper). Of particular interest was the indication of developmental difficulty of each competency and the articulation of unskilled, skilled and over-used skill behaviours in the execution of a given competency. This information is useful to help understand how to support incremental development of competencies, the value to be gained by the leader in strengthening a particular competency and importantly, to help identify milestones to reflect growth.

The descriptions for skilled, unskilled and over-used skills provide a necessary reference point for feedback, action and recognition. Coupled with the descriptions are potential remedies to address competency development; offering a roadmap to guide improvement (Lombardo and Eichinger, 2009)

> ***Competency: confronting direct reports*** *(part of the competency family of Courage),*
> *Most organisations are running leaner today. With rapid change and team-based efforts increasing, problem performers can't be hidden as they may have been in the past. Overcoming your reluctance to deal with them is key to your unit's performance and your career as well. Managers who excel at confronting direct reports are timely, consistent, focus on performance gaps and help the person succeed. But if the effort fails, taking timely but compassionate action to separate the person from the organisation is the true test of management courage.*
> **From:** *FYI For your Improvement: A guide for development and coaching*.
> **Michael M. Lombardo and Robert Eichinger, 2009, p. 74.**

The next step was the use of career interviews between the consultant and middle managers. This provided the opportunity to discuss career goals, level of ambition and what were considered the obstacles, stallers or impediments to their goals. The use of a consultant to facilitate these one-on-one discussions provided the necessary objectivity and lack of bias, thus eliciting candid responses; more than could have been achieved if led by a member of the UWL staff.

Through this process, a key organisational myth was overturned. It was revealed that there *was* considerable appetite and potential for leadership. Importantly, new insights emerged to reveal the reasons for inertia.

For many who participated in the interviews, the 'gap' in skill and competency between middle and senior level leadership was too wide to bridge; that they lacked the knowledge and tools to start closing the gap. For some, the incentives weren't sufficiently attractive and clashed with the personal value placed on work/life balance. All they could see was that higher levels of leadership just meant more work, more hours and a loss of conditions that fostered work/life balance, such as flexible hours of work. We as the Library Executive weren't making the extrinsic and intrinsic benefits of senior level leadership visible or attractive.

A significant milestone in evaluating current and potential leaders against the competencies was a self and peer assessment exercise. A predetermined rating scale was used by the Executive team to evaluate an individual's performance against the competencies in both leadership success profiles and the individual also completed an assessment against the competency profiles. The purpose of this exercise was to: test perception and alignment and to create discussion points to focus on unpacking the ratings assigned, and reconciling 'gaps' in alignment, and consideration as to whether an individual was as competent as they thought.

These exercises provided the necessary insight to understand the leadership potential of UWL. Staff clearly valued the candid discussions that had taken place; it was revealing and empowering to be asked, '*where do I see myself in the future and how might I get there?'* The next phase was to enable action; significantly, action that was driven and owned by the individual.

Professional career coaching, colloquially known in UWL as *conversations for action* commenced with the aim of reaching agreement on personal development goals. The coach's role was to facilitate self-discovery of actions for improvement and development; to hold up the 'mirror' to provide clarity and self-reflection and to focus on what needs to be done; addressing real issues taking place in the work environment; and to identify strategies to accelerate progress. For many, it was initially confronting and hard work; this was not a space for hand-holding. Importantly, these sessions were steeped in personal accountability (Lombardo and Eichinger, 1997).

To further promote self awareness, a 360 degree feedback process was deployed in 2010. All participants (learners) targeted for the survey were required to reflect and assess themselves against all 67 Lominger competencies, along with their chosen raters. In VOICES™, the Lominger 360 degree evaluation and feedback system, each rater is asked to rate the importance of each of the competencies as well as provide skill evaluations for the person requesting the feedback, "*the learner*" (Lombardo and Eichinger, 1997). A rich and detailed report was prepared for each team leader, manager and member of the Library Executive, coupled with a one on one debriefing session with an expert in the application of this tool. For some of the leaders, this was the first time they had experienced this type of evaluation and the findings were, in some cases, affirming as well as challenging. Despite initial reactions, pleasingly and reflective of the organisational culture, most participants openly shared their reviews and responses to feedback with their managers and in some cases their teams. All leaders agreed to identify at least one development goal in response to the feedback received.

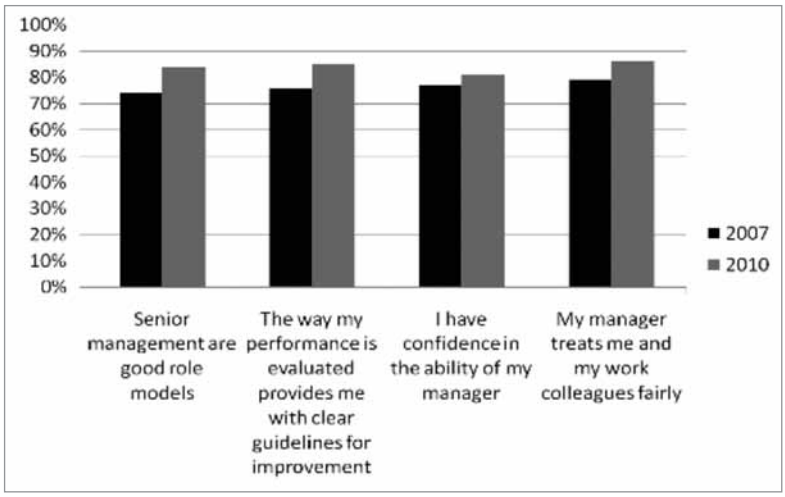
The competencies have since been systematically integrated into key staff policies, procedures and documentation, eg recruitment, induction, probation, annual performance plans and job enrichment portfolios. Intagliata, Urich and Smallwood (2000, p.16) assert if the competency 'model is the right one, it needs to applied aggressively, creatively and comprehensively'. The competencies and associated support documents and materials provide a reference point for developing actions for self improvement as well as evaluation of performance. Quite early in the process the commitment of team leaders and managers was evident as reflected in improved authenticity in discussions with their teams and improved alignment of goal setting activities to performance feedback.

Findings

The use of a consultant and the use of validated instruments introduced a degree of objectivity needed to help remove perceptions of bias or prejudice in our assessment of workforce and leadership requirements. The Library Executive made a firm commitment to ensuring the program's success and was integral to both the implementation and evaluation of chosen strategies.

A critical discussion at a review point focussed on measuring the success of the leadership initiative; how could it be measured? Perceptible changes had been noticed by the Library Executive, for instance, improved self confidence in leaders, a greater preparedness to address underperformance, and that career and developmental plans were more considered and constructive in their design.

An institutional employee climate survey conducted in 2007 and repeated in 2010 further reveals the impact of investing in leadership. Performance ratings for factors such as*: I have confidence in the ability of senior management; senior managers are good role models for staff; I have confidence in the ability of my manager* improved significantly.



Graph 1: Employee climate survey results

Evaluation against the Investors in People (IIP) Standard provides an opportunity to specifically test the application and integration of human resource management strategies and the success of individual and organisational change management strategies. Assessment against the standard can assist in determining whether a return on investment in people management and development strategies is being achieved. A recent IIP review in 2010 affirmed leadership development initiatives as good practice; further verified with the first IIP Silver Status to be awarded in Australasia under a new recognition program.

While much of the discussion so far has focussed on developing staff with potential; participation in the initiative also afforded opportunities to consider new and different approaches to dealing with the 'difficult or 'underperforming' employee. Through three-way coaching, and deployment of other tools, a number of underlying issues were uncovered and dealt with, and a greater appreciation of a staff member's strengths was enabled. This, in several cases, resulted in a fundamental shift from being a difficult employee to an engaged, productive staff member.

Importantly, our capacity to fill leadership positions from within is improving. A number of staff have since progressed to higher level roles or are preparing themselves for roles in the future. Through heightened awareness of the leadership success profile, an enhanced appreciation for individual strengths has emerged. For some, roles have been redesigned or reshaped to optimise available talent. In other cases, we have challenged the notion of years of service as a precursor to leadership development and the allocation of leadership assignments, and as a result, early career leaders are being accelerated, better supported and importantly, filling needed leadership roles (Intagliata, Ulrich and Smallwood, 2000).

Practical implications

As mentioned earlier, a commitment by the executive or senior leadership team is critical to this type of developmental program. Financial commitment is also a consideration through the engagement of the consultant and career coaching services. Not insignificant energy and time is required from all parties involved, eg scheduling time for workshops, coaching sessions, subsequent actions and review; challenging in an environment of ever-increasing priorities.

Challenging also is the management of perceptions and expectations of staff. It is fair to say that there was some disaffection from staff who were not included in the first round of coaching. Subsequently, opportunities to support both external and internal coaching are being investigated.

In building a sustainable approach for leadership development and evaluation a number of strategies are in place. Projects and job assignments are being used to provide necessary experience and opportunity to exercise the 'competency muscle' (Charan, 2005, Intagliata, Ulrich and Smallwood, 2000 and Lombardo and Eichinger, 1997). Structured feedback against the competencies is requisite in any leadership activity, eg secondment, acting at a higher level. The setting of annual goals for career and personal development must include a goal aligned to the development of one or more leadership competencies (Lombardo and Eichinger, 1997). An internal coaching network is in development with full deployment planned for 2012. Four staff have been identified as coaches and will enable considerable reach and access for those interested in using a career coach to identify actions for development.

To acknowledge the need to 'bridge the gap' between leadership levels and to provide further clarity on how to achieve this, a leadership development framework is nearing completion. Strategies, examples of evidence and results are mapped to the success profiles for both CAT and LEC. We foresee the Leadership Development Framework being used in career planning, coaching and personal development; providing the desired signposts to mark the leadership journey.

Conclusion

This exercise of leadership development and evaluation has been significant for number of reasons. It represents a new milestone in our commitment to quality and service excellence and best practice. UWL has overcome barriers, both real and perceived, to grow leaders from within; and dispelled myths about what leadership is and how it can be achieved. We have examined ways to accelerate an individual's progress.

A commitment to new methods to support and evaluate leadership development initiatives has resulted in changed perceptions of leadership aspiration, aptitude and ability. The identification of required competencies has provided improved goal clarity, insight on how to become skilled in a given competency, and a reference point for evaluation. Importantly the performance of leaders has improved. There is qualitative and quantitative data to demonstrate both a commitment to leadership development and the application of desired behaviours associated with the competencies. The capacity to grow and promote from within has also improved; evidence that the succession management initiative is being achieved. Through this initiative, we have signalled what it takes to be a high performing organisation and the roles leaders play in sustaining this aim.

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Applying SROI in the evaluation of the Welsh library strategy

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Introduction

Measuring the impact of libraries and library strategies is a complex issue that generates significant research interest (Jura Consultants, 2008). Given the complexity of the task, it can be difficult for a library service or a strategic body to know which model is the most appropriate for their particular needs.

In Wales there has been considerable investment in libraries by the Welsh Government, most recently with its £10.5m strategy 'Libraries for Life 2008-11'. With such significant investment it is important to evaluate the impact of the funding. The aims of the evaluation of Libraries for Life were to assess the impact of the Libraries for Life strategy on library services, library users and non users in Wales in order to inform future library policy and investment, and to capture, if possible, the wider benefits of such funding through the use of social return on investment (SROI).

Whilst most libraries are able to provide usage statistics such as number of issues or physical visits (eg those collated by the Chartered Institute of Public Finance and Accounting for public libraries and the Society of College, National and University Libraries for higher education institutions), it is often harder for libraries to show the impact they have on people's lives, their wider value, and the additional benefits that may arise from investment.

The Libraries for Life evaluation research adopted a broad multi-faceted approach to capture a range of evidence to help libraries prove their value at a time when many are facing budget cuts, reductions in services and a questioning of their existence now that "everything's on the Internet".

This paper will begin by outlining the Welsh library context and the Libraries for Life strategy before discussing the evaluation methodology, the use of social return on investment and implications of using this method for future performance measurement of libraries and library strategies.

Wales context

In order to put the Welsh library strategy Libraries for Life into context, it is important to provide information about the Welsh library environment and the political context. Wales is a small country (2.1 million ha), of some 3 million people, 25% of whom speak Welsh (Welsh Government, 2011). The more concentrated urban areas tend to be in south Wales and there are expanses of rural and remote areas across Wales. The library sector comprises:

- one National Library of Wales (in Aberystwyth)
- 22 local authority (public) library services
- 11 higher education (HE) library services (approx., mergers ongoing)
- 19 further education (FE) college library services (approx., mergers ongoing)
- school libraries
- health libraries

- five prison libraries
- workplace libraries.

The Libraries for Life strategy included the majority of these library services, although primarily concentrated on public, further and higher education libraries.

The Libraries for Life strategy was developed by CyMAL: Museums Archives and Libraries Wales which is the Welsh Government's division responsible for museums, archives and libraries in Wales, in consultation with the library sector. Libraries are a 'devolved issue' so Wales is able to develop policies in this area separately from England, Northern Ireland and Scotland. CyMAL develops policy, administers grant programmes, provides Ministerial support as well as providing advice and support to the whole domain in Wales. Since it was established in 2004 CyMAL has delivered two library strategies: *@ your library 2005-07* and *Libraries for Life 2008-11*.

Libraries for life

Libraries for Life: delivering a modern library service for Wales 2008-11 (Welsh Assembly Government, 2008) was a complex multi-strand strategy with £10.5 million of Government funding. It comprised of six work strands:

- community Learning Libraries Programme (capital investment refurbishing public libraries)
- online content and resources
- regional library partnerships framework
- national marketing strategy
- developing workforce skills
- Welsh Public Libraries Standards Framework Three.

Each strand varied in its size, approach, management and delivery, and some were led by CyMAL whilst the online strand was led by the National Library of Wales (NLW), and the marketing strand was led by Wrexham County Borough Council on behalf of all libraries. The majority of the funding was capital investment in the Community Learning Libraries Programme (£7.5million) and just under 70 branch libraries were modernised with this grant funding.

Evaluation methodology

A key consideration at the planning stage was to design an evaluation framework that not only assessed the success (or otherwise) of Government investment, but also one that included a way of measuring the *impact* of library services. The evaluation framework was designed to gather the full range of impacts of the programme, using a range of conventional research techniques and the SROI model which had been developed by the new economics foundation (nef) and has recently been used by the Museums Libraries and Archives Council (MLA) to evaluate community engagement within their public libraries refurbishment and building programme (ERS, 2010).

The SROI model was chosen for its ability to measure social benefit and its ability to translate outcomes into tangible monetary values which are effective headline figures to attract the attention of Ministers and policy makers.

The research was carried out over a 16 month period from December 2009 to March 2011 by Scotinform and involved the following methodologies:

- internal and external consultations with CyMAL staff, strand leaders and key partner organisations
- literature review including comparator countries
- survey of libraries and consultations with heads of library services
- online self completion survey, and online and face to face focus groups with library staff

- paper/online self-completion surveys, and online and face to face focus groups with library users
- face to face interviews, and online and face to face focus groups with non users
- Social Return on Investment model to be applied to two work strands (see below).

What is social return on investment?

Social return on investment is a framework for measuring and accounting for the concept of value developed by the Cabinet Office – Office of the Third Sector. It measures change in ways that are relevant to the people or organisations that experience or contribute to it. It tells the story of how change is being created by measuring social, environmental and economic outcomes and uses monetary values to represent them. SROI is about value, rather than money. Money is simply a common unit and as such is a useful and widely accepted way of conveying value.

The question posed at the outset of the overall evaluation of the programme was 'is SROI a suitable tool for measuring the impact of the Libraries for Life programme?' In order to answer this question the evaluation team created a framework based on SROI assessment criteria as laid out in the guidance documents available from the SROI Network (Cabinet Office, 2009).

It was decided that a full and rigorous SROI assessment could not be carried out on *all* six strands of the Libraries for Life strategy given the size of the programme of work and the complexity of the work being undertaken within each of the strands. In particular it was felt that several of the strands did not lend themselves to SROI as it would not be possible to attribute impact purely to the Libraries for Life investment. Therefore it was decided to concentrate the SROI element of the evaluation on two of the strands: Community Learning Libraries Programme (capital investment) and the workforce development strand. It was felt that for these strands it would be easier to map a direct and unequivocal link between investment and outcomes.

The assessment of the Community Learning Libraries Programme strand focussed on the modernisation of the public library network through two case studies:

- Pontarddulais library (south Wales)
- Wrexham library (north Wales)

These two case studies were selected because it was felt that they represented the broad range of libraries that have been modernised in Wales as part of the Libraries for Life programme. Wrexham is in the north of the country, Pontarddulais in the south; Pontarddulais was refurbished at the beginning of the programme of work and Wrexham in the final year; Wrexham is a large city based library and Pontarddulais is a small rural library.

Application of SROI

The process specified for an effective SROI assessment is clearly laid out in the SROI Network guidance documents (Cabinet Office, 2009). Following this guidance, the following processes were undertaken to evaluate the two chosen work strands of Libraries for Life.

Stage 1 – Establishing scope and identifying key stakeholders

The first stage was to identify the key stakeholders who will either have been impacted by, or have had an impact on, the programme of work. These key stakeholders were identified for both the chosen work strands. Consultations were then held with the key stakeholder groups including strand leaders, library staff and library management through the use of interviews and focus groups. In addition, relevant questions were inserted into the main surveys of staff and library users and non-users which were being conducted as part of the full evaluation, and desk research was carried out to review the project paperwork including grant applications and progress reports.

Stage 2 – Mapping outcomes

In considering measures of the change created by the activities of these two strands, a number of possible indicators were explored. However, many of these were either impractical to use within the resources available or not relevant.

The most *appropriate* indicators were therefore selected to work with. The criteria for selection and appropriateness were that indicators must:

- be sensible to measure (not requiring an inappropriate amount of resource – preferably with data already collected by existing systems)
- be relevant to Libraries for Life; and
- produce significant numbers to warrant data collection and work involved.

Stage 3 – Evidencing outcomes and giving them a value

This stage involved finding data to show whether outcomes have happened and then valuing these outcomes. These data made it possible to calculate the financial proxy for the SROI assessment. In selecting indicators there is a trade-off between data availability and accuracy: when data is unavailable or difficult to obtain, proxies may be used (a proxy is a value that is deemed to be close to the desired indicator).

Stage 4 – Establishing impact

Having collected evidence on outcomes and monetised them, those aspects of change that would have happened anyway or are a result of other factors were eliminated from consideration. These are classed as 'deadweight'. It cannot be assumed that all investment leads directly to positive change and so further investigation is required. In evaluating the outcomes and impacts of a policy, deadweight is what would have happened anyway, calculated through the use of benchmark data.

Many actions contribute to the achievement of outcomes. Like deadweight, 'attribution' involves finding out whether observed changes were the result of a given policy rather than merely coincidental, and whether they can be attributed to the programme being evaluated.

Stage 5 – Calculating the SROI

This stage involved adding up all the benefits, subtracting any negatives and comparing the result to the investment. At this stage we also tested the sensitivity of the results. Following these calculations the SROI figures that were arrived at for the three elements were:

- Workforce development: £3.12 of SROI
- Pontarddulais library: £3.42 of SROI
- Wrexham library: £2.16 of SROI.

These figures represent the social return on investment achieved for each £1 invested; these can also be expressed as a ratio. For example, for the workforce development strand using the small number of indicators and financial proxies that were appropriate and available we have calculated that for every £1 of spend there has been £3.12 of Social Return on Investment which equates to a ratio of 1:3.1. These data have not been verified by the SROI Network.

Reflections on SROI

SROI is not all about money, despite the final monetary calculation above. In the same way that a business plan contains much more information than the financial projections and the forecast return, SROI is not a number but a story about change which includes narrative, qualitative, quantitative and financial aspects. SROI considers stakeholders as investors and seeks to provide a mix of information to communicate the social return. During reporting we included details from calculations where there was no financial proxy available or where the sample was too small to provide a robust assessment, we have shown the wider impact of these elements of the Libraries for Life Strategy 2008-2011. This additional narrative on the social benefits of the investment can be found in the full evaluation report (Scotinform, 2011).

The evidence collected during the SROI element of the evaluation clearly showed that staff and users in public libraries have benefited from the investment in refurbishment and modernisation; there has been increasing usage and improved working environments from users and staff, and the public profile and perceptions of libraries have been changed.

Staff across the library sector have also benefitted from the investment in workforce development with increased levels of skills and confidence, improved career prospects and higher earning potential, all being a direct result of the investment of the Libraries for Life strategy.

At the end of the assessment process, the SROI calculation for the two strands showed very positive impacts, although it has not been possible to assess the impact in its entirety. Wrexham library had only just re-opened when the SROI assessment was undertaken and it is likely that its value would have increased after an additional six or 12 months. The two case studies undertaken for the Community Learning Libraries Programme, in particular, have shown a more than reasonable level of social return, and should it be possible for this process to be extrapolated out to include all libraries that had received the grant for refurbishment; the overall figure for this strand could prove to be higher on average than for the two individual libraries.

The SROI process has been challenging and has to some extent thrown up new questions as well as answers. The SROI process must be underpinned with involvement by, and consultation with, all stakeholders which can be difficult with large programmes such as Libraries for Life. However overall, we believe that undertaking an SROI assessment for the Libraries for Life strategy has provided a valuable insight into the wider impacts and benefits that the investment in the library sector in Wales has had, and has highlighted areas of impact that would not normally be focussed on in a purely quantitative evaluation of spend against outputs. It has shown clearly that the investment, in community libraries and library staff across all disciplines of the library sector in Wales has generated positive outcomes beyond the expected targets laid out in the strategy document.

Issues to consider for the future

After completing the SROI process we would suggest that SROI is not always the most appropriate tool for measuring value for a whole programme of the size and complexity of Libraries for Life. Where SROI could potentially be a useful tool is when trying to measure the wider impact of smaller, discrete library projects and investment where it would be possible to have the involvement of all stakeholders and for the data to be identified at the outset and collected consistently throughout the programme's lifespan.

For future CyMAL strategies the SROI findings could be used as a baseline for measuring the impact of future delivery and investment. However, this must be based on robust information gathering and reporting. Other research into measuring the impact of libraries using methods such as SROI have also found that creating a structure where appropriate evidence is collected regularly is central to measuring impact in a robust way. As discussed in a recent report for the Department for Culture, Media and Sport, the main challenge for evidencing libraries' impact is identified as:

> *"that the current evidence base still remains insufficient in a number of ways. Many of the weaknesses in the evidence base are generic, and have been identified in previous similar literature reviews, namely:*
>
> - *a predominance of one-off evaluations of time-limited programmes and pilot schemes over research on core services*
> - *a lack of baselines against which to measure change, and*
> - *a lack of in-depth qualitative research that analyses the specific nature of the interactions that take place in libraries."* (BOP Consulting, 2009, p. 2.).

Overall findings evaluating Libraries for Life

The evaluation of the whole programme was an iterative process and findings were presented by Scotinform throughout the evaluation period. Interim internal reports were presented in March 2010 and September 2010 with the full report presented in March 2011. The evaluation report (Scotinform, 2011) is available on the CyMAL website but key findings are:

- the strategy proved to be "… excellent value for money" with a wide reach

- there was considerable value in the partnerships across the library sector in improving services and working practices;
- positive impact of an holistic approach to investment in libraries, including capital investment, staff development, resource development and marketing
- evidence of the intrinsic 'value' of libraries held by users and non-users.

Implications and conclusions

The SROI figures are extremely useful for providing evidence of the additional benefits resulting from investment in libraries in a succinct and understandable manner. Such data is being used in policy briefings and Ministerial communications to provide evidence of the value of investing in libraries. Library services will also be able to utilise the research for their own purposes. The SROI findings and the evaluation report's findings as a whole are also extremely useful in showing the wider use, value and impact of libraries and especially the views of non users or lapsed users. The findings have already helped inform future policy development for the next libraries strategy for Wales (*Libraries Inspire*) which will run from 2012-16.

This is the first time SROI has been deployed to evaluate a library strategy in Wales but its findings will be relevant to libraries across the UK and beyond.

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What do they want now? Qualitative regrounding of the LibQUAL+® survey

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The LibQUAL+® centre piece web-based survey that enables libraries to assess their service is internationally respected for its rigorous development and testing (Kyrillidou, 2009b). Built on the premise that "only customers judge quality; all other judgements are essentially irrelevant" (Zeithaml, et al, 1990); the questionnaire was initially developed following a series of interviews conducted in late 1999 – early 2000 with academic library customers on what constitutes a quality library service (Cook, et al, 2002). Further qualitative and quantitative research iterations completed in 2004 resulted in the core 22 questions currently used.

LibQUAL+® has provided libraries with a customer satisfaction benchmarking tool which is easy to administer and cost effective. The success of the tool has been partially due to the survey questions relevance to the expectations of library customers. In order to remain current however, LibQUAL+® must review the questions asked of the library customers to ensure that it remains relevant as user expectations alter over time (McKinght, 2008). Do the needs of the academic library customer still align to the views held over a decade ago?

In April 2011 Cranfield University embarked on a research project into the current needs of its academic library customers with a view to evaluate if the LibQUAL+® questions are still assessing these needs. To set this research in context, Cranfield University is the UK's only wholly postgraduate university; focused on science, technology, engineering and management subjects. It is one of the United Kingdom's top five research intensive universities delivering the United Kingdom Ministry of Defence's largest educational contract. The University has over 5,000 students, 40% of whom are studying on a part-time basis (Higher Education Statistics Agency, 2011).

A series of focus groups were held at during spring 2011 capturing what academic library customers want from their library service. Separate focus groups were conducted with customers from four key stakeholder groups; full-time taught postgraduate students, part-time taught postgraduate students, doctoral research students and academic teaching staff. Owing to the postgraduate focus of Cranfield University the views of undergraduates were excluded from this research.

The focus groups primary aim was to discover what the academic community wanted from their library service. The semi-structured discussions focussed on the needs of the customers in four main areas; information provision, access to information resources, support from library staff and the physical library environment. The focus of the discussion was on academic libraries in general, rather than the specific needs of Cranfield University customers; however participants often pulled upon their experiences of Cranfield University. Users and non-users of the Library were invited to attend the focus groups to enable a broader understanding of customers' expectations, however all attendees had used the library service at least once. Eight focus groups were conducted in total, two with each of the four stakeholder groups. The discussions were recorded, transcribed and coded using Atlas.TI to identify the common themes of service provision requirements across all user types.

For students and academics alike the provision of information resources remains the primary remit of the library service, however their expectations differed.

For the students, the focus in the main was on readings recommended to them by their lecturers. They expect the library to provide the articles, chapters and books recommended to them; they did not find the need for abstract and indexing databases. The emphasis was on electronic full-text with easy, immediate access. They have no desire to access journal articles in print, and in the main the same was found when discussing books. When asked if they would prefer electronic or paper books the majority of students preferred the electronic format; with availability, easy access, searchability and portability being cited as the reasons. eBooks are viewed as being more convenient than their printed counterparts. Despite this, there is still a desire for print books. Students discussed the emotional connection with paper books, the desire to browse the shelves and flick through the pages in a way they perceive impossible with electronic media. Digital rights management is also inhibiting the popularity of library owned electronic books. Students that have eBook readers wish to use the library resources on their own devices; and all students wanted to

print off, download, save and print book chapters in the same way they can for journal articles. The varying access restrictions across providers are frustrating and confusing for the students.

Taught and research students both raised new media and social networking in the discussions around information provision. Video lectures being made available either via YouTube or the University's own website were requested, whether managed by the library or otherwise. Research networking, as apposed to 'social', was also discussed enabling students to share information pertinent to their studies across cohorts, years, courses and institutions. They expressed a desire for integration of personal devices with library services through a mixture of smart phone applications that allow them to locate resources on the shelves, QR codes that allow eBooks to be downloaded to their devices, and barcode readers that allow them to scan a barcode on any book to check if there is a copy within the library collection.

Despite having access to a cross-searching database, students still used Google or Google Scholar as their primary information source. Frustrations were encountered when trying to work with a myriad of systems which required varying authentication methods. The Library cross-searching tool was seen as inefficient compared to Google, providing too many irrelevant search results and not enough full-text access; despite having more options than Google to refine and filter the search results.

Overall they want personalised seamless electronic access to information resources via their own device whenever connected to the University network whether wirelessly or remotely.

The needs of the academic staff differed slightly. Although electronic journals were the primary information source used by the academics for their own research, unsurprisingly the desire for abstract and indexing databases was greater than full-text only sources. They use text books to support their teaching only, and overall they would prefer to recommend a book available in electronic format compared to print only. Electronic information delivery was in the main the preferred method of access.

So with the desire for electronic delivery of library resources, is there still a need for a physical library environment? All focus group participants said yes. The library is viewed as an escape, whether it is from their office, home or residential accommodation. It provides an environment conducive for study, focussing the mind on the task at hand.

Staff and students alike want the physical library to offer a one-stop-shop, with a mixture of information and computer provision, along with space for their laptops and a wireless connection to the University network. Students desire a mix of study environments and spaces, including areas for group working and individual quiet study. They desire a comfortable working environment where they can eat and drink whilst working, with an area to relax and take a break in when they wish. They do not feel comfortable at the thought of working in a strictly silent library.

The students expressed a desire for 24/7 opening hours, currently not available at Cranfield University, however they did not feel it needed to be staffed at all times. They wish to use the Library late into the night as a space to study in, especially when working to a tight deadline.

Within the Library students and academics alike want access to helpful, friendly staff who can answer information seeking questions in a supportive manner. They do not expect the library staff to have detailed knowledge of their subject area, but they do expect them to have an understanding of the best information sources to support their research. Students and academics prefer to find information independently in the first instance, only coming to the library staff for help if they have been unsuccessful. When they have a problem and need help they want to contact the Library through a central contact point whether that is face-to-face, online, via email or over the telephone. They also like having a named contact within the Library that they can call upon for more general or in-depth enquiries.

Customers expect the library staff to provide training for the students on research skills and using electronic resources. Both students and staff value the embedded training currently provided at Cranfield University, linking the training to the student's first assignment. Part-time students additionally expressed a desire to have drop in training session available to them whist attending residential weeks at the University. Academic staff want the library to provide them with training and support on issues surrounding copyright and intellectual property rights, especially with relation to electronic teaching materials in the virtual learning environment. They would prefer training to be delivered in their own offices at a time convenient to them on a one-on-one basis.

Those are the findings from Cranfield University, but what about the undergraduates? In an attempt to capture the views of undergraduate students a facebook poll was created posing the question "University Students: What would your ideal academic library offer?" Around twenty options were added to the poll, but the poll was left open to allow further option to be added by the respondents. Over 2,000 votes were received in the first month of the poll being available, and over twenty additional items were added by the respondents. The poll is available at ***http://on.fb.me/***

jatsne. Not all respondents were undergraduate students and the poll does not provide any scientific results, but the most popular options include study areas I can plug my laptop into, access to electronic databases for my research, a comfortable place to study, Wi-Fi access and silent study areas. Overall the results paint a picture of a student who likes to work quietly in the Library using their own electronic devices with the library resource. They want a comfortable place to study, where they can eat and drink, with access to knowledgeable library staff if they need help. Or, in short, Starbucks with benefits.

So how do these findings relate to the questions in the LibQUAL+® survey? The questions cover three main dimensions of library service provision, affect of service containing questions concerning the effectiveness of library staff; Library as Place, questions on the physical environment; and Information Control, questions concerning the ease with which information can be found and the availability information.

The Affect of Service dimension contains questions assessing the library staff in nine separate elements of service provision. At Cranfield University all of these values were still regarded as important by the focus group participants, none of the questions are viewed as irrelevant.

The Library as Place dimension consists of five questions assessing separate elements of the physical environment. At Cranfield University, all customer groups still desire a physical library environment. The term 'escape' was used often by all focus group participants, which aligns to the LibQUAL+® question that describes the Library as a haven or getaway for study, learning, or research. The mixture of group and individual quite space is still desired by the students. All of the Library as Place questions are relevant to the needs of the Cranfield University library customers.

The Information Control dimension contains eight questions relating to information provision and access. The overarching desire from the customers was to have seamless electronic access to library resources from their own devices. With that in mind, the questions:

- easy-to-use access tools that allow me to find things on my own
- making information easily accessible for independent use
- a library Web site enabling me to locate information on my own.

are all still desired by our library customers.

With the exception of one respondent, all focus group participants favoured electronic information provision over print. Physical resources are still valued by the customers for their 'browsability'; however in comparison the desire for electronic books and journals was greater than the desire for their printed counterparts.

Customers preferred Wi-Fi and integration with their own laptops over computers provided by the Library, however they did still want the Library to provide computers as they did not wish to carry their laptops around with them at all times. With the change to internet provision through wireless hotspots and 3G networks our customers now wish to access our electronic resources from anywhere. It could be argued that there is a need to broaden the question 'Making electronic resources accessible from my home or office' to encompass these needs.

Within the information control dimensions all of the eight questions align to our current customer needs, but with varying levels of desired expectations.

Two key elements of the library service raised by the customers of Cranfield University are not part of the LibQUAL+® core 22 questions; library opening hours and training provided by library staff. However, questions on both of these areas are available within the optional additional five questions libraries can add to their survey.

In conclusion, the findings at Cranfield University show that LibQUAL+® is still addressing the issues that matter the most to our customers. The expectations of our customers have not changed dramatically in the last ten years. Cranfield University is not a typical university library and as such further research into the views academic library customers at other institutions could be beneficial to ensure the relevance of LibQUAL+®. However, as it stands, LibQUAL+® still provides Cranfield University with a cost effective and easy to administer survey tool that measures the areas of service provision that our customers want from their academic library.

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LibQUAL+®: the UK and Irish experience

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Introduction

This paper reports the progress and development of the Society of College, National and University Libraries (SCONUL) LibQUAL+® consortium in the United Kingdom and Ireland since its introduction in 2003. The paper discusses the consortium composition, the expectations of the customers and how these have changed over time, the perceptions of the library service in the UK and how this compares with the Association of Research Libraries (ARL) survey respondents. Demonstrable outcomes from LibQUAL+® at a local and national level are also presented.

LibQUAL+® is a library service quality survey instrument developed by the Association of Research Libraries (ARL) in association with Texas A&M University (Association of Research Libraries, 2011). A consortium of SCONUL member libraries has been successfully running LibQUAL+® in the UK and Ireland since 2003 (Lock and Town, 2003). In 2003 the survey consisted of 25 questions across four dimensions; a consortium of 16 SCONUL member libraries successfully piloted the LibQUAL+® survey for the first time outside of the United States of America. In 2004 the survey was adjusted to consist of 22 questions on library services across three dimensions; Affect of Service containing questions relating to the library staff, Information Control covering the library resources and access to them, and Library as Place assessing the physical environment. The 22 question/three dimension model is still used today. One of the key strengths of LibQUAL+® is its use of gap theory to evaluate customer expectations as well as perceptions. For each of the 22 questions respondents are asked their minimum and desired expectations along with their current perceived level of service on a nine point scoring scale. The standardised survey enables participating institutions to benchmark their scores against one another, and against an aggregated score for their consortium.

Consortium composition

Since 2003 a total of 73 libraries have used LibQUAL+® as part of the SCONUL consortium, with over half of those using LibQUAL+® more than once. In 2010 a number of Ireland's Consortium of National and University Libraries (CONUL) members joined the SCONUL consortium enabling benchmarking across the United Kingdom and Ireland.

The composition of the consortium has been examined by UK Higher Education sector and in table 1. The primary users of the survey tool are universities from the Research Libraries UK (RLUK) or the Pre-1992 sectors, with over half of the institutions within these sectors using LibQUAL+® at some stage. Compared to the sector population, fewer new Post-1992 have used LibQUAL+® with only one third of institutions implementing the survey. To date only two UK Higher Education colleges have used LibQUAL+®.

	RLUK	Pre-1992	Post-1992	HE colleges
LibQUAL+® Participants	17	23	22	2
Percentage of sector group using LibQUAL+®	57%	55%	33%	7%

Table 1: LibQUAL+® Participants by UK HE Sector

Within the UK there are four Higher Education mission groups. They consist of HE institutions that have common aims and values; they work collaboratively with a view to influence public policy. Not all universities are members of a mission group. The composition of the consortium by UK HE mission group can be seen in table 2. Around a third of all University Alliance members and two thirds of Russell Group and 1994 Group member libraries have used

LibQUAL+® at some stage. To note, although not a UK HE mission group, nine out of the eleven CONUL member libraries have used LibQUAL+®.

	Russell Group	1994 Group	University Alliance	Million+
LibQUAL+® Participants	12	13	7	12
Percentage of mission group using LibQUAL+®	60%	68%	30%	44%

Table 2: LibQUAL+® Participants by UK HE Mission Group.

Repeat use of LibQUAL+® by SCONUL consortium members is predominantly on a two-yearly cycle, with half of the repeat users adopting this pattern. Around 20% of libraries use the survey on an annual or three-yearly basis.

Expectations & perceptions

The strength of gap theory as employed by LibQUAL+® is its assessment of customer expectations as well as perceptions. When reviewing the desired mean score for the SCONUL consortium across the years, three questions have been consistently seen as the most desired items on the survey:

- making electronic resources accessible from my home or office
- print and/or electronic journal collections I require for my work
- a library Web site enabling me to locate information on my own.

Similarly, three questions have consistently been the least desired items:

- giving users individual attention
- space for group learning and group study
- library staff who instill confidence in users.

Although the questions consistently received high and low desired mean scores, they are only the highest and least desired items within the confines of the survey limitations and in relation to each other. Overall the questions indicate that the respondents prefer to work with electronic resources autonomously outside of the physical library.

Longitudinal analysis of the SCONUL results from 2004, when the survey first took its current form, against the results from the first half of 2011 has been conducted. The minimum expectations of respondents rose for all three dimensions of service quality measures. The largest increase was found in the Affect of Service dimension; however this had the second highest minimum mean score behind the Information Control dimension. In contrast, Library as Place continued to have a higher desired mean score that Affect of Service; expectations in both of these dimensions rose between 2004 and 2011. Information Control had a slight decline in desired expectation between 2004 and the first half of 2011; however this area remains highly desired. Overall both minimum and desired expectations have increased since 2004. At an item level, the largest increases in minimum expectations were found in:

- making electronic resources accessible from my home or office
- library staff who deal with users in a caring fashion
- library staff who instill confidence in users
- space for group learning and group study.

The latter two questions are some of the least desired items; however expectations are increasing for these areas. Despite the overall rise in expectations, some questions saw a decline in desired expectations since 2004, including:

- modern equipment that lets me easily access needed information

- library space that inspires study and learning
- the printed library materials I need for my work

Along with rising expectations, perceptions of library service improved for all dimensions within the SCONUL consortium. There has been a steady increase in perceptions for the Affect of Service and Information Control dimensions, with the gap between perceived and desired scores gradually reducing. The Library as Place dimension has also seen an overall increase in perceived scores, however this has been more erratic that the other two dimensions with perceptions decreasing and increasing on alternate years. One explanation for this could be that although academic libraries are fairly consistent in the level of service and resources they provide, the physical environment varies more widely between institutions. With the majority of repeat survey users running LibQUAL+® every other year there is a greater chance of a variation of perceptions with regards to the Library as Place dimension.

Comparisons

The SCONUL results have been compared against the Association of Research Libraries (ARL) College & University results from 2004 and the first half of 2011. Overall the perceived mean scores received at ARL Libraries in 2004 and 2011 are higher than the SCONUL perceived scores. Although minimum expectations have risen for both consortia, the overall desired expectations have decreased for the ARL cohort between 2004 and 2011. The expectations of the UK and Irish respondents were the same as the ARL respondents in the first half of 2011. When reviewing the results at a dimension level the ARL libraries have received a decline in desired and minimum expectations within Information Control, the other two dimensions maintain relatively consistent expectations across the years. In comparison with SCONUL the desired expectations were relatively equal between consortia in 2011 except in the Library as Place dimension where the UK and Irish respondents had higher desired expectations. Across all dimensions the perceptions of the ARL respondents are higher than those of the SCONUL respondents.

National student survey comparisons

LibQUAL+® does not operate in isolation; within the UK the National Student Survey (NNS) plays a significant role in the assessment of Higher Education (Stanley, 2009). Sent to all final year undergraduate students the survey covers all aspects of the students' education, including one question on the library service: *"The library resources and services are good enough for my needs"*. The results of the survey allow potential future students to review higher education institutions. The NSS mean scores achieved at SCONUL LibQUAL+® libraries have been compared to the overall perceived mean scores of the undergraduates achieved in the same libraries in the LibQUAL+® questionnaire between 2008 and 2010. There is no scientific significance in this as averaging averages at this level should be avoided where possible, however comparatively the perceived means of both surveys appear to be similar with little change in the results for either survey over the three years. The benefit of the gap analysis employed by LibQUAL+® enables libraries to see these results in context and although perceptions have not changed at these libraries, expectations have with risen with the overall minimum mean score increasing between 2008 and 2010.

Results in action

As Matthews & Oakleaf (2011) reinforces, we do not assess to prove, but to improve. The UK and Irish LibQUAL+® community were asked what they were doing differently as a result of using LibQUAL+®. One institution found they had poor performance in the Library as Place dimension, summarised by the free-text comment left by an undergraduate student:

"The Library is one of the most oppressively depressing locations on the face of the earth; its ugly decor and offensive lighting gnaw at the soul and the carpeting is an invitation to madness."

The library in question was St Andrews University Library, and since conducting LibQUAL+® the Library has secured a £14 million improvement programme to renovate the Library building, expand the collection and increase the study space. The renovations included new carpeting and lighting throughout the building.

SCONUL members reported that LibQUAL+® enabled them to secure additional funding to increase resources, including electronic journal and book packages; and to procure resource discovery systems such as cross searching databases. Along with procurement libraries reported increasing academic liaison, especially with regard to reading list provision; and improving the library website. Two of the libraries spoken to had developed an online information literacy tutorial and one improved their help provision through a 24/7 Chat cooperative. Improvements to the

physical environment have also been made, including increasing study space and restricting access to external visitors at peak times. Computing, printing and photocopying facilities have been added or enhanced and zoning to help control noise has been introduced along with separate study spaces for researchers. Amongst the many improvements reported by the University of Glasgow, the introduction of "quick search" workstations allowing customers to quickly get online and check their email or print an document for a maximum of 20 minutes at a time was one of the more innovative changes.

At a national level LibQUAL+® has provided SCONUL with detailed performance data of its member libraries to help inform public debate. In a 2009 Times Higher Education (THE) article Kevin Sharpe criticised University Library buildings stating that "Libraries are being transformed into rowdy social spaces... many of the changes have had unfortunate – even disastrous – consequences for then place of libraries in university scholarship and study". In reply, the THE published a response from SCONUL in the next issue outlining that the SCONUL LibQUAL+® results show that the academic staff perceptions of library buildings are the highest they've ever been (Bainton, 2009).

Conclusions

In conclusion, within the UK pre-1992 universities use the LibQUAL+® survey more than their post-1992 counterparts, and nearly all CONUL libraries have now used LibQUAL+®. The majority of SCONUL members who use LibQUAL+® more than once tend to repeat the survey on a biannual basis. The results of the SCONUL consortium have shown that minimum and desired expectations have increased for all dimensions of service quality measures. Along with increased expectations, perceptions of the library service rose between 2004 and 2011. In comparison with the ARL College & University Libraries the UK and Irish respondents had similar expectations in 2011; however perceptions were found to be lower in all areas. LibQUAL+® enables libraries to put their survey results into context against customer expectations and provides more detailed information on library performance than the National Student Survey. SCONUL member libraries have used the LibQUAL+® survey results to improve services, increase funding to procure resources, and develop their library buildings based on customer feedback. At a national level it has provided SCONUL with data on customer perceptions of library provision. Overall LibQUAL+® continues to provide the SCONUL consortium with data to enable library performance improvement at a local, national and international level.

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Regrounding LibQUAL+® for the digital library environment: an analysis of the DigiQUAL data

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The LibQUAL+® protocol is a "total market survey" intended to help library staff understand user perceptions, and thereby improve library service quality and better meet users' information needs. A total-market survey is one of the 11 ways of listening to users elaborated by Leonard Berry (1995).

To date, LibQUAL+® has been used to collect service quality assessment perceptions from 1,294,674 participants at 1,164 institutions around the world. LibQUAL+® has been implemented in 28 language variations: Afrikaans, Chinese, Danish, Dutch, English (American, British, Dutch, Finnish, France, Norwegian, Swedish, Swiss), Finnish, French (British English-BE, Belge, Canada, France, Swiss), German (and German Swiss), Greek, Hebrew, Japanese, Norwegian, Spanish, Swedish (and Swedish BE), and Welsh.

Thompson (2007) described the origins of the LibQUAL+® protocol. The development of the protocol, and evidence for the integrity of LibQUAL+® scores, have both been quite extensively documented in the refereed journal literature (cf. Cook, Heath & B. Thompson, 2001, 2002; Cook & Thompson, 2001; Heath, Cook, Kyrillidou & Thompson, 2002; Thompson & Cook, 2002; Thompson, Cook & Heath, 2001, 2003; Thompson, Cook & Kyrillidou, 2005; Thompson, Cook & R.L. Thompson, 2002) and elsewhere in two dissertations (Cook, 2002; Kyrillidou, 2009).

LibQUAL+® was developed within a philosophy perhaps best communicated by a set of three quotations. First, in the words of French philosopher and moralist François de La Rochefoucauld (1613-1680), "Il est plus nécessaire d'étudier les hommes que les livres" (p. 51, line 106). Second, in the words of Bruce Thompson (2006), "We only care about the things we measure" (p. 1), so we do not seriously care about service quality unless we listen to library users in various systematic ways. Third, within a service quality orientation, "only customers judge quality; all other judgments are essentially irrelevant" (Zeithaml, Parasuraman & Berry, 1990, p. 16).

LibQUAL+® was grounded in library users' perceptions of libraries. This was accomplished through a series of interviews with diverse users from different research libraries in the United States and Canada (Cook, 2002; Cook & Heath, 2001). The initial measurement model, and even selected individual protocol items, were based on these interviews.

However, users' perceptions of libraries change over time. Much of the impetus for changed user thinking involves the emergence of the internet, and the explosive growth of digital content, some of which is provided to scholars by research libraries.

As Danuta Nitecki (1996) observed around the beginning of this digital revolution, "A measure of library quality based solely on collections [counts] has become obsolete" (p. 181). And Rowena Cullen (2001) noted that "focusing more energy on meeting... [library] customers' expectations" (p. 663) is critical in the contemporary environment, in part because

> the emergence of the virtual university, supported by the virtual library, calls into question many of our basic assumptions about the role of the academic library, and the security of its future. (pp. 662-663)

Purpose of the present study

LibQUAL+® was not developed as a static library assessment protocol. Indeed, the developers see the need to continually reground and update the protocol. This commitment can be seen in the recent development of LibQUAL+® Lite (see Cook, Thompson & Kyrillidou, 2010; Kyrillidou, 2009; Kyrillidou, Cook & Thompson, 2010; Thompson, Kyrillidou & Cook, 2009a, 2009b, 2010).

The present preliminary study was undertaken to explore regrounding the LibQUAL+® protocol to include more items focusing on digital content, or to provide an ancillary protocol focusing on accessing that content. The data for this inquiry were obtained as part of a research project, "Developing a National Science Digital Libraries (NSDL) LibQUAL+™," funded by the United States National Science Foundation. The protocol is known as DigiQUAL and the qualitative grounding of this research has been documented in previous articles (Cook, Heath, Kyrillidou, Lincoln, Thompson & Webster, 2003; Kyrillidou, Cook & Lincoln, 2009; Kyrillidou, Heath, Cook, Lincoln, Thompson & Webster, 2007; Lincoln, Cook & Kyrillidou, 2004).

Methodology

The researchers conducted a series of interviews with staff at major digital libraries in the United States, such as the Multimedia Educational Resource for Learning and Online Teaching (MERLOT) digital library. Based on interviews with respect to how users think about these libraries, a pool of 183 items was developed. Some of these items were in the actual words of the interviewees.

Subsequently, at several digital libraries when users went to the website the users were asked to complete a brief online survey. The survey asked about the user's gender, age, frequency of site use, five items from the pool of 183 items by the staff of the digital library, and an overall site satisfaction question. The item sampling technique was used to reduce overall respondent burden while still collecting data on all 183 items in the item pool, and to increase response rates (Cook, Heath & Thompson, 2000).

Respondents were asked to rate each of the five items with respect to both (a) importance of the library features evaluated by the item and (b) perceived quality of the site's services with respect to those features. Responses were collected on a "1" to "7" scale.

Participants

The DigiQUAL items were completed by 1,294 library users from one of seven digital libraries (eg, MERLOT, Utopia, Math Forum, National Engineering Education Delivery System [NEEDS]). There were marginally more females (58.2%) than males who participated in the survey. The ages of the 1,294 participants were: (a) < 18, 16.1%, (b) 18 to 22, 10.7%; (c) 23 to 30, 13.4%; (d) 31 to 45, 28.6%; (e) 46 to 65, 27.0%; and (f) older than 65, 4.2%. With respect to frequency of use of a given digital library, the 1,294 library users reported frequency as: (a) daily, 11.7%; (b) weekly, 31.7%; (c) monthly, 24.7%; (d) quarterly, 16.6%; (e) less than quarterly, 15.4%.

Results

A preliminary new pool of items was identified by evaluating the 183 items with respect to several criteria. First, items rated "not applicable" or skipped by an excessive number of respondents were rejected at the outset. Second, only items relevant to research libraries (as opposed to those more narrowly applicable only to completely digital libraries) were retained.

Finally, the remaining items were sorted with respect to the "importance" ratings provided by the respondents, and 24 items were selected on this basis. These 24 items are presented in Table 1.

Table 1: Items statistics for the final 24 DigiQUAL items

Variable	Importance mean (SD) n	Satisfaction r n
Q0183 Content that matches my information needs	6.45(1.18) 47	.7377 47
Q0181 Having comprehensive content	6.42(0.99) 26	.6441 26
Q0120 Easily finding information on the site	**6.41(1.01) 32**	**.7926 32**
Q0109 A site design that is easy to navigate	6.37(1.36) 27	.5849 27
Q0106 site being easy to navigate	6.36(1.11) 55	.7717 54
Q0133 site having a lot of resources in my area of interest	6.35(0.75) 43	.5876 43
Q0180 site enabling me to locate information on my own	**6.31(1.46) 26**	**.8429 26**
Q0090 Content that is sufficient to meet my needs	**6.24(1.32) 38**	**.8616 38**
Q0081 Easy to use access tools allow me to find things on my own	6.17(1.42) 35	.7810 35
Q0136 available content fitting my needs	6.10(1.26) 49	.7941 48
Q0140 Being able to find what I want	6.04(1.80) 53	.8311 53
Q0085 site enabling me to be more efficient in my academic pursuits	6.03(1.52) 31	.7121 31
Q0121 Navigating the site comfortably	5.91(1.73) 45	.8113 45
Q0108 site being well organised	5.87(1.58) 47	.7408 47
Q0021 Easy to use menus	5.83(1.37) 30	.4374 30
Q0053 site enabling me to navigate it independly	5.83(1.45) 41	.6876 41
Q0112 Staff take feedback seriously in putting the site together	5.81(1.30) 26	.7683 25
Q0075 My ability to navigate the site easily	5.77(1.60) 48	.8131 48
Q0161 A site that is accessible to the independent learner	5.70(1.54) 40	.6555 40
Q0102 Meeting the needs of the new user	5.69(1.29) 48	.6810 47
Q0011 Adequate breadth of content for my needs	5.63(1.66) 43	.6458 42
Q0125 site being intuitive	5.53(1.61) 30	.5889 30
Q0101 Bridging the gap between site, students and assignments	5.45(1.72) 33	.8324 33
Q0077 site facilitating self directed research	5.42(1.91) 38	.6648 38

Table 1 also presents the mean perception ratings on the 24 items. And Table 1 presents the Pearson r coefficients for the correlations between perception scores on the 24 item with the scores on the global rating of library satisfaction.

Discussion

Our goal was to identify on a preliminary basis some items that might be added to the LibQUAL+® protocol, or used as a standalone DigiQUAL protocol. We focused on items that users seemed to deem important, and which had scores highly correlated with overall library user satisfaction scores. On this basis we developed a preliminary item pool of 24 items, as presented in Table 1.

Of course, this preliminary research only represents an initial step in the process of developing a refocused LibQUAL+® protocol, or a standalone DigiQUAL protocol. Further research is required to investigate the performance of these 24 items, and potentially other digitally focused items, in relation to scores on LibQUAL+®. In short, new items need to be administered along with the current 22 LibQUAL+® items to make the final selections.

These 24 items in many ways reflect the Information Control dimension measured in LibQUAL+®. The 24 DigiQUAL items primarily reflect (a) content (breadth and depth) comprehensiveness or (b) ease of use of the website itself.

However, there are additional emerging issues that have surfaced in the last five years and captured through another study the Association for Research Libraries has completed: the collection of textual narratives describing the research library at the dawn of the 21st century (Potter, Cook & Kyrillidou, 2011). The narrative descriptions provided by ARL libraries articulate among other things the following important issues in relation to digital library characteristics:
(a) the suite of services provided by digital libraries such as blogs, wikis, open journal and monograph publishing

platforms, (b) born digital collections which includes a variety of media and datasets, (c) usage and awareness of these resources, (d) integration of digital library metadata into catalogs and other discovery tools to facilitate ease of access, and (e) the value of open access possibly tied with the inclination of some users to prefer digital libraries over commercial and other publishers.

The importance of the digital environment is also captured by the MINES for Libraries® protocol supported by ARL and documented through two important studies implemented at the Ontario Council of University Libraries (OCUL). Through the MINES for Libraries® OCUL studies we see the increasing use of electronic resources and the way it relates to student and faculty outcomes such as research, teaching and learning (Kyrillidou, Franklin, Plum, Scardellato, Thomas, Darnell, 2011; Kyrillidou, Olshen, Franklin & Plum, 2006). The MINES for Libraries protocol is a point-of-use survey, while LibQUAL+® is a total market survey protocol. The possibility of linking the two with DigiQUAL-like items is worth exploring in the future. Similar efforts from the IT environment also point to the increasing importance of information services provided by universities and colleges (Allen & Baker, 2010; Chester, 2010; Consiglio, Allen, Baker, Creamer & Wilson, 2011).

Digital library issues will remain with us for the foreseeable future. Even agreeing on a commonly acceptable definition of what is a digital library is a major challenge. The answer to this question seems to be "we will know it when we see it," not unlike the answer to the question "what is a research library!"

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Deploying the NUS Service class framework at the NUS Libraries to scale the peaks of service excellence

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Introduction

This paper describes how the National University of Singapore (NUS) Libraries deploys the NUS Service Class (NUSSC) framework to continually improve processes and to design adaptive services for library users at the NUS. The NUSSC framework assesses approach, deployment, review and refinement of interlinking categories with the objective of producing impactful and positive outcome.

NUS Libraries has been scaling the peaks of service excellence to delight our library users for several years. The NUSSC framework which was introduced by the Office of Quality Management (OQM) at NUS allows us to conduct self-assessment on how we approach, deploy and review our processes and services through cycles of improvement. In addition to self-assessment, external assessors engaged by the OQM review the application report, conduct site visits and interviews in search of evidence of service excellence.

Launched in 2007, the NUS Service Class, adapted from the Singapore Service Class[1] aims at creating a service-oriented environment at NUS. The NUSSC framework, adapted from the Business Excellence framework, provides a systematic approach to assessing and addressing gaps in service leadership, service agility, customer experience and customer delight. The framework enabled us to assess our leadership, strategic planning, information management, human resource planning & development, customer requirements & relationship and results achieved. It also allows us to see how the development of each category impacts the others.

NUS Libraries serves 36,000 students from 100 countries from 16 faculties & schools, three Research Centres of Excellence and 21 university-level research institutes. It has close affiliation with 16 national level research institutes and centres.

To fulfill our mission to deliver just-in-time information with passion and a smile, we worked on inculcating a culture of continual improvement to strengthen our four strategic thrusts – Staff Excellence, Collection Excellence, Service Excellence and Operational Excellence. Supporting the Excellence pillars are seven strategies: 1) Nurture and retain high performance and innovative staff, 2) Develop timely and relevant resources, 3) Enhance retrieval from collections, 4) Empower users through information literacy programmes, 5) Improve and promote services and resources, 6) Collaborate with faculties and departments, 7) Continual improvement of process and infrastructure. We set up targets and key performance indicators for each objective to track the success of our services and information resources delivered.

From the results achieved, we understand the importance of having a strong visionary leadership, innovative staff, holistic & systematic planning, a robust information management system as well as good customer relationship.

1 Singapore Service Class : *www.spring.gov.sg/qualitystandards/be/bec/pages/singapore-service-class.aspx*

Understanding our users' requirements enabled us to provide new touch points and to develop services and resources which are targeted and highly relevant to our staff and students. We build user trust by targeting programmes at specific groups for greater impact.

NUS Libraries consists of six libraries situated across the Kent Ridge campus and a library at the Bukit Timah Campus. We have the C J Koh Law Library, Central Library, Chinese Library, Hon Sui Sen Memorial Library, Medical Library, Music Library and Science Library. Each special library caters primarily to its faculty or school. Each Library customises and segments their primary users over the broadly subject based groups to provide highly relevant service.

NUS Libraries aligns itself closely with University's vision – To be a premier knowledge hub that promotes the University's vision to be a leading global university centred in Asia, influencing the future. We live our Library's mission – To deliver just-in-time information with passion and a smile at every opportunity with the core values – Respect, Integrity, Commitment and Excellence (RICE) as the foundation (Figure 1).

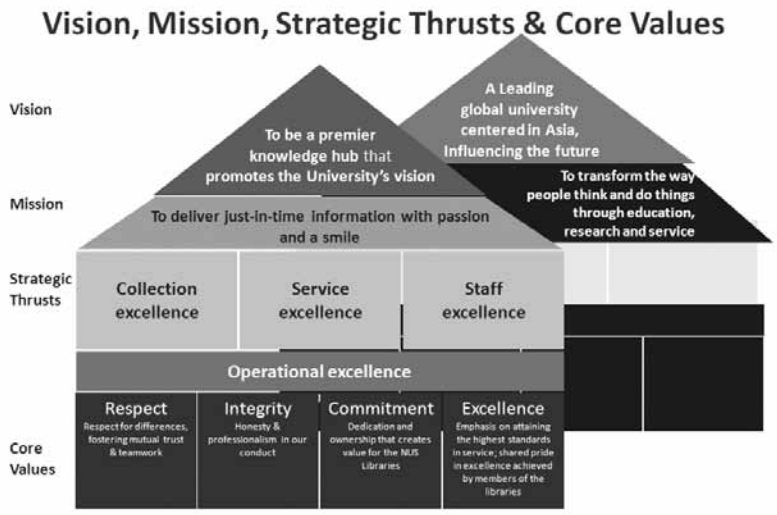


Figure 1: Aligning NUSL vision and mission with the University's

In the NUSSC framework, Leadership is the driver – ie senior management sets the organisational directions. Their line of sight is Results. Results deliver an ever improving customer value and organisational performance. So to get the results we want, we need a system in place ie we need to look into robust processes for Planning, Information, People, Processes and Customers. (Figure 2)

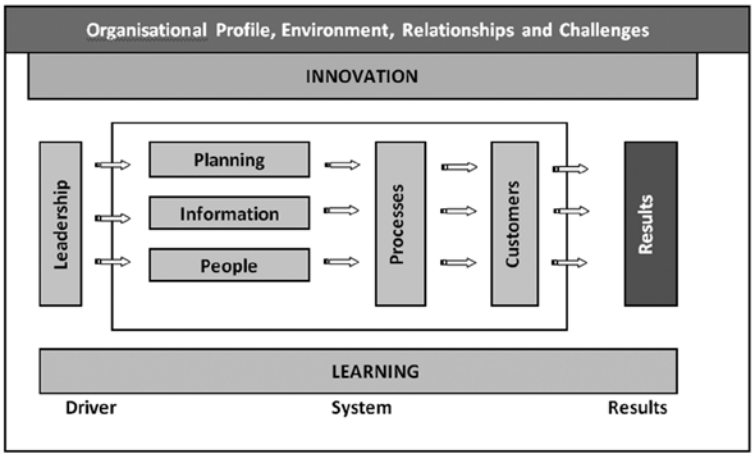


Figure 2: NUSSC Framework adapted from the Business Excellence[2]

2 Business Excellence : *www.spring.gov.sg/qualitystandards/be/pages/about-be.aspx*

For our organisation to move forward, learning is important. We need to continually train and develop our staff. In addition, for our organisation to be ever evolving, innovation is required for any breakthrough. We do it by deploying a systematic approach to assess and address gaps in the following areas:

- service leadership – how management leads and sets directions to create a customer-focused service excellence environment
- service agility – how we use information to respond to changing environment and address customer expectations
- customer experience – how we deliver services to delight the customers
- customer delight – how we measure and improve service performance

Figure 3: Interlocking categories

The interlocking circles and a triangle illustrate the impact of one category on another (Figure 3). It is therefore important that all categories are developed holistically to ensure maximum growth. The assessors look for evidence and links between each of these categories.

NUS service class assessment

For the NUSSC assessment there are 17 items and 58 statements altogether that need to be addressed. Each category is allocated a certain score with the highest score being allocated to the Results.

Two national assessors are appointed by OQM for the assessment. Participants need to submit an application report. There will be a site visit where the assessors will also interview staff members from different levels and with different years of experience. A detailed assessment report highlighting the strengths, weaknesses and opportunities for further improvement will be given. The assessment report is a useful piece of document; it provides objective information needed for making constructive changes in the design and execution of our services.

For the NUSSC framework, we adopt a systematic approach to strategic planning that includes reviewing and defining strategic objectives for relevancy. It begins with information and environmental scanning, formulation of strategic plan, communication and cascading plans to staff and finally implementation and follow up. We adopt the Balanced Scorecard to keep track of the various department action plans using a simple Microsoft Excel file.

We recognise that staff is the most important resource. We integrate the annual strategic and human resource plans to identify and provide the necessary training for staff to fulfill their action plans.

It is important that we align our strategies with the University's. It is equally crucial that we constantly review our strategic plan. An example is that we streamlined our seven strategies into six strategies after analysing information gathered:

1. Nurture and retain high performance & innovative staff
2. Develop timely & relevant resources
3. Enhance retrieval from collections
4. Promote services & resources

5. Improve services

6. Continual improvement of process & infrastructure

Figure 4: Strategy map

Using the Strategy Map (Figure 4), it helped us to put into perspective how the six strategic objectives are inter-linked to address the services, resources and facilities provided to users and stakeholders. In fact, it clearly illustrates that various core and support processes are closely intertwined in the delivery of all service to our customers.

Recognising the importance of close working relationship and teamwork among staff, emphasis was placed on teamwork as one of the staff evaluation criteria for all staff regardless of their level, grade or function.

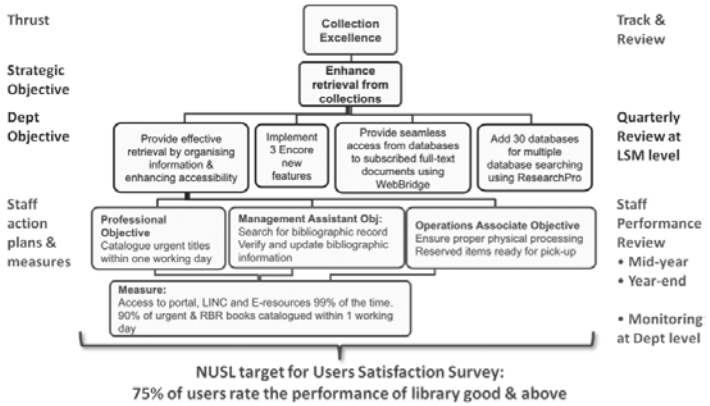


Figure 5: Example of a Cascading, tracking & review process

We cascade and deploy our plans to staff at each level, with the measures and targets put in place (Figure 5). This is integrated into the staff performance system and schedule. In addition, departments are to report the progress of action plans every quarter as part of the quarterly department plans.

Our key resource – our people

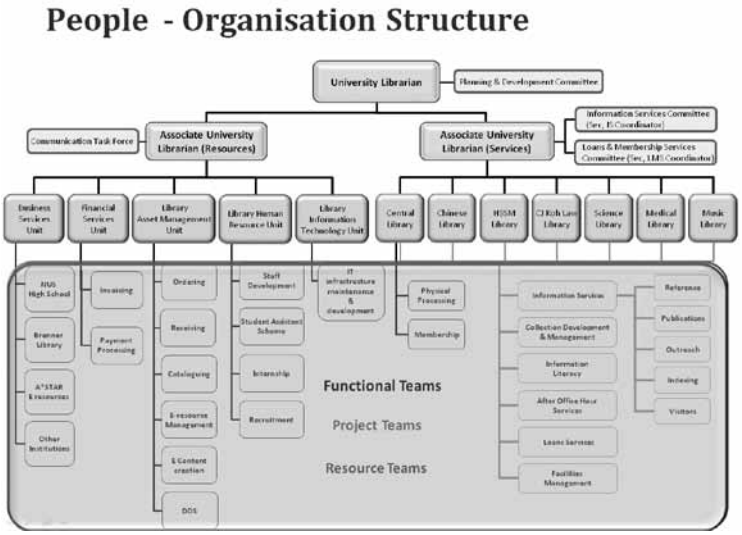


Figure 6: NUSL Organisation Structure

The Senior Leadership forms the Planning and Development Committee for strategic resource planning while the Library Senior Management (LSM) comprising of the Senior Leadership and Heads of all departments and Libraries, makes collective decisions on strategic plans.

While the LSM sets the direction for NUSL to meet the strategic objectives, the Resource Teams play an important part in engaging the faculty, researchers and students to better understand their information needs and provide the relevant services for them. Similarly, the Project and Functional Teams also solicit information from end users when developing new products or services. (Figure 6)

Human resource strategy

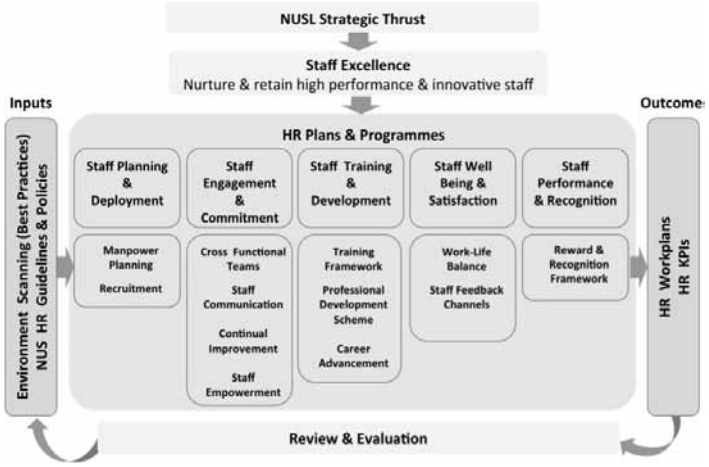


Figure 7: Human Resource Strategy

NUS Libraries places great emphasis on Staff Excellence as this is one of our strategic thrusts. The HR plans are closely aligned and integrated with the NUSL strategic plan. (Figure 7)

To support the strategic objectives and strengthen the processes, our human resource plans revolve around five components: 1. Staff Planning and Deployment 2. Staff Engagement & Commitment 3. Staff Training & Development 4. Staff Well Being & Satisfaction 5. Staff Performance & Recognition. We invest heavily on staff training and development to ensure they are able to carry out their job competently. Staff well being and satisfaction are looked into to ensure work-life balance. Staff is rewarded based on the NUS performance management system and we also have our internal reward scheme where staff members vote for their peers who exhibit exemplary behavior based on our core values,

RICE (Respect, Integrity, Commitment and Excellence). Our performance system and internal award is our strategic recognition that ties with values, ensuring that the entire workforce's performance and behaviors are aligned.

Training and knowledge building empower staff. Every opportunity is provided for staff to develop themselves. We have a training framework to provide holistic training. The components are:

1. Induction Program
2. Structured Learning Programmes for new staff
3. Training Needs Analysis
4. Total Training Plan (Competency-based training programmes)
5. Share and Learn Always (SLA) for continual improvement
6. Best practice learning opportunity
7. Professional Development Scheme
8. Encourage and motivate staff for continual development
9. Career Advancement
10. Formal training leading to certification (eg MSc in Information Studies)

We encourage staff engagement and commitment through teamwork, innovations and communications at all levels. Project or functional teams are key drivers for all our new and innovative initiatives. Through this, we are able to draw on the best persons to work on each initiative. Capable junior staff are identified and given opportunities to lead project teams. This is one way to build trust and to identify suitable candidates in succession planning.

Customer relations

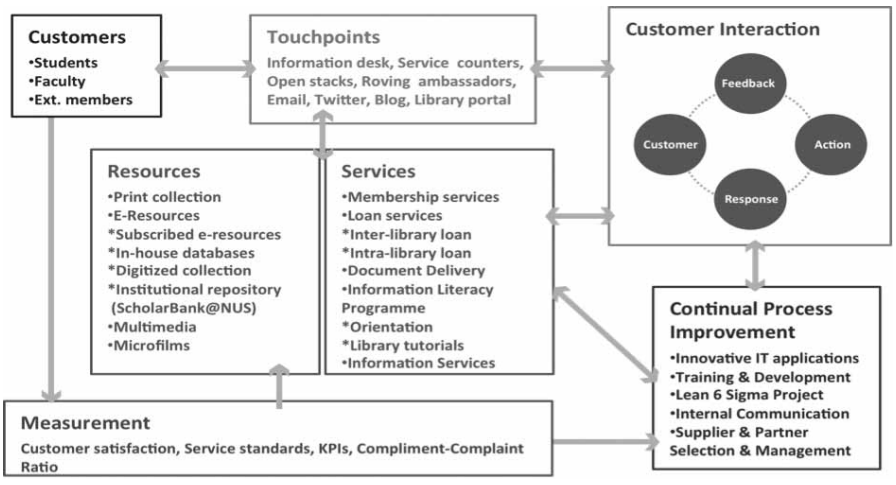


Figure 8: Customer Relationship Model

We deploy a customer relationship model (Figure 8) to help us understand our customers' needs through the various touch-points and feedback channels. It monitors our customers' needs and continuously improves our processes and services to ensure that we are delivering the right services and resources to our customers.

Service is first triggered by knowing our customers and their requirements. Services are designed and resources are allocated to address the needs identified. Through the various touch-points, we interact and serve our users. In turn they may be prompted to give us feedback.

Through interaction and feedback received, we review our processes, applications, staff competencies, internal communication and supplier's services as well as resources, services and touch-points for continual improvement.

It is important that we monitor and be alert to how our users feel about the quality and relevance of our resources and services. Knowing what our customers like or dislike help us to improve further.

Sources of information

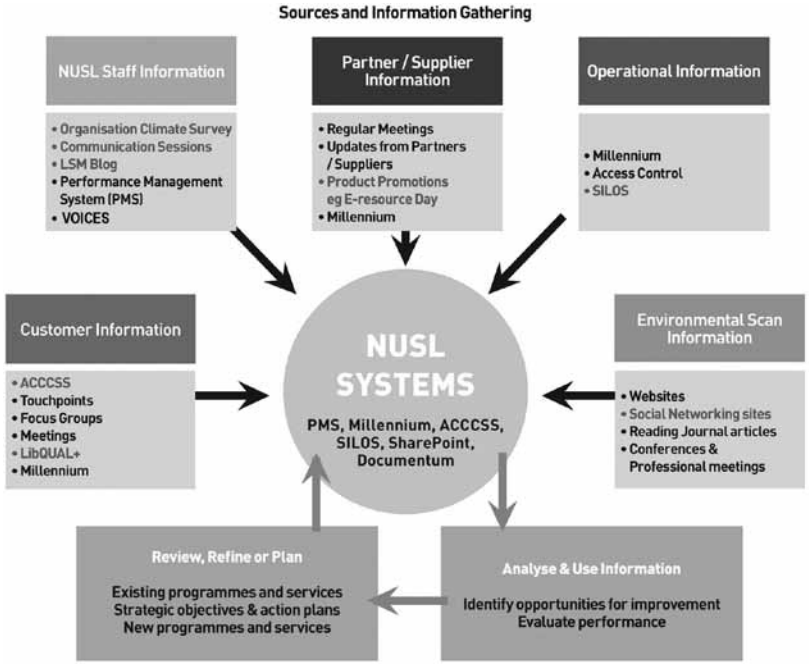


Figure 9: Information Intelligence Framework

Information is an important dimension of quality service. Information intelligence is harnessed to transform all customer input to continually influence and enhance service delivery to improve the customer experience.

The information framework (Figure 9) guides us in gathering internal and external information from customers, our people, partner/suppliers and environmental changes to improve service, staff competency and operations. We gather feedback formally and informally through online survey feedback forms, focus groups, information literacy programme & outreach evaluation forms, specific purpose surveys eg performance of photocopy vendors. We also participated in the NUS wide survey and international surveys.

How information is used

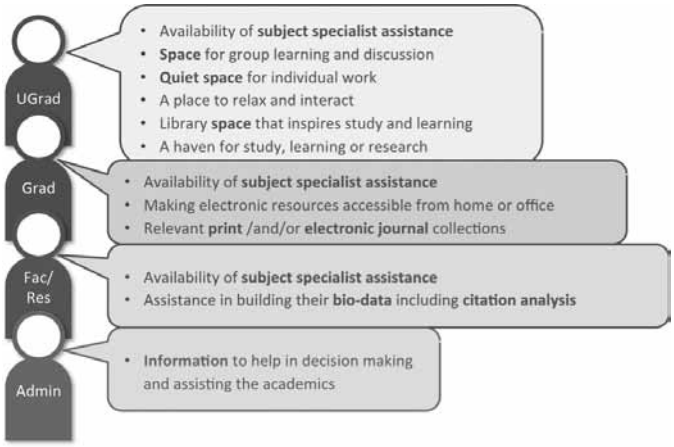


Figure 10: Customer requirement

From the various sources of information, we found that these are what the different groups of users need (Figure 10). The needs of the undergraduates, graduate students, faculty members and researchers as well as the administrative staff differ. Services and resources are then customised according to their differing needs.

To find out where we stand internationally with other institutional libraries, we conducted our first LibQUAL+ survey in 2009. The survey is a questionnaire used to find out users' perception of quality of library service, to identify gaps between minimum, desired and perceived levels of service.

Overall, we ranked 8th compared with 28 American Libraries and 2nd compared with 8 Asian University Libraries. While it is good to know where we stand internationally when compared with similar size major institutions, what was more important is to learn from our users what they think of our services and what needs improvement. One example of how we used the information gathered from this survey was for the request for new library space. The user feedback was that there was a lack of user space in the library. As a result, the University Administration approved the expansion plans for two libraries, the Hon Sui Sen Memorial Library and the C J Koh Law Library.

Figure 11: Designing of Information Literacy Programmes

Another example of how we used information gathered to improve services was in the information literacy programme. (Figure 11) We re-designed some of the programmes and fielded some questions for assessment.

It is also important that we gather information on how our staff feels about their work and NUSL. So, to understand staff better, one organisation climate survey was conducted in 2008 and another in 2011. Examples of improvements include the implementation of the Staff Recognition and Reward Scheme (SRRS) and better internal communication. One of the initiatives under the SRRS was the Shining Star award given to staff members who are nominated by colleagues based on the core values, RICE. To enable better communication with all levels of staff, a staff blog was created. The name itself went through changes from Conversations with Library Senior Management to Chatty Box after a naming contest. We wanted a name that made the channel of communication informal and for all rather than messages from the senior management.

Since the last NUSSC, we enhanced our in-house Feedback System, ACCCSS – Appreciation, Compliments, Comments, Complaints and Suggestion system to better manage user feedback. A 1-3-5 feedback resolution guideline was drawn up to monitor our response time to user queries.

Feedback received will be acknowledged or replied to within one day. If there is no satisfactory resolution or if we need to refer to escalate the issue, we will notify the user by Day 3. We will close the feedback within five days. Reference queries received via email are logged and analysed using Xobni on the speed of response.

Our future plan is to learn process benchmarking to enable us to systematically evaluate and improve our processes with the help of Office of Quality Management

As our customers get more IT savvy, we provide new touch-points to reach out to this group. Twitter, YouTube, Facebook, and online chat are some examples. Our commitment to users was published as the 7 Promises on 20 May 2010 to inform them of the expected level of service from NUSL. This is also to challenge our staff to step up their service to engage and delight our customers.

The NUSSC framework helps us to align our management practices, systems and processes throughout the library. It facilitates target setting and key performance indicators to assess our performance. The framework provides

opportunities for continual improvements. It helps us map our core processes and strategic objectives and discipline ourselves to think of our services.

From our journey towards the highest pinnacle of excellence and success, we realise that cascading the strategic plans and aligning library staff members' individual objectives with their teams' and library as a whole, will ensure continual improvement to processes and services.

Continual process improvements

While improving services and resources for our users, we have to constantly look at ways and have measures to save costs. Operational excellence is an integral part of service excellence. Staff members are trained in Lean Six Sigma to apply the tools to reduce waste, time and increase cost savings for the University. They are encouraged to submit suggestions on process and service improvements. Process improvement projects completed by the library saved the University more than S$2,000,000 from 1 Jan 2010 – 30 April 2011. With more teams being formed, more processes will be streamlined resulting in more cost savings.

Conclusion

It is important that we examine all aspects of services and processes regularly to address gaps. Gathering, analysing and applying the right information at every cycle of improvement is extremely critical. We need to work on all categories in tandem to ensure that no category is neglected.

Although we were awarded Recognition for Service Excellence in 2007 and the highest award, Outstanding for Service Excellence, in 2010, we will continue our service excellence journey. For our future, one of our efforts is to develop the I-CUBES@NUSL – Integrated Information & Intelligence System. I-CUBES@NUSL, our information management system, will form a knowledgebase and integrate all the existing disparate information systems as one source for capturing, analysing and disseminating information to different levels of library staff and also stakeholders. It can be used as a dashboard for the management and the staff. We hope that by integrating all data from multiple feedback channels into a single robust platform, it will enable us to pull and push information to empower staff to deliver information in a timely manner. We can be more effective and confident in assessing customer perceptions and understanding customer sentiment that may indicate future needs. The insight will increase our alignment to customers' needs and drive us to reach new heights in service excellence.

We are now working on aligning the core processes with the strategic objectives and to review the key performance indicators. This will enable us to have a one-stop information system for library staff and stakeholders.

Subcultures and values in academic libraries – what does ClimateQUAL® research tell us?

Charles B Lowry, PhD
Executive Director, Association of Research Libraries

Introduction

The ClimateQUAL® protocol is one of the assessment tools developed by ARL and accessible through the StatsQUAL® gateway ***www.statsqual.org/home***. The protocol has been documented in a variety of articles published in the literature.[1] The issues of organisational diversity and climate are of major concern to many organisations, a fact reflected in the extensive literature about both. This interest is based on the simple, perhaps intuitive, notion that we should find ways of measuring organisational climate, because climate will have an impact on organisational goals – from service to products.

ClimateQUAL® protocol and findings

The ClimateQUAL® protocol assesses staff perceptions of a library's (a) commitment to the principles of diversity and (b) organisational practices policies and procedures. The protocol is applied through an anonymous online survey of library staff with questions designed to understand the impact perceptions have on service quality in a library setting. However, it is not a survey about quality itself but rather a survey of staff attitudes that shape the culture of the organisation and have led us to the development of a new concept that we call the "healthy organisation." "The goals of the research are to establish that healthy organisations are more effective, establish the scales that measure health, and to develop strategies for improvement. It is clear too, that findings for research libraries have far broader implications and may be applied to other types of organisations."[2] More "specifically, a healthy organisation has policies, practices, and procedures that empower employees and emphasise the importance of continual learning and innovation to meet the demands of an ever changing environment. It is one in which customer service, employee diversity, and organisational justice are all recognised as critical imperatives that will determine the effectiveness of the organisation in the long run."[3]

At this time 29 libraries have implemented the protocol, and we have nearly 5,000 observations, that is, individual staff responses. There will be five new and one previous participant using ClimateQUAL® in 2011. We have established a deep understanding of key scalar measures of staff attitudes that shape the organisational response to its mission in fundamental ways. Two sets of scales have been developed to assess the health of the organisation, and comprise:

First, Organisational Climate Scales:

- Climate for Justice
- Climate for Leadership

1 Charles B. Lowry and Paul J. Hanges, "What is the Healthy Organization? Organizational Climate and Diversity Assessment: A Research Partnership," portal: Libraries and the Academy, vol. 8, no. 1 (2008), p. 1; Myra Sue Baughman, Johnnie Love, Charles B. Lowry, and Maggie Saponaro. (2007). *From Organizational Assessment to Organizational Change: The University of Maryland Library Experience.* Proceedings of the Library Assessment Conference. Charlottesville, VA, 2006; Paul J. Hanges, Juliet Aiken, & Xiaoyan Chen, (2007). *Diversity, organizational climate, and organizational culture: The role they play in influencing organizational effectiveness.* Proceedings of the Library Assessment Conference, 359-368, Charlottesville, VA, 2006; Martha Kyrillidou and M. Sue Baughman, (2009). *ClimateQUAL: Organizational Climate and Diversity Assessment.* C&RL News 70 (3), 154-157; Martha Kyrillidou, Charles Lowry, Paul J. Hanges, Juliet Aiken, and Kristina Justh. (2009). *ClimateQUAL™: Organizational Climate and Diversity Assessment.* Proceedings of the Fourteenth National Conference of the Association of College and Research Libraries, March 12-15, 2009: Pushing the Edge: Explore, Engage, Extend, edited by Dawn M. Mueller, 150-164, Chicago: American Library Association, 2009; Xin Li and Linda Bryan. (2010). On Becoming an Employer of Choice: Gauging Employee Satisfaction Through ClimateQUAL®. Library Trends – Volume 59, Numbers 1-2, Summer 2010/Fall 2010, 256-268.

2 Lowry and Hanges, p. 1.

3 Lowry and Hanges, p. 3.

- Climate for Deep Diversity
- Climate for Demographic Diversity
- Climate for Innovation: Co-Workers
- Climate for Continual Learning
- Climate for Teamwork
- Climate for Customer Service
- Climate for Psychological Safety

Second, Organisational Attitudes Scales:

- Job Satisfaction
- Organisational Commitment
- Organisational Citizenship Behaviors
- Organisational Withdrawal
- Team Psychological Empowerment in the Workplace
- Task Engagement
- Work Unit Conflict

Equally important, we have established baseline values for these scales so that libraries can understand at a deeper level what scores on each mean and the extent to which they need to take action to find improvement. The most important finding of our research is the connection between the health of an organisation and the climate for service that it produces. We used the results of the LibQUAL+® data from participating libraries as a benchmark for ClimateQUAL® protocol – an important use of the external measures of the former for validating the internal measures of the latter.

"Among the more critical and important findings of the research . . .:

- Results demonstrate empirically what we have known intuitively for a long time. A healthy organisation is better able to fulfill its service mission.
- Results also indicate that conflict that exists within an organisation has a direct negative impact on customers. In short, organisational climate (that is health) has a direct and perceived impact on the service experienced by our customers.
- Another important finding is that the climate for diversity improves the way an organisation operates – this is the first time that this has been shown. Similarly findings include a significant correlation between valuing diversity and the extent to which customers say they can get information. "[4]

Mining the ClimateQUAL® data

The ClimateQUAL® research has provided valuable new insights into organisational development and has given libraries an important new tool for managing organisational change. But, I will report here on an extension of our work that mines the data to reach a deeper understanding and extend the original research, specifically to investigate interpretive value of the ClimateQUAL® scales to provide new insights into library subcultures and values. Generally the word "culture" is used in library studies with little definition or rigor. Terms like organisational culture, hierarchical culture, learning culture, and culture change are employed principally as evocative or rhetorical. The small literature aimed at analysing library culture draws on the "Competing Values Framework" (CVF) to

4 Lowry and Hanges, p. 3-4.

probe more deeply into the question of culture and subcultures.[5] The CVF framework is built around four cultural archetypes – clan orientation, market orientation, adhocracy orientation, each expressed across two spectrums. These studies are based on the assumption that "Organisational culture plays a critical role in creating a work environment where employees are committed and contribute to the success of the organisation. [And that] Through an analysis of workplace culture it is possible to identify required changes to values, organisational structure, leadership and management initiatives and support mechanisms that facilitate a positive, creative and rewarding work environment that will support the progress and success of library staff."[6] I quite agree with these important goals, but at the same time think that the qualitative CVF model leads to assessments that find all four archetypes at work in a library and, thus, lead to generalisations without much precision that may not lead to effective action.

This preliminary report is an attempt to deploy the ClimateQUAL® scales for the same purpose and move toward a new model for understanding organisational values, culture and subcultures. The scales may be viewed as yardsticks for the library-wide values. Accordingly, it is equally useful to see the extent to which the actual results differ within libraries. We have an established demographic profile that each respondent completes that helps in this analysis. For a start, there is a standard set of work groups (what we call organisational units and divisional units) and participating libraries are asked to map their own organisational nomenclature to them. This paper presents the initial findings concerning how staff from different organisational units form "subcultures" that are reflected in their attitudes as measured by the scales. There is strong evidence of subcultures among the various working groups within the organisation chart of the library. There are seven standard divisional units, that is, teams or work groups:

- Administrative Services
- Public Services and Instruction
- Technical Services
- Collection Development
- Special Collections/Archives
- Technology
- Research

Libraries have a wide variety of nomenclatures for work groups and we give them considerable guidance, not to mention independence in mapping them. Clearly some information loss occurs when we try to standardise across different organisations but we reap the benefit of being able to do comparative studies and generalise across many institutions. Moreover, we believe distinctive values and subcultures are most likely to develop within working groups. But this is not the only way in which we may analyse them using the demographic and organisational data at hand. For instance, we also plan to investigate the differences between library professionals and paraprofessionals in the future.

Preliminary analysis – emerging insights

The analysis of the data for the purposes here was a team effort involving our "chief scientist" Dr Paul Hanges at the University of Maryland who did the heavy lifting and Dr Martha Kyrillidou, Senior Director, ARL Statistics and Service Quality Programs. As I make observations about our results, I will tell you the statistical measures we used, but will try to keep things at a summary level and not get down into the statistical weeds. We posited three working hypotheses:

- The smaller the library staff size, the less likely that there will be differences among the standardised units in % agreement on the climate scales (that is, small libraries should have more uniform climates).
- There will be significant differences among the standardised units in % agreement on the climate scales (that is, certain units will demonstrate different climates or sub-cultures from one another);
- The standardised units will demonstrate the same rank order position in % agreement on different climate scales (that is, a unit with a high positive response on one scale will have a high positive response on others).

5 See, for instance: Carol Shepstone and Lynn Currie, "Transforming the Academic Library: Creating an Organizational Culture That Fosters Staff Success," *The Journal of Academic Librarianship*, vol. 34, no. 4 (2008)pp. 358-68; and Michele Kaarst-Brown, Scott Nicholson, Gisela M. von Dran, and Jeffrey M. Stanton, "Organizational Cultures of a Library as a Strategic Resource," *Library Trends*, vol. 53, no. 1, (Summer 2004), pp. 33-53.

6 Shepstone and Currie, p. 358.

We found strong evidence to reject the first hypothesis and to support the last two.

The first level of analysis was about library size based on these staff sizes:

- total library sample 39 libraries
- small size library – staff n<100
- medium size library – staff 100 <n <200
- large size library – n>200

It seemed **intuitive** to us that the proximity and familiarity of all staff in small size libraries would lead to similar attitudes and a more uniform climate demonstrating fewer differences on the scales. Intuition failed. The highlighted P-values on these next slides show where there are statistically significant differences among the responses from the staff in standard divisions. Only one of the scales, Climate for Teamwork Structural Facilitation of Teams, had the same result no matter the library size.

Divisional Differences: Percentage Agreement Variables Organisational Climate Scales*

P-value measure of F Statistic for Different Library Sample Sizes	Total Sample	Small Libraries Staff n<100	Medium Libraries Staff 100 ≤n<200	Large Libraries Staff n≥200
Climate for Deep Diversity				
• Standardisation of Procedures	0.25	**0.00**	0.13	0.20
• Valuing Diversity	**0.01**	**0.00**	**0.00**	0.58
Climate for Justice				
• Distributive Justice	**0.00**	**0.03**	**0.02**	0.07
• Procedural Justice	0.11	**0.00**	0.34	0.29
• Interpersonal Justice	0.06	**0.00**	0.32	0.11
• Informational Justice	0.07	**0.00**	0.72	0.12
Climate for Innovation	0.15	**0.05**	0.63	0.42
Climate for Continual Learning	0.10	**0.03**	0.81	0.36
Climate for Psychological Safety	**0.01**	N/A	0.41	**0.05**
Climate for Teamwork				
• Benefit of Teams	0.34	0.09	0.13	0.47
• **Structural Facilitation of Teams**	**0.00**	**0.01**	**0.01**	**0.05**
Climate for Demographic Diversity				
• Racial Diversity	**0.04**	**0.00**	0.10	0.36
• Gender Diversity	0.60	**0.01**	0.09	0.17
• Rank Diversity	**0.00**	0.40	**0.00**	**0.01**
• Sexual Orientation Diversity	0.25	0.27	0.12	0.67
Climate for Leadership				
• Leader-Member Relationship Quality	0.60	**0.00**	0.58	0.85
• Authentic Leadership	0.02	0.09	0.22	0.07
Climate for Customer Service	**0.39**	**0.00**	**0.59**	**0.56**

**Statistically Significant Divisional Differences Highlighted*

Divisional Differences: Percentage Agreement Variables Organisational Attitude Scales*

P-value measure of F Statistic for Different Library Staff Sizes	Total Sample	Small Libraries Staff n<100	Medium Libraries Staff 100 ≤n<200	Large Libraries Staff n≥200
Job Satisfaction	**0.01**	**0.05**	**0.03**	0.43
Task Engagement	0.09	0.79	**0.04**	0.86
Organisational Commitment	**0.00**	0.32	0.46	0.01
Organisational Citizenship Behavior	**0.00**	0.09	0.00	0.00
Organisational Withdrawal	0.13	**0.04**	0.09	0.51
Team Psychological Empowerment	**0.00**	0.07	**0.05**	**0.01**
Work Unit Conflict				
• Task Conflict	0.86	0.71	0.59	0.08
• Interpersonal Conflict	0.22	**0.04**	0.73	**0.03**
TOTAL scales with significant differences	N = 11	N = 16	N = 8	N = 7

**Statistically Significant Divisional Differences Highlighted*

For the total sample of staff from 29 libraries, we found that there were significant differences (based on F-statistic measured by p-value) in 11 of 26 climate scales. However, in the small libraries with fewer than 100 staff there were significant differences in the % agreement on the 16 of the 26 scales. Thus in small libraries, there were significant differences on 50% more scales than for the total sample. Although significant, most of these effects were small as measured by eta-squared, some were of medium size for this group. By contrast, in large libraries the ratio was a much lower, significant for 7 of 26 scales, while for the medium size libraries we found significance in 8 of 26 scales. Moreover, for medium and large libraries, the effect of all these size differences (as measured by eta-squared) were small. We interpret this to mean that for smaller libraries the standard divisional units used in our hypotheses-setting represented clear and more evident distinctions among groups defined by their work environment. Put another way – the standard divisions mapped better to the actual work units in the small libraries. Why the difference? For large and medium size libraries, the forced aggregation of many units into the standard divisions may have resulted in information loss that creates 'noise' that dampened the differences. On reflection, this is persuasive given that so many local work units had to be mapped to the seven standard divisional units.

Nonetheless, we know that the work units generally show some significant differences in agreement about the climate scales, thus supporting our second hypothesis. To that extent they represent sub-cultures or sub-climates. Put succinctly, there is a higher level of satisfaction among some than others. We have not yet gone far enough in our analysis to create norms for the different administrative units, but we have looked for consistency, that is, evidence to show that work units tend to score consistently higher or lower across various scales.

That brings us to discussion of the third hypothesis. Ultimately, the mining of ClimateQUAL® data to study library sub-cultures or sub-climates, to use our term, will give us a new analytical tool for libraries that use the protocol to assess how their divisional units stack up to the norms. This should be helpful in the decision making about where to put the most effort to help improve climate and strengthen service. Because 26 scales is, practically speaking, a large number to deal with, we conducted preliminary factor analysis on the scales to see if there was a smaller set of underlying dimensions that these questions measure. Thus far, we have identified two major dimensions that bring together multiple scales

Dimension 1: Climate for Organisational Engagement/Citizenship Scales

Percent Agreement: Organisational Commitment
Percent Agreement: Climate for Customer Service
Percent Agreement: Climate for Teamwork, Structural Facilitation of Teamwork
Percent Agreement: Climate for Continual Learning
Percent Agreement: Job Satisfaction
Percent Agreement: Climate for Psychological Safety

Dimension 1: Divisional Unit Rank Order

	Low Score
Collection Development	-.56
Technical Services	-.14
Public Services and Instruction	.03
Special Collections/ Archives	.04
Administrative Services	.17
Technology	.20
Research	.21
	High Score

Dimension 1 "Climate for Organisational Engagement/Citizenship" is composed of six related scales. We then determined how the standardised divisions rank on this dimension. The divisions are rank ordered from Low or negative response to High or positive response. These are ordinal not interval rankings and the numbers should be interpreted as rough measures of the differences between divisions on each dimension. The lowest for Dimension 1 is Collection Development, which clearly falls way below Research in the rank.

Dimension 2: Climate for Demographic Diversity Scales

Percent Agreement: Climate for Gender Diversity
Percent Agreement: Climate for Racial Diversity
Percent Agreement: Climate for Sexual Orientation Diversity
Percent Agreement: Climate for Diversity of Ranks

Dimension 2: Divisional Unit Rank Order

	Low Score
Special Collections/ Archives	-.07
Public Services and Instruction	-.01
Collection Development	.01
Technical Services	.08
Administrative Services	.11
Research	.23
Technology	.23
	High Score

Dimension 2 "Climate for Demographic Diversity", has a similar range of differences for the rank order of divisions. We can see also that there are clusters of divisions with fairly close scores. This analysis gives us a measure of the standard divisions across all ClimateQUAL® libraries and might be used by individual libraries to compare their

institutional scores to the general normative sub-climate or sub-culture. These differences allow us to assess the organisational impact and initiate improvements within divisions that demonstrated lower scores from the norm.

Finally, we conducted Tukey's HSD post hoc test at a more granular level of analysis of the distribution of "Percent Agreement" on the specific scales for each division. To illustrate, we may use four Justice Scales that are defined as:

- **Distributive Justice.** Distributive Justice reflects the employees' perceptions regarding the extent to which the rewards that they receive (eg, pay, opportunities to advance, etc.) is adequate given their level of effort and work.
- **Procedural Justice.** Procedural Justice addresses the fairness of the procedures used to distribute rewards (ie performance evaluations, amongst others).
- **Interpersonal Justice.** Interpersonal justice refers to the extent to which other people in the workplace, such as supervisors, treat an employee fairly.
- **Informational Justice.** Informational justice refers to whether or not an employee has access to the information he/she needs. This type of justice indicates that transparency – that is, supervisors being honest and open with employees – is imperative to an employee's sense of justice in the workplace.

We find that there is a range of responses for different divisions. This table shows three of the seven divisions that had the lowest rates that were significantly different from the other divisions. Across our total samples, Collection Development was the division that consistently felt that rewards, procedures, fair treatment, and transparency were not what they should be. Technical Services also demonstrated a normative pattern of disaffection.

Low Means Percent Agreement on Justice Scales Total Sample

Justice Scale/Division	Technical Services	Collection Development	Special Collections
Distributive Justice	Significantly lower		
Procedural Justice		Significantly lower	
Interpersonal Justice	Significantly lower	Significantly lower	Significantly lower
Informational Justice		Significantly lower	

This gives us a picture at a more detailed level of subcultures that may lead to an understanding of how staff perceive the organisation and where it is important to engage them to understand why.

Conclusion

While we are just starting, we believe that this line of investigation is leading to a new understanding that there exist in academic libraries normative subcultures that may be defined by the ClimateQUAL® scales. I have only been able to provide a brief snapshot of the work we are doing to marshal the use of the ClimateQUAL® data to investigate underlying organisational subcultures. But we are encouraged that it has both explanatory power and, perhaps most importantly, it may be used to achieve a key goal that underlies the use of the protocol – improvement of the health of the organisation, which will have a positive impact on the service that it provides.

Using basic data visualisation methods to explore LibQual+® data

Ray Lyons

Well-designed graphs impart information about quantitative data that usually cannot be gained in any other way. Graphs reveal patterns, trends, and exceptional values and enable quick and repeated comparisons of ample amounts of data. And, as Stephen Few (2009, p. 6) reminds us, they do more:

> *[Graphs] extend the capacity of our memory, making available in front of our eyes what we couldn't otherwise hold all at once in our minds. In simple terms, information visualisation helps us think.*

Visualisation facilitates both exploration and understanding of data. Accordingly, LibQual+® survey findings include graphs of both survey responses and attributes of survey respondents. Responses to the twenty-two core survey items are illustrated in the LibQual+® hallmark graphic, the radar chart.

Interpreting LibQual+® radar charts

Essentially, LibQual+® radar charts are self-contained maps of respondent groups' standings on the three survey dimensions. For a given group, the charts describe service quality as mean values for individual dimension items, as well as magnitudes and distributions of superiority gaps and adequacy gaps for the items. The Association for Research Libraries (ARL) standard notebooks advise libraries to look for "symmetry or uniformity of data" by examining the shape, location, thickness, and color of concentric areas delineated by the measures and their gaps. Positive versus negative adequacy and superiority gaps are encoded using the familiar yellow/blue/red/green color scheme. Relative sizes and shapes of chart regions paint a single picture of service quality for the institution.

The main advantage of a radar chart is this distillation of a large amount of information into a single visual representation. Its summative nature permits direct comparisons of service quality patterns among survey respondent groups, within or among institutions, and between survey years. At the same time, libraries can "drill down" to examine details by visually unpacking the components of the charts, keeping in mind their basic structure (see figure 2).[1]

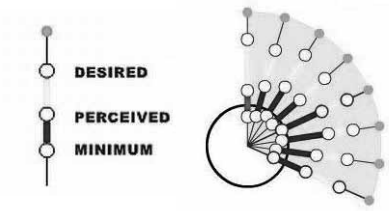


Figure 1: LibQual+® Service Quality Levels Plotted on Radiating Spokes
Source: Learn About LibQual+® Presentation, http://www.libqual.org/about/about_survey/tools

Sometimes this process can be difficult due to visual distractions of coloring, varied line angles, and the lack of stationary baselines from spoke to spoke. For this reason this paper proposes a set of simple graphical formats to assist with detailed exploration of LibQual+® data.

Before considering alternate graphical formats, it will be helpful to revisit the construction of standard radar charts. In the charts, survey mean values are plotted on spokes to form segments which are directly analogous to stacked bars (see figure 2). Users gauge relative quantities by comparing one segment (bar) in a single spoke with its matching segment, and segments from different spokes with each other.

1 In the radar charts, shapes of color-coded areas are determined both by the data and the order in which items are arranged around the radial. Since this order is deliberate but arbitrary, the geometric shape of a dimension's color-coded area is not as meaningful as its overall spread and thickness.

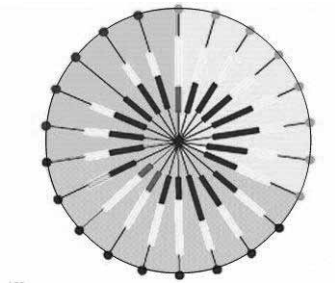


Figure 2: Color-coded Segments on Spokes Indicate Adequacy and Superiority Gaps

Unfortunately, stacked bars (sometimes called divided bars) are not ideal for visually estimating lengths of laterally aligned segments (Cleveland, 1994, pp. 265-266). Visual comparisons of lengths are more accurate when bar segments are separate and located parallel to each other on a common baseline, as they are in the format of traditional bar charts. Thus, perceptual difficulties inherent to radar charts make bar charts useful supplements to the former for the purpose of comparing data visually.

Using bar charts to explore patterns in Libqual+® mean service quality measures

Bar charts presented here were rendered using Tableau Software due to its ease of use and advanced features.[2] One attractive feature of this software is its interactive graphical capabilities. Appropriately deployed interactive features can increase the information content of traditional charts. Figures 3A through 3C show two interactive features available in Tableau Software, and in other available statistical software.

Figure 3A depicts service quality levels for surveyed faculty among the nine items in the affect of service dimension. The legend at the right indicates that Min(imum) levels are coded brown, Per(ceived), green, and Des(ired), gold. Using the same chart as in figure 3A, figure 3B shows the software's behavior when the cursor hovers over the Per(ceived) bar in the item AS-8 columns. Notice the bubble indicating the mean score to be 7.97. This interactive feature keeps charts uncluttered while making details available on demand. (Using this feature makes bar value labels and horizontal gridlines unnecessary in these charts.)

Figure 3C contains two additional renditions of the chart in figure 3A. When a user clicks on a measure in the legend, bars for that measure are highlighted. In the upper chart in figure 3C the Min (brown) measure has been selected, causing the remaining two – Per(ceived) and Des(ired) – to be grayed out. In the lower chart in figure 3C shows the Per (green) legend item has been selected.

To demonstrate how effectively bar charts can reveal data patterns, it will be useful to begin with a comparison of two survey respondent groups. Figure 4 depicts service quality levels for one dimension, affect of service, for all respondents and for the faculty respondent group. In each item column, a dotted line across the bars marks the height of the Min (brown) bar. Within each column these lines assist in viewing the extent to which perceived and desired levels exceed minimum levels.[3]

In figure 4, in the upper chart notice for items AS-4 through AS-9 that Min, Per, and Des levels are quite similar for this group of all respondents – measuring roughly 6.6, 7.3, and 8.0 respectively. Levels for AS-1 and AS-2 are substantially lower, especially the minimum values. Measures for item AS-3 are all slightly higher than the rest of the items, at 6.9, 7.7, and 8.2.

2 Charts presented in this paper were created using the public version of Tableau Software. See ***www.tableausoftware.com/public/.***

3 Typically, bar charts should include zero in their horizontal or vertical axes (depending on the chart's orientation) to assure that relative visual comparisons will be reliable. To conserve space zeros have been omitted from the chart axes in figures 3A – 3C, 4, 6, and 7, making comparisons of total bar lengths inappropriate. Readers should compare only differences in bar lengths in these figures using the charts' vertical axes and horizontal dotted lines as guidelines.

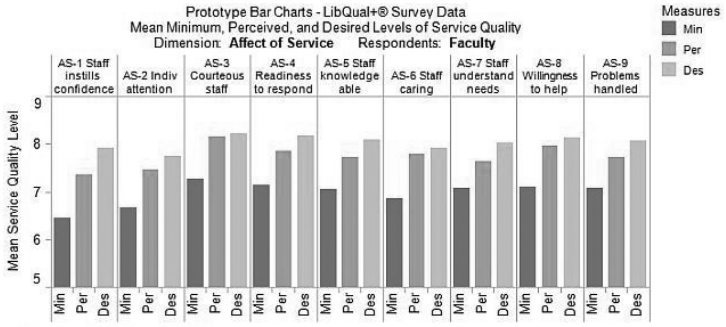


Figure 3A: Bar Chart for Affect of Service Mean Service Quality Levels for Faculty

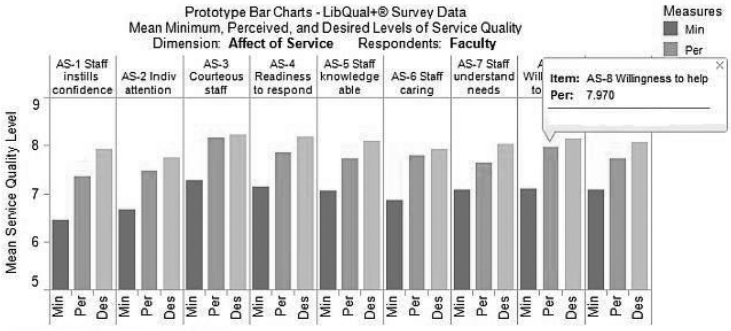


Figure 3B: Tableau Software Interactive Feature: Data Value Lookup

As seen in the lower chart in figure 4, mean measures for faculty respondents are more uniform than for all respondents. Levels for AS-5 through AS-9 are fairly similar, although perceived levels for AS-6 and AS-8 are quite close to desired levels. And for AS-3 the superiority gap is especially small (0.7). From patterns observable in figure 4, we can conclude:

> *For most of the items, faculty report about the same levels of desired service quality as do the group of all respondents. The faculty's mean minimum expectations are slightly (about 0.3) higher than all respondents, especially for the first two items in the affect dimension. Faculty report consistently higher mean levels (about 0.4) of perceived service quality on all items compared to all respondents.*

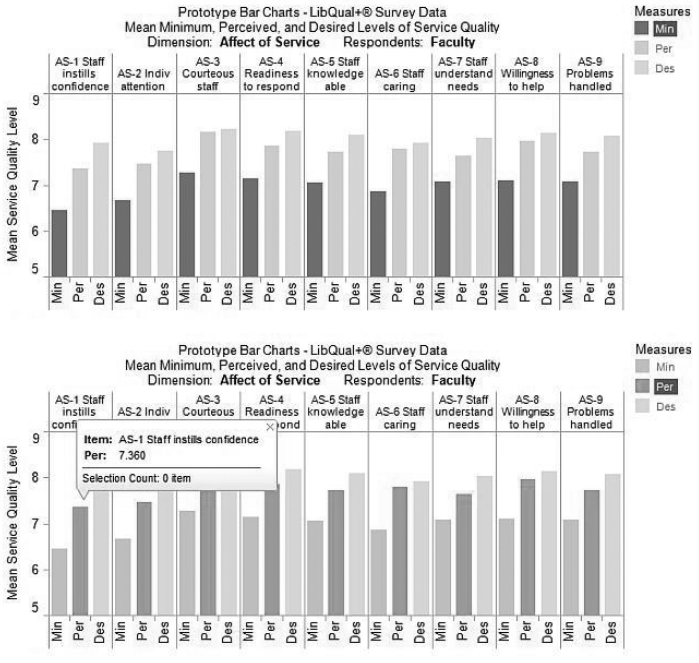


Figure 3C: Tableau Software Interactive Feature: Highlighting individual measures

These sorts of patterns can also be identified in LibQual+® radar charts. For instance, in the top chart in figure 5, the yellow affect of service region near the blue-shaded item numbers (top right of chart) represents the superiority gaps for the nine items in that dimension. Note that this region indicates a notable superiority gap. Comparing that with the same (yellow) region in the lower chart in figure 5, the gap for faculty is much less due to the higher mean levels of perceived service quality. In this same manner, users may identify specific patterns in radar charts which can then be explored using bar charts in the general style presented here.

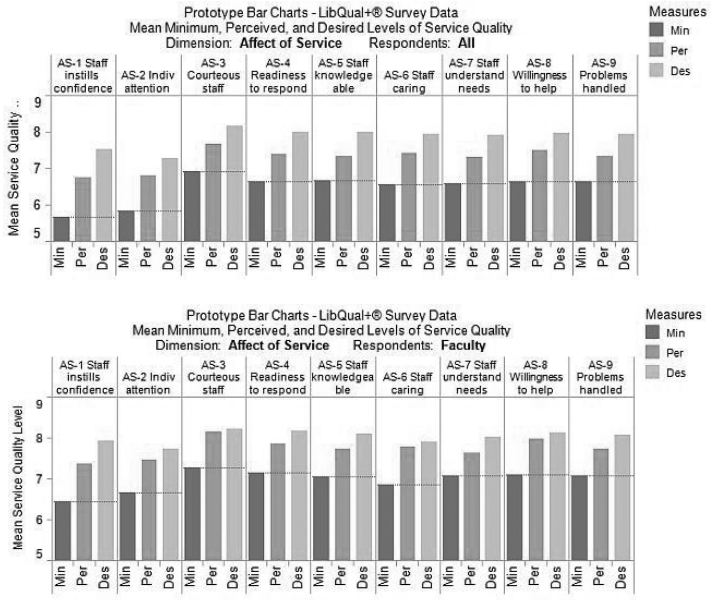


Figure 4: Levels of Service Quality for Affect of Service Items, All Respondents and Faculty

In a more compact arrangement, bar charts can display data pertaining to a single LibQual+® dimension for all respondent groups, as seen in figure 6. Presenting the data in a single graphic allows for visual inspection of patterns within and among groups. As an example, looking at mean service quality levels for undergraduate and graduate students in figure 6, we see that:

> *Graduate students report slightly higher levels of desired service quality than undergraduates do, especially for the first two affect dimension items Their mean minimum expectations are slightly higher (about 0.3) than undergraduates. Graduate students report about 0.4 higher mean levels of perceived service quality on all items compared to undergraduates.*

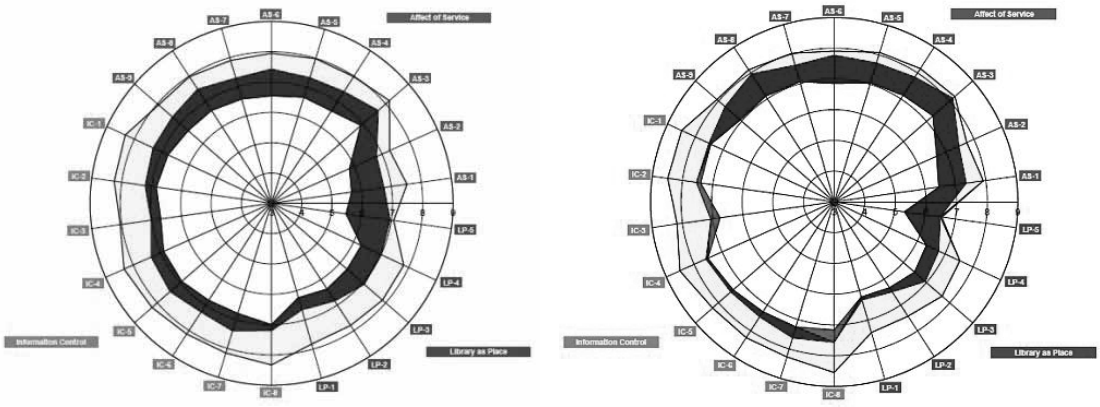


Figure 5: LibQual+® Radar Charts for All Respondents (upper) and Faculty (lower)

Alternatively, service quality levels for a single respondent group can be displayed for each dimension. Figure 7 portrays mean responses for graduate students for each dimension as well as that group's overall responses for the 22 core items.

The relative sizes of adequacy and superiority gaps can also be presented in bar chart format. Figure 8 depicts mean adequacy gaps in order by the three LibQual+® dimensions for each respondent group.[4] The bar color-coding matches the scheme seen in the radar charts' item identifiers (see figure 5 and standard LibQual+® notebooks).

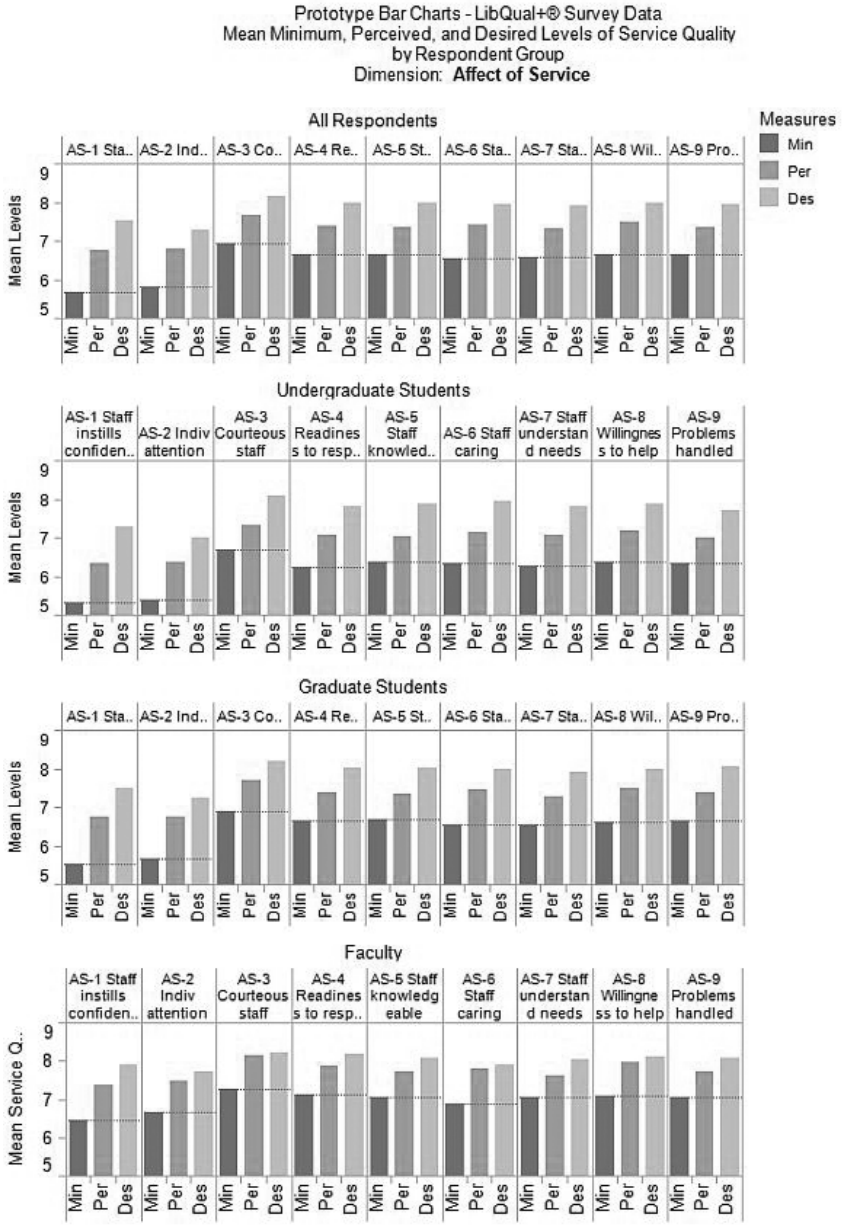


Figure 6: Multiple Bar Charts Enable Comparisons of Data Within and Between Respondent Groups

4 It is important to note that none of the bar charts presented in this paper contain certain key information which radar charts always contain, namely (a) the mean minimum levels against which mean perceived levels are compared to calculate the adequacy gaps; and (b) mean desired levels against which mean perceived levels are compared to calculate the superiority gaps.

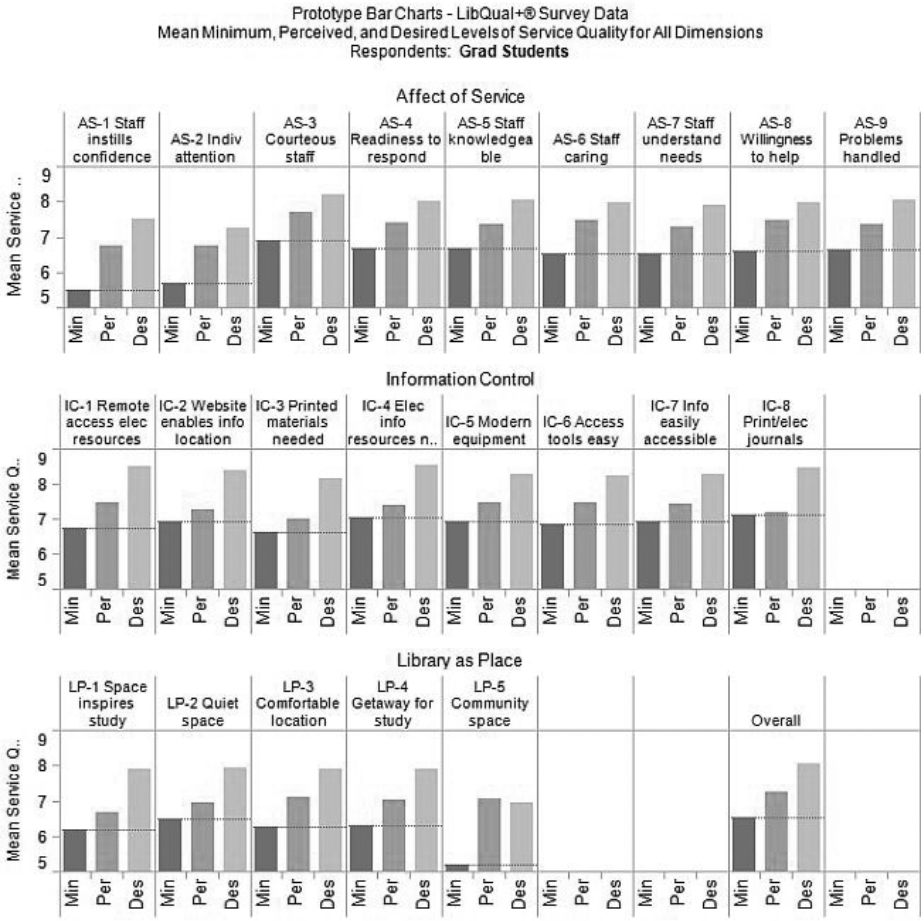


Figure 7: Multiple Bar Charts Depicting the Three LibQual+® Dimensionsfor a Single Respondent Group

Because these charts utilise a stationary zero baseline (see figure 8), they provide an intuitive representation of the survey data. Being exact representations of gap sizes, the bar heights make comparisons easy. Since the axes scales indicate positive and negative values, color could be used in these charts to encode additional information, if desired. In radar charts, color is reserved to indicate positive versus negative gaps and superiority versus adequacy gaps.

Sorting mean adequacy gaps may also lead to other insights, as illustrated in figure 9. For instance, in the top chart in that figure (all respondents) it is clear that adequacy gaps are larger, overall, for the affect of service dimension than for information control. Of course, this pattern is evident also in the top radar chart of figure 5. However, figure 9 enables a more straightforward comparison of these magnitude differences.

Since superiority gaps are typically negative, the zero baselines for charts in figure 10 appear at the top of their vertical axes. The bars extend downward and the vertical axes values reflect decreasing negative numbers (and increasing negative magnitudes). One exception appears in the lower chart, where, for graduate students, item LP-5 shows a positive superiority gap.

Charts in the styles seen in figures 8 and 10 can be combined into a single graphic portraying adequacy and superiority gaps together. This combination is presented in figures 11 through 14, which re-express the same data portrayed in the concentric areas of radar charts. Keep in mind that in radar charts superiority gaps (negative numbers) are located higher on the radiating scales, towards the outside of the circle. Adequacy gaps (positive numbers) are located lower on the scales, closer to the center (see figure 5). The orientation of the bar charts is the inverse of this. That is, the chart scales are upside down compared to LibQual+® radar chart scales. (Or radar chart scales could be considered upside down since negative values are plotted above positive ones.)

In figures 11 through 14 the heights of bars (whether above or below the zero baseline) correspond exactly with the thickness of the color-coded spokes on the radar chart as illustrated in figure 15. Chart regions in these figures,

rendered in pastel yellow, blue, green, and pink, follow the basic color scheme of radar charts. Additionally, the bar colors match the three LibQual+® dimensions, as do bars in figures 8 – 10 also.

When data include negative adequacy gaps or positive superiority gaps, the zero axes for the two categories do not coincide (see figures 13 and 14). Nevertheless, visual comparisons of bar lengths in the upper and lower portions of these charts are fairly clear-cut. Notice also in figure 13 that one item (LP-5) has a positive superiority gap indicated by the thin pastel green region. Figure 14 includes a pastel green region highlighting that same item (LP-5). Also in that figure, three items (IC-2, IC-3, and LP-1) show negative adequacy gaps in the highlighted pink region.

In sum, the chart styles in figures 11 through 14 are useful because they re-present the same data that radar charts display in a simpler and more readable format. As indicated earlier, the charts can be used in tandem with radar charts to investigate any patterns of interest noted in either format.

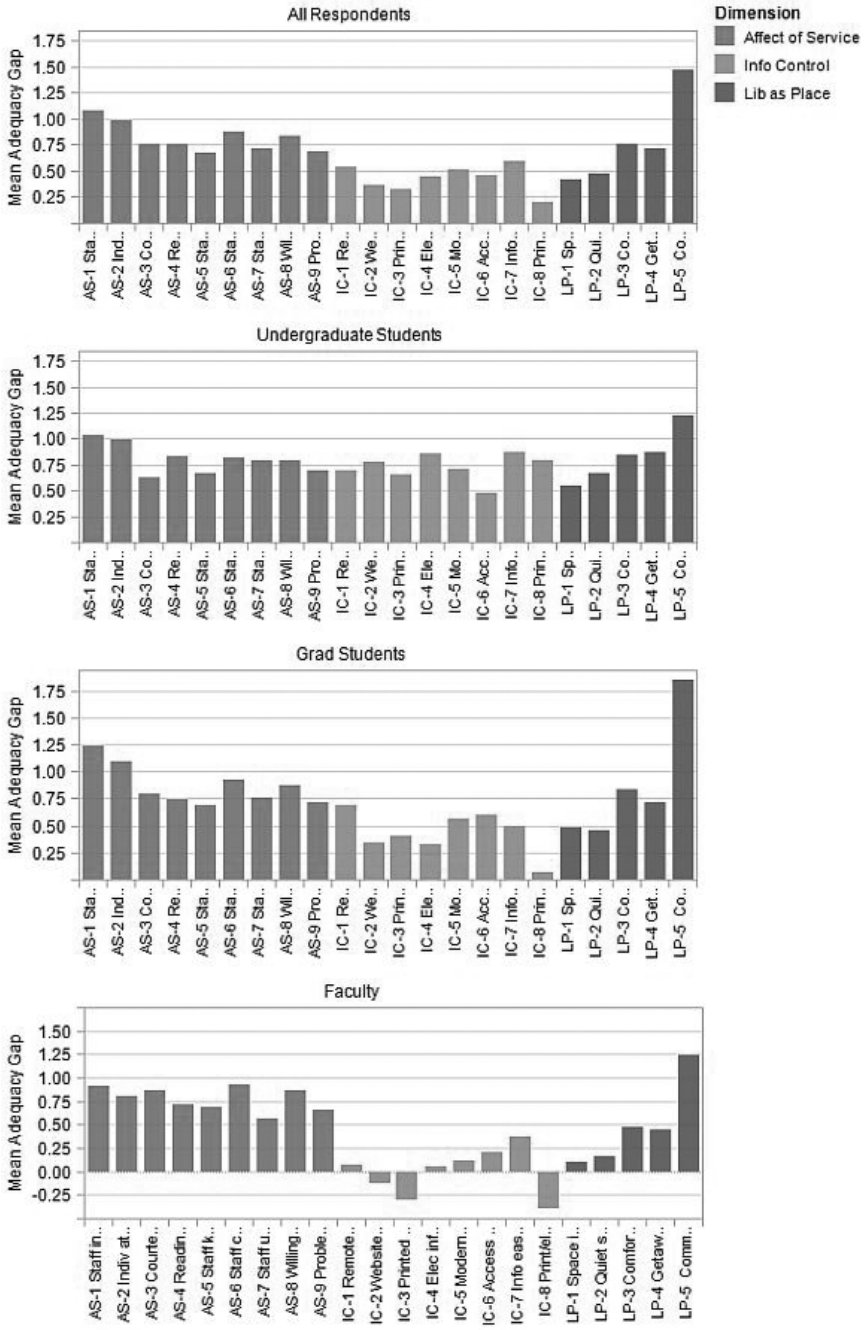


Figure 8: Mean Adequacy Gaps for 22 Core Items by Respondent Group

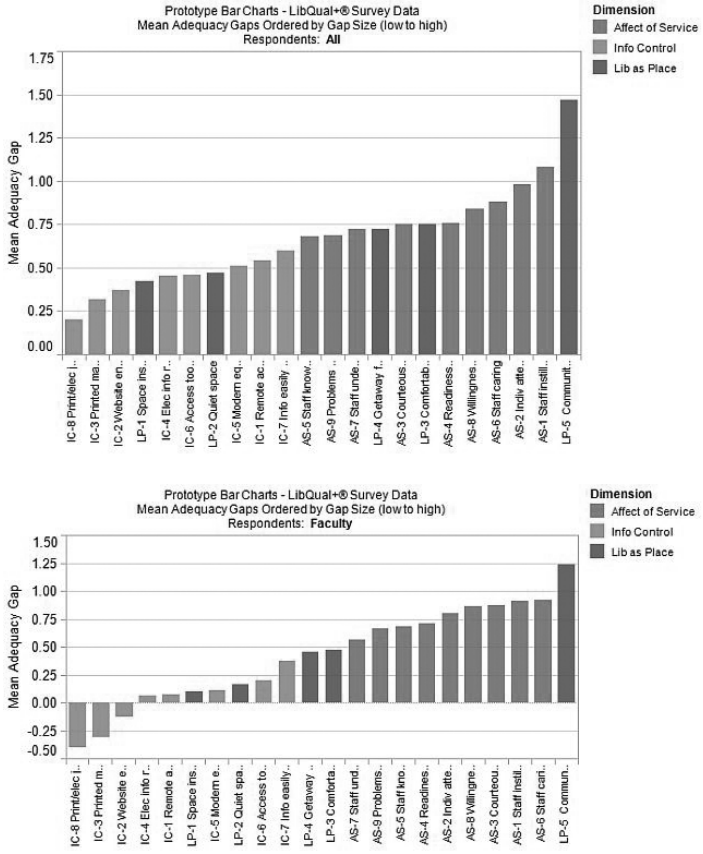


Figure 9: Adequacy Gaps Sorted by Size for All Respondents and Faculty

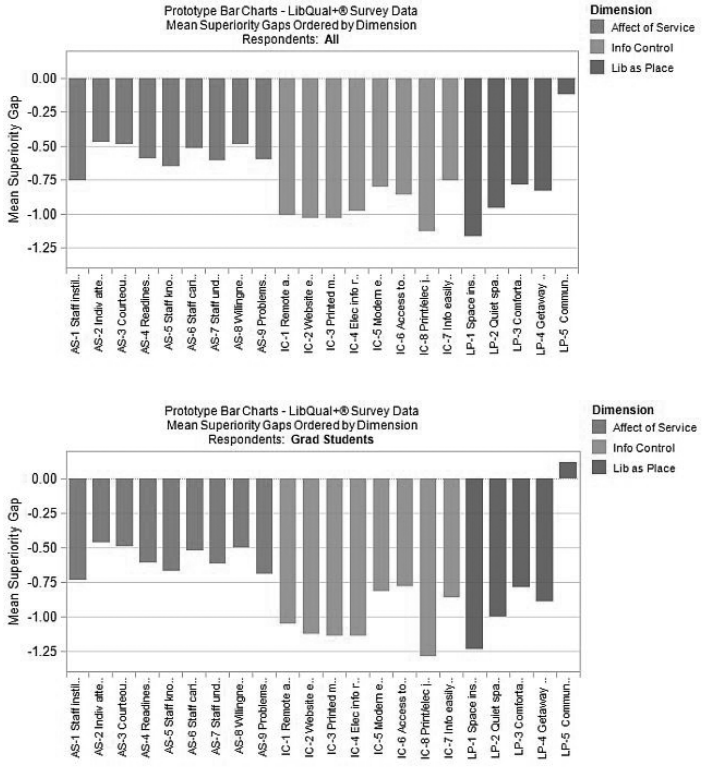


Figure 10: Mean Superiority Gaps for All Respondent and Graduate Students

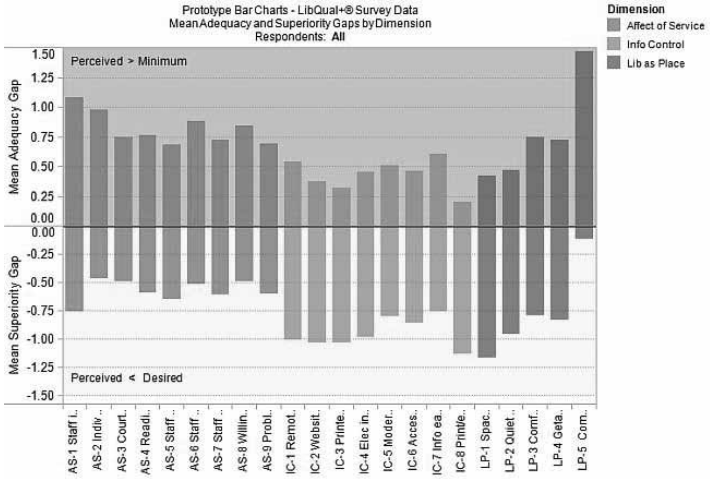


Figure 11: Mean Adequacy and Superiority Gaps for All Respondents

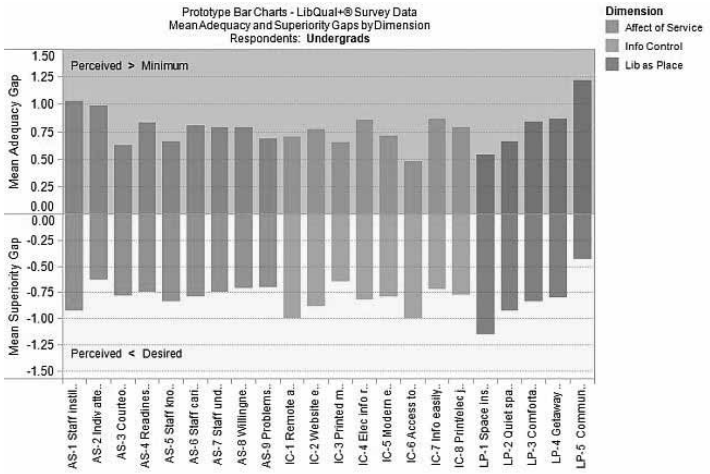


Figure 12: Mean Adequacy and Superiority Gaps for Undergraduate Student Respondents

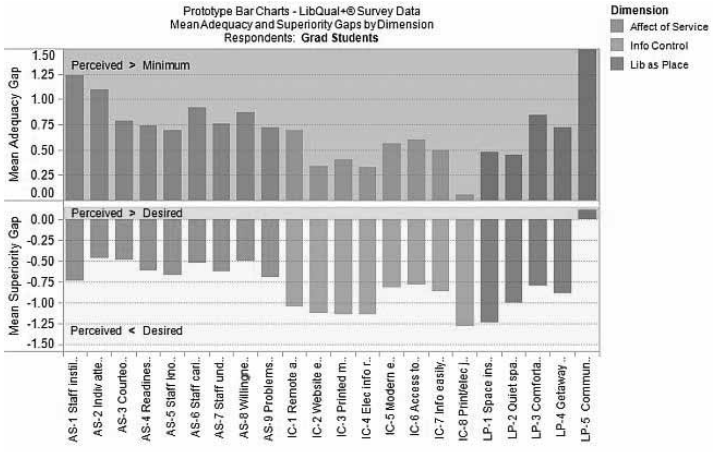


Figure 13: Mean Adequacy and Superiority Gaps for Graduate Student Respondents

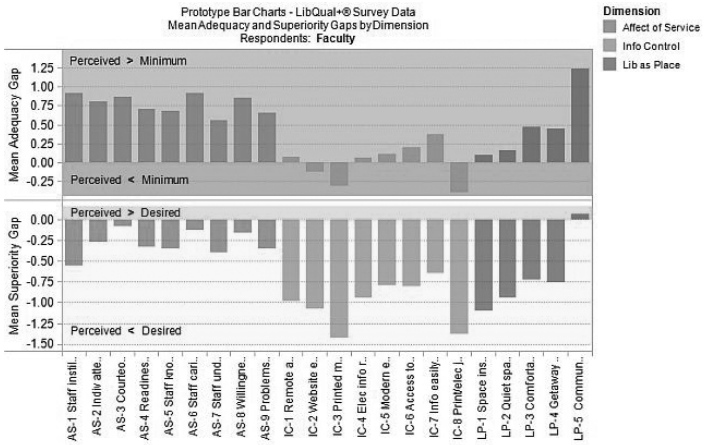
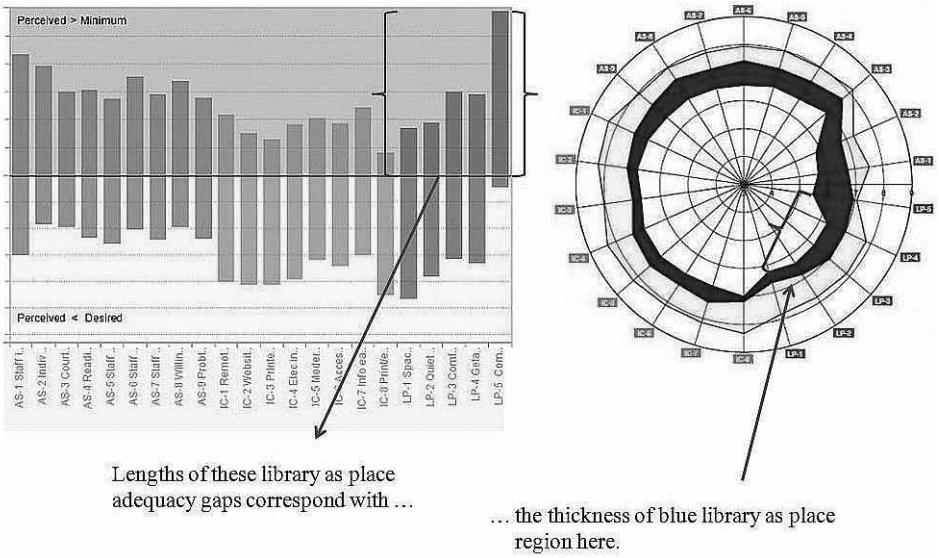


Figure 14: Mean Adequacy and Superiority Gaps for Faculty Respondents



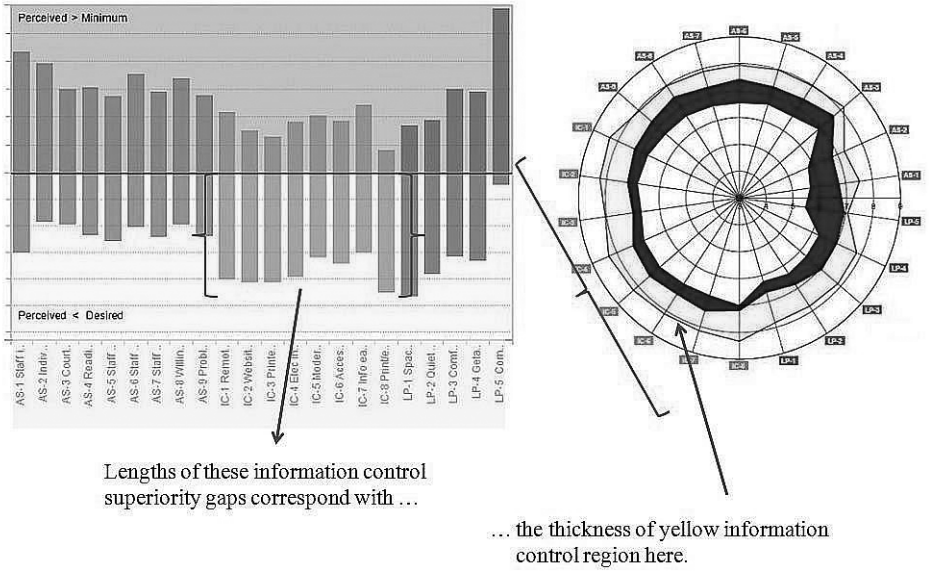


Figure 15: Bar Lengths Correspond with Thicknesses of Specific Portions of Radial Charts

Exploring data variability using histograms

John Tukey (1977, p. 27), the grandfather of data visualisation, wrote:

> *Summaries are very useful but they are not the details. So long as the detail is not so great as to confuse us hopelessly, there will be no substitute for having the full detail where we can look at it.*

When analysing LibQual+® service quality ratings and gaps, libraries should be cognisant of details underlying the data, that is, the data distributions. The simplest tool for visualising data distributions is the standard histogram. For example, figure 16 presents two histograms with ratings of minimum, perceived, and desired quality levels for survey Item AS-2 for all respondents. The two rows in the figure are identical, except that mean values are annotated in the lower row. Notice in either row that responses for desired levels are skewed towards the left, whereas for perceived and minimum measures they are more spread out. Mean values reflect this fact in that the mean perceived rating (6.8) is further left than the mean desired rating (7.2). Yet, these two figures hardly describe the real spread of the data. But looking at the histograms does.

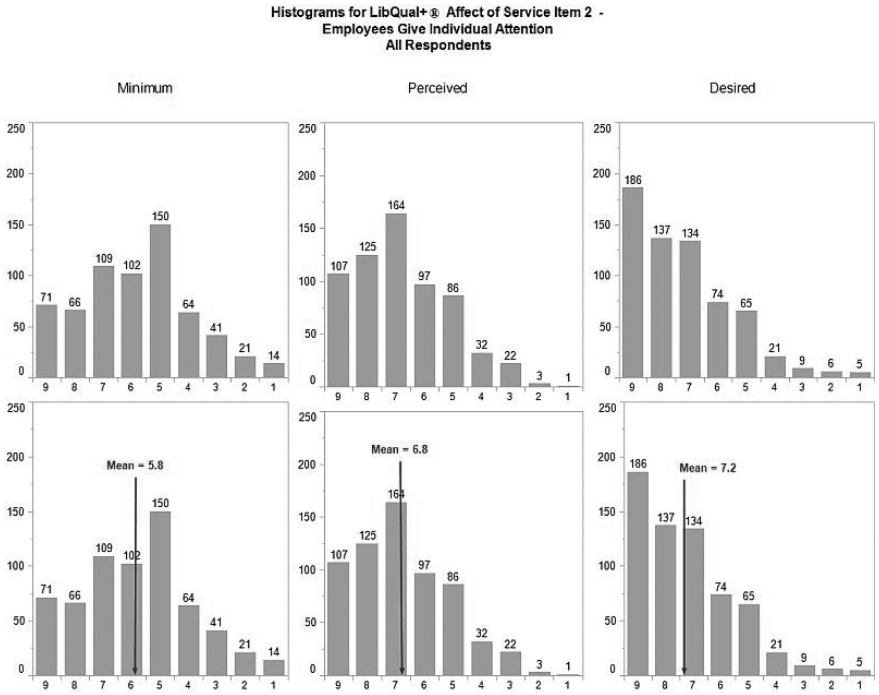


Figure 16: Histograms Show Data Variability

Thus, it is crucial that libraries generate histograms for each survey item, for each respondent group, looking for patterns that may be unique to any given combination of items and groups. In many of these charts, the libraries may observe that the majority of responses cluster together. For instance, in many cases mean desired levels may routinely approach 8 or 9. And there will also be other patterns which the majority of respondents tend to follow. Still, patterns unique to the minority of respondents require attention also. Histograms and similar graphs (like box plots) that show the distribution of survey responses will reveal these minorities. Beyond this, histograms from different survey years should be examined to identify trends among these minority responses over time.

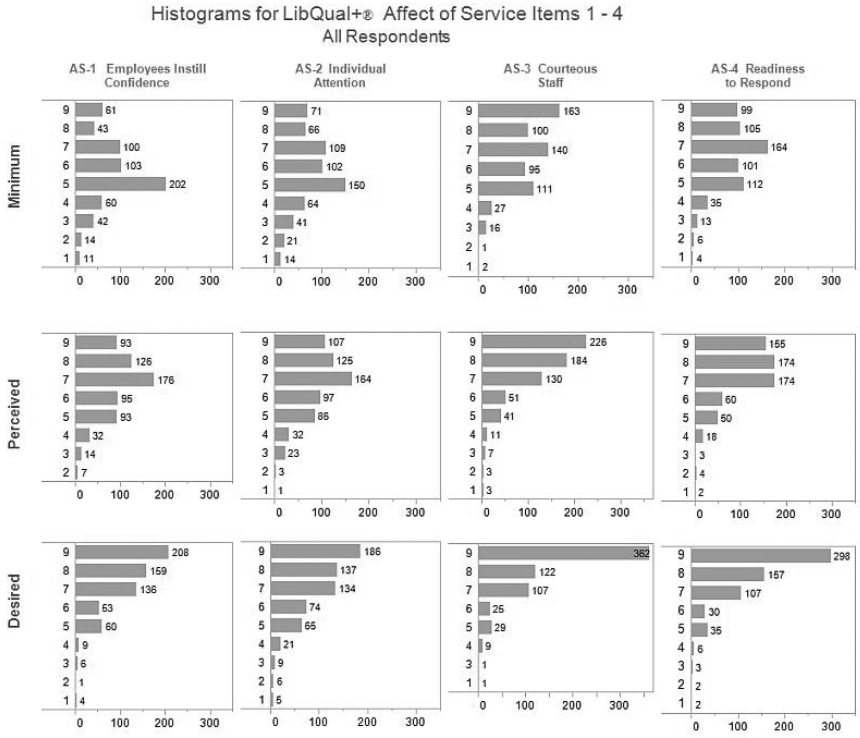


Figure 17: Histograms of Items AS-1 through AS-4 for All Respondents

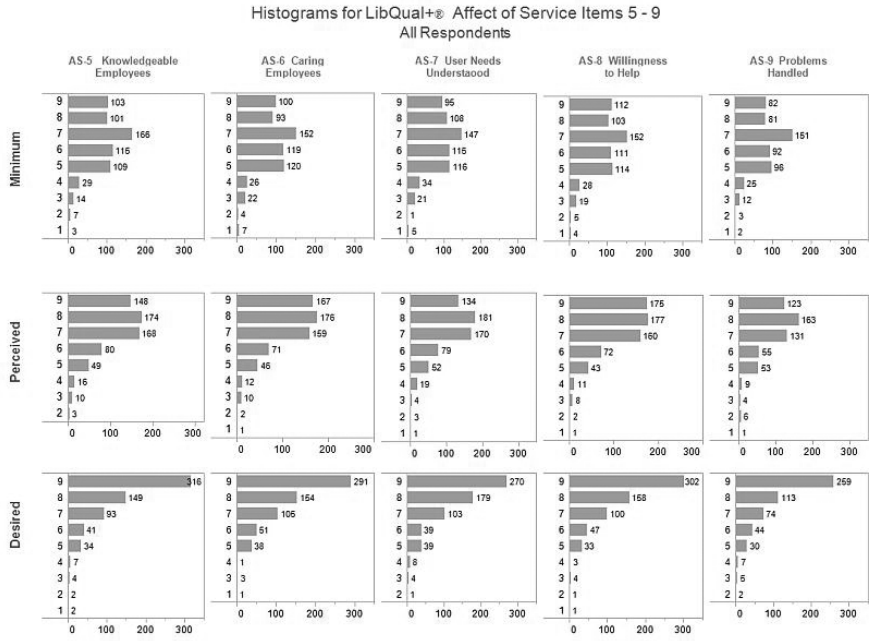


Figure 18: Histograms of Items AS-5 through AS-9 for All Respondents

Again, sleuthing for information in survey data requires looking at as much detail as possible in ways that foster meaningful insights. Figure 17 and 18 provide another example of details worth examining. The figures (referred to as a trellis display because they contain multiple small charts) make quick visual comparisons of all nine items for the affect of service dimension possible. They also demonstrate the amount of detail that this process yields. Some displays may produce no information that is news to the library, but others may. As a result, libraries should devise and explore a substantial number of graphs like these, depending on the library's services, respondent groups, and assessment questions.

Use of stacked bars in histograms can help illuminate patterns among subgroups, as figure 19 illustrates. Since visually gauging lengths of stacked bars can be difficult, this chart represents each group in both stacked bars and individual histograms (with aligned zero baselines).

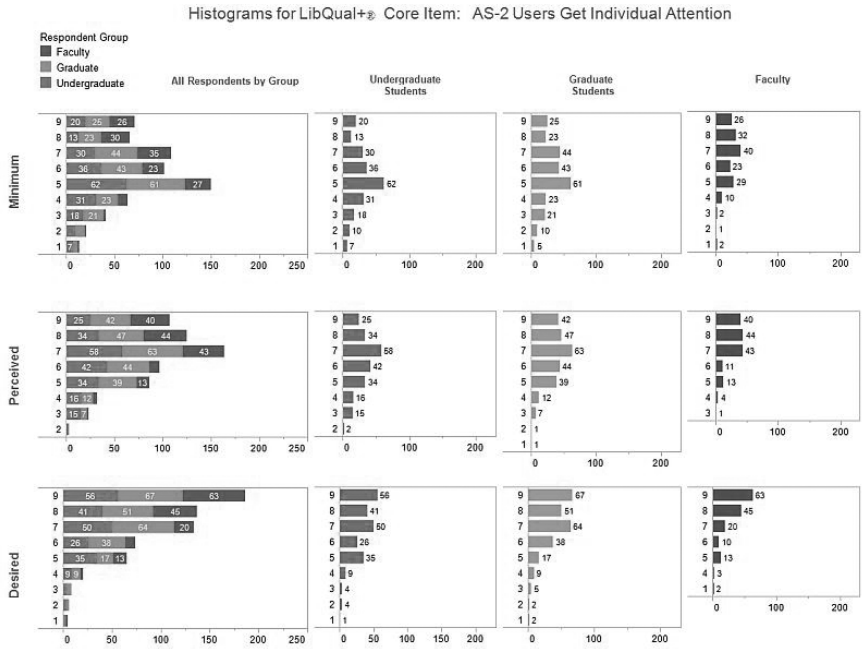


Figure 19: Stacked Bar Histograms and Single Histograms for Items AS-2

Conclusion

Use of two basic graphical formats – bar charts and histograms – can enhance a library's understanding of its LibQual+® survey data. Bar charts are simple graphical formats that facilitate accurate visual exploration of details in data. Patterns identified in radar charts, within and across both respondent groups and survey dimensions, can be clarified using charts such as those proposed here. Bar charts can also help uncover patterns that may be obscured by the complexities of radar charts. Histograms provide a clear portrayal of the distribution of survey responses and gaps. Again, these require diligent preparation and detailed study.

These charts have been proposed in hopes of raising interest in pursuing graphical data presentation tools further. The designs and formats are preliminary. Their utility can only be confirmed by use and refinement by libraries seeking to learn more about their users via LibQual+® data.

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Revitalising strategic planning: introducing the Balanced Scorecard

Alison Mackenzie
Learning Services, Edge Hill University

Introduction

Learning Services at Edge Hill University comprises a range of complementary academic services, including Library services, learner support, comprising IT, academic literacies, and support for students with a Specific Learning Difficulty (SpLD); and Learning Technology and Media development teams who provide support and expertise on technologies to support teaching and learning to academic colleagues, researchers and students. Its mission is to *'support learning and to develop a responsive learning environment for all, through services and facilities, research and development, information and support'*.

Subdivided into a number of functional teams, including the headline priorities identified at Service and University level, strategic planning on an annual basis at a local level traditionally used a SWOT analysis as the basis for the prioritisation of actions. This approach was well understood by staff at all levels. Although it encouraged engagement and participation, it was increasingly being used as a reflective tool with an emphasis on past achievements and activities and less as a vehicle to assist forward planning. There was also an increasing bias towards the prioritisation of individual team priorities, and plans were less clear on how and where their priorities connected with the Service and University. Concurrent with the internal Service review, the University launched a new strategy, making explicit links between its strategic objectives, sets of key performance indicators (KPIs), and measurable outputs. It was evident that the Service's current approach to annual planning was no longer effective and required a root and branch review. The key drivers which informed this were:

- recognition that the current processes undertaken by Learning Services required remodelling
- the need to have more visible and measurable outputs to draw on for a variety of purposes eg benchmarking, trend analysis, business cases, promotion and marketing
- the need to mitigate the risk of being unable to readily demonstrate impact and value, clearly articulating the Service's contribution to the reputation and success of the University
- the aim to establish a greater sense of empowerment at a local level, to encourage staff to extend their contributions to Service development through new connections and partnerships
- a clear directive from senior University managers for annual plans to explicitly draw on evidence to inform the identification of priority actions.

It was also seen as essential that this process did not endanger effective team cultures and practices. When working productively and effectively, these are high-performing teams whose staff flourish and demonstrate enhanced loyalty, motivation and creativity. Although it was vital to retain this level of productivity and effectiveness it did not detract from the need for a more rigorous approach to performance measurement at team level. However, it was acknowledged that not all staff worked within high-performing teams, and investment in individual staff development and support was of equal importance to the overall success and reputation of the Service. As changes to the planning process took place, it became evident that revitalising the planning process alone, did not necessarily equate with high quality professional behaviour and performance and although difficult to measure and/or benchmark, it was clear that the professional behaviours of individual staff was an important element in contributing to the collective performance of teams and in turn, the reputation of the Service.

Context

Over 120 staff work in a variety of professional and support roles within Learning Services. Some teams draw their staff from discrete professional backgrounds eg Academic liaison teams comprise professionally qualified librarians;

others recruit from emerging professional areas, where an undergraduate degree is required, but there is no clearly defined career path eg Learning technology development team; and others eg Customer Services, where qualifications are important, but of equal importance are highly developed interpersonal and communication skills. Informed by the key drivers identified above, a set of requirements were agreed by the Service's senior management team to specify how the planning process might be improved. These requirements highlighted:

- the need to have a tool which would exert structure and discipline to the planning process
  - explicitly requires an evidence base to inform decision-making and strategic planning
  - encourages critical review and analysis
  - is sufficiently adaptable to meet local requirements and can be interpreted in a meaningful way
  - will provide a framework to underpin the identification of measurable priorities
  - is future focussed.

The choice of the Balanced Scorecard as the vehicle to help achieve these objectives was informed by the following factors:

- it broadly met the criteria listed above
- it is an established performance management tool
- it has been deployed by a variety of different types of organisations working across commercial, public and not-for profit sectors, demonstrating its adaptability and flexibility
- it is evidence based and anticipatory, both elements which are critical to determining where investment is targeted to achieve maximum return
- its use of four perspectives, Customer, Financial, Internal, and Learning & Growth provided a blueprint for interpretation, adaption and local customisation.

In addition, the Balanced Scorecard has the potential to provide a structural framework to support individual staff objectives. Following the introduction of the Scorecard in 2009, a more recent development is an accompanying pilot project to explore the potential of a professional behaviours framework as a tool to enhance staff effectiveness. It was increasing recognised by the Service's senior management team that success and reputation, both individually and collectively is directly linked to individual staff ability to self manage, motivation to continually develop, and deployment of effective relationship management skills. These complement an individual's professional and technical expertise which collectively contributes to high-performance at all levels.

The Service has deployed the Association of University Administrators (AUA) CPD Framework[1] as the vehicle to underpin the pilot project. This has resulted in staff who are engaged in not only meeting key objectives, but also assessing, through personal reflection and regular performance coaching, their capacity to stretch themselves to become more effective professionals and contributors to Service developments. This is an on-going project where the success of the intervention will only be visible over time. Internal feedback and comments are captured as part of an iterative process but the measureable impact is not yet realised. It is hoped, that success may translate into improved National Student Satisfaction (NSS) scores, increase in collaborative activities with academic departments and other professional services across the University, and enhanced external reputation by staff attendance at conferences and other professional engagements. However, these are projections and the return on investment waits to be realised in quantifiable terms.

Introduction of the Balanced Scorecard

It was recognised at an early stage that local control over the introduction and application of the Balanced Scorecard would be a key success factor in its uptake and deployment as a practical tool to underpin the process of planning. Consensus on choice of tool was important, but more importantly was its effectiveness in practice. To achieve this, a significant investment in staff time was allocated to the drafting of supporting documentation to accompany staff development events to both raise awareness of the tool, and to test out its application in a number of scenarios. This

1 *www.aua.ac.uk/cpd-0-.html*

stage in the process was critical to individual team manager's engagement with the process and their ownership over the local interpretation of the tool, ensuring that it best reflected the nuances and culture of their team.

Implementation: 2009

An initial introduction to the Balanced Scorecard at a manager's forum, focussed on its adaption to a University environment and in particular, the specifics of Learning Services. It was evident from the outset, that the Scorecard required re-alignment to support the context of a specialised customer service environment. The priority success measure for Learning Services was achieving Customer Service excellence. The interpretation of success and the accompanying measures vary across individual customer/user groups, but it was important to understand that in terms of weighting the four perspectives, the measures identified in the three other areas would collectively feed into the value of the customer experience, its effectiveness and contribution to the success of the Service and the University.

This relationship between the four perspectives was captured as a model and work was undertaken to explode each segment to identify the evidence base and associated performance measures for each area and how they would be delivered to extend the value of the Service to its customers.

The initial starting point was to identify the types of activities which would sit within each of the areas; how these are measured; the criteria for success and where readily available associated and pre-existing Service level agreements.

Learning Services had previously attained the Government award for Customer Service, Chartermark[2]. The process of applying for this award had led to a significant number of processes having associated performance measures and these formed the basis for the initial discussion and distribution of measures across the perspectives.

Each perspective was examined in turn, for

1. evidence which would help drive greater efficiency eg metrics, and

2. where evidence might be sourced which would underscore new initiatives

It was also recognised that performance measures might be drawn from more than one perspective to support and evidence the success of cross-Service initiatives.

This process, begun in 2009 has been revisited each year and adjustments made to existing measures; new measures have been introduced and the process refined as staff develop a more critical approach to the process of planning and as priorities for development have changed.

The breadth of measures featured under each perspective varies significantly in number and complexity.

2 ***www.idea.gov.uk/idk/core/page.do?pageId=71569*** Chartermark has now been superseded by Customer Service Excellence

The majority of process driven measures sit under the **Internal efficiencies** perspective.

Examples include:

- workflow processes linked to acquisition activities
- usage statistics linked to resources and services
- internal data collection and management
- effective working practices eg team meetings; local communication tools; timetables and structural deployment of staff
- life cycle management eg archiving policies.

Linked to the **Internal** perspective, efficiency based metrics also feature significantly under **Value for money/Cost effectiveness**

Examples include:

- benchmarking activity, in particular looking at value for money from suppliers
- performance measurement activities eg system downtime; supplier performance
- monitoring cost of delivering key or new services eg extended opening hours.

The development of new services and the need to ensure that the workforce is appropriately skilled and adaptable is essential to the effectiveness and robustness of the Service, and sitting under the perspective of **Learning & Innovation/Growth** are a number of measures which relate to this area, including:

- monitoring and review of staff development activities
- professional activity monitoring eg attendance at faculty boards; involvement in external professional activities
- audit/review of staff skills and competencies.

Each of these feeds into the Customer perspective, where the sum of the activities is tested against customer feedback and comment. On a strategic level, the ability to demonstrate the value or added-value the Service brings to its key customers, namely, the students, academics and researchers of the University is essential for decision-making and business planning. Specific performance measures which sit in this perspective relate to:

- surveys, feedback and focus groups to determine impact and measure satisfaction
- trend analysis to determine future allocation of budget/staff resources
- quantitative data related to footfall, physical use of space, collections etc
- monitoring quality of enquiry services and inter-personal interactions.

Sitting beneath this tier of activity is a supporting infrastructure which is in the process of being developed as both a rich source of information on the outputs, and also includes operational information on who collects the data, its purpose, format and frequency. Using the Balanced Scorecard to organise and capture data and information on the Service is valuable, but at a strategic level its value is in ensuring that it continues to be 'fit for purpose'. One activity which is undertaken by managers refers to key reflective questions which focus attention on the value propositions associated with each of the four perspectives of the Scorecard. These are examples of the questions which are considered by Service managers, both in advance of, and at the end of their team planning activities, to ensure that their strategic objectives are based on evidence, are measurable and are in accord with the strategic direction of the Service.

Customer service excellence:
Is the team meeting the needs and expectations of its various customer groups and their specific requirements?

Internal efficiencies
How effective are our internal processes and management of resources in supporting the delivery of our services?

Learning and growth/ innovation
How able and flexible is the team to respond effectively to the changing needs of an increasingly dynamic environment?

Cost effectiveness/value for money
Is the approach taken to budget management delivering the best possible return for the team/Service?

Although this activity may appear artificial, its value sits in prompting colleagues of the need to critically appraise and reflect on current practices and to ensure that resources are deployed as effectively as possible.

The introduction of the Balanced Scorecard was evaluated through formal and informal feedback from individual team members. In addition team managers were asked to respond to a set of questions designed to assess the extent to which the introduction of the Scorecard met the original objective for a tool which would exert structure and discipline to the planning process, and in particular:

- explicitly requires an evidence base to inform decision-making and strategic planning
- encourages critical review and analysis
- is sufficiently adaptable to meet local requirements and can be interpreted in a meaningful way
- will provide a framework to underpin the identification of measurable priorities
- is future focussed.

Feedback suggested that the Scorecard readily lent itself to the development of an evidence base and provided a useful framework for future planning. Reservations were expressed over its adaptability. Managers in particular felt that its usefulness lay principally in the discussions it encouraged with team members on the identification of priorities and accompanying performance measures. The decision to devolve implementation of the Scorecard to team level was welcomed, but also served to highlight individual manager's readiness and confidence to introduce a new and challenging approach to planning. To some extent this has influenced the speed of buy-in by individual teams, with some initially demonstrating a tepid response to its introduction.

Conclusion

From the perspective of the Service's senior management team, the plans which emerged from individual teams are sharper, better focussed and are clearly evidence based. As discussed above, an unforeseen consequence of introducing the Scorecard is that it has drawn attention to the need to consider how the skills, attributes and behaviours required by staff will be measured. This extends beyond the scope of the current Scorecard and has required a different approach to achieving this.

Modified and further amended on an annual basis, the Scorecard is now an established keystone in the annual planning cycle. Despite some initial lack of engagement, teams now view use of the Scorecard as *the* vehicle for planning. It is evident that the Scorecard has the potential to extend its role, and the next phase is to evaluate how it might drive behavioural change and provide a more complete governance model for strategic planning.

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The use of the ACRLMetrics Service: results of a survey

Joseph R Matthews

The Association of Academic and Research Libraries (ACRL) has been compiling and publishing statistical information for U.S. (and Canadian) libraries since 1943. In recent years, an average of 1,400 to 1,500 libraries representing all Carnegie classifications have responded to this annual survey (out of a total population of about 3,300 college or university libraries). ACRL uses the ARL (Association of Research Libraries) survey instrument (with permission) to gather a core set of data in four broad categories: Collections, Expenditures, Library Operations, and Local Characteristics or Attributes. An additional set of "trends" questions is used to gather data about a variety of topics of interest to the profession. The intent is to identify trends and other changes that are impacting library operations (Davis and Petrowski 2009). Data is input via a Web-based survey form and the survey relies on voluntary participation.

Initially, the results of the annual survey were published in the annual *ACRL University Library Statistics*. In 1998 the title of the annual publication changed to *Academic Library Trends and Statistics*. From 1999 to 2008, the results of each year's survey were available as a print publication and as an electronic database providing access to a single year's worth of data.

In late 2010, ACRL announced a partnership with Counting Opinions to develop a database that would provide integrate access to the ACRL data files from 2000 onward as well as the NCES (National Center for Educational Statistics) data sets. Counting Opinions is a company that provides online performance management and customer satisfaction tools. According to Frank Biss, Counting Opinions VP of Customer Service, "Having identified the need for more robust solutions around the comprehensive management of operational data (both quantitative and qualitative), ACRL partnered with Counting Opinions to develop a robust, inexpensive, web-based service to support benchmarking and other custom data report outputs requirements."

The new online service, called ACRLMetrics, requires a yearly subscription, and allows a library online access to the retrospective ACRL data as well as biennial data from the National Center for Educational Statistics Academic Libraries Survey from the year 2000 to the present. Note: this data is freely available on the NCES Web site, but searching across the datasets is not supported. In addition to a wide range of standard reports, subscribers (who might be libraries or individuals) can create their own ad hoc reports (which can be saved and run again at a future time). For example, all of the reports suggested in the appendices of the Robert Dugan, Peter Hernon, and Danuta Nitecki's (2009) book on library metrics are easily accessible as template reports as shown in Figure 1. Readers interested in learning more about ACRLMetrics may do so at ***www.acrlmetrics.com***. The earliest review of ACRLMetrics by Christopher Stewart was published in January 2011 and the results of the survey reported in this paper builds on (and adds to) to this initial assessment.

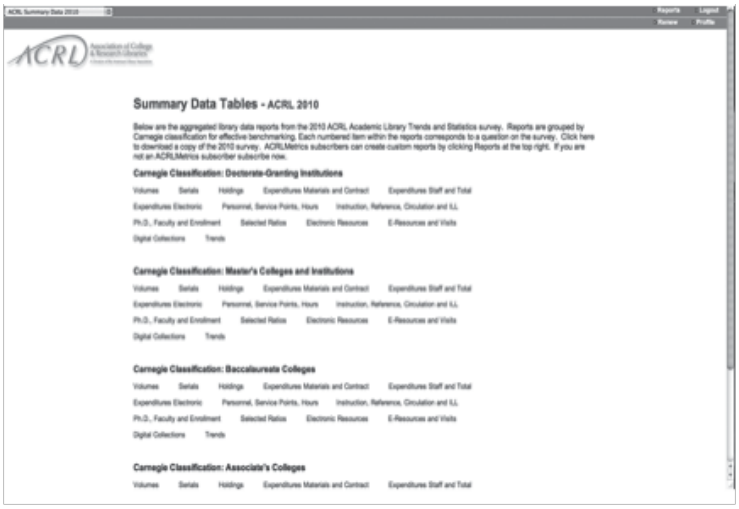

Figure 1: Pre-prepared Reports Using ACRLMetrics

The availability of this wealth of data about academic libraries will, hopefully, encourage libraries to perform peer analysis comparisons as well as more involved statistical analysis. ACRLMetrics is designed to support librarians in their strategic planning, budget presentations, benchmarking, and trend analysis, and advocacy efforts. Christopher Stewart (2011) has prepared a thoughtful and practical review of ACRLMetrics that should be of value to libraries considering the use of ACRLMetrics. The six ways in which a library can output the result of an analysis are shown in Figure 2.

Type of Report	Functions
Table	Summary data **
PI report*	Summary of selected variables **
Trend/PI	Summary of selected variable (range of years)
Graph/PI	PIs sorted by PI value **
Summary	Summary data for all selected PIs
Period comparisons	Data values for each selected time speriod

Figure 2: Types of Reports Available Using ACRLMetrics

In order to better understand the needs of its customers, ACRL and Counting Opinions created a brief survey that asked subscribers about their use of the new ACRLMetrics service and how the service could be improved. The survey was distributed in the spring of 2011 and the results are presented here. A total of 36 responses were submitted to the Web-based survey.

The most frequently mentioned reason for using ACRLMetrics was to use the data for benchmarking with other peer libraries (58 percent of the respondents). Frequently the benchmarking is being done to compare staffing levels (to avoid cutting staff members) and to compare expenditures (preparing a budget request and defending a budget). As noted by some of the respondents,

> *"Trying to discover useful comparisons for budget benchmarks.*
>
> *Our college is in a period of growth. I am using metrics to benchmark how our current library staffing, budget, circulation, and hours match up with similar schools.*
>
> *We use the metrics to compare our library to comparable ones (both size and Carnegie class). Specifically we've focused on staffing and budget expenditures.*
>
> *To justify budget growth, personnel growth, and to get the University's administration to understand that libraries still house and collect physical books."*

In addition, a few libraries mentioned that they were using ACRLMetrics as part of the preparation process leading to an accreditation visit.

When asked what they liked about ACRLMetrics, the respondents revealed they appreciated:

> *The fact that "all" years of data can now be searched simultaneously (large data sets).*
>
> *The templates have been helpful, and I like that when you create a template you can return to it again and again just altering a few things.*
>
> *Reports that can be downloaded saved, etc., multiple ways – in Excel, as graphs, etc. I also like the ability to easily run comparisons on different categories of data against our peers.*
>
> *Being able to pull together very valuable information very quickly. It is really important that it can be exported into Excel. It has been the most valuable tool I have had in the last year.*

The power and flexibility of the ACRLMetrics service is demonstrated in Figure 3 which illustrates a significant amount of control that the user can exercise in preparing a report that will best meet the needs of the subscribing library. A sample report is shown in Figure 4 and Figure 5.

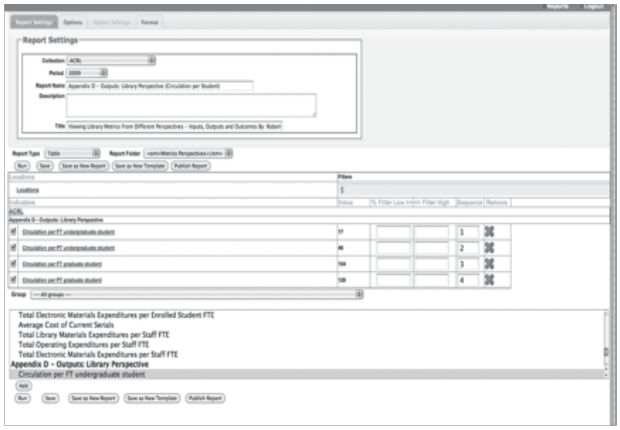

Figure 3: Report Settings Available to Users of ACRLMetrics

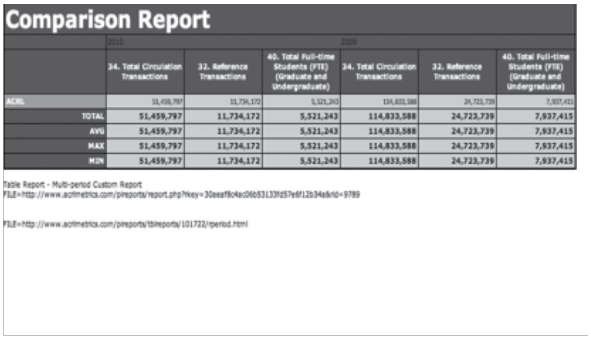

Figure 4: Sample Report from the ACRLMetrics Service

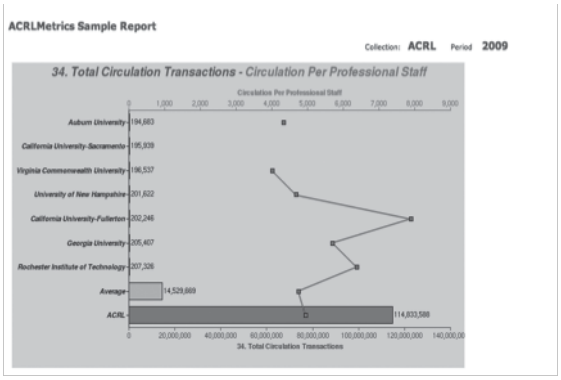

Figure 5: Sample Graphic Report Using ACRLMetrics

Respondents were also asked about ways that ACRLMetrics could be improved as 44 percent indicated that they would like to see an improved user interface. While the system has a lot of power and capabilities, for some users it has proven to be difficult to learn and/or remember how to accomplish a task that was previously used. Interestingly, some of the respondents clearly "got" how the user interface works and they really are benefiting from using ACRLMetrics. As Christopher Stewart as noted, "ACRLMetrics provides an extraordinary amount of information for the researcher. It is a valuable service with a great deal of potential… For the researcher seeking general results data from current and past ACRL surveys, or is conducting inquiries about his/her own institution, and performing basic peer analysis and benchmarking, ACRLMetrics provides the researcher with a myriad of data access points and reporting features" (2011, p. 76).

Several other respondents indicated that they would like ACRLMetrics to use IP authentication so that several people at the University could gain simultaneous access (without the need to remember a password). Some of the comments of the respondents include:

> *I've just started using it but I'm finding it challenging to learn.*
>
> *Make it easier and more intuitive to create groups, do comparisons, etc.*

Ugh... you need a more user-friendly interface. I finally got the hang of it, but not without considerable hair-pulling and swearing.

I found the interface a bit hard to figure out. I also had trouble getting it to generate spreadsheets.

Respondents also indicated that they would also like the ability to fill in the gaps of data not reported in prior years. Note that ACRLMetrics subscribers can forward any updates to fill in any gaps of their data to Counting Opinions. In addition, ACRL and Counting Opinions are working together to improve the user interface.

In general, a majority of respondents indicated that they have found ACRLMetrics to be a valuable resource. 61 percent of the respondents indicated that they are either "Satisfied or Very Satisfied" with ACRLMetrics.

Using a 10-point scale (10 being Very Likely), respondents were asked how likely they would be in recommending ACRLMetrics to a colleague? The average response was 6.4 and one-third of the respondents chose a value of 8, 9 or 10.

Will Weston of the San Diego State University Library indicated that, "I like that I can quickly create a table and graphic pretty much on the fly. For instance, getting a question in the middle of a presentation and simply having the data available to create a chart/graphic to answer a unexpected question provides a great deal of flexibility." And Thomas Bremer of the Winona State University library noted that the, "ACRL Metrics is a useful tool as we adjust to the 'new normal.'"

Mantra Henderson of Mississippi Valley State University found "ACRLMetrics was a timely purchase for us in that it because it was instrumental in us being able to produce data for our accreditation standards as well as being able to identify peer and aspirant libraries for comparison." And Raymond Calvert of the Pasco-Hernando Community College library noted, "I have found ACRLMetrics to be easy to use. It has saved me a lot of time and has provided valuable data for strategic planning." And Michael Olson of the University of North Carolina, Charlotte noted "I'm crunching some numbers using ACRLMetrics for the first time, and it is fantastic. Thank you for producing it."

Conclusion

Clearly the users of ACRLMetrics are finding the new online service to be of real value. The ability to select a group of peer libraries as well as selecting specific data elements to be included in an ad hoc report provides a tool that is directly in control of and is responsive to the needs of the user. The dominant reason for the use of ACRLMetrics is to benchmark a group of peer libraries in order to ask for additional budget allocations or to defend the current budget. In some cases, the data is being used to defend requests to cut budgets, collections, and staff. A few libraries are using the data to prepare self-study accreditation reports.

Academic libraries spend considerable amounts of time and other resources responding to requests to complete surveys. The value of data in each survey is not obtained by reporting it but by consistently using the data reported by a library and comparing it to a set of peer libraries. The value of data comes from analysis and using the data to present a compelling case for the role of the library in today's competitive environment.

Counting Opinions actively solicits (and responds to) requests for improvements by holding user group meetings twice a year at the ALA Midwinter and Annual Conference. Also, subscribers can provide feedback online, as the survey is still available. In addition, it is expected that the IPEDS (the Integrated Postsecondary Education Data Set) statistics will be added to ACRLMetrics by the end of 2011. This will allow libraries to begin to explore the new relationships and possible correlations between library characteristics and educational outcomes.

According to Mary Ellen Davis, Executive Director of the Association for College and Research Libraries, "ACRL is pleased to learn that ACRLMetrics is helping the academic library community demonstrate and assert value. We will continue to work with Counting Opinions to solicit subscriber feedback to improve the utility of ACRLMetrics."

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Assessing library contributions to university outcomes: the need for individual student level data

Joseph R Matthews

Over the last twenty-five years or so, United States state and federal stakeholders have exerted a steady drumbeat of pressure on colleges and universities to account for student learning outcomes. Many campuses have responded to these pressures by reporting indicators of student "learning." However, almost without exception the measures that are being reported by each campus are proxies or indirect measures of learning – for example, graduation rates, progress or retention rates, employment rates, or student surveys.

These and a variety of other measures are considered *indirect* since there is a large gap between graduation rates, for example, and the student's actual learning as a positive change in observed behavior over time. The attractiveness of indirect measures is that they are relatively easy to obtain or calculate and then report to outside stakeholders.

Among the more popular *indirect measures* are the national student surveys such as the National Survey of Student Engagement (NSSE) and its offspring the Beginning College Survey of Student Engagement (BCSSE) and their counterparts.[1] These surveys provide a broad overview, as well as a campus perspective, about student participation in programs and activities provided by higher education institutions for their learning and personal development. It should be noted, however, that student self-reports on the NSSE survey are uncorrelated with direct learning measures.

The NSSE surveys tells a different kind of story and asks students to report of their level of academic challenge, the opportunities for active and collaborative learning, the extent and quality of students interactions with faculty, the availability and access to enriching extra-curricular experiences and the extent to which the campus offers a supportive environment for learning and student development.

An analysis of the NSSE data that explored use of the library and student achievement found some interesting and disturbing findings (more than 380,000 respondents from 1984 to 2002).[2] The authors note that:

- academic libraries and their services at small, academically challenging liberal arts colleges are strongly correlated with other educationally purposeful activities (note that such institutions are usually residential in nature, the library is closely located to student residences making access easier)
- library use is less frequent in larger doctoral/research-intensive – perhaps due to the readily availability of other alternatives
- individual students who frequently use library resources are more likely to work harder to meet faculty academic expectations
- library experiences do not lead to gains in information literacy
- library experiences do not lead to gains in student satisfaction
- library experiences do not lead to what students gain overall from college.

However, one important word of caution. The consistent results of NSSE and other similar surveys are that the library has little or no role in the lives of a majority of undergraduate students. In some cases, as noted by George Kuh and

1 Other standardized surveys that may be used on a college or university campus include the Cooperative Institutional Research Program's Student Information Form (CIRP), the Your First College Year (YFCY), College Senior Survey (CSS), College Student Experience Questionnaire (CSEQ), College Student Expectations Questionnaire (CSXQ), Community College Survey of Student Engagement (CCSSE), and the Community College Student Experience Questionnaire (CCSEQ).

2 George Kuh and Robert Gonyea. The Role of the Academic Library in Promoting Student Engagement in Leaning. *College & Research Libraries*, July 2003, 256-282.

Robert Gonyea, 50% or more of students surveyed indicate that they never entered a campus library or used a library service during their undergraduate years.[3] This should be serious cause for concern.

More recently, the United Kingdom Library Impact Data Project has found that 50 percent or more of university students have never borrowed an item from the library, never visited the library or has never downloaded an item from an electronic resource.[4] And similar results were also observed in an Australian university when they examined library transaction data in conjunction with student performance data.[5]

Direct measures of learning typically include scores on graduate school admission examinations, scores on certification or license examinations (teacher, the bar, CPA and so forth). Usually what direct measures of learning measure are not learning but rather *achievement*. When students take a certification examination or a graduate admissions examination the test is measuring achievement and it is difficult to separate what the university's contribution to an individual's achievement is from other environmental contributors – peer group, family, work experiences, and so forth. So it is safe to say that when using the more frequently used direct measures of learning, the contribution of the college or university is indirect, at best.

Another strategy is to employ examinations that attempt to assess board measures of critical thinking, communication and decision-making– see for example, the Collegiate Learning Assessment (CLA), The Collegiate Assessment of Academic Proficiency (CAAP), and the Measure of Academic Proficiency and Progress (MAPP).

The Collegiate Learning Assessment examination focuses on assessing critical thinking, judgment, analytical reasoning, problem solving and writing skills. CLA does not attempt to assess domain-specific knowledge, skills, values or appreciations. Taking the test at the beginning of the freshmen year and then again at the end of the senior year, allows an interpretation of the change in students behavior as learning due to experience of instruction and study that has lead to measurable learning. The goal of CLA is to determine the value added by a college education. Alarmingly, analysis of CLA data nationwide suggests that roughly 45 percent of college students fail to demonstrate any gain in their critical thinking skills while in college.[6] Critics of CLA and other similar tests note that only samples of students from each class take the test and the analysis of data does not consider attrition.

Student learning frameworks

Alexander Astin has developed a conceptual framework that illustrates the complexity of the educational process and, by implication, the difficulties in assessing student-learning outcomes as shown in Figure 1.[7]

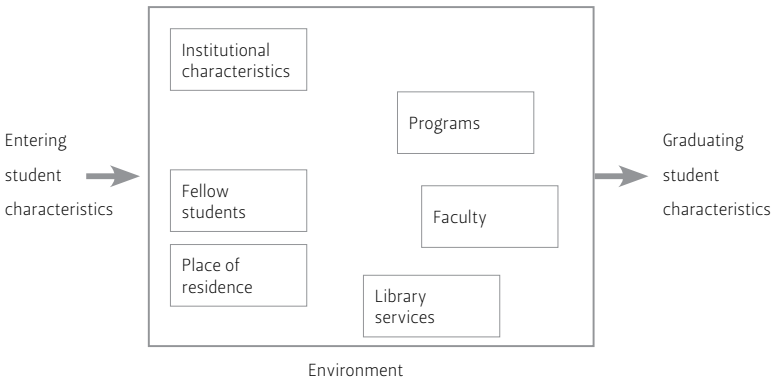

Figure 1: Astin's Input-Environment-Output Model

3 Kuh and Gonyea, op cit

4 Deborah Goodall and David Pattern. Academic Library Non/low Use and Undergraduate Student Achievement: A Preliminary Report of Research in Progress. *Library Management*, 32 (3). See also, Graham Stone, Dave Pattern, Bryony Ramsden. The Library Impact Data Project: Hit Miss or Maybe? The Proceedings of the 9th Northumbria Conference in Performance Measurement in Libraries and Information Services, York, England, August 22-25, 2011. In press.

5 Margie Jantti and Brian Cox. Capturing Business Intelligence Required for Targeted Marketing, Demonstrating Value, and Driving Process Improvements. *The Proceedings of the 9th Northumbria Conference in Performance Measurement in Libraries and Information Services*, York, England, August 22-25, 2011. In press.

6 Richard Arum and Josipa Roksa. *Academically Adrift: Limited Learning on College Campuses*. Chicago: University of Chicago Press, 2011.

7 Alexander Astin. Achieving Education Excellence: A Critical Assessment of Priorities and Practices in Higher Education. San Francisco, CA: Jossey-Bass, 1985.

In a similar vein, Richard Shavelson has developed a framework for student learning outcomes that identifies the different components of the challenge and some of the instruments that have been used to measure or assess learning outcomes as seen in Figure 2.[8] Clearly, what is learned and how well it transfers to new situations depends on the natural aptitudes and abilities that students bring with them to the work place. These aptitudes and abilities are the product of their education (in and out of school) along with their inherent capabilities.

Figure 2: Framework for Student Learning Outcomes
Adapted from Richard Shavelson. ***Measuring College Learning Responsibility: Accountability in a New Era****. Stanford, CA: Stanford University Press, 2010, p 13.*

Yet, even a cursory examination of life on any college campus will reveal that student life is not solely focused on learning. There are many compelling distractions that lead to what can be called "the total collegiate experience." The challenge for any student is finding the right balance between the demands for learning and the time spent on extracurricular activities – both on and off campus. For many, finding this balance can be tricky.

Philip Babcock and Mindy Marks have examined data about how students spend their time using a series of time use surveys from the 1920s till 2004. Their analysis revealed that full-time college students in the 1960s spent about 40 hours per week attending class and studying. Since then, there has been a steady decline so that by 2004, full-time students were investing only about 26 to 28 hours per week on academic pursuits.[9]

Another perspective of the same data reveals that the percentage of students who report studying twenty or more hours per week also declined: in 1961, 67 percent of full-time students report this level of effort; in 1981, the percentage had fallen to 44 percent; and 2004, only 20 percent report devoting more than 20 hours per week to academic pursuits.

Yet, despite the lack of academic focus at today's universities, there has been little impact on student's grade point averages. Rather than rolling up their sleeves and getting to work, students today are "gaming" the college environment by carefully shaping schedules, carefully selecting instructors, and working to limit workload. George

8 Richard Shavelson. *Measuring College Learning Responsibility: Accountability in a New Era.* Stanford, CA: Stanford University Press, 2010, pg 13.

9 Philip Babcock and Mindy Marks. *The Falling Time Cost of College: Evidence from a Half Century of Time Use Data.* NBER Working Paper No 15954. Washington, DC: The National Bureau of Economic Research, April 2010.

Kuh has suggested that "a disengagement compact" has been struck between students and faculty. This compact can be briefly summarised, as "I'll leave you alone if you leave me alone."[10]

The library's contributions to university outcomes

Calls for the academic library to demonstrate value as the typical college or university is spending considerable amounts of money to provide both the physical and virtual library. So what then are the impacts of the library on student learning?

Megan Oakleaf, on behalf of the Association for Academic and Research Libraries (ACRL), produced a wonderful summary of the available research pertaining to the value of academic libraries.[11] The Oakleaf report summarises the research that has been conducted as well as identified possible surrogates and other measures that can be used to demonstrate potential areas of correlation between the uses of library collections and services and the impacts in three areas:

Student	Faculty	University
• Student enrollment • Student retention & graduation • Student success • Student achievement • Student learning • Student experience, attitude & perception of quality	• Faculty research productivity • Faculty grants • Faculty teaching	• Institutional reputation & prestige

As Oakleaf and others (see for example, Matthews[12]) have noted, the vast majority of this research is flawed and difficult to rely on with any kind of confidence since the literature reports the details of case studies typically focused on one group of students in one class or of several classes over one semester. These "micro-level studies" reflect a very narrow perspective and reflect a particular slice in time, which limits their generalisation. In addition, other possible and very plausible explanations for any of the gains noted in the studies are not considered (and in many cases not even identified). What is needed, therefore, are broader and more coherent (and compelling) demonstrations of the value of the library and its services.

Type of analysis

One of Megan Oakleaf's recommendations was that the "data systems need to protect the privacy of individuals by stripping individual (identification) information from records." This stripping of individual identification information is typically called "anonymisation." At the same time, it is important to develop an internal individual identification system so that the data from various sources can be tied together for meaningful analysis. Again, Oakleaf suggests

> *"until libraries know that that student #5 with major A has downloaded B number of articles from database C, checked out D number of books, participated in E workshops and online tutorials, and completed courses F, G, and H, libraries cannot correlate any of those student information behaviors with attainment of other outcomes. Until librarians do that, they will be blocked in many of their efforts to demonstrate value."*[13]

Interestingly, school libraries may provide a model for university and college libraries to emulate. More than twenty studies have surveyed school librarians and correlated standardised test scores with school library program components. Nine studies surveyed students, teachers, and school administrators about their perceptions of the impact of school libraries on learning. These studies also factored in school and community differences and found that socio-economic factors could not explain away the positive impact of school library programs.[14]

10 George Kuh. What We Are Learning About Student Engagement. *Change*, 35, 2003, 28.

11 Megan Oakleaf. *The Value of Academic Libraries: A Comprehensive Research Review and Report*. Chicago, IL: Association of College and Research Libraries, September 2010. Available at ***www.ala.org/ala/mgrps/divs/acrl/issues/value/val_report.pdf***

12 Joseph R. Matthews. *Library Assessment in Higher Education*. Westport, CN: Libraries Unlimited, 2007.

13 Oakleaf, op cit., pg. 97.

14 Debra Kachel. *School Library Research Summarized: A Graduate Class Project*. Mansfield, PA: School Libraries & Information Technologies Department, Mansfield University, Spring 2011. Available at http://libweb.mansfield.edu/upload/kachel/ImpactStudy.pdf

Broad-based data analysis

A useful resource is that of a data warehouse that would pull together a wide variety of data from a number of different systems and silos. Once in a central data repository or warehouse, the library would be able to prepare a wide variety of data analysis and correlations to help determine the value of library resources. Perhaps the most well known example of a local developed collection of data resources is the University of Pennsylvania Library Data Farm developed by Joe Zucca.[15]

In the Library Data Farm, information is pulled from the integrated library systems (all modules), an electronic resource management system, open URL link resolvers, Web service logs, and proxy server logs bringing together resources, services, and the data they produce when patrons use them. The availability of the data Farm allows Joe and other librarians the opportunity to track resources, people and locations. Notice that the Penn Library Data Farm provides access to library-related data and thus provides an inward-looking library perspective.

It is particularly important to note that the Library Data Farm goes through a process to clean, anonymise and normalise all that data that it accepts. This is done to ensure that the confidentiality of each individual is preserved while, at the same time, capturing information about each user so that the data set can be "sliced and diced" in a great many meaningful ways.

In order to provide an outward-looking university perspective, the Data Farm would need to be able to access, load and maintain university-wide data such as registrar information, university data from such surveys as the Collegiate Learning Assessment survey, the NSSE survey, alumni surveys, scores from graduate admission examinations, use of the campus Learning Management System, Assessment Management Systems, and so forth.

A cloud-based commercial version of the data repository is available from Counting Opinions. This solution is called LibPAS® for Library Performance Assessment, provides Web-based tools for libraries to collect, review, and report the quantitative aspects of library performance for operational and advocacy purposes.

Using LibPAS, the library is able to define each data file and all of its associated data elements. Data can be automatically imported on a regular basis or on an ad hoc basis. In addition to library specific data, the library also can import data files from campus Assessment Management Systems as well as campus data silos from the registrar's office and others. It would also be helpful to include NCES and IPEDS data for example, as well as national survey data, eg, NSSE, CLE among many.

LibPAS provides a repository for common definitions to help 'normalise' the data to help ensure consistent use across institutions and facilitate trend and comparative data amongst peers. The real value of the LibPAS system is that it helps libraries to:

- keep data clean and accurate
- combine data from several sources to obtain a clearer picture of what library customer's are actually doing
- analyse the data so that the impact on library customer's is better understood
- learn from what the data has to say. The library can then adjust its services and use new data to measure any changes
- use data to better communicate the value of the library in the life of students, faculty, and researchers.

Rather than the library developing its own data repository, a campus data repository may already exist through the Office of Institutional Research (or whatever the name of such a department is called on your campus). So the library should explore what other resources are currently accessible on campus and reach out to development assessment partnerships.

One of the important implications of the library being involved with a data repository is that it will need a librarian who is comfortable in working intimately with data and all that that implies. Being a good "data jockey" will increasingly become a real marketable skill for librarians.

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15 Joseph Zucca. Building Frameworks of Organizational Intelligence: Strategies and Solutions Stemming From the Penn Libraries Data Farm Project. *Proceedings of the 2008 Library Assessment Conference: Building Effective, Sustainable, Practical Assessment. August 4-7, 2008 in Seattle, Washington.* Washington, DC: Association of Research Libraries, 2009, 37-41.

Library data collection needs to support assessment

Despite the anecdotal and gate count evidence, almost all academic libraries really have no idea of who is actually using the library and for what purposes. The reason for this lack of knowledge is that the library is not simply a monolithic service but rather it offers a multiplicity of services in three primary areas:

- a collections and services space
- a virtual space
- a community space.

New approaches will be required to gather and analyse data to develop a better understanding of who is using the library and why. Once the data from a variety of sources has been gathered, deposited in a data warehouse, analysed and summarised, the library will be able to determine the number of unique customers that use the library in some way and to calculate the percent of students, faculty and staff that use the library and with what frequency. This data can then play an important role in helping the library assess its existing portfolio of services as well as discover the impact of new programs and services.

Collections and services space

Using the library's integrated library system (ILS) it is a fairly straightforward task to determine who is actually using the library's collections (if in-library use is ignored for a moment). Once deposited in a data warehouse, an analysis can be prepared that identifies each unique individual, the number of times the collection was used and the number of items borrowed. The ILS is also likely to have information about the type of customer (undergraduate student, graduate student, faculty or staff); data that can be used to sort the collection use data. Several studies suggest that 80 percent of circulation is created by 20 percent of the customers – the 80/20 Rule. [16] The 80/20 Rule, sometimes known as the Pareto effect, suggests that a small proportion of users account for a large proportion of collections use. Your local library may have slightly different numbers (85/15 or 75/25) that will be revealed when your library's ILS data is analysed.

Recently an analysis of data at the Huddersfield University library in the U.K. found that students, who "read" more, measured in terms of borrowing books and accessing electronic resources, achieve better grades while students who make less or no use of the library attain lower grades.[17] A study at the Hong Kong Baptist University library found a positive relationship between grade point average (GPA) and the use of the library's collections.[18] Remember that correlation does not mean causation – only that the relationship exists.

In-library use of a collection is also a part of the equation that must be considered. Some academic libraries can have a substantial amount of in-library use of their physical collections. There are a variety of methods that can be used to determine the amount of in-library use of collections.[19] Rather than focusing on the use of the collections, the focus should be on determining who is using the materials in the library. This may involve using sample periods in order to ascertain who is using the library's collections. The combination of circulation records and in-library use data will provide a better understanding of the number of individuals who are actually using the library's collections – whether used in the library or borrowed.

It should not be surprising that individuals come to the library to use different services. One nationwide study prepared by Christie Koontz and others found significantly different use of library services based on the ethnicity and income level of the individual.[20]

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16 Richard W. Trueswell. "Some Behavioral Patterns of Library Users: The 80/20 Rule." *Wilson Library Bulletin* 43 (Jan. 1969): 458-61.

17 Deborah Goodall and David Pattern. Academic Library Non/Low use and Undergraduate Student Achievement. *Library Management*, 32 (3), 2011, 159-170. See also, Lisa Toner. Non-Use of Library Services by Students in a UK Academic Library. *Evidence Based Library and Information Practice*, 3 (2008): 18-29.

18 Shun Han Rebekah Wong and T.D. Webb. Uncovering Meaningful Correlation between Student Academic Performance and Library Material Usage. *College & Research Libraries*, (2011): forthcoming.

19 For a review of these methods see Joseph R. Matthews. The *Evaluation and Measurement of Library Services.* Westport, CN: Libraries Unlimited, 2007, 132-133.

20 Christie M. Koontz, D K. Jue and Keith C. Lance. "Neighborhood-Based In-Library Use Performance Measures for Public Libraries: A Nationwide Study of Majority Minority White/Low Income Markets Using Personal Digital Data Collectors." *Library and Information Science Research* 27 (2005): 28-50.

Another related perspective is determining the number of unique individuals who use interlibrary loan services (ILL). Additional data sources for the data warehouse would come from acquisitions, the online catalog, proxy servers, authentication services, and many others.

Since the intent of this suggested analysis is to determine the number of unique individuals who use the library and its services in some way, the identity of each individual must be maintained so that those individuals who use two or more services are only counted once. Once a master list has been created and individual characteristics have been linked to the record, eg, undergraduate or graduate student, faculty, staff and so forth, the unique ID number for each individual can be deleted. Again this anonymisation process preserves the individual's privacy.

The library could ask each individual approaching a reference desk if they would mind having their ID scanned (perhaps using a portable scanner). Identification data can also be gathered for users of reference provided via the telephone, chat, or email. Once data for a semester (data for a complete year would be better) has been gathered, the data can be analysed and sorted so a list of unique ID numbers is created. A similar approach could be used to identify those individuals who participate in any formal or informal training session conducted by librarians.

A virtual space

Academic libraries spend a considerable amount of their budget to acquire and license electronic resources – electronic journals, databases and other information resources. The ready availability of such resources portends considerable change. As Sarah Pritchard has so clearly noted,

> *The digital environment, however, has transformed the passive sense of a building with books, which was in effect an information monopoly over which the user had little control, into an environment where the user has numerous choices…*[21]

Yet, despite the efforts put forth by libraries to communicate the ready availability of such electronic resources (in the form of press releases, blogs, workshops, poster sessions, and bookmarks) it is simply not enough. A large-scale survey conducted by OCLC (more than 3,300 respondents, of which 396 were college students – most were undergraduate students) found that fewer than two percent of college students start their search at a library Web site.[22] Not surprisingly, given its convenience and ease of use, Google is the starting point for most students (89 percent of students start with a search engine).

A library's Web site is, in almost all cases, used by customers as a first step to gain access to the set of electronic resources licensed by the library. However, many graduate students and faculty will often by-pass the library and go directly to a publisher's Web site. Once an electronic database or e-Journal has been selected, the customer is authenticated to ensure that they have the appropriate rights to gain access to the electronic resource.

Measuring the Impact of Networked Electronic Services (*MINES for Libraries*) is a short, Web-based survey that provides an individual library or consortium with information about the demographics and why the electronic resource being accessed by the library customer is being used. The Association of Research Libraries (ARL) adopted *MINES for Libraries* as a survey tool that can be licensed by a library. While this tool provides a fairly detailed picture of how and why customers are using electronic resources based on a sample of users, the unique identification of each individual is not preserved.

Separate from *MINES for Libraries*, the identification of each individual who uses electronic resources could be preserved over the course of a semester or for a complete year. The data could be written to a file as part of the authentication process and subsequently analysed. The number of times and what electronic resources were accessed could be determined, and more importantly, a list of unique individuals who use electronic resources could be created. This list could then be used in conjunction with other client databases on campus to identify the demographic characteristics of each individual – undergraduate student, graduate student, faculty, staff, department and so forth.

If the library had other resources, for example, tutorials available on its Web site, the library might be interested in asking the customers to identify themselves using a short Web-based form. This data could then be analysed in the same manner as that used for electronic resources.

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21 Sarah M. Pritchard. "Deconstructing the Library: Reconceptualizing Collections, Spaces and Services. " *Journal of Library Administration*, 48 (2008): 219-33.

22 OCLC. *College Students' Perceptions of Libraries and Information Resources*. Dublin, OH: Online Computer Library Center, 2006. See also, OCLC. *Perceptions of Libraries and Information Resources*. Dublin, OH: Online Computer Library Center, 2005.

A community space

An academic library can also play an important role in the life of the students as a gathering play where individuals can meet and interact for a variety of reasons. Many academic libraries have created spaces that incorporate computing resources and technological support for their students. Such spaces, often called information commons, provide access to electronic resources, computer equipment and software to enable individual student productivity.

Other libraries have moved beyond the information commons to provide space and tools that encourage effective group work incorporating flexible furniture and seating arrangements as well as coffee shops and other amenities to promote and encourage academic socialising. Designed to encourage collaboration, this approach has been called the learning commons by Scott Bennett.[23] And Jeffrey Gayton has suggested that the values of the traditional library (studious, contemplative and quiet) focus on the individual as a solitary activity while the values of the learning commons (sometimes studious, occasionally contemplative, and certainly not always quiet) focus on group activities.[24] Danuta Nitecki has offered a framework for the purposeful assessment of library space in order to better understand how various factors and different paths will affect the results of assessment.[25]

One traditional approach to tracking the level of use of the library building is to employ a gate counter. For example, Patricia Frade and Allyson Washburn use increasing gate counts and circulation figures to demonstrate relevance of the campus library.[26] While a gate counter will accurately track the number of people who enter the library on a daily basis, it does not identify the individual nor ascertain the reason for visiting the library and thus the library will have greater difficulty in discussing the impact of the library in the lives of students, faculty and staff.

It would be fairly easy to capture the ID number and reason for use of the library using a portable scanner (barcode, magnetic stripe, RFID). Data could be collected at various times during the course of the academic semester to ensure a broad and representative sample. Alternatively, data could be captured for all individuals entering the library for a week or more of time. The data analysis should create a unique list of individuals who are using the library. This unique list of individual IDs could then be used in conjunction with other campus client databases to identify the characteristics of each individual. Further analysis would identify the frequency with which the library is used (several times a day, daily, weekly, and so forth) along with the reasons why they have entered the library (individual study, group study, use a computer, meet people, and so forth).

Combining the data

Once the library has collected information about the individuals for the use of library collections/services, use of electronic resources, and use of the physical space, it would then be possible to determine the total number of unique individuals who have used the library in some way during the past semester or year (as well as those who use two services, three services, and so forth). The number (percent) of students and faculty who actually use the library in some manner could then be compared to the results reported in the national surveys, such as the National Survey of Student Engagement to determine if the actual use of the library is more than or less than the percent reported in NSSE.

David Shulenburger, Vice-President for Academic Affairs for the Association of Public and Land-Grant Universities, spoke at the 2010 Library Assessment Conference in Baltimore, Maryland. David reiterated Megan Oakleaf's call for combining library transaction data with university wide assessment data to better understand and demonstrate the value of the academic library.[27] David illustrated this necessity by discussing how the Kalamazoo College faculty used the data from several student surveys, including the Collegiate Learning Assessment exam, to understand why the school had done well in some disciplines and poorly in others.

Recent examples of combining library transaction data with student performance data may be found in the UK Library Impact Data Project and the University of Wollongong (Australia) project reported during this Northumbria Conference held in York, England in August 2011. Both projects demonstrated a correlation (there is that word again) between use of library resources and services and better student achievement as measured by student grades.

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23 S. Bennett. "The Information or the Learning Commons: Which Will We Have." *Journal of Academic Librarianship*, 34 (2008): 183-5.

24 Jeffrey T. Gayton. "Academic Libraries: "Social" or "Communal?" The Nature and Future of Academic Libraries." *Journal of Academic Librarianship*, 34 (2008): 60-66.

25 Danuata Nitecki. Space Assessment as a Venue for Defining the Academic Library. *Library Quarterly*, 81 (1), 2011, 27-59

26 Patricia A. Frade and Allyson Washburn. "The University Library: The Center of a University Education?" *portal: Libraries and the Academy* 6 (2006): 327-346.

27 David Shulenburger. *The Relationship Between University Assessment and Library Assessment.* Paper presented at the Library Assessment Conference, Baltimore, October 25-27, 2010. Available at ***http://libraryassessment.org/bm~doc/shulenburger_david.pdf***

Challenges

Clearly collecting and analysing the data needed for the comprehensive analysis suggested would require a fair amount of effort. The time periods to gather data for those individuals entering the library would need to be determined. Would data be gathered for several days or several weeks during the semester? How would data collection periods be distributed over the course of the semester or the entire year to ensure a representative sample?

In addition, approval from the campus Institutional Review Board or Research Ethics Review Board will likely be needed. The Institutional Review Board ensures the confidentiality and privacy of all students and faculty when data about people is being gathered and analysed. Approval from the Review Board should not be a difficult task if care is taken to eliminate the individual identification numbers. It is a relatively easy process to strip individual ID numbers from the data set once other demographic data has been included. The resulting data set will then allow the library to prepare a comprehensive analysis of the data (without knowing the specific individuals who comprise this set of data).

The library would also need to interact with the campus Office of Assessment to gain access to the NSSE survey data or the data from other campus-wide surveys and studies. The Office of Assessment should also be of assistance in gaining the approval of the Institutional Review Board. Involving the top-level campus administrators and garnering their support for such a large library assessment project would do much to alleviate concerns about abridging the right of privacy for students, faculty and staff that use the library.

Conclusion

The suggested assessment plan presented here provides some guidance about how a campus library can gather data about who is using the library and for what purposes. Of course, embarking on such a broad library assessment project is not without its risks. The library will need to partner with others on campus to use an existing data repository (as well as being able to add library-specific data sets) or create/contract for its own data repository. In a time of decreasing financial resources this presents real challenges but the outcomes are simply too serious not to move aggressive in conducting a series of studies to determine the impact of library collections and services on the mission of the university. The data repository is really the enabling tool that will allow a library to prepare credible analysis of the library's impact in the lives of its students, faculty, and researchers. Just as the majority of all learning is indirect, so too the impact of the library will also likely be indirect. Perhaps it is time for libraries to begin to construct multi-path structural equation models so that the real impact of the library can be analysed with greater rigor.

The plan discusses ways in which a library can identify who is using the library's collections, study spaces, IT resources, reference and instructional services, and electronic resources. By applying this suggested approach the library would have a clearer understanding about who is using the library and its collections, electronic resources, space and services. With this understanding the library will finally be in a positive to accurately demonstrate the real value of the academic library. However, it is crucial to act upon the most important first step – get started!

Libraries as learning spaces: exploring how students make use of the physical space in academic libraries

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Associate Professor, Library, Mount Royal University

This paper presents preliminary results of a project examining the use and meaning of space in 5 small Canadian academic libraries. This research seeks to better understand how undergraduate students are making use of library spaces and what role these spaces are playing in the life of the academic community.

It can be argued that the increasing availability of information in a digital format creates a major challenge for academic libraries as physical spaces (Bennett, 2006; Sennyey, Ross, and Mills, 2009). In addition, many academic libraries report that circulation numbers and reference transactions have been falling (Anderson, 2011; Martell, 2008). Despite these trends some libraries have also shown an increase in physical visits by patrons to the libraries (Frade and Washburn, 2006; Opperman and Jamieson, 2008). It seems that libraries as physical spaces are serving a larger purpose than simply providing access to information.

Against this background this research seeks to explore the actual use of physical space in a variety of different academic libraries. The goals of this study are to assess (a) how library patrons are using and experiencing the physical space of a selection of small Canadian academic libraries, and (b) what purpose these spaces are serving within the academic community. The objectives related to this goal include assessing who the users of these libraries are and what uses they make of these physical spaces, and determining whether the answers to these questions differ depending on the unique context of each of the study libraries.

Originality and value

The information gathered through this project feeds into the theoretical literature concerning the academic library as place and expands on existing knowledge by comparing library use across multiple library spaces. The methods used demonstrate a practical method for using observation and surveys to evaluate and compare usage of multiple library spaces.

Research design

This study examines student use of 5 small academic libraries in Canada. Size of institution varied from 4 – 12 thousand students and included 2 community colleges, [Lethbridge (LC) and Red Deer (RD)], two universities, [Grant MacEwan (GM) and Mount Royal (MR)] and a technical college [Southern Alberta Institute of Technology (ST)]. Study libraries were selected both for variety and for geographic convenience. This research is part of a larger study that also examined faculty and library staff perceptions of library spaces. Answers to the research questions were developed using information gathered via seating sweeps and student questionnaires. Seating sweeps, a method of unobtrusive observation, produce detailed and quantifiable information about the use of library spaces (for a review of this method see Given and Leckie, 2003). Data was gathered during the 2009-2010 academic year.

Rounds of seating sweeps were conducted twice at each library, once in the middle of the fall semester and once mid-winter. Each round of seating sweeps involved four separate sweeps of the library (morning, mid-day, afternoon and evening). Questionnaires were circulated to individuals in the library during the mid-winter visit (on the day after the seating sweeps). In smaller libraries, all patrons in the library were invited to complete the questionnaire. In the larger libraries, questionnaires were distributed to individuals located in different areas of the facility using a stratified sampling method (for example, by inviting the individual located at every fifth occupied computer station to complete

the questionnaire). Seating sweeps and user questionnaires were timed to roughly coincide with what is traditionally the busiest time of the year for the study libraries.

Findings

Questionnaires had a high response rate at 87%. At four of the five libraries, more females than males responded to the survey, with percentages of female responses ranging from 49% to 61% (see Figure 1). The disproportionate ratio of female to male students registered at each institution only partially explains the disparity in response rate. For example, at both universities in the study the ratio of female to male students is 3 to 2. Response rates at one university mirror this ratio almost exactly, while at the other males and females responded in equal numbers. At the technical college, where males outnumber females 3 to 2, 53% of respondents were female. In contrast, the sex of individuals observed during seating sweeps of the libraries (Figure 2) matches the sex ratio of registered students at every institution but GM, where the numbers were roughly equal.

Most questionnaire respondents report visiting the library frequently (Figure 3) and for extended periods of time (Figure 4). Questionnaire respondents at some institutions (LC and ST) are more likely to report coming to the library to work alone than respondents at others (Figure 5). This variation may reflect differences in student populations (the predominance of professional programs for example may result in students being less socially oriented and more likely to study independently).

Respondents report engaging in a wide variety of activities in the study libraries (Table 1). Many of the reported activities are directly linked to the academic purpose of the library, including studying, getting help from library staff, accessing library resources and attending library research classes. Other frequently reported activities included engaging in social activities, both in person and online, eating, drinking, and napping. Unsurprisingly, technology continues to be an important part of the library experience as respondents overwhelmingly reported using computers, laptops, photocopiers and printers in the library. Seating sweeps provide further evidence of the importance of technology; the majority of library users observed were using a computer, either desktop or a laptop (Figure 6). When asked about the most important reasons that brought them to the library on the day they filled out the questionnaire, the most common responses were either to work on schoolwork using a laptop computer or to study using their own materials (Figure 7).

Library users generally have good grades, with most students indicating a "B" grade point average (GPA) (2.7-3.6 out of 4) (Figure 8). Most respondents also report completing a significant proportion of their out-of-class schoolwork in the library (Figure 9). Frequency of visits to the library and percentage of out-of-class schoolwork completed there does not appear to be related to GPA (Figures 10 and 11). Senior students are more likely to have borrowed materials from the library in the past year (Figure 12) and report longer library visits (Figure 13).

Practical limitations

The use of space in libraries is intrinsically linked to the space itself and its unique features, from location and design to furnishing, thus limiting the generalisability of findings presented here. The strength of the methods used is the ability to survey and observe many student users of the library, but these qualities also necessarily limit the ability to collect in-depth observations of student users and do not allow for clarification or follow-up.

Conclusions

Although students report engaging in many types of activities, both academic and non-academic, the primary purpose that brings them to the library is academic work. Students using the library are choosing this space to accomplish a good proportion of their out of class work. These findings expand those of several previous research studies, including one whose observation of library study spaces indicated that students were generally engaged in academic activities (Suarez, 2007). Suarez also concluded that although students participated in social and leisure pursuits while in the library, these activities were only secondary to academic activities (Suarez, 2007). Other observational research found that the university library was a preferred study location on that campus (Applegate, 2009). The findings of the research presented here confirm the importance of the library as a student study space and provide evidence in support of the claim that this may be true of academic libraries in general. The important role these libraries play in the lives of respondents highlights them as important campus learning spaces.

These libraries are providing spaces where students can engage in learning and be immersed in the academic experience. When students work on academic activities in the library they are choosing to place themselves in a

setting that connects information to the social experience of learning (Bennett, 2006). This research provides evidence to affirm the claim that people come to libraries to engage in academic activities because they enjoy doing so in a place that supports and fosters a learning environment, and in the company of others engaged in similar activities (Demas, 2005). This study rejects the common refrain that there is little need for a physical library in the digital era, or that the modern campus library serves largely social purposes. The majority of students report using their library as an information retrieval space, and nearly all indicate using it as a learning space. These findings, combined with those showing that most students continue to borrow print materials and seek help from library staff, suggest that the library is, indeed, a vital component of the campus learning environment.

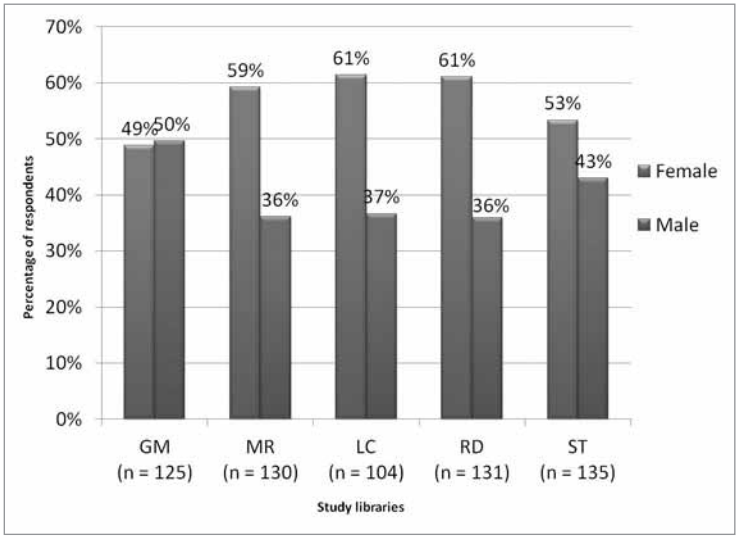

Figure 1: Sex of questionnaire respondents

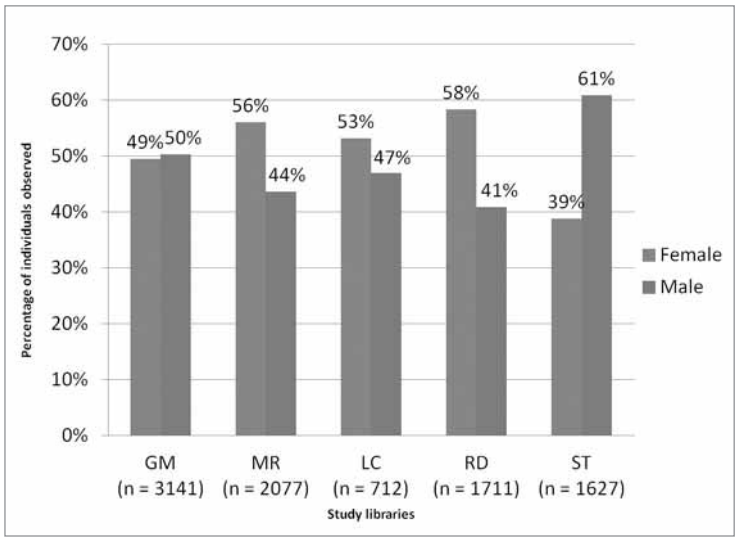

Figure 2: Sex of individuals observed in the libraries

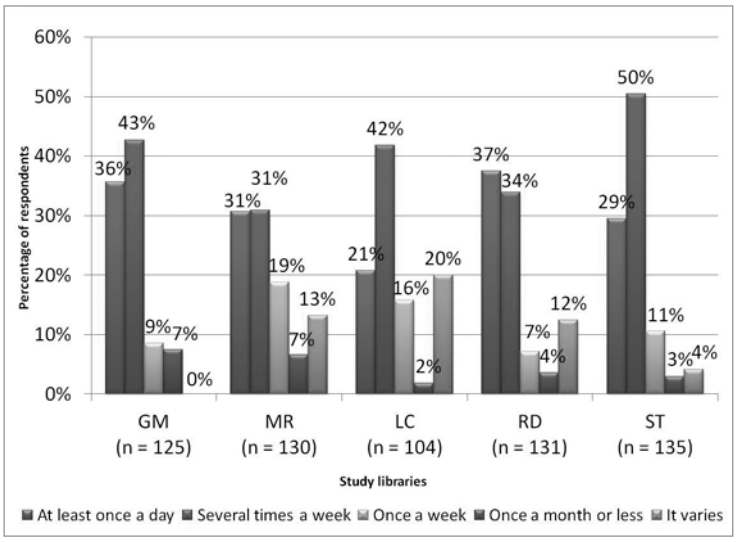

Figure 3: Frequency of visits to the physical library by questionnaire respondents

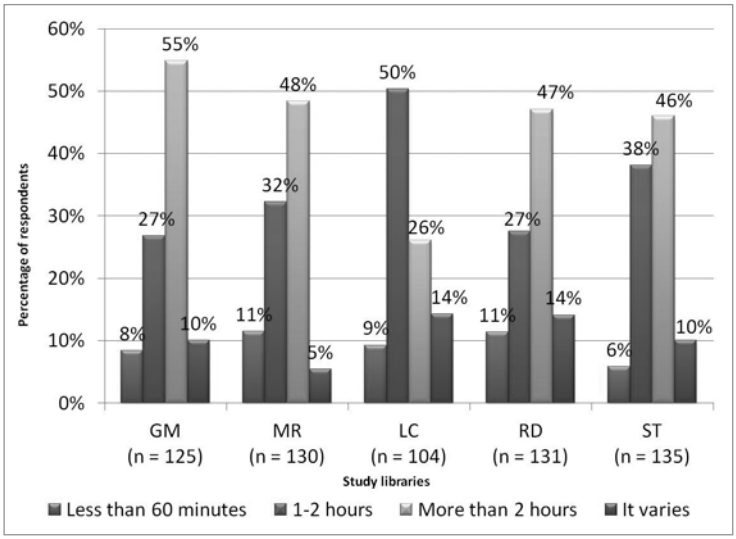

Figure 4: Typical length of library visits reported by questionnaire respondents (most common responses only)

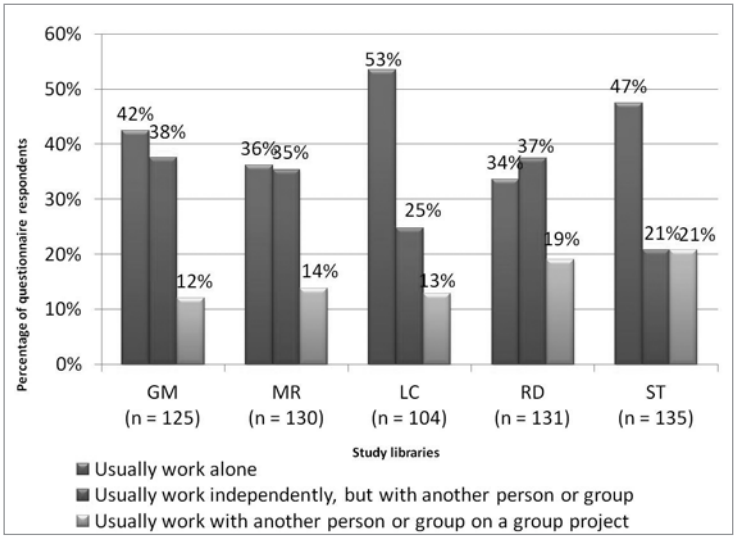

Figure 5: Usual companionship of respondents while doing schoolwork in the library

Activities	Responses (%)
Worked on schoolwork using the library computers	84%
Worked on schoolwork using a laptop	82%
Used the printers/photocopiers	82%
Socialised in person (ie chatting with friends)	75%
Drank	75%
Ate	69%
Socialised online (for example by using facebook or email)	68%
Used a group study room	67%
Got help from library staff	63%
Read or studied print materials NOT FROM THE LIBRARY	60%
Borrowed or returned library materials	54%
Physically searched for information (ie in the bookshelves)	50%
Read or studied print materials FROM THE LIBRARY	46%
Attended a library instruction session or workshop or tour	36%
Took a nap	30%

Table 1: Activities does by questionnaire respondents (n = 622) in the library in the past year.

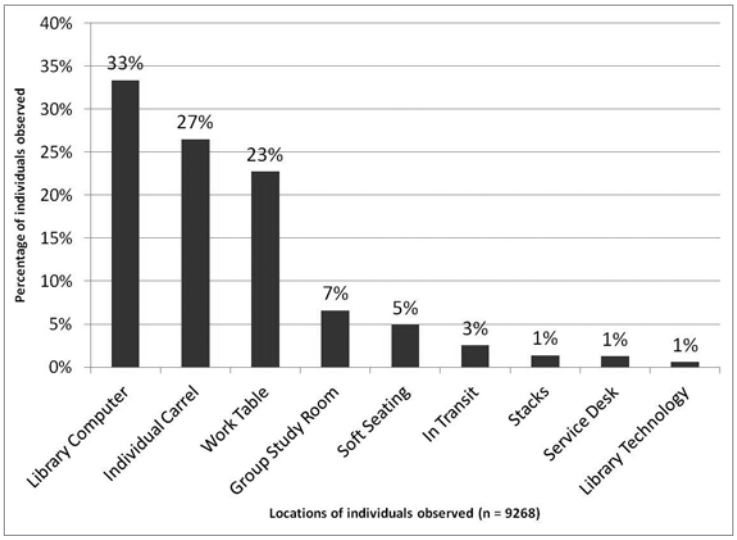

Figure 6: Locations of individuals observed in the library (all locations, n = 9268)

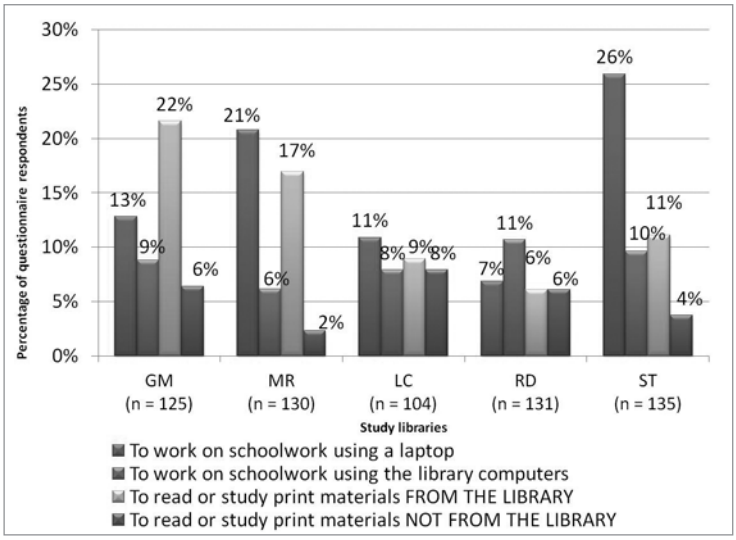

Figure 7: The main activity that brought respondents to the library on the day they filled out the questionnaire (most common responses only)

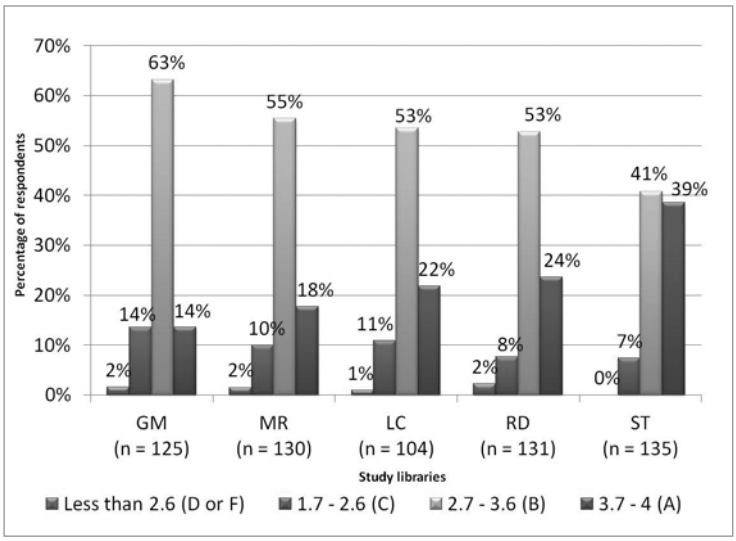

Figure 8: Self-reported GPA of questionnaire respondents

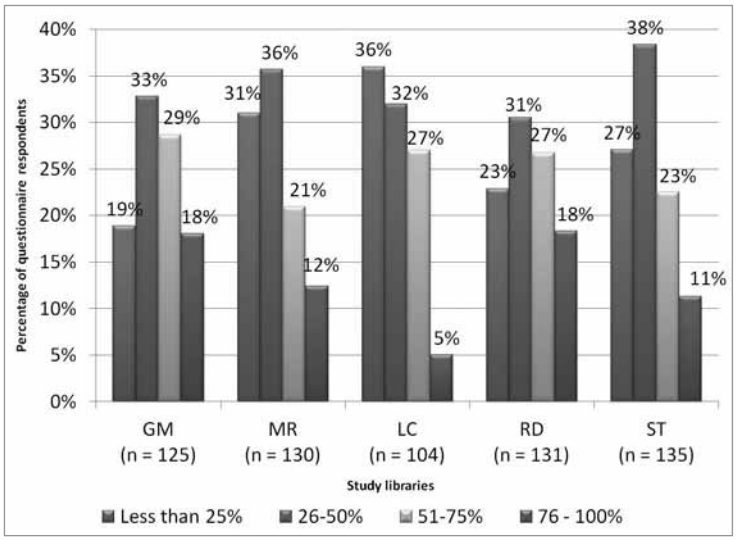

Figure 9: Percentage of out-of-class schoolwork done in the library

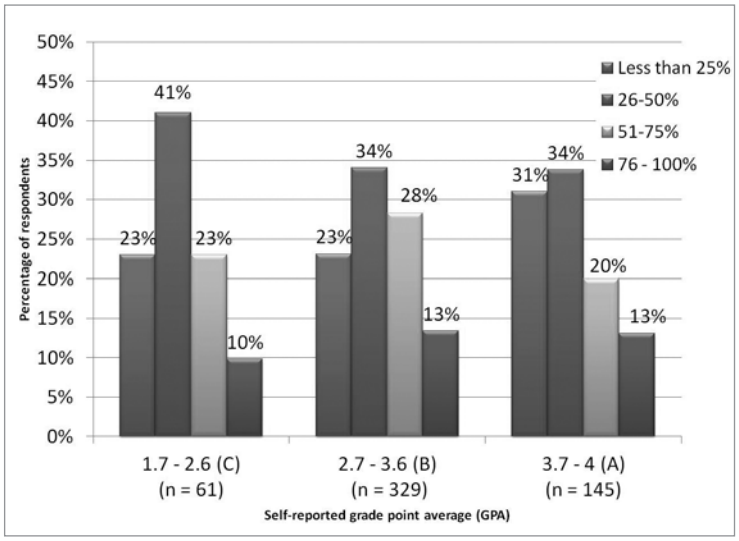

Figure 10: Percentage of out-of-class schoolwork completed in the library by self-reported GPA

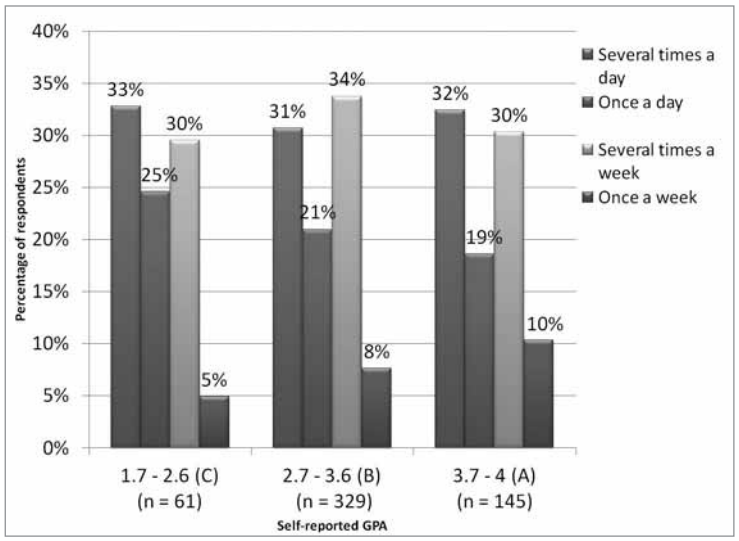

Figure 11: Frequency of visits to the library by self-reported GPA

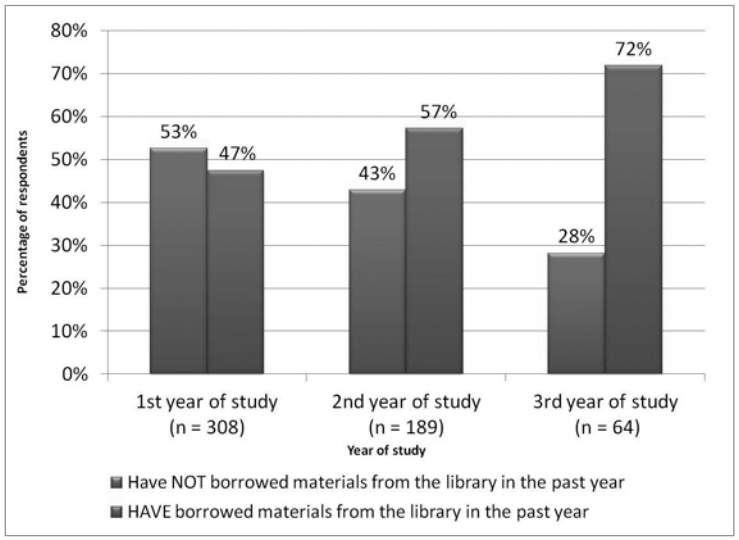

Figure 12: Activities done in the library in the past year by year of study: Borrowed materials from the library

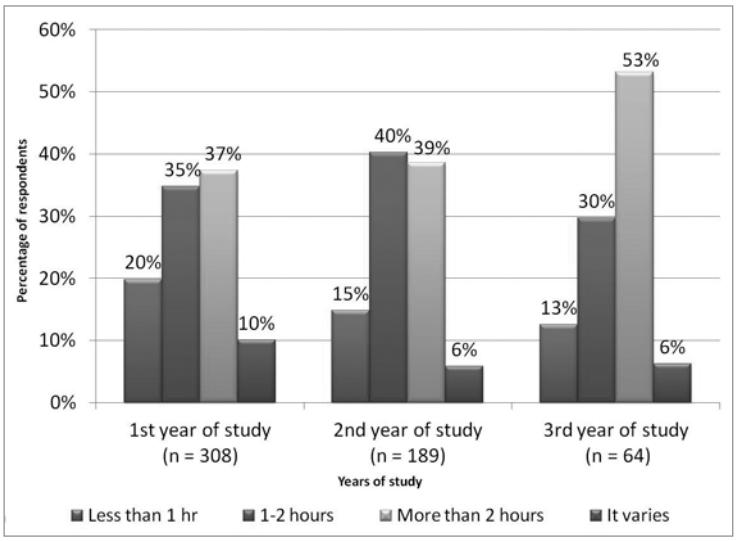

Figure 13: Usual length of visit to the library by years of study

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Designing a user and usage database to promote, market, and demonstrate the value of selected statewide databases: the Florida Electronic Library as an example

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Introduction

As part of ongoing assessment, the Information Use Management & Policy Institute (Information Institute) of the Florida State University, College of Communication & Information, engages in a number of activities to accomplish specific tasks related to evaluation of the Florida Electronic Library (***www.flelibrary.org***). A 2010-2011 project funded by the Florida Division of Library and Information Services (the Division) focused on development of a user and usage database including multiple datasets that were combined to achieve multi-faceted analysis of Florida Electronic Library users and their usage of the databases within it. The intended purpose was to produce data-driven recommendations to guide future Florida Electronic Library marketing and promotion efforts, but the database also is available for research on digital library usage.

Literature review

Usage

Library usage statistics are important in terms of library decision-making, impact on marketing initiatives, and advocacy. Usage statistics are indicative of how resources are used (Matthews 2009b). The combination of e-metrics and qualitative assessments (eg, surveys and usability testing) provides a critical mechanism to communicate libraries' value to their stakeholders (Kinman 2009). Usage data also provide cost-per-use of electronic resources, topics for educating users about electronic resources, and data to support decisions regarding acquisitions (Baker & Read 2008; Kim 2006; Matthews 2009a).

If use varies throughout year (Blecic, Fiscella & Wiberley 2001), which is typical in many libraries, data should be reviewed over a full year. Also, use should be looked at by user population (ie, per capita), not just in total (Blecic, Fiscella & Wiberley 2001). This is noted with regard to disciplinary and institutional populations, (eg, use by humanities versus social sciences) (Blecic, Fiscella & Wiberley 2001), but this is also important for statewide electronic libraries serving wide arrays of users, representing different library types, age groups, levels of educational attainment, ethnicity, and language spoken. Xie and Wolfram suggest that research should utilise multiple data

sources to investigate how users interact with statewide digital libraries (2002), and Kim did look at usage in conjunction with demographic and other user-related variables (2006).

Commercially available usage data tend not to provide centralised consortial statistics (Matthews 2009a), such as those needed to evaluate use of statewide electronic libraries. The Virtual Library of Virginia (VIVA), a consortium of academic libraries and the Library of Virginia, developed a consortial statistics database that is a combination of Microsoft Excel and Access (Matthews 2009a), but this relies on vendor-supplied data only. A survey of research libraries found that many also collate data from several vendors into one database/spreadsheet to analyse usage across vendors and cross-tabulate usage with variables such as cost data and web logs (Baker & Read 2008).

Marketing

Marketing includes identifying a target market and its wants and needs, and making sure you are doing this better than your competitors do (Alford 2007). For electronic resources, competitors include publicly available Web resources (Bucyznski 2007; Dillon 2002; Wisniewski & Fichter 2007). Emphasis on libraries' credibility and trustworthiness can help separate libraries' electronic resources from other Web resources (Dillon 2002). Marketing should focus on promoting the benefits of the electronic resources, not the resources themselves (Wisniewski & Fichter 2007).

There are several ways to get to know a target audience, such as through electronic resource usage data, which should inform promotional and educational activities (Brannon 2007). Other ways include gathering user feedback via focus groups and surveys (Alford 2007; Fagan 2009; Turner, Wilkie & Rosen, 2004). Marketing electronic resources has to include (and should start with) library staff because the reference desk is the first place many users are exposed to electronic resources (Brannon 2007).

Libraries need to provide targeted training for the wide array of populations unfamiliar with digital libraries (Liu & Luo 2011), as attracting non-users can increase usage (Xie & Wolfram 2002). Any marketing campaign should include branding (Alford 2007; Fagan 2009; Singh 2004), and in today's competitive information market, both face-to-face and virtual awareness and training campaigns (Turner, Wilkie & Rosen 2004; Xie & Wolfram 2002). Virtual campaigns cannot rely on library websites and services alone—libraries must reach non-users wherever they are (Wisniewski & Fichter 2007; Xie & Wolfram 2002). Social media marketing reaches high volumes of potential users (Alford 2007; Fagan 2009), and one option is through word of mouth (or viral marketing), which works well online where the voice of the user has considerable weight (Bucynski 2007). Marketing and promotion is never-ending; libraries cannot market their electronic resources once and assume usage will rise in perpetuity. Rather, libraries need to be capturing new staff and new users all the time (Brannon 2007).

Research design

The project employed a multi-phase design: (1) identify, collect, and analyse various demographic and usage datasets; (2) design requirements for an interactive database; (3) pilot test and make recommendations to refine the database; (4) and produce data-driven marketing, impact, and value recommendations for further Florida Electronic Library efforts. Due to differences in the purposes and activities among the phases, the research team employed a multi-method approach to data collection, including content analysis of datasets, usability and functionality assessments of the beta database, and cross-tab and descriptive statistical analyses of datasets in the final database.

First, the research team collected initial examples of available datasets, reviewed these based on criteria such as currency and ability to cross-tabulate with other datasets, presented these to a Division liaison to ensure that selected datasets would be valuable to Florida Electronic Library marketing efforts, and made changes based on feedback from the liaison. The original purpose of the database was to allow the Division to cross-tabulate and analyse data that could be used for purposes of outreach and marketing efforts targeted to specific segments of the end user population. The Project Manager at the Division subsequently identified additional needs for the database: ability to get reports on each data element by county for a single database or all databases and by a single loc_id or group of loc_ids, and ability to get average use by population demographic (eg, total searches in the *Kids Alphabits* database for a given county with comparison to the population of children in that county). Based on this information, the study team created requirements and developed the structure for an interactive database to be developed by the Division.

While the Division developed a beta database, the Information Institute developed usability testing protocols and general standards that the database was intended to meet. Division staff developed the SQL database and a front-end graphical user interface (GUI) for the database to make queries easier. The GUI increases usability of the database by allowing users who are less comfortable creating SQL query strings to select the information they need and the query

language is written automatically. To test functionality, the Information Institute (with the assistance of Technical Staff at the Division) performed queries for county-level usage data to determine usage per capita.

Finally, to support future marketing efforts of the Division and Gale-Cengage, the study team used the database to make recommendations for targeted marketing, impact, and value. Information Institute staff examined county-level usage data to determine usage per capita and analysed data from two of the 10 counties with the lowest usage per capita for total sessions, total searches, total full-text, and total retrievals to determine possible target markets in which to promote the FEL. In addition, the study team examined usage data for three specific databases selected by the Division as a starting point for further, detailed analysis: *General OneFile*, *Academic OneFile*, and *Kids InfoBits*. This decision is supported by the literature, which indicates that analysis should focus on high-impact databases, rather than attempting to analyse usage in all databases (Shim & McClure 2002).

Findings

Building an aggregated database

During the course of the project, several challenges arose, including the inability to appropriately cross-tabulate data from the original datasets. For example, the Google Analytics and ForeSee customer satisfaction data were available at only statewide level, while the usage and demographics data were available at both statewide and county levels. The project team had determined that the best solution was to focus on statewide data for the beta database, and to consider expanding to county-level data in a follow-up effort. However, the Division needed county-level data in order to perform the necessary queries to accurately depict usage on a county-by-county basis and market the Florida Electronic Library appropriately.

Therefore, data variables were reduced to demographic data for Florida's 67 counties and seven variables from monthly Gale-Cengage database usage reports: total sessions, total connect time, average connect time, total searches, total retrievals, total full-text retrievals, and turnaways. Information Institute staff revised the database elements and design accordingly, leaving two tables and a reduction in the number of data elements to include in the database. While constructing the database according to a revised Database Structure report, Division Technical Staff determined that Access could not support the type of database structure that was needed, but a SQL database could. As a result, Division staff imported the database into SQL.

Usage assessment

The study team first looked at usage per capita for each of Florida's counties to identify the 10 counties with the lowest per capita usage of the Florida Electronic Library, based on the measures of full-text, retrievals, searches, and sessions (Note that the data used for this analysis was from one sample month, April 2011, which may not represent typical monthly usage trends, as the Florida Comprehensive Assessment Test – FCAT – is given during this month for grades 4, 5, 8, 10, and 11). Three counties were among the lowest 10 in usage per capita for all four categories and one was among the lowest 10 counties in three of the four categories. Three additional counties showed zero usage in all four variables, but these counties are part of a multi-county cooperative, which may relate to why they show zero usage (ie, their usage may be measured via the cooperative and not at an individual library/county level). This is an issue with relying on loc_id and county-level data when some library systems show usage within a multi-county cooperative instead of at the individual library level (Blecic, Fiscella & Wiberley 2001).

The study team analysed usage statistics from three FEL databases as a beginning to further detailed analysis: *General OneFile*, *Academic OneFile*, and *Kids InfoBits*. These databases serve as a sample of more detailed usage statistics that are essential to understanding which areas of the FEL are least used in which counties. *General OneFile* is a general interest periodical database, *Academic OneFile* focuses on peer-reviewed material suited to higher education and academic libraries, and *Kids InfoBits* is targeted to students in kindergarten through 5th grade. As with usage overall, some counties showed far lower usage in each of the three databases than the majority of counties, and several also showed zero usage for all three databases, but again these counties are part of a multi-county cooperative, which may relate to why they show zero usage.

Two counties appeared within the 10 lowest-usage counties overall in full-text, retrievals, searches, and sessions and either in the 10 lowest-usage counties or among zero usage counties for the three selected Florida Electronic Library databases. Either of these two counties provides an opportunity for more detailed study to try and determine factors affecting usage and offer recommendations to improve usage in these counties. It is possible to apply the same analysis techniques to other Florida counties to determine areas for improvement in Florida Electronic Library

marketing to improve usage statistics. The Information Institute chose the slightly lower usage county to create an example of a detailed profile examining Florida Electronic Library usage within the county, identifying key populations of interest, determining possible reasons for low or zero usage, identifying marketing potential, and addressing any concerns.

County profile

For April 2011, this county's usage data showed 93 unique sessions with 159 total searches in the Florida Electronic Library. Within those 93 sessions, only four full-text and four retrievals (downloads) resulted from all 159 searches. Total full-text and retrievals each were 0.0114% per capita, searches were 0.2665%, and sessions were 0.4557%; note that on each of these four variables, usage per capita in this county is below 1%.

Of the four total full-text and retrievals, three were in *General OneFile* and none were in *Academic OneFile* or *Kids InfoBits*. Of the 159 total searches in the FEL, 12 were in *General OneFile* and 12 were in *Academic OneFile*. Usage data revealed *General OneFile* and *Academic OneFile* each had seven sessions, for a combined total of 14 out of the 93 overall total sessions in the Florida Electronic Library. April 2011 usage data showed zero activity in *Kids InfoBits* for all four categories.

This county had a total population of 34,890 people, with 11,397 (32.66%) of the population identifying themselves as Hispanic (American Community Survey). The majority of the county's population (n=23,493; 67.33%) identified as not being Hispanic, but of the Hispanic population, 87.86% (n=10,014) reported speaking English "less than very well." Adults aged 20-54 made up almost half of the total county population (48.11%). About one-quarter (24.65%) of the population was children from birth to age 19. Adults of retirement age (60-84) made up the next smaller demographic (21.72%). School-age children (ages 5 to 19) made up 18.39% of the county's population; however, only 16.05% of the total population was enrolled in kindergarten through high school. Only 2.41% of the total county population was enrolled in college or graduate school though 19.38% reported having attained some college, an associate's degree, a bachelor's degree, or a graduate degree in the higher education categories. More than half of the county (62.81%) reported obtaining a high school diploma or having less than high school education.

The demographic profile of this county revealed some target populations for marketing the Florida Electronic Library to increase usage within the county. The Hispanic population, population of adults 20-54, and population of adults with high school or less than high school education were significant. Adults 20-54 are important targets for marketing because they represent the age range of parents of minor children as well as the prime period for employment.

Recommendations

One purpose of this study was to determine the usefulness and feasibility of the data as developed in the database; thus, there are two limitations. First, the available usage data from April 2011 may not necessarily represent typical monthly usage trends since the FCAT is given in April. Second, that fact that the data are limited to one month is problematic as "One or two selected months of statistics will not provide a true picture of use" (Blecic, Fiscella & Wiberley 2001, p 452).

Future research is needed to investigate Florida Electronic Library usage over 6-12 months; determination of the lowest, median, and highest 10 counties to develop county-level profiles for each; fluctuations in monthly use; database-specific usage patterns; and effects of various Florida Electronic Library access points. Additional research in terms of analysis of the use of specific Gale-Cengage databases by county and an assessment of Florida librarians' preferences for including existing or different databases in the Florida Electronic Library could provide valuable insights into the possible causes of varying levels of usage by county and changing levels of usage over time, as well as allowing longitudinal analysis of marketing efforts over a longer time period.

Future marketing initiatives should include creation of in-depth marketing profiles of both counties and specific library systems with the highest and lowest levels of usage; development of key training concepts; creation of a web-based marketing supplement, not just through flelibrary.org, but also through other websites, social media, etc.; and examination of issues affecting the Florida Electronic Library brand. Given that factors for non-use include lack of awareness about the digital library and user satisfaction with other sources of information (Liu & Luo 2011), there is a need to look into why some people are and are not using the Florida Electronic Library, and to collect data from end users to understand their wants and needs (Alford 2007).

Conclusions

The goals of this project were to assist the Division in (1) collecting and analysing usage and retrieval data from various datasets evaluating outputs, (2) using outputs and datasets to create an outline for an Access (ultimately SQL) database, and (3) using the resultant data for providing recommendations to guide marketing efforts to end users. Overall findings can be discussed in the context of these three goals.

With regard to data collection and analysis and the resulting database design, numerous discussions between the Information Institute and the Division revealed the need for both county-level and statewide data, as well as a database that could support complex query design. Information Institute staff initially collected, compiled, and arranged statewide datasets into a relational database design using Microsoft Access. The project team (including Division staff) determined that county-level data was needed instead, so Information Institute staff revised the database elements and design, but Access was not able to support the type of database structure needed, so Division staff imported the database into SQL.

Data-driven recommendations to guide Florida Electronic Library marketing efforts outlined the need to closely examine counties underutilising the Florida Electronic Library to determine how to increase usage. Specifically, improving awareness in Florida's 10 counties with the lowest per capita usage based on the measures of full-text, retrievals, searches, and sessions may impact overall usage directly. Some counties belonging to multi-county library cooperatives also show zero usage, and this is an issue that should be further investigated to determine if membership in a multi-county cooperative is the ultimate cause of this level of usage, or if there are other mitigating factors. Overall the project points to the significant need for future research that examines electronic resource usage in the context of the user populations to develop more targeted marketing campaigns with the goal of increasing usage.

Acknowledgement

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Broadband and libraries and information organisations: measuring levels of broadband access and perceptions of broadband impact and value

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Introduction

Overview of projects

High-speed broadband Internet connections are unavailable to many residents in rural areas of the United States. To facilitate greater broadband access to rural residents in Florida, the North Florida Broadband Authority (NFBA; ***http://www.nfba-fl.org/***) and Florida Rural Broadband Alliance (FRBA; ***http://www.weconnectflorida.com/***) obtained funding for middle mile projects from the National Telecommunications and Information Administration (NTIA; ***http://www.ntia.doc.gov/***) via the Broadband Technology Opportunities Program (BTOP; ***http://www2.ntia.doc.gov/***). These projects aim to build out the middle mile network in three large rural areas in Florida, called Rural Areas of Critical Economic Concern (RACECs; ***http://www.eflorida.com/FloridasFuture.aspx?id=2108***), but on their own, the middle mile projects do not include needs assessment or benchmarking of anchor institutions' broadband connectivity in the RACECs (anchor institutions include libraries, schools, and a variety of other public service institutions, hereafter referred to as information organisations).

NFBA and FRBA separately funded the Information Use Management and Policy Institute (Information Institute; ***http://ii.fsu.edu***) of the Florida State University College of Communication and Information to provide needs assessments, benchmarking, and onsite diagnostics of network configurations in rural information organisations in Florida. The goals of these projects are to: (1) inform deployment and configuration of the middle mile networks, (2) increase successful deployment and use of broadband in information organisations within Florida's RACECs, (3) insure that users of rural information organisations obtain high quality and up-to-date broadband services, (4) position NFBA and FRBA to better document the success of the middle mile projects based on intended outcomes described in the original proposals to NTIA, and (5) assist in obtaining additional funds for broadband expansion and economic development. Inherent in these objectives is demonstrating information organisations' value to rural economic development and meeting the information needs of end users in rural areas. Additional information is available on these projects at ***http://nfba.ii.fsu.edu*** and ***http://frba.ii.fsu.edu***. The particular focus of this paper is the project findings related to rural public libraries.

Importance of broadband to communities

The proposed eventual benefits of ubiquitous broadband access for rural communities include a variety of improvements to overall quality of life for rural residents. Broadband can bring improved educational opportunities

and higher quality healthcare services for residents through new educational and healthcare technologies. Broadband also can improve the ability of local governments to provide emergency management operations as well as increasing savings to taxpayers through the use of e-government services. A primary goal, especially in the current economy, is for broadband to result in economic development through the attraction of new and expansion of existing businesses.

Importance of broadband to libraries

In recent years, public libraries have experienced a shift in primary service roles from providing traditional information services through the diffusion of printed materials to providing free access to technology, namely computers and the Internet (McClure & Jaeger 2009). Rural public libraries, whose service populations tend to be lower income and underserved by Internet Service Providers (ISPs), play an essential role within their communities as they frequently provide the only free public Internet access in their communities. To remain relevant in and meet the information needs of their communities, rural public libraries must gain access to high speed broadband connections. Poor Internet service diminishes the libraries' abilities to meet the information needs of their communities and limits the libraries' justifications for continued funding.

Rural public libraries are positioned to be vital leaders in community broadband services. However, libraries must measure and evaluate their abilities to provide effective information technology services and support to prove their value to local administrators and politicians. From the data gathered at libraries and information organisations in rural Florida, measurements of impact and value from broadband and broadband-enabled services are indicated by the capability of libraries and information organisations to provide education, training, and planning on new technological applications of broadband.

Literature review

Library valuation

In addition to other forms of evaluation, the literature indicates a growing need for library valuation, or the assignment of financial benefits to library services (Aabø & Strand 2004; Imholz & Arns 2007; Matthews 2007). This is particularly critical in an economy where libraries compete with other public institutions for funding (Aabø & Strand 2004). To conduct such studies, researchers need to identify who receives the value, when it accrues, whether immediate benefits translate into long-term value, and how to identify both tangible and intangible benefits from library use (Matthews 2007).

This value must include direct and indirect use values, as well as nonuse values, such as values to society (Aabø & Strand 2004; Matthews 2007). One key aspect to valuation is measuring economic value of the library. An example study was conducted for the Seattle Public Library, finding that the library and its information resources are valuable to the local economy (Berk & Associates 2005). A key factor in valuing libraries' economic impacts is the degree of awareness of libraries' various possible and actual roles (Imholz & Arns 2007), suggesting increased need for public awareness campaigns that promote library services.

Need for education in addition to infrastructure

Numerous studies indicate the importance of education, training, and planning for successful adoption and utilisation of broadband. LaRose, Strover, Gregg, and Straubhaar (2011) argue that simply providing access to broadband does not guarantee adoption or utilisation; community outreach efforts must be included as part of broadband deployment activities. A report on broadband access and use in Washington notes the need to create demand for broadband in rural areas through education and training on applications (Washington State Broadband Office 2011). This study also notes the need for coordination of broadband access projects. Two studies on broadband access and use in two counties in rural Ohio (Strategic Networks Group 2004) and one county in rural Ontario (Strategic Networks Group 2009) note that no benefit to the community occurs unless there is significant use of broadband by the local population.

Government reports conducted by the Federal Communications Commission (FCC) and the NTIA also identify education, training, and planning as central to broadband adoption and utilisation by underserved communities (FCC 2011a; NTIA 2011). The FCC's Eighth Broadband Progress Report states that "physical deployment of broadband networks … should also include an assessment of other factors such as broadband cost, quality, and adoption by consumers" (2011b, p. 3).

Research design

The Information Institute employed a multi-method approach collecting data from a survey, focus groups, and onsite network diagnostics of individual libraries and information organisations. Analysis is ongoing but preliminary findings establish a basis for recommendations. The survey included all information organisations identified in the three RACECs to gain background data on standard metrics for usage and stakeholder groups. Focus group participants were drawn from survey respondents to further identify key stakeholder groups and draw representatives for in-depth onsite network diagnostics.

Onsite diagnostics examined each visited organisation's use of information technology and ability to adopt and utilise an increased broadband connection speed. Key areas of interest for the diagnostics team included the amount of broadband currently available, the availability of technology training to both staff and users, sophistication level of current IT services and network, and planning for future developments in technology. These key areas were explored through the following metrics:

- The amount of broadband currently available measured by:
  - the actual connection speed reaching workstations,
  - the number of ISPs available in the area, and
  - the staff/administration's perception of the network to meet current and future needs;
- The availability of technology training to both patrons and staff measured by:
  - whether classes are available for staff or patrons on basic to advanced computer skills,
  - degree to which technology training is a priority for the organisation, and
  - whether the organisation considers a new employees computer skills and comfort level with technology during the hiring process;
- The sophistication level of current IT services and network measured by:
  - Whether there is centralised management of login authentication, software licenses, software updates, and data backups,
  - Whether the organisation has an established network security policy that includes consequences, and
  - Whether or not IT policies and day to day IT procedures are written, tracked, and accessible to other staff members; and
- Planning for future developments in technology measured by:
  - Degree to which the organisation follows a technology plan that includes:
    - An inventory of all equipment,
    - A replacement schedule for out-of-date equipment and to build a reserve of backup equipment for possible emergencies, and
    - An IT-specific portion of the budget to track expenses and help set priorities for future expenses.

These four key areas provide a working framework to assess the ability of the library or information organisation to utilise broadband in an effective way.

Findings

Broadband in rural Florida libraries and information organisations

The diagnostics team visited a total of 34 institutions throughout the three RACECs, including seven libraries. Figure 1 illustrates the actual connection speeds reaching workstations at each of the seven libraries. Connection speeds vary, so the chart shows each library's highest and lowest speeds, measured in megabytes per second (Mbps). It should be noted that the connection really is only as fast as the minimum speed. In terms of all the institutions that received onsite diagnostics, libraries' connection speeds fall in the middle, and all operate with connections greater than 1 Mbps.

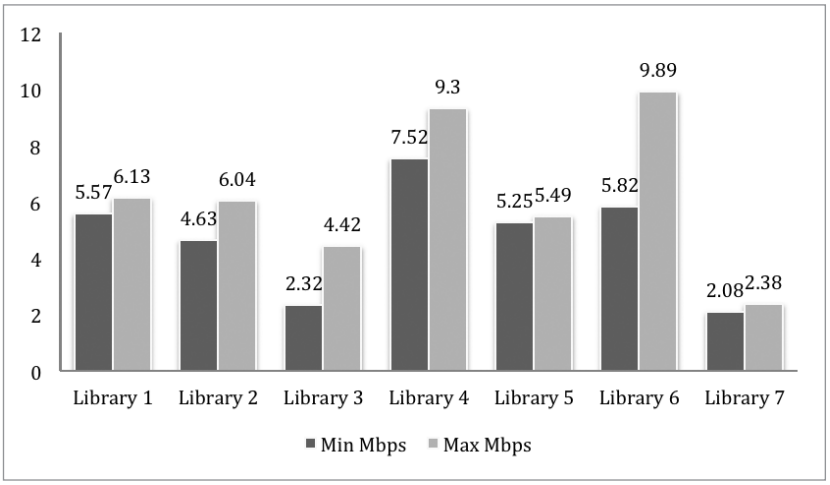

Figure 1: Connection speeds from visited libraries.

The fastest connections at Library 4 and Library 6, however, do not exceed 10 Mbps, indicating that libraries probably struggle to provide high speed Internet to multiple users simultaneously. The average maximum connection speed is 6.24 Mbps and the average minimum is 4.74 Mbps. To give an idea of exactly how fast the average speed is, it takes about 20 minutes to download a file of about 800 Megabytes at 6 Mbps, which is the size of an average 2-hour movie (***www.t1shopper.com/tools/calculate/downloadcalculator.php***). While it is unlikely that anyone in the rural libraries is downloading a whole movie, the libraries noted that during peak usage hours, such as when school lets out, the network slows considerably and sometimes crashes.

Technology training

The survey identified that most libraries offer some kind of basic computer literacy training to the public. Figure 2 shows response percentages of the types of training provided by libraries in NFBA. Major examples of training topics included setting up email accounts, typing and using a mouse, and general assistance in finding information online. No libraries reported offering any training for the public on the applications of broadband connection speeds, which may be related to the fact that no library respondents indicated that their staffs were very or extremely comfortable with advanced broadband or advanced wireless topics.

The survey identified a general low level of sophisticated technology use at rural libraries and other information organisations. The fact that there are no public training opportunities on applications for broadband means (1) that there likely is no demand for such training along with a corresponding lack of comprehension of what broadband is and means for a community, (2) the libraries and information organisations lack the ability to provide such training, and (3) simply providing libraries or information organisations with access to a broadband connection does not ensure the organisations will adopt broadband.

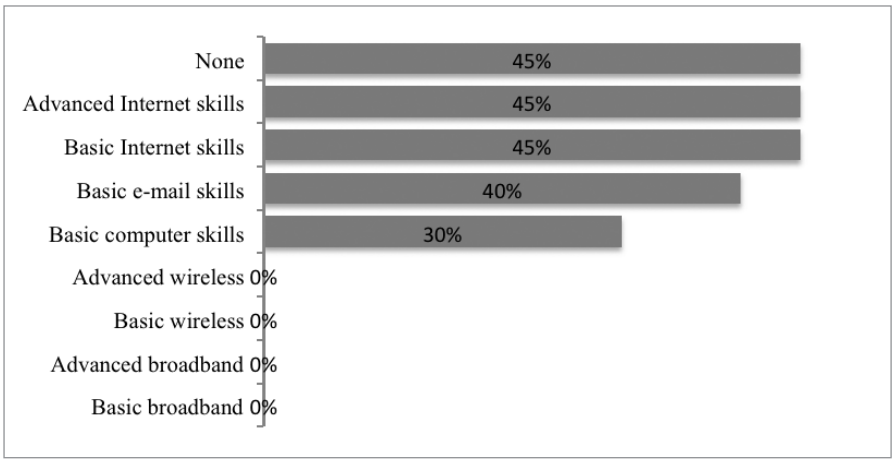

Figure 2: Computer training topics available to the public at libraries in NFBA.

Focus groups in each of the RACECs provided further confirmation from library and information organisation representatives that staff and patrons will need additional training and education on the application and use of broadband technologies. Attendees noted especially the need for customisable types of education and training for different counties and organisations, saying that a one-size-fits-all approach will not work across an entire RACEC or even across multiple counties. Diagnostics results indicate that the priority level of ongoing technology training for library staff and users is in the low-to-medium range on a low-medium-high scale. Only the staff in one library placed ongoing technology training above this range. The lack of importance placed on providing technology training is attributable to a number of reasons chief among them lack of time, funding, and interest from users.

Enablers and barriers to adoption

Focus groups identified the critical enabler for adopting broadband and improving technology resources is prior knowledge of broadband, its uses, and how to deploy it through the network among institutional and administrative staffs. Participants noted there is a significant need for adequate justification to administrators and local politicians for increasing allotment of resources towards technology, a trend also noted in the literature (Duncan 2008). All noted a distinct lack of resources and the fact that spending on technology meant taking resources away from something else. Administrative leadership and support, along with a trained and dedicated IT staff are also key enablers.

Library representatives lack knowledge about whether their current equipment is able to fully utilise a higher connection speed or not, which is a significant barrier to broadband adoption and utilisation. Diagnostics participants rated the degree to which they perceived their connections to be able to meet current and future needs on a scale of 1-5, with 1 being very poor and 5 being excellent (Figure 3). The majority of library representatives rated the ability to meet current needs at 3, which is average. While this might seem like a good thing it illustrates a culture of complacency and the belief that since the network works now, increased speed is not needed or justifiable at this time. However, most acknowledge that the current network will be unable to meet future needs.

Other significant barriers to broadband adoption among rural libraries and information organisations include a chronic lack of resources and limited knowledge about broadband, how best to deploy and apply it, and how exactly to contract with the ISP in a way that ensures the organisation is not paying too much for a service they are not really able to receive. All of the libraries visited shared their IT staff with other libraries or institutions, another barrier as this means those libraries often are unable to address any network problems quickly. One Director noted that the library shares an IT staffer with the county government and there is little communication about IT policies or needs.

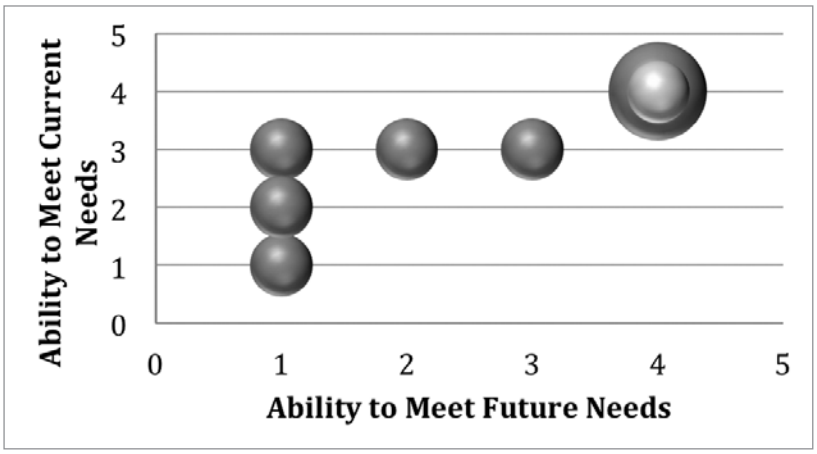

Figure 3: Perceptions of library networks ability to meet current and future needs. Note that multi-colored dots represent two libraries

Implications and limitations

If rural public libraries want to stay relevant to their communities, they must provide not only access to up-to-date technology, but also education and training on new technology applications. By evaluating the libraries' current connection speeds, educating and training the library staff in advanced networking best practices, and detailing a plan that guides technology purchases and organisation, rural public libraries can increase their value to the communities they serve. The needs identified in the data gathered for this study are a first step in positioning rural public libraries as valued technology access centers within their communities. The metrics outlined in the research design establish a framework within which libraries and information organisations can measure their abilities to provide high levels of access to and training on new broadband technologies.

Conclusions

This research indicates that, in addition to the existence of the middle mile network, what Florida's rural libraries and information organisations really need is more education on the benefits and possible applications of broadband. Without understanding of what broadband connectivity can provide to the organisation and community, administrators and local policymakers will believe that current networks are good enough to meet current needs, therefore spending their limited resources on what they consider to be higher priority problems. Rural libraries are positioned to be extremely valuable centers of broadband technology provision, but to evaluate libraries' abilities to adopt and utilise broadband successfully, they must evaluate the levels of technology education, training, and planning currently available in their organisations.

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Collaborative assessment: North American academic libraries' experiences using the Balanced Scorecard to measure performance and show value

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Background

The Balanced Scorecard is a widely-accepted organisational performance model that ties strategy to measurable results in four critical areas: finance, learning and growth, customers, and internal processes. While originally designed for use in the for-profit sector, the scorecard has been adopted by non-profit, government, and other mission-based organisations including some academic libraries. This paper focuses on the continued experiences of two prominent North American research libraries, Johns Hopkins University and McMaster University. These two libraries were part of an Association of Research Libraries (ARL) pilot effort that included a total of four institutions, the two represented by the authors, plus the University of Virginia and the University of Washington. (For the purposes of this paper, the four libraries are described as Cohort 1.)

The ARL initiative was described as "an investment in helping libraries make a stronger case for the value they deliver by developing metrics that are tied to strategy." [E-News for Library Directors, January 2009, *www.arl.org/news/enews/enews-15jan09.shtml#32*]

In addition to developing cases for value, the ARL initiative aimed to test the viability of creating a community of practice to facilitate scorecard implementation and practice. As the original initiative progressed with Cohort 1 in 2009-2010 and strategy maps, objectives, and measures were developed, the participating libraries discovered common themes and threads running through their respective work. The libraries had very similar focuses in each of the four scorecard perspectives (financial, customer, internal process, and learning and growth). These commonalities intrigued the authors and encouraged further scrutiny.

Three key questions emerged. First, given the commonality in objectives, how much overlap would emerge in the actual measures chosen by the Cohort 1 libraries to track performance? Second, given the long-standing nature of the formal ARL statistics program, what portion of the measures that were developed for the scorecard draw from the annual statistics reported to ARL? Finally, as ARL continues to move the scorecard initiative forward and 10 new local sites (described in this paper as Cohort 2), join the program; can new tools be created to further the concept of collaborative scorecard development? Two approaches seemed worthy of exploration: a) the compilation of an inventory of all measures from which prospective scorecard sites could choose or b) create a "common" set of uniform core measures for use by scorecard participants.

A note on the time frame of the data used in this paper; while the four libraries in the original ARL initiative started at the same time, organisational acceptance, budgetary cycles, and strategic planning cycles are different across the institutions. To eliminate confusion, the authors will use naming convention of YEAR 1 for the first cycle of work the

libraries completed and YEAR 2 for the second cycle. These cycles roughly correspond to 2009-2010 for Year 1 and 2011 for Year 2.

Common Objectives

Within the context of the scorecard, objectives are the building blocks of a strategy. They define the organisation's strategic intent and for mission-based organisations they connect directly to achieving its chosen mission. It is reasonable to assume that research libraries should have common objectives. The work research libraries are performing is very similar, the missions are often surprisingly similar, and the institutions research libraries support have similar purposes. For example, all research libraries need to secure funding, there are common concerns about physical and virtual space, there are significant changes happening in regard to staff recruitment and development, and there is a need to ensure that our intrinsic value is known by stakeholders and patrons.

Not surprisingly the Cohort 1 libraries' objectives displayed significant similarities. A detailed description of the common objectives can be found in Lewis' 2010 paper, "Building Scorecards in Academic Research Libraries: Organisational Issues and Measuring Performance." Given that the Cohort 1 libraries were all trying to achieve similar objectives, the authors were eager to explore the extent of overlap in the resultant measures. Would the libraries create similar measures for those objectives or would local concerns and needs force divergence?

Measures

In the Balanced Scorecard, measures tell an organisation if they are making progress in implementing their strategy, and whether that strategy is actually having the anticipated outcome on the planned organisational performance. In other words, are we doing what we said we would do and does it affect our users, stakeholders, and staff as we intended. For the measures analysis portion of this paper the authors will only use measures from Johns Hopkins, McMaster, and the University of Washington libraries. The University of Virginia Libraries had been using the balanced scorecard since 2001 and the measures they had at the time of this paper were in the process of being refreshed.

Libraries have a long tradition of collecting statistical and other measures related to library performance. However, these measures on the whole tend to be input measures. Input measures traditionally count things such as the number of volumes, user seats, librarians, dollars, or computers. They form the basis of many of the regional or national statistical surveys where comparisons can be made. The authors used Wordle to examine the wording of measures developed by the three libraries. As illustrated by the word cloud, libraries still rely heavily on counting. The emphasis on sheer quantification raises critical questions. Are libraries counting the right things? Are libraries counting the things that matter to our patrons, to our stakeholders, and for our staff?

Table 1 indicates the distribution of Cohort 1 measures across the four scorecard perspectives. Given libraries' historic focus on patron services, it is not surprising to see the concentration of measures in the Customer perspective. The measures in the Customer perspective also tend to be less about counting how many of something and more about service effectiveness based on specific output-related measures.

Table 1: Year 1 Aggregated Measures		
Perspective	**Number of Measures**	**Typical Measures**
Customer	41	Effectiveness of library instruction Effectiveness of liaison librarians and the services they provide Collections related activities
Financial	19	Material inflation Revenue generation including grant revenue ARL Investment Index Donations
Internal Processes	19	Collections and the use of those collections Patron satisfaction with collections Web and IT services Promotion of the library
Learning and Growth	15	Employee satisfaction Staff retention rates Staff ratings on various surveys including ClimateQUAL Numbers of assessments or development plans

Note: Number of measures is based on the scorecards of Johns Hopkins, McMaster, and U. Washington Libraries

The authors also examined the connection between the scorecard measures and ARL standard statistics. The measures developed by Cohort 1 libraries made very little use of current ARL statistics. Overall, only 9.5 percent of the measures were related to the ARL statistics. The most commonly used ARL statistic was ARL Supplemental Statistic number 10 which deals with library digitisation activities including number and size of libraries digitial collections, number of collections, size of collections, and number of items. Table 2 provides an overview of the ARL statistics used as scorecard measures.

Table 2: Measures Using ARL Standard Statistics	
Supplemental Statistics 10b	4
Supplemental Statistics 11a	2
Supplemental Statistics 10c	1
ARL Investment Index	1
Standard Statistics 5	1
Standard Statistics 16	1
Standard Statistics 35-36	1

NOTE: for informaiton on ARL's statistics see ***www.arl.org/stats/annualsurveys/arlstats***

Another common measure methodology observed was the use of surveys. Table 3 provides a distribution of surveys used as measures. LibQUAL was largely used in the customer perspective to identify both customer satisfaction and space related issues. ClimateQUAL was only used in the Learning and Growth perspective and related to library staff. The WOREP and READ scales were used as teaching and learning measures. Further investigation is needed to determine if it would be feasible to create collaborative work around the other locally created surveys.

Table 3: Year 1 Measures Utilising Surveys	
Locally created surveys	15
LibQUAL	4
ClimateQual	2
WOREP (Wisconsin Ohio Reference Evaluation Program)	1
READ Scale (Reference Effort Assessment Data)	1

The question remains if libraries can improve their arsenal of assessment tools by working *alongside* each other (as opposed to directly *with* each other) as they implement local organisational performance measurement instruments? To answer that question the authors propose using the experiences of the second cohort group to explore options of measurement development.

The benefits of a collaborative approach

As noted earlier, the ARL initiative aimed to test an alternative, more collaborative approach to assessment tool development. Each library aimed to create its own scorecard. Would local teams benefit from working alongside their counterparts in other ARL libraries, even if each team was producing an independent instrument?

Interviews with members of the Cohort 1 libraries point to very clear benefits from the collaborative approach. Participants described the opportunities for face-to-face and teleconference discussions as "invaluable" to the success of their local implementations. They frequently consulted the other participant's scorecards for ideas. Three benefits were identified: 1) seeing what other institutions were doing (or considering doing) **saved time**. The ideas they took away were "kitchen tested" in another like organisation; 2) the concepts had **high credibility**. Knowing that something had been done in another institution often came in handy when persuading reluctant colleagues to accept a new idea; 3) Finally, the idea of adopting a measure similar to someone else's laid the ground for future comparisons and **benchmarking**.

The process was not seamless. Cohort 1 team members described the frustrating experience of being initially persuaded by a specific measure in use at another institution – only to discover that the measure was either inactive or fraught with pitfalls. Reading published lists of measures failed to reflect the true value of various components.

The Cohort 1 also noted the challenges associated with getting the measures "right" or at least "good enough" for early consumption. By way of example, the McMaster team started with a cluster of 63 measures in support of their 13 objectives, far in excess of the 16-36 recommended measures. The initial slate included a host of ambitious but untested concepts. The final slate released a year later bore little similarity to the initial roster. In many cases, it wasn't until actual data was collected, massaged and analysed that the Scorecard team knew they had captured a "measure that mattered". Johns Hopkins held onto a slate of 55 measures the first year, far too many for effective use. The second year the slate was reduced to 20 measures.

The refinement process was exhausting, especially for institutions with less fully-developed assessment programs. In many cases, the teams were exploring data sets for the first time. Understanding how large blocks of data could be boiled down to a single trackable scorecard measure proved particularly difficult. For example, most sites collect large amounts of data associated with their instruction program, but what single meaningful measure could be tracked over time? The librarian's natural reluctance to filter information often became an impediment.

Enhancing collaboration

Once the call for a 2nd cohort of Scorecard sites was initiated, members of the Cohort 1 began discussing strategies for facilitating measure development: Could they use their own experiences over the previous several months to ease the load of the 2nd cohort sites and, in doing so, lay the groundwork for future, more robust scorecard implementations? After much discussion, two possible models emerged for furthering the collaboration agenda: a) the compilation of an inventory of all measures in use at Cohort 1 sites; and b) the crafting of a core set of common measures reflecting a synthesis of thought at all sites.

A. The Inventory

The inventory is envisioned as a compilation of all measures in use at Cohort 1 sites. Each entry would include: measure name, formula, originating library, an indication of whether the measure was active or inactive at that site, and a rating (by the local site) of how successful the measure is in capturing meaningful data. For example:

Table 4. Inventory of Measures Example					
#	**Measure Name**	**Formula**	**Originating Library**	**Active/Inactive**	**Rating (0–5) (N/A = inactive)**
1.2	Study Seats	Number of study seats located in "silent" or "quiet" areas.	McMaster	Active	5

The authors recognise some definite pluses and minuses associated with the inventory model. Such a tool would compile options from which local sites could chose based on their environments. The inventory could be pulled together very quickly – without a lot of negotiations or compromises. The tool would also facilitate the sharing of specific information (eg, the effectiveness rating). At the same time, the inventory model lacks the consistency required for benchmarking. Individual libraries could address a similar theme, but use a completely different approach and language to capture it.

B. The "Common Set"

The "Common Set" is envisioned as a tight set of measures carefully crafted by Cohort 1. The set would reflect, not only a common approach to measuring a particular theme, but also common language. Common measures might adopt the thinking of one Cohort library over the others or, alternatively, reflect a compromise statement not actually in use at any Cohort 1 site. For example, a common measure linked to staff satisfaction/healthy workplace could read:

Table 5. Common Set Example	
Measure Name	**Formula**
Healthy Work Place	Increase in the percent of staff answering "3" or above on ClimateQUAL question #

The uniform nature of the common set has both strengths and weaknesses. The consistent approach and language would facilitate benchmarking: Sites choosing to use the common measure could be assured that other adopting locations would use the same formula and language. The process of creating the set, however, would not be easy: Cohort 1 libraries would have to negotiate the measures between themselves. Additionally, libraries choosing to use the set would effectively give up the ability to customise language to meet their local environments.

Research design

The authors decided to test the approaches as part of a small-scale research project. They will construct the two instruments in conjunction with Cohort 1. The two sets will be presented to Cohort 2 at a face-to-face meeting. Three months following this presentation, the authors will interview members of Cohort 2 regarding the perceived usefulness of the two sets for their local work. A second set of interviews will be scheduled for a few months later to determine actual measure adoption. Results will be presented in a formal report and presented at an upcoming assessment conference.

Conclusion

The Balanced Scorecard is a powerful tool for tracking success in meeting organisational mission. Implementing a scorecard effectively requires significant intellectual effort. In many ways, setting clear objectives and identifying crisp initiatives is the easy part. The challenging work lives in the middle – in the identification and fine-tuning of meaningful, well-aligned measures.

The current slate of measures in use by Cohort 1 shows a fair amount of similarity – especially in areas of Customers and Learning and Growth. Given the clear overlap in objectives, this level of measure convergence is not surprising.

The current slates illustrate some linkages to the ARL statistics and assessment program. The authors note that the use of annual survey data and large-scale initiatives like LibQUAL and ClimateQUAL is there, but not in the quantity one

might expect. The small number of linkages suggests that further work needs to be done on the data being gathered by the program. (An ARL Statistics & Assessment Committee task group is currently working on this issue.)

The Cohort 1 experience with measure creation suggests that collaborative efforts pay off. The four teams benefitted greatly by working together: They saved time, leveraged the credibility of the larger group and laid the groundwork for future benchmarking. Further research will be done in the coming months on two instruments for furthering this collaboration. The authors will build two prototypes for discussion with Cohort 2 sites – an inventory of all used measures AND a set of common measures from which other libraries may opt to choose.

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How low budget research can make a high impact

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Introduction

The National Library of Scotland (NLS) is undergoing a sustained period of development as it undertakes an ambitious programme of modernisation. During this development NLS has continued to maintain its historic roles of: being a world centre for the study of Scotland and the Scots; serving as Scotland's largest research library and a leading European research library; being responsible for the collection and preservation of Scotland's culture; and acting as the only Legal Deposit library in Scotland.

In 2010, the NLS published a report entitled "Thriving or surviving; the National Library of Scotland in 2030". (Hunter 2010) The report set out how NLS might operate and deliver content and services to its users in an environment 20 years into the future. It identified the role of the customer as a key factor in how NLS was likely to change: changing patterns of customer needs and behaviours and the emergence of new customer groups were predicted to have a profound impact on the way NLS delivers services.

The changing political landscape in Scotland has also had an impact on NLS. Successive devolved governments have aspirations to transform and deliver change at a national level (Scottish Government 2009) and expect Scotland's public sector to actively contribute to this change. In the case of NLS, these demands create a need for a library that is not only acquiring and safeguarding the national published record but one that is also active in providing access to an increasingly global set of resources that enables Scots to conduct research across a wide spectrum of subjects and regions.

This need to deliver information to Scotland as a whole is a reflection in the changing nature of the Library's customer base. A growing demand for business information, family history, maps and environmental data reflects the changing customer base of the Library. These newly emerging users, many who of whom could be defined as "citizen scholars" (Coll 2011) are located throughout Scotland, often operating outside traditional research communities and thus lacking many of the necessary information resources to assist them in conducting such research.

This latter factor highlights a key challenge for NLS: how to widen access to its Collections, whilst continuing to meet the needs of users of existing services? One of the key development areas has been the commitment to investment in digital services, including digitisation of material and developing digital technology. There have also been a range of other developments in recent years which have, or are likely to have, significant impact on usage:

- the acquisition of the John Murray Archive (JMA) in 2006
- Scottish Screen Archive merger in 2007
- the opening of the new Visitor Centre in 2009
- commitment to a rolling programme of digital services
- increasing access to the collections through online registration, exhibitions, outreach activities and the web.

An additional factor in the development of NLS is the current economic environment. As a non-departmental public body (NDPB), the Library is funded by the Scottish Government and is currently facing significant cutbacks in its annual budgets. The cutbacks have not only affected departmental budgets, but have also led to a significant

reduction in the headcount. The impact on the research budget was to reduce it by 50%, giving a working budget of approximately £20,000 a year.

NLS recognised that research had an important role in measuring changes in use and identifying ways of improving service delivery, particularly to new customer groups. In 2009 it issued a tender for a three year research contract which identified four broad research objectives:

- to identify the impact that developments were having on current and potential users, particularly in encouraging wider usage of services
- to identify ways of increasing use of services, particularly by non-traditional audiences
- to provide evidence of the Library's performance relating to relevant Key Performance Indicators (National Library of Scotland, 2010)
- to provide data that could be compared with previous research where relevant

Scotinform Ltd, an independent research company, was appointed to conduct the research programme. The programme was designed to build on the Library's annual research (introduced in 2004), as well as developing new research methods which could assess the impact that NLS was having in attracting different audiences and reflect the development of significant online resources.

This paper describes how this research programme has introduced new methods and utilised internal resources in order to meet the research objectives and provide evidence of NLS' impact. It shows how, on a comparatively small budget, primary research can be used to explore the views of new and existing customer groups and provide an understanding of customers which should help NLS thrive. The approach to the research is described, followed by a summary of the key findings and conclusions drawn from the process.

Review of existing data

NLS identified five key customer groups which the research needed to address:

Key audience	Description
Academics and researchers	Academics and researchers working in colleges, universities and other institutions – both in Scotland and elsewhere
Library and information professionals	Public libraries, other Scottish libraries and archives and library networks
Education and lifelong learners	Schools, colleges, universities, professional bodies, voluntary/ community organisations, community learning/development centres
General public	The general public in Scotland, including the under-represented groups defined by the Scottish Government (by gender, age, disability and ethnic group)
Business and enterprise	Businesses, representative organisations and organisations offering business advice

The first stage of the research programme involved a review of the data held by NLS to see how it could be used in surveys of the key groups. Information on these groups was stored on three databases:

- Voyager library management system which contains the details of 16,000 plus customers registered to use NLS either online or by visiting the Reading Rooms in Edinburgh
- Constant Contact, the database used to record details of customers receiving the, e-newsletters (9,000 contacts)
- Raisers Edge database of customers receiving print Discover NLS, the Library's quarterly magazine (12,000 contacts).

One of the key issues for the research was that none of these systems collected information that would allow categorisation into the five key customer groups for research sampling purposes. It was also felt that the customer

groupings reflected the traditional users of the NLS rather than the new users– particularly the increased use by 'citizen scholars' referred to in the Introduction.

Internal data showed that there had been a significant increase in online usage – there are over two million visits annually to its website – but there was no data available other than a rough guide as to what country they were from. To put this context, there were 150,000 visitors to the Library in 2010-2011.

The challenge, therefore, was to implement research methods that would encompass both the traditional customers, mainly registered readers, and the new user groups whose contact with NLS could be limited to visiting the website.

Research methods/approach

This paper focuses on three specific research methods employed by NLS since 2009. These methods have been selected as they illustrate the how combining a mix of traditional and new methods has met the requirement to survey the new user types. They also represent practical examples of how a relatively small research budget can be used effectively to carry out longitudinal surveys alongside ad hoc research.

Customer survey

NLS has conducted annual customer surveys since 2003 to: provide the measurement of the Library's KPI for customer satisfaction; identify issues of concern to different customer groups; and assess potential demand for and interest in new services.

Pre 2009 the sample for the customer survey was extracted from the database of registered readers which, at that time, only included customers with readers' tickets (ie those who visited the Reading Rooms in Edinburgh). The survey was conducted by telephone, with a random sample of 500 readers selected from the database of registered readers.

In 2009 it was recognised that conducting telephone interviews was no longer viable: they were expensive and could only be conducted with customers who had provided telephone contact details. The introduction of the new online registration system, however, opened up a new avenue for research: an online survey. This method means that customers accessing online resources, visitors to exhibitions/events and people receiving the Library's e-communication can be included in the research, along with the readers registered to use the Reading Rooms or the online resources.

The main concern about the move to an online method was the response rate: if the response was low the validity of the results would be in doubt. A number of actions were taken to encourage customers to respond:

- the first contact was through NLS sending an email to the sample selected for the survey: this email explained the aims of the questionnaire and asked for their help; it also provided an opportunity for customers to opt out of the survey
- the questionnaire was designed to interest customers and the online software meant that customers were routed away from questions that were not relevant to them
- an incentive of a prize draw was included on the questionnaire
- a pilot survey was conducted to test the questionnaire and get feedback on its length and to test out the wording of questions.

Survey of the general public

In 2003 NLS signalled a change in attitude towards the use of the Library by the general public. Pre 2003 the Library policy was to restrict access to customers who could demonstrate that the material they required was not available elsewhere. In its strategy, Breaking Through the Walls (NLS, 2004), the Library identified the need to widen access to the Library's collections in line with the Scottish Executive's Cultural Policy of delivering cultural services 'to the people of our country in an effective and accessible way' (Scottish Executive 2004).

The development of awareness and use of NLS since the introduction of the strategy has been measured through annual face to face surveys of the Scottish public. Using a Scottish Omnibus[1] of 1,000 Scottish residents, the Library has awareness data which is used to measure its Key Performance Indicator relating to public awareness. This method has also provided key information on the effectiveness of communication methods and awareness of online resources. The Omnibus sampling method – quota sampling – means that the results are representative of the Scottish population in terms of age, gender, employment status and location.

In 2009 it was decided to retain this methodology as it offers very valuable longitudinal research which allows comparisons to be drawn across different demographic groups and areas of Scotland. Budget savings were made by reducing the number of questions to seven core questions covering awareness of NLS and it services, usage of NLS and awareness of communications/marketing.

Measuring customer service standards

One specific issue addressed by the research was the extent to which the Library's services met the needs of the new user groups. The development of new Customer Standards (NLS: Customer Charter 2007 – www.nls.uk/using-the-library/customer-charter) reflected the changing needs of customers, particularly through the introduction of standards for staff to ensure that visitors to the Library were welcomed and provided with information on how to use the services. In order to measure these Standards, the Library has evolved a sophisticated programme of mystery visits which identifies areas for improvement to its enquiry process and environment. This is a standard market research methodology involving a mystery visitor acting as a prospective customer of the Library and undertaking a series of predetermined tasks to measure performance against the customer standards (ESOMAR Research, 2005).

The mystery visit programme was developed in 2010 to provide not only evidence of the extent to which customer standards are being met but also extensive qualitative feedback on areas not covered by the standards. In order to represent the typical customer experience, the visit covers every aspect of potential contact with the Library: the website, email, telephone and letter enquiries, reader registration, the Reading Rooms, cafe, shop, exhibitions, toilets and lift.

Mystery visits are conducted quarterly and visitors are selected to represent a range of different types of new users: for example a member of the public interested in family history research or a disabled visitor. Additional feedback has been provided by mystery visitors attending staff development sessions to answer questions and tell staff firsthand about their experiences.

Findings

Customer Survey: the link to an online survey was emailed to approximately 4,000 customers: a total of 25% responded which was the anticipated response rate for a survey of this nature. A significant proportion of responses (40%) were from customers who were not registered readers, who had been excluded from previous customer surveys. The adoption of this new method meant a budget saving of 40% and, as result of success of the first survey, the Library has developed a new KPI on customer satisfaction.

Survey of General Public: the use of the Omnibus as a method for surveying the general public has continued to provide longitudinal data, showing a significant improvement in the awareness of NLS (from 20% in 2004 to 50% in 2011) and providing valuable information for the Library's marketing communications plan. NLS has shared its information with other national organisations. Recently the National Museums Scotland has also commissioned regular Omnibus surveys.

Mystery Visits: the development of this method to include both qualitative and quantitative data has provided extensive feedback on all aspects of the customer journey. The quarterly scores for each area of the customer standards clearly highlight areas for improvement, and the comments show the impact that specific behaviours or processes have on new users. As a result, the Library has made adjustments to some aspects of its service, for example introducing a sticker system on Library cards to indicate a new user, so that staff recognise and respond appropriately to the needs of new customers.

1 An Omnibus is a survey covering a number of topics, usually for different clients. The samples tend to be nationally representative and composed of types of people for which there is a general demand. Clients are charged by the market research agency on the basis of the questionnaire space or the number of questions required. (source: Market Research Society)

Conclusions

The combination of new methods and tailoring existing methods to the new budget has been successful in meeting the research objectives set by NLS. The new online methodology for the customer survey has expanded the survey significantly and provided feedback from new users for the first time. This information has given the Library a better understanding of its new users and set a robust benchmark on awareness and usage that can be measured in future. The challenge for future customer surveys is to identify ways of including 'remote' users – those who are accessing the website but do not make contact in any other way with NLS.

NLS has evidence of the impact it is making in widening access to its resources and can measure this through its Key Performance Indicators. The research has proved useful in setting budget priorities, an important output given the current budget reductions. Most importantly, the combination of research methods means that the Library has an understanding of customers' expectations and how it should develop services to meet these expectations.

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The impact of information literacy on the pass rate of first year students: a project at the Cape Peninsula University of Technology

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Introduction

The Impact of information literacy interventions has often been measured in the change of the information literacy skills and/or behaviour of students. However, this paper describes a process whereby it is attempted to measure the impact of information literacy interventions in the first-year on the pass rate of the students at the end of the year. The relevant factors, including some that are particular to the South African situation, that have lead to the ability to measure the comparative impact of information literacy interventions on the success rate of first-year students at the Cape Peninsula University of Technology (CPUT) are discussed and presented with examples from the Faculty of Education first-year course

Literature review

Information literacy interventions have been the subject of many studies. Writing in 2007, Craig and Corrall (2007:118) state that the literature is substantial with the 2004 select bibliography alone listing 270 items, with 159 on academic libraries. Despite this seeming large number of studies on information literacy, most of the studies that deal with the assessment or impact of information literacy training focus on how the student perceived the instruction or how specific skills improved, as measured by pre and post-tests (Wong and Cmor, 2011:465).

Although information literacy outcomes may be seen as integral to university education, the institutions are noted in the latest ARCL Draft Standards as being more interested in

the library's impact on student learning, time to degree, student retention and academic success (ARCL, 2011:5-6). However it is maintained that libraries still do not know how to demonstrate these impacts, particularly that on student learning (Rodriguez, 2011).

The result is that there is not much literature on the impact of information literacy training on the student's academic performance in a course as a whole. In most of the literature that has attempted this, the attention is on a particular assignment or course and the content analysis of the sources used for the assignment or confidence of the students (O'Connor, Radcliff and Gedeon, 2002).

Research

Attendance registers of Information Literacy interventions at CPUT by the library have been kept since 2000. Since the introduction and acceptance of the Information Literacy Policy (Cape Peninsula University of Technology, 2008), these interventions have increased. In the Faculty of Education there have also been assessments done at the request of the lecturers. By placing students in different groups based on school-leaving choices and results, an average for each group in their final school year can be determined. The end-of-year results of these students can then be determined, and variance from the average in each case determined. In the practical gathering of the necessary data on the students, the researcher was assisted by the librarian responsible for their training, Mrs. Joanne Arendse.

Choice of students

The Bed FET first-year class at Wellington was chosen to be the subject of this investigation, using purposive-sampling. This group was accessible to the researcher in that the classes were held in terms of an agreed timetable and evaluation process. Library staff at the Wellington campus of CPUT were responsible for both the classes and the evaluation. In addition, the Education faculty were prepared to assist in the provision of results. For ethical reasons the students are not identified by name, but rather by symbol, those with an S being in one group, and those with a T in the other.

These two groups were determined by analysing the Grade 12 results of the class to produce a group of students who had written Grade 12 in the same year, under the same examining body. 37 students had all written the Grade 12 examination in 2010, under the same examining body. Once this group was identified they were grouped according to their choice of the three compulsory elements of the Grade 12 syllabus: Mathematics, Home Language and First Additional Language. As the Faculty of Education on the Wellington campus holds their classes through medium Afrikaans, it was found that a large proportion of the group (33) had the combination of English First Additional Language and Afrikaans Home language. Those without this combination (4) were then discarded.

Of the remainder, three had additional subjects which affected their Grade 12 average, and these were also discarded. The remaining 30 students were then divided into two groups, based on whether they had chosen Mathematics, or Mathematical Literacy

Grade 12 results

The following table shows the group of Mathematical Literacy students in the faculty, with their Grade 12 subject results and overall average.

	Gr 12 subjects						Gr 12 total	Gr 12 avg	LO Gr12	Group	Gr12 subject choice		
T1	61	63	70	43	58	88	383	63.8	44	2	ml	a1	e2
T2	61	68	57	55	48	74	363	60.5	51	2	ml	a1	e2
T3	63	67	54	64	65	79	392	65.3	73	2	ml	a1	e2
T4	76	80	63	55	62	83	419	69.8	83	2	ml	a1	e2
T5	61	61	42	57	41	58	320	53.3	76	2	ml	a1	e2
T6	73	69	72	50	69	80	413	68.8	83	2	ml	a1	e2
T7	70	75	59	61	75	75	415	69.2	75	2	ml	a1	e2
T8	61	63	53	52	48	59	336	56.0	60	2	ml	a1	e2
T9	66	61	30	52	47	65	321	53.5	77	2	ml	a1	e2
T10	56	60	67	59	31	55	328	54.7	70	2	ml	a1	e2
T11	70	66	63	53	68	84	404	67.3	71	2	ml	a1	e2
T12	66	77	56	63	58	87	407	67.8	79	2	ml	a1	e2
T13	56	59	57	53	40	71	336	56.0	75	2	ml	a1	e2
T14	75	78	53	46	60	82	394	65.7	64	2	ml	a1	e2
T15	63	70	56	49	65	78	381	63.5	75	2	ml	a1	e2
T16	66	69	34	63	68	83	383	63.8	64	2	ml	a1	e2
							5995	62.4	70				

Table 1: Mathematical Literacy (Group T)

Those students with Mathematics as a subject for Grade 12, with the same information:

	Gr 12 subjects						Gr 12 total	Gr 12 avg	LO Gr12	Group	Gr12 subject choice		
S1	72	68	34	56	58	55	343	57.2	80	1	m	a1	e2
S2	61	74	45	53	84	50	367	61.2	83	1	m	a1	e2
S3	70	75	64	53	79	71	412	68.7	81	1	m	a1	e2
S4	65	64	38	58	59	61	345	57.5	90	1	m	a1	e2
S5	61	70	42	41	64	78	356	59.3	71	1	m	a1	e2
S6	69	59	78	64	82	62	414	69.0	82	1	m	a1	e2
S7	55	60	52	49	54	57	327	54.5	73	1	m	a1	e2
S8	64	71	43	52	40	52	322	53.7	77	1	m	a1	e2
S9	65	68	60	65	61	82	401	66.8	87	1	m	a1	e2
S10	65	65	48	60	60	58	356	59.3	71	1	m	a1	e2
S11	74	68	60	39	63	67	371	61.8	80	1	m	a1	e2
S12	71	65	64	64	70	52	386	64.3	88	1	m	a1	e2
S13	61	52	54	64	54	62	347	57.8	76	1	m	a1	e2
S14	75	75	77	71	51	68	417	69.5	78	1	m	a1	e2

Table 2: Mathematics (Group S)

These were then arranged to give the students a ranking, based on the Grade 12 results.

Student	Gr 12	Ranking
T5	53.3	14
T9	53.5	13
T10	54.7	12
T8	56	11
T13	56	10
T2	60.5	9
T15	63.5	8
T16	63.8	7
T3	65.3	6
T11	67.3	5
T12	67.8	4
T6	68.8	3
T7	69.2	2
T4	69.8	1

Table 3: Group T Grade 12 ranking

Student	Gr 12	Ranking
S7	54.5	13
S1	57.2	12
S4	57.5	11
S13	57.8	10
S5	59.3	9
S10	59.3	8
S2	61.2	17
S11	61.8	6
S12	64.3	5
S9	66.8	4
S3	68.7	3
S6	69	2
S14	69.5	1

Table 4: Group S Grade 12 ranking

Course results

For both these groups the student's participation in and results of Information Literacy classes as well as the results at the end of the year for the whole course were obtained.

	IL final course mark (95)	%	IL Class attendance (8)	B ED:(FET):ECONOMIC & MANAGEMENT SCIENCE 1 course results
T1	62	65	5	
T2	77	81	7	66.47
T3	73	77	6	73.2
T4	48	51	5	66.67
T5	42	44	5	60.33
T6	63	66	7	72.27
T7	62	65	5	64.2
T8	67	71	6	64.47
T9	70	74	6	67.4
T10	65	68	9	67
T11	55	58	5	64.86
T12	61	64	6	75.36
T13	46	48	5	60.47
T14	59	62	5	
T15	76	80	8	69.67
T16	69	73	5	64.2

Table 5: Group T: Information Literacy and course results

	IL final course mark (95)	%	IL Class attendance (8)	B ED:(FET):ECONOMIC & MANAGEMENT SCIENCE 1 course results
S1	73	77	6	68
S2	72	76	6	76.27
S3	60	63	5	75.64
S4	76	80	8	74.4
S5	49	52	3	57.53
S6	72	76	6	80.67
S7	61	64	5	66.33
S8	64	67	5	
S9	58	61	4	63.47
S10	63	66	8	69.5
S11	48	51	5	73
S12	72	76	8	68.29
S13	74	78	8	69.06
S14	54	57	0	77.73

Table 6: Group S Information Literacy and course results

In cases of the students T1, T14 and S8 no end of year average was available. These students were then removed from the groups and their data ignored. (This was also done in tables 3 and 4). The students were then once again ranked according to their end of year course results.

Student	Course	Ranking
T5	60.33	14
T13	60.47	13
T7	64.2	12
T16	64.2	11
T8	64.47	10
T11	64.86	9
T2	66.47	8
T4	66.67	7
T10	67	6
T9	67.4	5
T15	69.67	4
T6	72.27	3
T3	73.2	2
T12	75.36	1

Table 7: Group T course ranking

Student	Course	Ranking
S5	57.53	13
S9	63.47	12
S7	66.33	11
S1	68	10
S12	68.29	9
S13	69.06	8
S10	69.5	7
S11	73	6
S4	74.4	5
S3	75.64	4
S2	76.27	3
S14	77.73	2
S6	80.67	1

Table 8: Group S course ranking

Comparisons

The two rankings thus obtained were then compared to see how the students had progressed relative to each other. A variance was obtained by subtracting the course position from the Grade 12 position. This gave the following results:

Student	Course	Gr 12	Variance
T2	8	9	1
T3	2	6	4
T4	7	1	-6
T5	14	14	0
T6	3	3	0
T7	12	2	-10
T8	10	11	1
T9	5	13	8
T10	6	12	6
T11	9	5	-4
T12	1	4	3
T13	13	10	-3
T15	4	8	4
T16	11	7	-4

Table 8: Group T Variance

Student	Course	Gr 12	Variance
S1	10	12	2
S2	3	7	4
S3	4	3	-1
S4	5	11	6
S5	13	9	-4
S6	1	2	1
S7	11	13	2
S9	12	4	-8
S10	7	8	1
S11	6	6	0
S12	9	5	-4
S13	8	10	2
S14	2	1	-1

Table 9: Group S Variance

Student	Info Lit	Grouping
S1	77	0
S2	76	0
S3	63	1
S4	80	0
S5	52	1
S6	76	0
S7	64	1
S9	61	1
S10	66	
S11	51	1
S12	76	0
S13	78	0
S14	57	1

Table 10: Group T Info lit grouping

Student	Info Lit	Grouping
T2	77	0
T3	73	0
T4	48	1
T5	42	1
T6	63	1
T7	62	1
T8	67	0
T9	70	0
T10	65	0
T11	55	1
T12	61	1
T13	46	1
T15	76	0
T16	69	0

Table 11: Group S Info lit grouping

The students were placed into two ranking groupings, based on the results of their Information Literacy tests. These groups comprised those below the middle-ranked student (1) and those above (0). In the case of Group S, there was also the middle-ranked student as the group had an odd number.

These groupings were then compared to the variances the students had shown on their Grade 12 and Course results. The following were obtained:

		Group	
		1	0
Variance	Negative	4	1
	Positive	1	6
	Neutral	2	0

Table 12: Group T results

		Group	
		1	0
Variance	Negative	4	1
	Positive	1	5
	Neutral	1	0

Table 13: Group S results

Conclusions

With the change in the South African school-leaving system, school-leaving results of students have become comparable. Similarly, for students taking the same course at CPUT, results at the end-of each year are also comparable, as all students take the same subjects. With the availability of assessment results, the student's exposure to information literacy can also be determined. The positive impact of information literacy could then be shown for those students' better assessment results.

In the above comparisons, Tables 12 and 13 show that there is a strong correlation between students who do well at Information Literacy Assessment, and success in the course as a whole. This has been determined from a relative point of view, with those students who did better in Information Literacy achieving better in their course, compared to those who did not do so well. This improvement was not linked to ability of the student, as this result was obtained irrespective of their original ranking in the group.

To this extent, then, it is important, not only from the point of view of being information literate, but from being able to achieve better in the course itself, that students' be well-trained in information Literacy. It is also a pointer to the value that Information Literacy training, as done by the library, has for the academic project and the institution as a whole.

Research limitations

This research has been limited to a single group in a single Faculty, and might not reflect the reality institution-wide, let alone on a wider scale. Similarly, if used across different groups, the actual intervention and its quality have to be determined to have comparable results. This research also ignored other factors that might have played a role in the student's success. To some extent by limiting the research to a particular group in a particular course on a particular campus, these other factors have been limited, but may still be present. It will also prove a greater limitation to replicating this research when these factors, such as course, location, and lecturers all play a role.

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Determining the value of individual librarians' work: a case study of the Cape Peninsula University of Technology

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Introduction

The work done by a faculty librarian has several dimensions, not all of which are easily measured. However, certain basic assumptions have been tried and tested in CPUT Libraries with regard to the staffing of branches, and these measures included several relevant to the work done by Faculty Librarians, as well as those who work as Branch Librarians. Several models of staffing have also been suggested by the different faculties within CPUT, and these, too, have included certain key elements that are important in determining the actual work being done by one Faculty or Branch Librarian opposed to another. This study was thus undertaken to try and develop a formula based on these approaches that could be used to provide a measure against which the work being done by faculty librarians could be measured. From this we should also be able to determine a workload model for faculty and Branch Librarians.

In looking at these it is important to be able to measure exactly what has been and is being done by the librarian. However, it is equally important to be able to measure how effective the librarian is in reaching the potential market. The former measure shows the productivity of the librarian, but the latter shows what can be done, and the gap shows the level of effectiveness.

Types of work done at Librarian level

The professional staff members at CPUT Libraries have three separate functions for which they bear some form of responsibility:

- management
- professional service
- organisational service.

However small or large the branch, certain managerial functions are common to all, but naturally the scale of these differs. Unlike professional services, for the management component there is no difference between actual work done and potential of work, as these activities are not measured in terms of output but are aggregated according to formulas based on actual measures.

Professional work is seen as that part relating to information provision, including training, assistance, provision of material and liaison. In this context we can definitely see a difference between what is actually being done (measured in terms of outputs) and what could be done, measured in terms of market opportunity.

Organisational is linked to both management and professional service, but goes beyond that in recognising that certain activities need to be measured and credited which fall outside the direct ambit of these two spheres. Examples include participation in institutional forums, contribution to research output and linkages outside CPUT. In all these cases the actual commitment needs to be measured and factored into the librarian's overall actual work.

Determination of professional staff needed

Based on the above distinctions, formulas can be developed for each of these, using the typical components that can be used to measure work, or potential work, in each case. These formulas need to have the following characteristics:

- the formulas are designed to produce a fraction that relates to a portion of a staff member's overall annual work load. Thus by adding the fractions together an overall measure in terms of staff numbers is obtained
- the formula uses statistics that are being gathered already. This implies that no extra work is needed to do the exercise. In addition, the measures required are therefore feasible, viable and accepted, as they are already being gathered and used, albeit usually in isolation.

Common to several formulae are the following:

- 8 as the number of working hours in the day. Although at CPUT this is not entirely accurate, as the working week is 38 1/2 hours, it is balanced by the following factor
- 200 is taken as the number of actual working days in a year. Determined by 365 minus 104 (weekends), 30 (working days leave), and 9 (public holidays) this would give 222: provision of 12 days for sick leave, etc leaves 210. However to compensate for the shortened time as shown above, this is taken as 200. The difference over a year is 17 hours or 1%

For each formula an explanation, as well as an example of its application, are given.

Managerial formulae

Human resource management

F = [P + [n-0.2....n]]*0.3/8	P is the total number of staff including the librarian. N is a decreasing fraction to be added, determined by subtracting 0.2 each time from 1. The number of times it is subtracted depends on the number of staff. Thus for 2 members of staff it would be 1, for four 1 + 0.8 + 0.6 + 0.4
The 0.3 is a fraction of an hour per day spent on human resources; the 8 the number of working hours in a day	

A faculty or branch librarian with one staff member to supervise would therefore use:

F = (2 + 0.8)*0.3/8 = 0.1

Financial management

F = [1 + [A/C/1000]]*0.25/8	The 1 is the factor for the presence of financial control and for capital control. A is the total amount of the budget, C the number of codes covered. The division by 1000 is to create a figure in thousands of Rands
The 0.3 is a fraction of an hour per day spent on finance; the 8 the number of working hours in a day	

Thus for a librarian controlling a branch with a budget of R500 000 in 50 budget codes there would be:

F = (1 + [500 000/50/1000])*0.3/8 = 0.4.

A faculty librarian would, however, have a factor of 0.

Physical amenities

F = [1 + [S/100] + [R*0.2] + (1 if H*)]]*0.25/8	S is the total floor area of the branch/area controlled in square meters, R the number of user rooms. 1 is added if the building is separate
The 0.25 is a fraction of an hour per day spent on physical resources; the 8 the number of working hours in a day	

Thus for a manager of a branch in its own building of 500 sq m with 8 rooms there would be: F = (1 + [500/100] + [8*0.2] + 1)*0.3/8 = 0.3; for a faculty librarian controlling 250sq m with an office and 10 seminar rooms there would be F = [1 + (250/100) + (12*0.2)]*0.3/8 = 0.22

Planning

F =[MGF1 + MGF2 + MGF 3]* 0.3	MGF1, etc are the results of the above formulae, for four
The 0.3 is a multiplier to indicate that 30% of the manager's time dealing with these issues should include a future planning and strategic component.	

Thus for the above examples the branch librarian would be:

F= [0.1 + 0.4 + 0.3]*0.3 = 0.24

The faculty librarian, without the branch responsibilities, would be

F = [0.1 + 0 + 0.22]*0.3 = 0.1

Professional outputs

Visits to the library per annum

F= [A4/10]/(22/500)/3	The division by ten is for the busy 10 months of the year- although one can divide by 12, the work has to be done within the ten months and cannot be held over.
The 20 refers to the number of working days in a month, and the 500 the number of visitors that will require one assistant's attention for the day. The 3 is the factor by which the professional staff are less affected than the assistants. This figure is then divided per librarian.	

For example, 160 000 visitors will be F = [160000/10]/22/500/3 = 0.5.

For a branch with four faculty librarians: 0.5/4 = 0.13 each

For a branch with a branch manager and one librarian: 0.5/3 = 0.16 for the branch librarian, 0.32 for the information librarian as the latter deals more directly with the visitors.

Income per annum

F= [A5/10]/30000	The division by ten is for the busy 10 months of the year- although one can divide by 12; the work has to be done within the ten months and cannot be held over.
The 30 000 refers to the income per month generated through total marketing	

For example, R120000 income will be

F = [120000/10]/30000 = 0.4. The same division as above with the visitors will give:

0.1 for each librarian in a branch with four faculty librarians

0.13 for the branch librarian

0.26 for the information librarian.

Queries handled per annum

F =([Q*1 + Se*3 + Su*5 + C*30]/60/200)*0.125	Q are quick queries, Se service, Su subject and C complex. 60 is the number of minutes in an hour, 200 the working days in a year, and the 0.125 the factor to move from hours per day to a fraction of a staff member
51 is the number of queries to produce an average, 65 is the number of minutes it takes, the 60 the number of minutes in an hour, and the 150 the working hours in a month	

For example, 8150 queries handled will be

F = [7140/10/51]*105/60/150 = 0.2

2500 Quick, 3000 Service, 2000 Subject and 1000 Complex queries will be

F = ([2500*1 + 3000*3 + 2000*5 + 1000*30]/60/200)*0.125 = 0.54

Items added to the collection

F= [A7TP + (A7TD/2)]*1/8/225	A7P indicates the number of titles of items purchased, and A7D the number of titles of items donated to the branch or for the faculty in a particular year
1 indicates the time taken to do one purchase, as well as the follow-up and post-arrival work; 8 the number of hours in a day; 200 the number of effective working days in a year	

For a branch/faculty with 350 purchased items and 300 donations:

F= [350 + 300/2]*1/8/200 = 0.4

Individual + Group training sessions per year

F= ([A8G*2.25] + [A8I*0.5] + [A8GM/100])/8/225	A8G indicates the number of group sessions held in a year, and A8I the number of individuals trained on a one-to-one basis. A8GM are the numbers of students in the groups, and this is divided by 100 to allow for assessment of larger groups requiring more time
2.25 indicates the hours needed for one session and 0.5 is the fraction of an hour for one individual training session; 8 the number of hours in a day; 200 the number of effective working days in a year	

For a faculty librarian/branch with 85 training sessions involving 1600 students and 50 individual training encounters:

F= ([85*2.25] + [50*0.5] + [1600/100])/8/200 + 0.1 = 0.2

Professional market segment

Book stock, AV stock, Periodical stock

F= P1 + P2 + P3/150 000	The division by 150000 indicates the work needed to keep 150000 stock items in good order.
This figure further relates to both the stock control, as well as collection development activities.	

For example, a book stock of 55 000 items, AV stock of 3 000 and 2500 bound periodicals

F = [60500]/150000 = 0.4

Full-time students on campus

F= P5/2500	The division by 2500 indicates that for every 2500 Full-time students one professional is needed.
This figure indicates that these users will place demands on the professional for queries, guidance and training.	

For example, a campus with 1000 full-time students will need

F = [1000]/2500 = 0.4

Part-time students on campus

F= P5/10000	The division by 8000 indicates that for every 8000 part-time students one assistant is needed.
This figure indicates that these users will place demands on the professional for queries, guidance and training	

For example, a campus with 400 part-time students will need

F = [400]/10000 = 0.04

M and D students on campus

F= P7/250	The division by 250 indicates that for every 250 M + D students one professional is needed.
This figure indicates that these users will place demands on the librarian for advanced support and guidance.	

For example, a campus with 80 M and D students will need

F = [80]/250 = 0.3

Academic staff on campus

F= P8/250	The division by 250 indicates that for every 250 academic staff one professional is needed and that the presence of one academic gives as much work as that for an M or D student
This figure indicates that these users will place demands on the professional not only for advanced personal support, but also in terms of resourcing the course the academic is responsible for.	

For example, a campus with 100 academic staff, including all part-time and full-time staff:

F = [100]/250 = 0.4

Organisational contribution

Unlike the previous three sections which are closely linked to overall branch measures and performance, this section relates to the individual's contribution on a larger scale to the overall CPUT's library functioning. These factors have been, in the most part, extrapolated from the workload models of academic staff as those items credited as being essentially part of an academic staff member's workload are also seen as being creditworthy for professional non-academic staff. The following are then looked at:

- Research output: at CPUT, and in South Africa, research outputs by non-academic staff are also credited to the institution. In many cases, including CPUT, the institution will support non-academic staff members in the same way as for academic staff when it comes to producing research outputs. This includes both support for study for further qualifications, as well as articles and presentations.
- Committee contribution: the membership of a committee requires time and effort from those on the committee, but without the committee system both the institution and the library would not be able to function as effectively. Where the person is the chair of a committee, this is an extra workload and needs to be recognised. Committees thus recognised include internal library committees, institutional committees as well as external committees where the staff member is representing CPUT with the approval of library management.
- Community engagement. This is one of the three key components of the HE sector's mandate – the other two being Teaching and Learning and Research.

Finally, allowance must be made for the unexpected or specific projects that are not catered for elsewhere. Consolidation projects, for example, feature largely for a time in certain staff member's workload, but then will disappear.

Research output and study

The following are the percentages of one staff member's time for each of the following:

- Registered for Master's Degree: 0.01
- Registered for Doctorate: 0.015
- Writing an article for publication in an accredited journal: 0.075
- Writing an article for publication in a non-accredited journal: 0.05
- Writing an accredited conference presentation: 0.05
- Writing a non-accredited conference proceeding: 0.025

Further research output contributions that can be counted include:

- Editorship of an accredited journal: 0.075
- Convener of an accredited conference: 0.075
- Co-organiser of an accredited conference: 0.05
- Member of an Editorial board of an accredited journal: 0.01
- Reviewer of article/presentation for accredited publication: 0.005 per article/presentation

Committee contribution

Various committees are considered but in all cases there are limits: only 0.075 can be gathered for chairing committees, and 0.05 for membership. The following are then credited:

Chairing committees: Internal library committees; CPUT or Senate sub-committees, professional committees: 0.025 each

Membership: 0.005 for each committee

Community engagement

Community engagement is typically tackled in teams – a group of staff members each contributing to the overall project. For each project the team will divide 0.075 between themselves, and no one person can gain more than 0.075 per year.

Other contributions

The actual definition and quantification of these can be difficult. However as with most organisations, CPUT has performance management, and this is done by means of performance management contracts that are mutually discussed and set up at the beginning of each year. It will be in these contracts that these other, usually temporary, projects will be outlined and the time spent on them mutually agreed. For each 40 hours that is spent on such a project, the staff member will be credited with 0.025. There is no maximum, as the amounts are pre-agreed and form a natural part of the work planning for the year.

Application within CPUT

When applying the above to the different faculty librarians, branch librarians and information librarians within CPUT, reliable statistics are needed. As some of these are annualised statistics, it will follow that unless mechanisms are in place to adequately harvest these statistics, there will be inconsistencies in applying their formulae. In Appendix A the statistics needed as well as the mechanisms whereby they are obtained are defined.

From the above formula a simple Excel program has been developed which is being tested within CPUT. Although using the formulas given above, it can be changed to suit the need, and will be adapted for each circumstance.

Conclusion

The above discussion is an attempt to outline a proposed measure of the workload of a faculty, branch or information librarian. In a multi-branch set-up such as CPUT it makes sense to develop these formulae as they would help with any rationalisation or growth. Naturally all the formulae mentioned are open to question and debate, although they have been derived largely from practice. Each could, in their own right, be the subject of an investigation and further research.

Finally, it is the philosophy behind this measurement that needs to be accepted as it will make the work of allocation of work to librarians an easier task both now and in the future.

Appendix A: Measures

Area used	Statistic required	Source
Management functions		
Human resource management	Number of FTE staff managed, including self	Library organogram
Financial management	Amount in budget Budget codes controlled	Library budget
Physical amenities	Total floor area in sq.m Number of user rooms Separate building	Space audit
Planning	None	
Professional outputs		
Visits to the library per annum	Number of visits to library in year	Gate counts
Income per annum	Income generated by branch	Library budget/ finance office
Queries handled per annum	Information queries handled by branch OR Information queries handled by librarian OR Differentiated queries handled by librarian: quick, subject and complex	Branch/Librarian reports
Items added to the collection	Titles added through purchase Items added per donation	Technical services reports
Individual + Group training sessions per year	Number of group training sessions Individuals trained on a one-to-one basis Number of individuals trained in groups	Training reports Librarians reports
Professional market segment		
Book stock, AV stock, Periodical stock	Number of books in stock either branch, or faculty collection Number of AV items in stock Number of bound and loose periodical items in stock	LMS (Aleph)
Full-time students on campus	Number of headcount full-time students registered for campus/faculty	MIS
Part-time students on campus	Number of headcount part-time students registered for campus/faculty	MIS
M and D students on campus	Number of headcount M and D students, whether full-time or part-time	MIS
Academic staff on campus	FTE Academic staff on campus/faculty	MIS
Organisational contribution		
Research output and study	Registration for further study Articles written Presentations prepared Editorship Conference contribution Articles reviewed	Performance Management Contracts
Committee contribution	Committees chaired Committees sat on	Performance Management Contracts
Community engagement	Projects participated in	Performance Management Contracts
Other contributions	Descriptions of other commitments in terms of time needed	Performance Management Contracts

Assessing the impact of provision of books on reading, teaching and learning behaviour in twenty disadvantaged primary schools in South Africa

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Introduction

The purpose of the research project was to investigate the effects of provision of story books in twenty disadvantaged primary schools in rural South Africa. The recipients of the donation were children in deprived areas, growing up in print-poor environments, and attending under-resourced schools. South Africa's education system is in crisis and the President has pledged his government's commitment to placing education at the centre of the government's programme, and to raising reading levels at school (South Africa. Department of Basic Education, 2010).

Children's access to reading materials: school libraries in South Africa

The state of school libraries in South Africa, and therefore provision of suitable reading material, is a source of great concern to the LIS sector. It has been documented by Equal Education whose figures are reproduced in Table 1:

Province	No of schools	(A) Schools with no library space, no materials, librarian	(B) Schools with space but no materials, librarian	(A) + (B) Schools with no materials and no librarian	Schools with functional libraries
E Cape	5669	5123	379	5502	167
Free State	1531	1138	253	1390	141
Gauteng	1970	810	787	1598	372
KZN	5928	4710	848	5558	370
Limpopo	4035	3740	198	3938	97
Mpumalanga	1844	1493	216	1709	135
N Cape	600	483	177	561	39
N West	1716	12099	304	1513	203
W Cape	1453	684	390	1073	380
Total	24699	19344	3471	22796	1903
%	100%	78.32%	13.97%	92.29%	7.71%

Table 1: Schools with libraries. Source: Equal Education. 2011: 23.

The 60 Schools Project

Biblionef is a non-government organisation (NGO) that donates new storybooks in all eleven official languages to needy children throughout South Africa in order to promote a culture of reading and so contribute to development. Its programme theory is that access to attractive age-appropriate books will have beneficial effects such as better literacy skills, promotion of confidence and improvement in learning.

Biblionef received a National Lottery grant to make book donations to 60 poorly resourced schools in four provinces; fifteen schools each in Eastern Cape, Gauteng, KwaZulu-Natal and Limpopo. Each school was given 150 books – 40% in English, and 60% in the mother tongue of the school. Each provincial education department was responsible for the selection of beneficiary schools based on the severity of scarcity of resources, and logistics associated with delivery of the books, and also the appointment of a coordinator to oversee the project in each province.

The impact study was undertaken in 20 of these schools randomly selected by each provincial coordinator (as an investigation in all 60 schools widely dispersed across vast areas was impracticable). The majority of these schools were in rural areas, and three were in informal settlements. The investigation was conducted in Grade 4 as this is the transition year between instruction in mother tongue (at our sites, African languages) and instruction in English.

The main purpose of this study was to observe and assess the impact of the donation of books and the handover training sessions, as a follow-up to a pilot project in four rural primary schools which showed disappointing use of the books. The pilot study attributed the low impact of the donated books in these very poor schools to insufficient training of teachers and principals in the value and use of books for voluntary reading and classroom use. In the larger study (the subject of this paper) the book donation was accompanied in each case by extensive training of the class teachers receiving the books, based on principles derived from the pilot. The training covered the following information:

- How to display books in the classroom
- How to promote and manage the borrowing of books by children
- Benefits of reading, for pleasure and for acquiring knowledge
- Ways of reading with children for enjoyment, including speculating, dramatising, drawing
- Ways to improve fluency and comprehension, eg paired reading, silent reading

Framing the study

The conceptualisation of childhood literacy influences the approach to research in this area, so an understanding of the terrain was important for us in order to frame the study. Two dominant approaches to an understanding of children's literacy can be identified. Many studies focus on the technology of reading, trying to measure progress in skills using pre- and post-tests involving, for example, assessment of comprehension. These studies, important as they are, do not assist in understanding why some children read easily, and others do not (Comber and Cormack, 1997: 22), or why some children choose to read and others do not.

The shift from a reading and comprehension skills focus to a greater concern with the social and cultural environment has been accompanied by the development of terminology to capture the complexity arising from the new understandings. The newly coined term 'literacy event' suggested fruitful lines of inquiry; it is defined by Heath as "any occasion in which a piece of writing is integral to the nature of participants' interactions and their interpretive processes" (1987: 93). Our experience in the pilot project isolated the following factors associated with literacy events, each of which is amplified below:

- Availability of books
- Voluntary reading: reading for pleasure
- Reading in the mother tongue

Availability of books

Krashen has noted the relationship between a ready supply of books in the classroom, time given for reading, and the amount and breadth of reading (Krashen, 2004). One of the most significant indicators of future reading is the "shared book experience" between children and caregivers; consequently a "critical focus has been to get books in children's hands" (Neuman, 1999: 286). Children who live in deprived areas or homes, attend poorly resourced schools or live in remote areas are thus presented with a serious barrier to reaching their potential and achieving success at school. One way of remedying this, suggested by many studies, is by increasing the "volume of children's playful, stimulating experiences with good books" (Neuman, 1999: 289).

Studies have shown that exposing children to a variety of sources and allowing them to choose, leads to reading more, both for pleasure and for information. Developing a print-rich environment is important from the early years of a child and should be maintained as children move through the higher grades (Elley, 1992).

Voluntary reading: reading for pleasure

Research has found a positive correlation between the amount of voluntary reading and academic performance (Elley, 1992: xiii). Reading enjoyment is more important for children's educational success than their family's socio-economic status. Reading for pleasure (also known as voluntary reading) could therefore be one important way to help combat social exclusion and to raise educational standards (Organisation for Economic Co-operation and Development 2002). Krashen's investigations into the role of free reading, or reading for pleasure, shows that those who do more recreational reading have superior reading, writing and comprehension skills in both mother tongue and second language subjects (2004).

Reading in the mother tongue

There is consensus that success in a second language is dependent on proficiency in the mother tongue (Abadzi, 2006) – a fact of relevance for those South African children whose mother tongue is not English. Mother tongue education up to at least Grade 3 is expected by government, with the introduction of at least one other language in Grade R. Land has noted the association in South Africa between an impoverished reading culture and the devaluing of indigenous languages reflected by the reluctance of publishers to publish in African languages (2003: 94).

Research approach

The objectives of Biblionef's 60 Schools Project were to:

- Promote reading and the use of books in the classroom
- Promote voluntary reading by children

The specific research objectives of the project were to assess the impact of the donation by assessing how and whether:

- The books were easily available to the children
- The children were reading the books
- The children were borrowing them to take home
- The teachers were including more book related activities in their daily programmes

The participants in the study were drawn in equal numbers from each of the 20 participating schools:

- 10 randomly selected school children in Grade 4, with an average age of 12 years; a total of 200
- All Grade 4 teachers; a total of 20

Trained fieldworkers fluent in the predominant home language in the different schools employed a variety of qualitative methods which were designed to yield comparative data collected over a span of six months representing the situation before and after the books were received:

- Observation
- Focus group: children, using graphic tools such as drawing, building up diagrams and pictures with cards
- Focus group interviews: teachers

There were two site visits to each school. The initial visits allowed the collection of baseline data, important in being able to establish change and evidence of progress.

Since the study was conceptualised as an impact study we spent time considering what impact means and how to assess it, finding the model by Markless and Streatfield very useful (Markless and Streatfield, 2006: 50). The first stage of the model starts with a delineation of the objectives of the programme, which is followed by working out a couple of impact indicators. Their typology pointed us to the areas where we could look for evidence of change (2006: 64):

- Affective
- Behavioural
- Knowledge-based
- Competence-based

Findings

We classified the findings into the following themes:

- Availability: print environment
- Literacy events
- Literacy discourse

Availability of books: print environment

Of the 20 schools, 7 were found at the first visit to have no classroom collection or library at all. After the handover of Biblionef books, it was observed that five of the seven schools had still made no effort to provide a space for shelving and reading. However, mere presence or absence of books does not translate into use and borrowing as we discovered; in one of the schools where the books were appropriately displayed in the classroom, the children were forbidden to touch them – a source of great frustration to them as the children expressed:

- "We are so happy that we have Biblionef books in our school even though we haven't read them but the outside cover does grab the attention."
- "If the teachers could let us touch the new books we know we could know lot of stories to tell, more especially that they are in our classroom."
- "We steal the books when the teacher is out."

At the start of the project we found that the vast majority of schools – 16 schools – did not allow children to borrow books, either because there were no books, or as a matter of policy. The second site visit showed change in a positive direction in 12 schools, while four schools persisted with this prohibition.

Literacy events

We were interested in observing and recording literacy events at the schools as a major purpose of the project had been to promote reading and use of books; thus we explored two related themes:

- Voluntary reading at school by children

- Use of books in the classroom and other venues by the teacher

and we also examined language preference, since one of Biblionef's primary objectives is to promote reading in the mother tongue.

Voluntary reading of books by children during school hours was a rare phenomenon during the first site visit, being observed at only one school. At the end of the project, voluntary reading was seen to be a regular occurrence at 15 schools, while in five no positive change was observed. Teachers at fourteen schools had introduced reading activities such as reading clubs, opportunities for the children to talk about their reading, writing of stories, reading competitions and debates. In five of these schools, reading was featured in the weekly assembly – with children participating in reading activities, or narrating stories they had read.

Literacy discourse

We posed the same question to participants before and after the donation to gauge their personal views of the benefits of reading, which would reveal attitudes and dispositions towards reading. At the start of the project, the responses of both children and adults were overwhelmingly framed in utilitarian terms: the acquisition of knowledge, the development of skills related to reading and writing, the passing of examinations. The children's views echoed those of their teachers.

While a rise in the level of enjoyment and interest in books was reported in most schools after the donation, teachers employed the same type of language as before, emphasising improvements in spelling, understanding of English and writing, comprehension, and book handling. However, in four schools, the teachers began to introduce elements of enjoyment, excitement, passion and engagement in describing the benefits they had observed of increased opportunity for children to read.

Language

It was not possible to gauge from the findings the extent to which the children appreciated that the majority of books were in their mother tongue. Many children reported that they were already reading in their mother tongue while others said they preferred reading in English. In their responses, however they spent more time talking about how the books were helping them with their English, than they referred to books in their home language.

Other effects

The book donation had other – unanticipated but welcome – consequences. In two schools the principals had been successful in securing funds to offer training to two people to take charge of the library. At one school a building contractor had offered to build a library, at another a child who had been heard to recite a poem had been offered a bursary by a local doctor, and one school reported that pupils from surrounding schools, attracted by the news that children were being allowed to take new books home, were applying for admission to the school.

Conclusions

We found positive change in all but five of the participating schools, but were unable to extract reasons for the inertia: why books were still not unpacked, why they could not be traced in the library where they were claimed to be, and why the borrowing of books was still prohibited. Teachers' refusal to allow pupils to look at or borrow books is not a rare phenomenon in South African schools where many researchers have reported that book donations and school workbooks provided by departments of education remain in their cartons, stored in the principal's office, or relegated to a storeroom (Zinn 2011). There was, however, much evidence that there is increased reading in the majority (15) of the schools where reading is encouraged through a variety of activities, and there is some progress in adopting the view of reading as an enjoyable and discretionary activity. We attribute the positive changes to the training that accompanied the donation. This is an important lesson for those involved in policy and planning for the improvement of literacy skills in our primary schools – that you cannot expect the teachers to work confidently with materials at their disposal without providing specialised training in and benign monitoring of the use of the books.

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Exploring the cause and effect of library value

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Libraries are increasingly challenged to affirm their contribution to the academy. The library competes for funding and recognition, and does so within a political culture that particularly responds to faculty expressions, sometimes to the rationale of quantified return on investment, and often to the perceived value influential people attribute to the library. Managers seek evidence to support value arguments for the survival of the library, making value a tool for advocacy.

Research associated with these arguments have revolved around the role the library assumes (eg gateway, buyer, archive) (Schonfield and Housewright 2010) more often than around the effect of that role on individual clients of the library. Oakleaf (2010) notes that user perceptions generally relate to competing alternatives and focus on either financial value or impact value. In Oakleaf's literature review, the perceptions of various library stakeholders are noted. For example, the value of libraries for faculty members is associated with research productivity, grants, and teaching. The value of the libraries for administrators tends to be for reasons related to reputation and prestige. The report *Perceptions of Libraries and Information Resources* (OCLC 2005) asked respondents to rate their agreement with the statement: "The librarian adds value to the information search process" but stopped short of asking why it does. Few empirical studies have been found that delve beyond the surface identification of valued library roles to explore the cause of the perceived valued effect of these roles from the perspective of the stakeholder. In referring to a study by Tenopir and King, Oakleaf notes that "Studies like this one can be replicated or adapted to further explore the nature of academic library value in the context of faculty research productivity." [Oakleaf, 2010, p. 49]

Purpose

This study begins to validate a proposed framework of library **value** as the relationships between diverse stakeholders' perceptions of valued **effects** of a library and of **causes** for those effects. (See Figure 1) In our research, **effect** is the stakeholders' perceived value, indicated by a rating score. The study explores **causes** through adaptation of the "five whys" inquiry, a tool for uncovering root causes used extensively for process improvement.

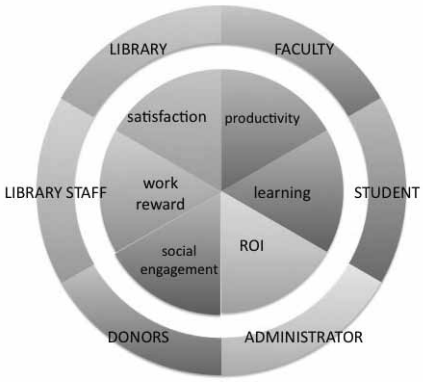

Figure 1: Library Value Wheel

A "library value wheel" graphically highlights a diverse set of stakeholders (shown in the outer ring) and their key associated areas of library values (identified inside the doughnut). It builds upon the areas of library values found in the literature as summarised by Oakleaf for the 2010 ACRL Value report. Oakleaf recognised the need "to understand

the perceptions and the desires of faculty and administrators…and this means investigating the mindset of colleagues and institutional leaders, knowing what metrics will resonate with them." (p. 27)

This study addresses this gap by beginning to identify areas of library values from the perspective of stakeholders' perceptions of most valued **effects** of the library, and then exploring the root **causes** of these effects as a way to identify the valued impact the library has for them. The perceived root causes of these valued effects will generate data to help librarians manage library activities and resources to improve the library's value. Engaging stakeholders in the identification of the library's valued effect and root causes for its impact from their personal perspective will gain influential support for improving the library's institutional value. Such insights will contribute to the discussion about value and will advance building a framework of library value from stakeholders' perspectives.

The study explores the perceptions of faculty, one slice in the wheel. In the literature, productivity is identified as a key indicator of value. The study in part confirms this but identifies other perceived root causes why the library's effect is valued by faculty. This wheel also reminds us that there are additional library stakeholders who may have a very different filter for perceiving the library's value. These might include students, administrators, donors, library workers, and library managers, with such diverse areas of value as learning, return on investments, social engagement, workplace rewards, and user satisfaction.

The study's research questions relate to examining **effects** and their **root causes**, as well as **the five whys protocol**.

1. What effects of the library do faculty most value?

2. What are perceived causes of these valued effects?

3. What variations among the causes faculty identify for valued effects emerge from use of the five-whys inquiry?

Methods

The "five whys" inquiry delves deeply and arrives at a root cause of value that will allow librarians to take steps to maximise an institutional perception of the value the library provides its community. It is often difficult for stakeholders to articulate why the library is or is not of value and this study explored whether this approach helps them do so.

The study modified the recommended multiple steps of the why-why root cause analysis (Bauer et al 2002, p. 99) in the following way.

- Step 1 is to determine the starting point of the analysis either as a problem or an already identified cause. The study used the participants' rating of the library's value as the valued effect for further analysis.

- Step 2 calls for use of brainstorming to find causes below this starting point. The study used interviewing to brainstorm factors contributing to the perceived effect.

- Step 3 traditionally asks, "Why is this a cause for the original problem?" This step was incorporated into the interview session.

- Step 4 entails portraying a chain of causes in a chart, which was done when organising the responses.

- Step 5 posts a continued series of whys until no new answer results and the process likely identifies the root causes for the problems. This step was incorporated during the interviews and through analysis in this study. Experience in using the 5 whys approach has identified a rule of thumb that this method often requires five rounds of the question "why?"

This qualitative study utilised mixed methods, centered on adapting the "5 Whys" inquiry method. It is a single case study at one academic research institution. In-person interviews were conducted with an initial group of ten faculty members who were invited to participate as important library stakeholders. Participants reflected the diverse makeup of the university's faculty, including tenure track research faculty, non-tenure track teaching faculty, and those with intense administrative responsibilities. A variety of disciplinary foci represented the university's dozen academic schools and colleges.

Interviews, averaging 15 minutes each, were recorded and both researchers transcribed quotes from listening to the audio record. Quotes were organised by themes and entered on a spreadsheet. Together the researchers reviewed these

and rewrote and clustered selected responses on a large white wall. From this they identified key valued factors or effects, and initial causes or valued impact.

Next, a focus group composed of 6 members of the Library Advisory Group reviewed the identified factors and causes to validate results. A subset of 4 factors was used in a group discussion of "whys" that identified further causes. In additions member checks were invited via email correspondents to all participating interviewees.

Limitations of the Study

The study focuses on one stakeholder group, faculty members, and pilots an approach to empirically explore the framework but does not complete its validation or design. Furthermore, the study is limited to a small sample of faculty members in one institution, which limits the ability to generalise the findings. To address issues of data validity inherent in the qualitative interview method, the researchers triangulated the findings using individual interviews and focus group discussion.

Findings

The individual interviews began by asking the faculty to rate the value provided to them by the library on a scale of 1 to 10, where 10 represents "of maximum value." The mean score was 7 (n=10), the median score was 7.5, and the range in scores was 3 to 9.

There seems to be little difference by faculty status (research or tenure track versus teaching or administrative), but the sample size is too small to determine if the difference is statistically significant. The mean score for the research faculty was 7.5 with a median score of 9 (n=7). Both the mean and median scores for the teaching/administrative faculty were 6.5 (n=3). The members of the focus group were also asked to rate the value of the library. The averages for this group were comparable, but the average score among the teaching and administrative faculty was slightly higher than the average score of the research/tenure track faculty.

After obtaining the rating score, the interviewer began asking a series of "whys" to uncover the root cause for the perceived value. In all instances, the stakeholders' first responses identified input factors. Subsequent probing sometimes identified root causes, which represented the impact of the factor on the stakeholder.

The input factors were identified as key to contributing to the library's perceived value. Table 1 presents the input factors identified.

Table 1: Input factors contributing to library's perceived value

• **Information resources** (archives, reserves, stacks, electronic) • **Staff** • **Space**
• **Access** (circulation, ILL, online catalog) • **Assistance** (Instruction & reference) • **Purpose of Use** (eg reason to use the library)

The factors in Table 1 are ranked based on feedback from the Library Advisory Group. The top three factors resonated with most faculty in the group. The second group of factors might be merged into the first three: access relates to information resources, assistance to staff, and purpose of use to space.

Through clustering interview data, the researchers initially identified 8 original root causes. Then, interviewees were sent the lists of input factors and these root causes, and were invited to confirm the interpretation that these are key contributors to faculty perception of value. The same was done with a focus group interview of 6 Library Advisory Group members. Through these steps, the researchers validated this list, recognising that some causes resonated more strongly than others with individual faculty members.

Focus group members supported the following 5 root causes:

1. to **increase my productivity** (eg couldn't do as much or as well without the library)

2. to **expand student ability** to get information
3. to **do my job** for teaching, research and writing (eg prepare online class, write book chapters, prepare grant, save time). Low value was noted when library is perceived as not needed to do work.
4. to **save money** (eg can't afford to buy publications)
5. to **indulge intellectual curiosity.**

The next 3 root causes were not supported by the focus group but they were mentioned during the individual interviews:

6. to **(not) feel frustrated** (eg due to clunky process, hard to use or not intuitive interface, not sure how to search)
7. to meet **accreditation criteria** specifically for faculty performance (eg to understand how to do research, publish, and present)
8. to **change the University** (eg to change the way we think about learning and learning outcomes).

In addition to these initial 8 clustered root causes, the researchers identified 4 input factors without root causes during the interviews. They applied the multiple why protocol with each factor to identify root causes during the focus group interview and through emails as part of member checks. From this further application of the why protocol, these additional previously unidentified root causes were noted and associated with input factors:

- **archival or historic value of student work** (eg make student work available for future generations; students get jobs due to preparation with Institutional Repository materials; recognised valuable to be member of a team identified through recorded work)
- **finding (material and information) online** (eg saving time and being efficient)
- **space for faculty** (egshapes scholarly attitude; "sense of place creates sense of mind;" "feel scholarship;" "feel different")
- **space for students** (eg makes stronger students; faculty sensed they get better work from students who use library space).

Discussion

From this initial exploration the researchers are encouraged that the "five whys" method of inquiry is adaptable to solicit factors affecting perceptions of library value. However, inserting multiple whys in an interview seemed at times awkward and forced. Interviewees responded without prompting to implicit "whys" such as explaining the reason for their rating of the library. At times a why question elicited an evaluation of the library factor rather than the reason it mattered in forming a value judgment. Participants often identified multiple factors in a single statement, each requiring a series of whys to uncover root cause, thus complicating the management of the interview. Unlike the application in a cause and effect situation, here the input factors for perception are difficult to individually address. Once a factor is isolated, as in the discussion with the focus group, the use of multiple whys became easier.

The study gained some insights, beginning with those about factors contributing to perceptions of value. One relates to the purpose of using the library. A few faculty saw little value of the library for them, thinking it is for students. The following quotes illustrate this perception: "I don't use all the value that is there." "(I) thought librarians are there just for students, not for me."

Next, in probing the library input of providing space for faculty, the interaction of space and resources emerged. As this quote highlights, the provision of electronic resources may be perceived as changing the perceived value of a library: "I'm nervous that the digital is taking away the value of the library."

Another insight relates to faculty's identification of how information resources affect their value rating. Access to resources is frequently cited, whether locally, online or through ILL delivery services. Service elements of speed, ease of use, and convenience might compensate for weak locally available collections. Similarly staff assistance also may rank high in value judgments but not independent of information resources. These two quotes highlight this trend: "(Staff enthusiasm) compensate[s] a lot for lack of collection, but without collection can't get to 10" "The number of online resources [available through the library] in my field are [sic] limited."

Although the study reaffirmed several insights found in the literature, some differences emerge from this case study. For example, the shift from collections to experience emphasised in the *ACRL Value Report* (Oakleaf 2010, p. 23) is not echoed in this study's participants valuing services and user experiences over resources. Even though access services and staff assistance were identified at the input level, the probed root cause often returned to impacts that depended on information resources offered by the library.

Root causes why the library is valued are varied and complex. Value may be dependent on the library's contribution to root causes and its performance. Different factors (and multiple factors) are associated with root causes. For example, the frequently cited "to do my job" root cause was associated with such opposing faculty assertions as "If libraries did not exist, I could still do my research" and "Without the library, my productivity would be reduced by 75%."

A single quantitative rating of value may be very unstable. The study showed that use of multiple whys on several occasions caused interviewees to stop and question their original rating. The probing raised the interviewee's awareness of benefit the library gave and their personal value system; for example as this quote illustrates: "Hmmm… now maybe a 9 or 10…higher value since the librarians work with adjuncts and faculty needs of our department." Others acknowledged that they were not taking advantage of value opportunities available: "I'm not making full use…" "I'm not familiar with what is provided… there could be a wealth of information."

In addition to basic limitations of qualitative research to generalise findings, the researchers acknowledge that institutional factors may also influence perception of value, reaching the root cause level. For example, teaching and research faculty have different cultures and different expectations for service, research and teaching. An institution's culture, for example, emphasising experiential learning, over liberal arts may also affect root causes. The same may be said for a technology centric applied research setting Collections that are significantly electronic over physical, or available to faculty seamlessly at other nearby universities, may generate criteria of delivery, convenience, and ease of use when thinking about the root cause of library value. This case study showed that such institutional characteristics might influence the nature of the input factors but not fundamentally the root causes of attitudes to the library's value.

Conclusions

With understanding of value ratings, input factors, and root causes, library managers can improve their value to the community they serve and advance the mission of the institution that hosts them. Marketing the library's value in terms of stakeholder's root causes for perceived value could be powerful advocacy of worthy contribution. Factoring the root causes for stakeholders' perceived value will advance responsive managerial leadership for undertaking strategic planning, setting priorities for program development, and encouraging new ideas based on root causes not just input factors.

This study did not attempt to assess satisfaction nor service quality, though both are influencing efforts to improve library services. Results introduce a different focus of evidence to shape library improvements with intent to maximise value. Even though satisfaction, service quality, and value each involve perceptions, they are not the same. Satisfaction is a personally perceived response to an experience. Comparison of the expectations for excellence and the perceptions of service delivery offer a metric for service quality. Value, as framed in this study, focuses on causes for these perceived reactions and judgments through identification of the impact of a library's services and resources on those interacting purposefully with the library.

Within this framework and application of the "5 whys" root cause analysis protocol, the study found that participants initially identify inputs, indicated by library services and resources. However, through probing, they identify root causes of their perceived value, as the impact of the library on the stakeholder. Library value is not seen in faculty achievements but in contributing to their ability to achieve. It is not in student grades, but in enhancing students' capacity to learn. It is not in scholarship, but in its environment to indulge in curiosity.

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Staying on track with Rubric Assessment: five institutions investigate information literacy learning

Megan Oakleaf

Like many American Association Colleges and Universities (AAC&U) Essential Learning Outcomes, information literacy – the ability to locate, evaluate, and use information – is a concept integrated into curricula and co-curricula campuswide. Throughout college, students are asked to define their information needs in order to complete their academic work and make decisions affecting their personal and social development. They are expected to obtain information to meet those needs, evaluate the applicability of the information they locate, and revise their searches accordingly. They also are required to apply new information ethically and responsibly. These information literacy outcomes are integral to a successful college experience.

Outcomes with such broad applicability should be assessed often and well. In reality, information literacy is frequently omitted from higher education assessment efforts for several reasons. First, faculty and co-curricular professionals traditionally expect students to acquire information literacy skills prior to college; consequently, they typically do not teach and assess them as a focus of their courses and activities. Second, librarians – who do focus on teaching information literacy – often do not have the access to students in ways or settings most conducive to meaningful assessment activities. Third, because information literacy is not explicitly taught in courses or co-curricular activities, existing information literacy assessments are frequently limited to survey and test formats that can be administered by librarians remotely. However, information literacy is an especially complex and context-dependent concept that is not easily assessed using these common fixed-choice methods.

The VALUE rubric for information literacy

The development of a VALUE (Valid Assessment of Learning in Undergraduate Education) rubric for information literacy was a significant advance in information literacy assessment because it addressed these obstacles to information literacy assessment. First, naming information literacy an "essential" collegiate learning outcome elevated the ability to locate, evaluate, and use information to a position valued by faculty, co-curricular professionals, and, of course, librarians. Second, the VALUE rubric for information literacy established an expectation that this outcome will be assessed in the context of existing student learning activities and assignments – activities and assignments that are both complex in nature and steeped in authentic contexts.

RAILS

Recently, the Institute of Museum and Library Services awarded $400,000+ in funding to support a 3-year project called RAILS (Rubric Assessment of Information Literacy Skills). The RAILS project is designed to support the rubric assessment of information literacy outcomes at institutions nationwide. During the 2010-2011 academic year, five institutions participated in RAILS including a branch campus of a public university (2,800 FTE); a private, faith-based liberal arts college (4,500 FTE); a private, liberal arts college (6,400 FTE); a public, land-grant, high research activity university (29,000 FTE); and a public college that focuses on workforce development and offers high-school completion, certificates, and associates degrees (30,000 FTE). To begin, librarians from each institution took part in intensive rubric training. As a part of their training, librarians learned to customise the VALUE rubric for information literacy to fit the unique needs of their institutions and formed plans to test their rubrics. Next, they gathered 100+ artifacts of student learning to assess using the rubric and selected 10 participants (faculty, co-curricular professionals, and other librarians) to serve as raters. Then, they scheduled intensive rubric revision, norming, and scoring sessions for all raters. During the scoring sessions, each of the 10 participants rated all 100 student artifacts and inputted rubric scores for each student into Waypoint Outcomes, an assessment management system that facilitates rubric usage. These scores are currently under analysis in order to learn about student information literacy skill levels and explore factors that contribute to inter-rater reliability. Results will be disseminated as they become available via a variety of venues, including the project website at ***www.railsontrack.info***. During the 2011-12 academic year, this cycle will be

repeated at five additional institutions. Combined assessment results from all ten RAILS institutions will be released in summer 2012.

Student performance on RAILS rubrics

In order to meet the needs of individual institutions, each rubric used during the first year of RAILS was slightly different in scope (see Figures 1-5 below). Each RAILS rubric was based on the VALUE rubric for information literacy; however, individual institutions decided to "break out" different criteria and describe them in more specific terms. Two institutions used multiple VALUE rubric criteria (see Figures 2 and 5); the others focused on one criterion. Figure 3 demonstrates how one VALUE criterion ("Use Information Effectively to Accomplish a Specific Purpose") can be divided into three parts using the key verbs from the VALUE rubric: communicate, organise, and synthesise.

The first year of RAILS rubrics also revealed varying levels of student skills. For some institutions, student performance on the rubrics was "as expected". Other institutions found more surprising results; in some cases, the surprise was how many students fell into unsatisfactory performance levels in specific skill areas. For example, one institution found that students in the RAILS sample did not achieve expected levels of ethical and legal information use (see Figure 4). At this institution, almost 80% of students either did not follow style guide conventions when citing information sources (13%) or committed frequent errors (65%). These results provided the concrete evidence needed to significantly revise instruction to address skill weaknesses. At other institutions, interesting patterns of satisfactory performance emerged. For instance, one institution found that students were far more likely to evaluate an information source at an "accomplished" level based on currency (68%) or authorship (46%) than the source's reliability (23%), accuracy (21%), or point of view (27%) (see Figure 2). After receiving these results, faculty and librarians developed a shared understanding of information evaluation criteria, adjusted assignment requirements, and improved in-class instruction.

Potential barriers to Rubric Assessment

After rating student work using RAILS rubrics, participants were asked to identify major barriers to their personal use of rubrics as well as their perceptions of potential barriers for their colleagues. More than half listed a lack of time and coordinated structures for assessment (eg, an assessment "point person" or committee) as major barriers to their use of rubrics. More than a quarter of RAILS participants cited insufficient financial resources, lack of staff, and assessment role uncertainty. They were also concerned about possible inaccuracy of assessment tools and misuse of assessment data. More than a third of participants stated that their colleagues would be stymied by these barriers plus two more: a lack of familiarity with rubric assessment in general and a lack of rewards for participating in assessment activities.

Initial RAILS Findings

Institutions have already reported a number of important findings resulting from RAILS participation including changes to teaching, assessment, and collaborative activities.

Teaching

All institutions report substantive improvements in teaching information literacy concepts. Furthermore, librarians and faculty have revised student assignments, altered classroom pedagogy, and enacted changes in curriculum sequencing. Faculty reported a higher quality of student work and plan to use rubrics as one of their teaching tools. One RAILS participant reflected, "I learned that grading the assignments in the RAILS project was an empowering act for me. It will strengthen my teaching the next time because I now understand what the students really are not getting. This rubric creation and rating experience has facilitated valuable reflection on my teaching practice and I hope to weave what I now understand into my teaching the next time around." According to another participant, RAILS "changed the way I teach … [the instructional] session has more structure, and the students seemed much more engaged." A third participant shared a student remark about the increased level of hands-on engagement that resulted from pedagogical changes: "The day that we went as a class to the library… was probably one of the most beneficial days of my semester."

Assessment

In addition to teaching improvements, all institutions also documented increased assessment activity. Several institutions created or revised rubrics focused on information literacy and other Essential Learning Outcomes. Faculty and librarians collected more artifacts of student learning for assessment purposes, and one institution regularised consent forms for collecting student work samples. In addition, more than one institution are contemplating the purchase of assessment management systems to improve the organisation and reporting of their assessment data. Significantly, the librarians who participated in RAILS feel less disconnected from institutional assessment efforts and more committed to participating in program reviews and accreditation processes campuswide.

Collaboration

Beyond teaching and assessment improvements, rubric assessment has enhanced cross-campus collaboration. Faculty, teaching and learning center professionals, librarians, and writing center professionals have reported increased partnerships and future plans for co-created projects. A few have commenced rubric-related research projects; others have joined together to communicate rubric assessment results.

Preliminary results

Although the statistical analysis of first year RAILS results is still in process, a few preliminary findings have emerged. First, faculty, co-curricular professionals, and librarians need to increase their awareness and knowledge of rubric assessment. Many of the participants involved in the RAILS project had no prior experience with rubrics, but all expressed interest in learning more about them. Second, if multiple participants plan to use the same rubric to score artifacts of student learning, norming is critical for establishing shared understanding of the rubric and achieving greater inter-rater reliability. Third, analytical rubrics appear to be more practical for assessing student artifacts than holistic rubrics. The more specific the language and the narrower the scope of the rubric, the more confident participants seemed to be about the accuracy of their ratings. Fourth, the more analytical the rubric becomes, the more directed the rubric scorer must be in looking for evidence of learning. Thus, participants appeared to be more confident about their ratings when student artifacts under analysis were concrete, focused, and shorter in length. This may mean targeting a different type of student artifact or subdividing larger artifacts to facilitate scoring. Fifth, large scale analysis of rubric assessment results is faster and more convenient when an appropriate assessment management system is a part of the process. The use of Waypoint Outcomes greatly facilitated the data recording, analysis, and reporting of RAILS rubric data.

Once statistical analysis of RAILS is completed, more conclusions can be made. During the 2011-12 year, five additional institutions will participate in the RAILS process and benefit from the lessons learned from the first year of the grant.

Conclusion

The VALUE rubric for information literacy in its original, holistic form is a significant step forward in the assessment of students' ability to locate, evaluate, and use information, both in and out of the classroom. The RAILS project has already captured important information about student information literacy skills at several institutions and identified potential barriers to rubric assessment so that they may be better understood and overcome. Perhaps most importantly, RAILS has demonstrated that VALUE rubrics, adapted for analytical, campus-specific purposes, can spur instructional improvements, increase assessment activity, and improve collaborations among faculty, co-curricular professionals, and librarians. In the coming year, RAILS will build on these successes to keep rubric assessment of information literacy "on track"!

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	Advanced	Developing	Beginning
Determines Key Concepts	Student determines keywords/subject/subheadings that fully describe the research question/thesis. **Students rated as Advanced: 44%**	Student determines keywords/subject/subheadings that partially describe the research question/thesis. **Students rated as Developing: 50%**	Student does not determine keywords/subject/subheadings that describe the research question/thesis. **Students rated as Beginning: 6%**
Accesses the Needed Information	Student accesses information using a logical progression of advanced search strategies such as limits, Boolean searches, or combined searches. **Students rated as Advanced: 27%**	Student accesses information using advanced search strategies, such as limits, Boolean searches, or combined searches. **Students rated as Developing: 62%**	Student accesses information using only simple search strategies. **Students rated as Beginning: 11%**
Retrieves Relevant Information	Student retrieves information sources that fully fit search parameters and relate to concepts. **Students rated as Advanced: 37%**	Student retrieves information sources that partially fit search parameters or relate to concepts. **Students rated as Developing: 53%**	Student does not retrieve information sources that either fit search parameters or relates to concepts. **Students rated as Beginning: 10%**

Figure 1: Access the Needed Information – Institution #1

	Accomplished	Developing	Inadequate
Evaluates Authority	*Student shows sufficient evidence of the author's credentials and qualifications.* **Students rated as Accomplished: 46%**	*Student briefly identifies the author's credentials and qualifications.* **Students rated as Developing: 35%**	*Student does not identify the author's credentials or qualifications.* **Students rated as Inadequate: 19%**
Evaluates Currency	*Student comments on the source's publication year and retrieves the source that is published within the last five years.* **Students rated as Accomplished: 68%**	*Student either comments on the source's publication year or retrieves a source that is published in the last five years, but does not do both.* **Students rated as Developing: 26%**	*Student does not comment on the source's publication year and does not retrieve a source that is published in the last five years.* **Students rated as Inadequate: 6%**
Evaluates Reliability	*Student shows adequate evidence of whether or not the source is trustworthy.* **Students rated as Accomplished: 23%**	*Student shows superficial evidence of whether or not the source is trustworthy.* **Students rated as Developing: 53%**	*Student does not show evidence of whether or not the source is trustworthy.* **Students rated as Inadequate: 24%**
Evaluates Accuracy	*Student provides a thorough explanation of the accuracy of the source.* **Students rated as Accomplished: 21%**	*Student provides superficial explanation of the accuracy of the source.* **Students rated as Developing: 51%**	*Student does not explain the accuracy of the source.* **Students rated as Inadequate: 28%**

	Accomplished	Developing	Inadequate
Evaluates Perspective	*Student identifies the author's point of view in detail.* **Students rated as Accomplished: 27%**	*Student briefly identifies the author's point of view.* **Students rated as Developing: 53%**	*Student does not identify the author's point of view.* **Students rated as Inadequate: 20%**
Evaluates Reflection of Source	*Student explains in detail how the source contributes to his/her knowledge.* **Students rated as Accomplished: 29%**	*Student identifies how the source contributes to his/her knowledge.* **Students rated as Developing: 51%**	*Student does not identify how the source contributes to his/her knowledge.* **Students rated as Inadequate: 20%**
Access the Needed Information	*Student accesses information using effective, well-designed search strategies.* **Students rated as Accomplished: 27%**	*Student accesses information using simple strategies, including both search term(s) and tool(s).* **Students rated as Developing: 53%**	*Student does not specify strategy with both search term(s) and tool(s).* **Students rated as Inadequate: 20%**

Figure 2: Evaluates Information and its Sources Critically & Access the Needed Information

	3	2	1
Organises Content **Are the sources in the right places?**	Consistently organises cited information in a manner that supports the purposes and format of the product/performance. **Students rated as 3: 35%**	Inconsistently organises cited information in a manner that supports the purposes and format of the product/performance. **Students rated as 2: 45%**	Does not organise cited information in a manner that supports the purposes and format of the product/performance. **Students rated as 1: 20%**
Synthesises New and Prior Information **Do the sources help to support new claims or make points?**	Consistently connects new and prior information to create a product/performance. **Students rated as 3: 27%**	Inconsistently connects new and prior information to create a product/performance. **Students rated as 2: 48%**	Does not connect new and prior knowledge to create a product/performance. **Students rated as 1: 25%**
Communicates Information **Do they have sources?**	Consistently communicates information from sources via products/performances. **Students rated as 3: 37%**	Inconsistently communicates information from sources via products/performances. **Students rated as 2: 50%**	Does not communicate information from sources via products/performances. **Students rated as 1: 13%**

Figure 3: Use Information Effectively to Accomplish a Specific Purpose

	Advanced *Applies outcome successfully; Many strengths are present*	Developing *Shows skill in this outcome; Improvement needed*	*Beginning* *Evidence of the outcome may be minimally or not at all present; Need for improvement outweighs apparent strengths*
Style conventions	Follows style guide conventions with few errors. **Students rated as Advanced: 22%**	Follows style guide conventions with frequent errors. **Students rated as Developing: 65%**	Does not follow style guide conventions. **Students rated as Beginning: 13%**
Correspondence of bibliography and in-text citations	Bibliography and in-text citations correspond. **Students rated as Advanced: 39%**	Bibliography and in-text citations do not correspond. **Students rated as Developing: 53%**	Does not include a functional bibliography and/or in-text citations. **Students rated as Beginning: 8%**
Common knowledge and attribution of ideas	Consistently distinguishes between common knowledge and ideas requiring attribution. **Students rated as Advanced: 33%**	Inconsistently distinguishes between common knowledge and ideas requiring attribution. **Students rated as Developing: 59%**	Does not distinguish between common knowledge and ideas requiring attribution. **Students rated as Beginning: 8%**
Paraphrasing, summarising, quoting	Summarises, paraphrases, or quotes in order to integrate the work of others into their own. **Students rated as Advanced: 43%**	Summarises, paraphrases, or quotes, but does not always select appropriate method for integrating the work of others into their own. **Students rated as Developing: 53%**	Does not summarise, paraphrase, or quote in order to integrate the work of others into their own. **Students rated as Beginning: 4%**

Figure 4: Use Information Ethically and Legally

	Advanced	Developing	Beginning
Access the Needed Information	*Student:* • *searches and locates websites or journal articles using effective search techniques demonstrated* • *finds relevant and diverse information sources for assignment* • *demonstrates persistence and ability to refine search when necessary.* **Students rated as Advanced: 51%**	*Student:* • *searches and locates websites or journal articles using simple search strategies demonstrated* • *finds information with partial relevance and quality for assignment.* **Students rated as Developing: 41%**	*Student:* • *accesses websites or journal articles randomly* • *does not apply new techniques demonstrated* • *retrieves information that lacks relevance and quality for assignment.* **Students rated as Beginning: 9%**
Use Information Ethically and Legally	*Student:* • *follows style guide conventions correctly* • *citations are mostly complete and accurate.* **Students rated as Advanced: 41%**	*Student:* • *follows style guide conventions with errors* • *citations have partially correct information.* **Students rated as Developing: 48%**	*Student:* • *does not follow style guide conventions* • *citations are not included.* **Students rated as Beginning: 11%**
Evaluate Information and its Sources Critically	*Student:* • *uses 4-5 of the points on the comprehensive list of evaluation criteria provided* • *provides a reasoned rationale for using information for a given context.* **Students rated as Advanced: 48%**	*Student:* • *uses a 2-3 points on the comprehensive evaluation criteria list provided* • *provides a limited or incomplete rationale for using information for a given context.* **Students rated as Developing: 39%**	*Student:* • *does not apply the evaluation criteria provided or uses only 1 of 5* • *provides no rationale for selecting sources for analysis.* **Students rated as Beginning: 13%**

Figure 5: Access the Needed Information, Use Information Ethically and Legally, and Evaluate Information

Standardizing the Assessment Cycle: the development of an assessment rubric for effective project planning and data reporting

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Introduction

Funding agencies that support research and instruction want to know: does the research have an impact within the supported field, and are students learning? In direct to response these types of accountability questions, higher education administrators require their colleges, departments, centers, and libraries to quantify their value. LibQUAL+® and Association of Research Libraries (ARL) statistics provide libraries with benchmark data. In addition to ARL surveys, libraries individualize assessments to measure service quality. In the area of teaching and learning, information literacy assessment remains a key performance indicator within libraries.

This research examined 124 of the 126 ARL members' websites to ascertain the quantity and quality of the publicly available assessment information. This research looked at in-house service quality assessments and in-house information literacy assessments. Additionally the research identified assessment personnel within the ARL libraries.

The relevance of research libraries would be more apparent if library administrators could describe their value to the parent institutions. Public reporting of assessment illustrates the value of the library. The impact of assessment depends on the quality and comprehensibility of the data presented.

At conferences, new assessment librarians often ask for a template to utilize in conducting assessment. Communication would be enhanced if professional guidelines were developed for addressing assessment issues: design of assessment tools, thoughtful analysis of data, consistent reporting of results, and clear statements of actions to be implemented. ARL libraries need to standardize assessment activities and describe assessment results when appropriate within a value-added framework. To accomplish this, the researchers created an assessment rubric to guide the creation of quality assessments.

Literature review

A review of professional activities and literature illustrates the importance of the value-added metaphor for libraries. For example, when Syracuse University threatened to remove research collections, the value of academic libraries became quickly apparent. After the faculty's fury regarding the possible removal of some research collections reached Suzanne E. Thorin, the dean of Syracuse University libraries, she said, "It means there's a lot of burning passion on this. Humanities faculty members have made it clear they consider the library their *central laboratory*" (Howard, 2009, p. 1). Conversely, Housewright and Schonfeld (2008, p. 5) wrote:

> *while [faculty] value the library, they perceive themselves to be decreasingly dependent on the library for their research and teaching and they anticipate that dependence to continue to decline in the future. There appears to be growing ambivalence about the campus library.*

Faced with perceived campus ambivalence, libraries must emphasize the value of library services and resources to various constituents -- constituents who are not homogeneous and who often have divergent but essential needs related to research and scholarship.

Mays, Tenopir, and Kaufman (2010, p. 38), touched on this very point when they wrote that the grant-supported Lib-Value: Measuring Value and Return on Investment of Academic Libraries intends to examine how the value of a library varies for diverse stakeholders. Megan Oakleaf's report (2010, pp. 19-22), supported by The Association of College and Research Libraries (ACRL), described how libraries might assess the impact resources and services have on faculty research success and on student retention. The ACRL's Assessment Committee (2010) activities included the creation and maintenance of the ACRL Value of Academic Libraries Toolkit.

Not all assessment activities are based on the value-added framework. The professional group, Library Leadership and Management Association: Measurement, Assessment, and Evaluation Section (2009), developed a toolkit that links to various assessment models. The researchers would argue while many library assessment toolkits do not describe libraries through the lens of the value-added phrase, most library data can be framed within the value-added model.

Library literature describing the implementation of information literacy rubrics for student learning is extensive. Oakleaf (2006, p. 40), identified three useful characteristics of a rubric:

- formatted on a grid or table
- employed to judge quality
- used to translate difficult, unwieldy data into a form that can be used for decision-making

As libraries moved from bibliographic instruction to information literacy learning, instructors developed rubrics as a means to authentically assess learning performance (Knight, 2006, p. 45). Oakleaf, Millet, and Kraus (2011, pp. 833-34) described how librarians at a workshop engaged administrators and faculty in the development of an information literacy rubric; the successful development and implementation of an authentic information literacy rubric hinged on librarians' and stakeholders' collaboration. Choinski, Mark, and Murphey (2003, p. 572) emphasized the importance of rubrics as tools to facilitate objective assessment of learning. Rubrics can provide a means of building stakeholder buy-in, of objectively assessing processes, and of describing value-added outcomes.

Methodology

The researchers reviewed the 124 ARL members' websites available in English for publicly accessible assessment data. The researchers focused on in-house Information Literacy (IL) assessment, in-house service quality assessment, and assessment personnel, including positions and committees.

The researchers selected search strategies to optimize locating data points because the websites under review were not similar in design or content. The strategies used included site search, Google site search, and extensive browsing within each library site. Search terms and phrases, including but not limited to "return on investment," "LibQUAL," "information literacy," and "assessment," were explicitly defined and parameters developed to normalize results.

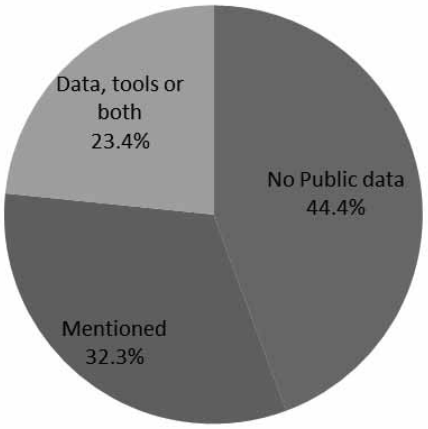
Results

The researchers gathered and analyzed data for each of the three categories of interest: in-house information literacy (IL) assessment, in-house service quality assessment, and assessment personnel.

In-house Information Literacy

IL assessment tools or measures were generally created in-house and were activity specific; therefore these assessments could not be used for benchmarking without analysis and discussion with the relevant parties. Chart one illustrates the percentage of ARL members that have IL assessments. The data are broken down into three major categories: No public data-meaning no IL assessment can be found, Mentioned-meaning IL assessment is mentioned but not reported with data or a context, and Data, tools or both-meaning IL assessment is reported with data, or with the assessment tool, or with both the data and the tool publicly searchable on the website.

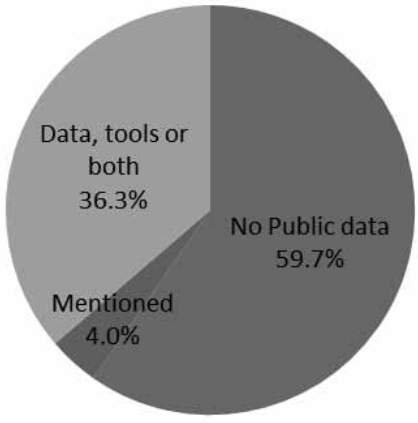
Chart one: Publically available information literacy assessment data and tools



In-house Service Quality

This paper focuses on in-house service quality assessment. Many libraries had multiple types of assessment; the researchers identified over 200 assessment data points related to service quality. These assessments included qualitative and quantitative methods and ranged from, but were not limited to, the implementation of surveys, focus groups, ethnographic studies, grounded theory, statistical analysis, or large-scale longitudinal data analyses. Despite the larger number of assessments present, nearly 60 percent of ARL libraries provided no service quality assessment.

Chart two: Publicly available ARL service quality assessment data and tools

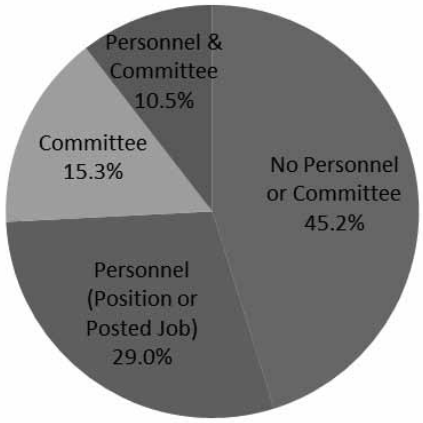


Personnel Assessment Data

The researchers searched for data about assessment committees and personnel. Personnel included both current positions and posted jobs. The ARL libraries were then placed into one of four groups: no personnel or committee, personnel only, committee only, or both personnel & committee (See chart three). Almost 40 percent (49 of 124) of ARL libraries had personnel dedicated to assessment. This number bodes well for the library assessment profession.

At the same time, more than 45 percent (56 of 124) had no public mention of a dedicated assessment librarian, of an assessment committee or of a job posted.

Chart three: ARL libraries with assessment personnel and/or committee



Discussion and implications

Preliminary results show that assessment reporting is not systematic. Lewin and Passonneau (in-press) found that ARL member institutions do not consistently use assessment results to inform strategic documents such as library annual reports and strategic plans. This study can only draw broad conclusions regarding the correlation among assessment activities, strategic planning, and program improvement since only publicly available data and documents were analyzed. The results from this research show that across ARL member institutions there is no consistency in assessment activities or in reporting practices.

The researchers identified three main issues regarding assessment activities for ARL members. First, there is a wide variety of assessment data types and activities found on ARL member websites. Secondly, only 62 percent of ARL members had any publicly available assessment data, including both in-house and benchmarking assessments in service quality and information literacy (Lewin and Passoneau, in-press). Lastly, assessment personnel, though growing more prevalent, are often not provided with the same type of support and guidance as other library professionals.

The results of this study confirm a disconnect between the libraries' public assessment data and the stakeholders' desires to understand the value of the library within the context of institutional strategic goals or foci. Libraries must collect and report data to demonstrate and prove the vital roles they play within the university.

It is vital that libraries collect relevant data and report assessment results. Shared data allows stakeholders to understand the library enterprise in relation to the parent institution. Publicly available assessment data and resultant actions provide a glimpse into the triumphs, struggles, and future plans of a library. It is important to demystify "what we do" and solidify the libraries' role within their parent institutions.

At this time, the ARL strategic plan (2010, p. 5) underscores the library's role in developing assessments that demonstrate added value. However, ARL members' activities diverge from this professional organization's recommendations. The DUI, (doing, using, and interacting) model can explain the lag between professional recommendations and professionals' implementation of the recommendations. The DUI model facilitates knowledge creation and innovation but it takes time for communities of practice to synthesize and adopt new models (Chatterjee and Chatterjee, 2010, p. 50). No matter the reason for the disconnect, it is evident that across ARL libraries there is no standard for developing assessment tools, analyzing assessment results, or reporting assessment finding.

Higher education's focus on accountability and higher education's need for data to support accreditation have impacted the assessment field within librarianship. However, many of the personnel are new to the field and have

been provided with little guidance. Our research shows while over 50 percent of ARL libraries have assessment personnel or committees, the public reporting of assessment on websites is still minimal.

Rubric

Assessment data on ARL websites was difficult to find and often minimal if present at all. Due to the obvious gaps in libraries' presentations of their stories, the authors created a rubric to facilitate assessment procedures and reporting practices based on their professional observations. The rubric was designed with four considerations in mind:

1. Facilitate assessment librarians' implementation and management of projects.

2. Facilitate a professional discussion within the library assessment community regarding useful, flexible standards for reporting assessment activities.

3. Facilitate the understanding of the workflows and processes involved in conducting effective sustainable assessments.

4. Encourage assessment reporting and creation of resultant action plans.

Oakleaf (2007, p. 28) states, "Librarians require tools that facilitate the translation of unmanageable facts and figures into data that can be used to support decision-making. One such tool is a rubric." Wessels and Birkholz (2010) note, "Rubrics are both a tool and a method for communicating expectations. A rubric describes exactly what is expected in completing a task or producing a product." A rubric facilitates the description of the parts and levels of performance of a particular task, product, or service (Hafner, 2003, p. 1518).

The assessment rubric produced could be used to develop workflow processes, measureable outcomes, and sound reporting practices. The rubric is an attempt to negotiate best practices and encourage some consistency regarding assessment activities within the library community.

Rubric Format

The assessment rubric uses the format found at the Rubric Assessment of Information Literacy Skills (RAILS) website (2010) and the terminology of the Association of American Colleges and Universities (AAC&U) Value project (2010). Table one is a blank Rubric template found at the RAILS website (Oakleaf, 2010).

Table one: example of a blank rubric found at the RAILS website (Oakleaf, 2010) – Blank Rubric: 4 Levels

	Performance Level Label	**Performance Level Label**	**Performance Level Label**	**Performance Level Label**
Criteria	Performance description	Performance description	Performance description	Performance description

One way the assessment rubric differs in format from other rubrics is the use of the term "category." The assessment rubric covers the entire assessment cycle, therefore three categories were added to reflect major stages of the assessment process. The sub-categories are the various criteria. The target indicators are labeled from left to right and are scored from 1-4. Within the assessment rubric, all the criteria clarified the scoring for each step in the process. Table two depicts the first category in the process by illustrating the organizational elements of the assessment rubric.

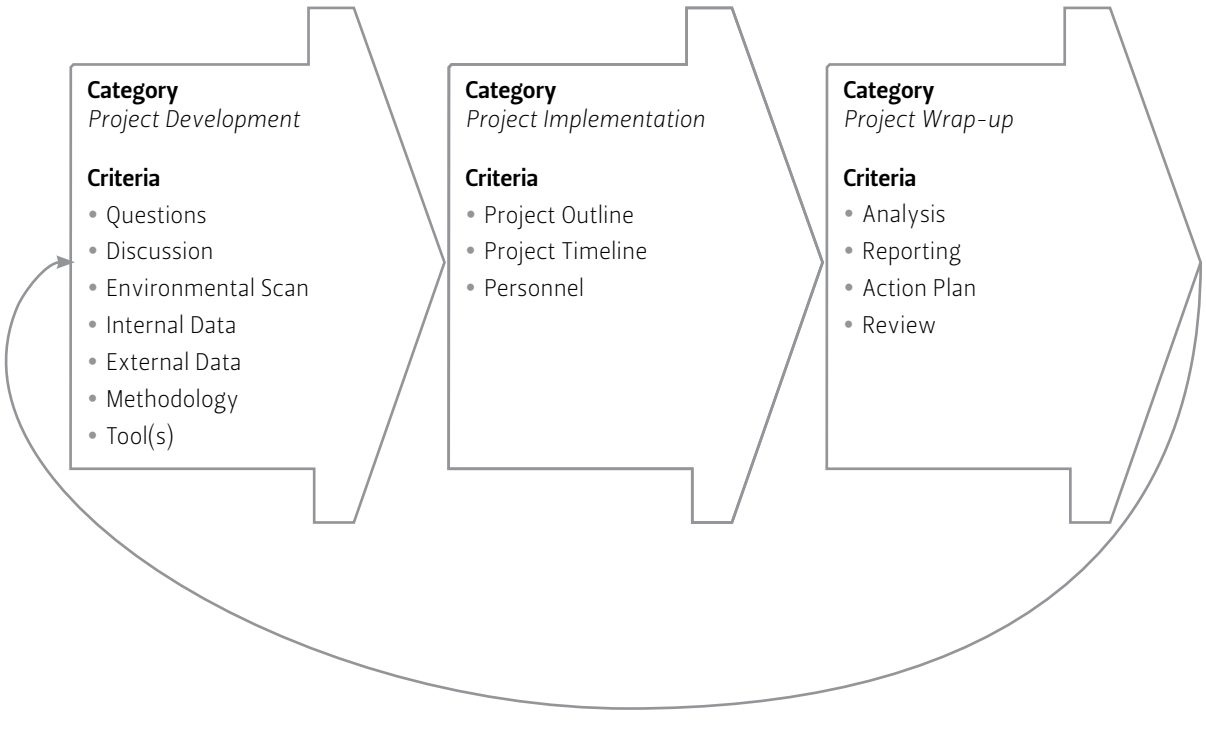
Table Two: Elements of Assessment Rubric Using the First Category of the Process

Rubric Elements	Categories	Performance Indicator				Rubric Elements
Category Heading →	Category 1: Project Development	Benchmark 1	Milestones 2	3	Capstone 4 ←	Indicators Score
Criterion →	Question	• Creates a vague question. AND/OR • Doesn't have well defined assessment need.	• Begins to define assessment question or need. • Identifies library need.	• Adequately defines the scope of assessment question or need. • Correlates question to library need.	• Thoroughly defines the scope of the assessment question or need. • Ties question to direct need in the library; to library strategic plan; to university strategic plan and goals.	Performance Indicator: Describes the Criterion

Library assessment rubric described

The three categories, which are project development, project implementation, and project wrap-up, encompass the totality of the assessment process. Within a category, the specific criteria address different elements of the assessment process. Table three illustrates how all the criteria fit within a category.

Table three: illustration of the relationship between the categories and criteria of the assessment rubric



Academic libraries' processes mirror the collaborative aspects of research, learning, and teaching activities occurring throughout the parent university or college. Therefore, all the criteria of the assessment rubric either explicitly or implicitly underscore the need for teamwork during the project cycle. The researchers understand that the assessment process is not linear. There will be times when one criterion will overlap with another criterion within a category. However, the rubric delineates each activity to clarify the process (see appendix A.)

Project development

During the *project development* phase of an assessment, the project leader will directly ask for input from stakeholders, as indicated by the criterion *Focused Discussion*. Under the criterion *Environmental Scan* the project leader would be wise to ask for input from individuals working in the area related to the assessment activity. Under the two criteria *Internal Data* and *External Data* the project leader should meet with appropriate personnel to conduct an audit of existing data. The final criterion *Tool(s)* can be blended with the criterion *Methodology*. The project manager can receive feedback (if any) from stakeholders about chosen method and tool.

Project implementation

Kaske (2007, pp. 7–9) provided flow charts and work processes that detail best practices for project implementation. Measures to ensure validity and reliability should be addressed while outlining the project. The criterion *Project Outline* delineates this process. The criterion *Timeline* helps the project leader to indicate adequate progress. Under the criterion *Personnel,* all impacted library personnel should be identified and informed about the project.

Project wrap-up

Under the criterion *Analysis,* results should be forwarded to staff and administration asking for input. The criterion *Reporting* outlines best practice for sharing results. Reporting should be precise. Time should be taken in choosing graphs, photos, or other images to effectively relay results as visuals can make or break a presentation. As Tufte (1983, p. 51) eloquently wrote, graphical excellence "consists of complex ideas communicated with clarity, precision, and efficiency,"… [and]… "requires telling the truth about the data." Under the criterion *Action Plan* the data must inform the outcomes. Actions resulting from the assessment could be anything from major improvements or minor tweaks. The criterion *Review* prompts the project manager to reflect upon and learn from the activity.

Conclusion

The development of this rubric is meant to launch a professional conversation among colleagues regarding assessment practices and standards. As one respected leader (Hiller, 2011) in the assessment community stated, "The activity should drive the metric. The metric should not drive the activity." The proposed rubric is intended to demystify the assessment process. The assessment rubric is not meant to be an inflexible protocol but rather a prompt to place the process within the larger context of the parent institution. Additionally, the rubric provides a process for self-evaluation for both new and experienced assessment librarians.

The results from this research illustrate the need to develop professional learning networks to complement the growth of assessment within libraries. The current state of assessment does not parallel ARL's and ACRL's support of assessment or these organizations' strategic plans to demonstrate value. By consistently posting data and resulting actions libraries will be taking the first steps to develop a robust and mature assessment culture that can respond to the demands of parent institutions and stakeholders.

Only through conversation and collaboration with professional groups can a substantive matrix be useful. The rubric we are presenting is a "first pass" at developing a self-evaluative assessment rubric. Professional conversations and group work are needed to refine the rubric. This process will develop professional networks, address ARL's and ACRL's strategic plans, and assist in the consistent posting of data, with the end result being the development of a culture of continuous improvement. In this way libraries will be able to easily declare their value.

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Appendix A: Rubric

Self-Evaluation Assessment Rubric				
Categories	**Target Indicators**			
Category 1: Project Development	**Benchmark 1**	**Milestones 2**	**3**	**Capstone 4**
Question	• Creates a vague question. AND/OR • Doesn't have well defined assessment need.	• Begins to define assessment question or need. • Identifies library need.	• Adequately defines the scope of assessment question or need. • Correlates question to library need.	• Thoroughly defines the scope of the assessment question or need. • Ties question to direct need in the library; to library strategic plan; to university strategic plan and goals.
Focused discussion	• No outreach to library members and other stakeholders regarding assessment question.	• Begins to elicit library members and other stakeholders' feedback regarding assessment question.	• Elicits library members and other stakeholders' feedback regarding assessment question. • Provides opportunities to review project.	• Elicits and incorporates appropriate library and community stakeholders' feedback. • Provides opportunities to review project, provides feedback through formal and informal channels.
Internal Data source	• No investigation of internal data sources that address assessment question.	• Begins to identify whether there is an internal data source that addresses assessment questions by identifying existing data sources.	• Identifies whether there is an internal data source that addresses assessment questions by identifying, accessing and analyzing existing data sources.	• Identifies whether there is an internal data source that addresses assessment questions by identifying, accessing, analyzing and eliciting appropriate expert opinions regarding existing data sources.
Environmental Scan	• Does not investigate whether an environmental scan will complement assessment question.	• Begins to investigate whether an environmental scan will complement assessment question.	• Investigates whether an environmental scan will complement assessment question. • If an environmental scan is appropriate the purpose of the environmental scan is clearly related to the assessment question.	• Investigates whether an environmental scan will complement assessment question by speaking with appropriate individuals. • If an environmental scan is appropriate the purpose and scope of the environmental scan is clearly related to the assessment question.

Self-Evaluation Assessment Rubric				
External Data	• Does not investigate whether there is an external data source that addresses assessment question.	• Begins to identify whether there is an external data source that addresses assessment questions by identifying existing data sources.	• Identifies whether there is an external data source that addresses assessment questions by identifying, accessing and analyzing existing data sources.	• Thoroughly identifies whether there is an external data source that addresses assessment questions by identifying, accessing, analyzing and eliciting appropriate expert opinions regarding existing data sources.
Methodology	• Does not examine different methodologies to identify the best framework for addressing the assessment question.	• Begins to examine different methodologies to identify a framework for addressing the assessment question.	• Examines different methodologies and identifies a framework to apply to the assessment question.	• Thoroughly examines different methodologies and identifies the best framework to apply to the assessment question by reviewing when appropriate stakeholders input, data sources, and environmental scan.
Tool	• Does not select or create a tool.	• Begins to select or create a tool.	• Selects or creates a tool informed by the assessment question.	• Appropriately incorporates existing data sources, results from environmental scan, stakeholder feedback into the selection or creation of tool.
Category 2: Project Implementation	**Benchmark 1**	**Milestones 2**	**3**	**Capstone 4**
Project Outline	• Does not create a project outline.	• Begins to create project outline.	• Creates a tool or project outline that is informed by the assessment question.	• Appropriately incorporates existing data sources, results from environmental scan, stakeholder feedback, and best methodology.
Project Timeline	• Does not create a timeline for assessment project.	• Begins to create a timeline for assessment project.	• Creates timeline and incorporates contingency plans that build flexibility into the assessment project.	• Creates timeline and incorporates contingency plans that build flexibility and adaptability into the assessment project.

Self-Evaluation Assessment Rubric				
Personnel	• Does not consult individual impacted by assessment project.	• Begins to consult individual impacted by assessment project.	• Consults individual impacted by assessment project and asks for their input.	• Consults individual impacted by assessment project and when appropriate incorporates for their input.
Category 3: Project Wrap-up	**Benchmark 1**	**Milestones 2**	**3**	**Capstone 4**
Analysis	• Does not analyze the results from the assessment project.	• Begins to analyze the results from the assessment project.	• Analyzes the results and develops an appropriate scope for reporting the results and analysis.	• Analyzes the results and develops an appropriate scope and for reporting the results and analysis in a timely manner.
Reporting	• Does not report out the results and/or analysis of assessment project.	• Begins to create preliminary report regarding the results and/or analysis of assessment project.	• Creates a report regarding the results and/or analysis of assessment project.	• Creates a complete report regarding the results and/ or analysis of assessment project and considers the audience for the report.
Action plan	• Does not develop an action plan from the assessment project results or analysis.	• Begins to develop an action plan from the assessment project results or analysis.	• Develops an action plan from the assessment project results or analysis by consulting with appropriate stakeholders.	• Develops an action plan from the assessment project results or analysis by consulting with appropriate stakeholders and developing a reasonable timeline to complete the action plan.
Review	• Does not review the effectiveness of the assessment project or resulting action plan.	• Begins to review the effectiveness of the assessment project or resulting action plan.	• Reviews the effectiveness of the assessment project or resulting action plan and considers successes and challenges to address for next assessment project.	• Reviews the effectiveness of the assessment project or resulting action plan and considers successes and challenges to address for next assessment project and reports success and challenges to stakeholders.

Can we quantify the library's influence? Creating an ISO standard for impact assessment

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General

Traditionally, libraries collect and present at least basic data about the input into their services (funding, staff, collections, space, equipment) and the output of those services (loans, visits, downloads, reference transactions, etc). Such statistics are usually collected in the individual library and are more or less regularly summed up to regional or national statistics. Definitions and collecting procedures have been formalised and are described in the ISO Standard 2789 (International library statistics).

In addition to such quantitative counts, libraries have also developed measures for assessing the quality of their services and the cost-efficiency of their service delivery. Such quality indicators or performance indicators are described in the ISO Standard 11620 (Library performance indicators).

In recent years, libraries like other non-profit organisations are expected to prove their value. For libraries, such value has traditionally been accepted as self-evident. However, today all information "seems" to be available via the Internet, and information seeking often bypasses library catalogues and collections. Based on such misconception, the benefits available via the use of library services are questioned, especially by funding institutions. Libraries have responded to this situation and have developed and tested methods for identifying and proving their value for individual users and society.

The development of methods for "impact assessment" in different projects worldwide has by now reached a stage where a first aggregation in an International Standard seems possible and highly expedient. The review of projects and existing literature on library impact or outcome shows a remarkable variety not only in methods, but also in terminology. Evidently, it is time to give a structure to the manifold results and procedures. A project for that purpose has been set up by the ISO committee that is responsible for standards of quality in the information sector (ISO TC 46 Information and documentation SC 8 Quality – statistics and performance evaluation). The project started in December 2010 with 17 experts from 13 countries.

The new standard: ISO 16439

The mission of libraries, the reason why they are established and supported, refers to broad cultural, educational and sociological goals. Library services ultimately aim at effects such as:

- information literacy
- free access to information
- cultural awareness
- local culture and identity
- social inclusion
- individual well-being.

Such benefits to the individual and society are indeed difficult to identify and still more difficult to quantify, to "measure". Therefore, the first question for the new ISO working group was, what the new standard was meant to "standardise", what contents it should have.

ISO standards are not intended to replace handbooks with broad theoretical analysis of a topic, nor manuals with practical examples and step for step instructions. Usually, they determine the terminology and methodology of a subject area. The new standard ISO 16439 "Methods and procedures for assessing the impact of libraries" intends to:

- standardise the terminology and the definitions for impact assessment
- describe and harmonise the methods that have been tested and that have delivered meaningful results.

The terminology

The existing publications show a striking variety in the terminology. Nearly all use the same language for describing the effects of library activities and services. But the individual words can have various meanings, and the relation of the terms is seldom the same.

The main terms are these:

- output
- outcome
- impact
- benefit
- value.

"Output" is usually clearly defined as counterpart to "input". Nevertheless, in many publications the meaning overlaps with "outcome", expressing as well the products as the effects of the library. "Outcome" and "impact" are often used synonymously, but also in parallel, describing different steps of library influence.

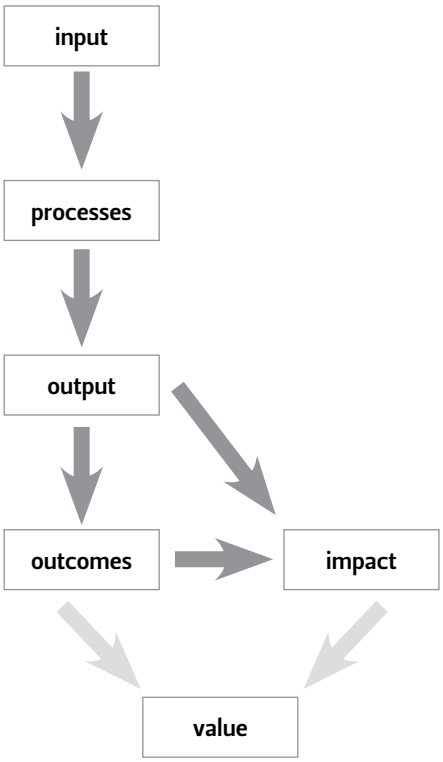
> *Example: "Outcomes are the short- to medium-term results of applying outputs. Impact is the effect of the outcomes on the environment and is usually long-term."*
>
> **(Howley, 2002)**

The terms "benefit", "effect" or "influence" are used more or less like in normal language, while "value" usually gives a more general and broader impression than "outcome" or "impact". For the new standard, the working group had to decide on the terminology that should be used. The following definitions were chosen for the working document, but might still be slightly changed during the process:

- **benefit:** a helpful or good effect, or something intended to help
- **impact:** difference or change in an individual or group resulting from the contact with library services NOTE The change can be tangible or intangible.
- **input:** contribution of resources in support of a library (eg funding, staff, collections, space, equipment)
- **outcomes:** direct, pre-defined effects of the output related to goals and objectives of the library's planning (e. g. number of users, user satisfaction levels) NOTE This includes outcomes that concern the library's institution or community
- **output:** products of library processes (eg number of titles catalogued, number of loans, number of information requests)
- **process:** set of interrelated or interacting activities which transforms inputs into outputs (e. g. cataloguing, lending, reference service)

- **value:** the importance that stakeholders (funding institutions, politicians, the public) attach to libraries and which is related to the perception of actual or potential benefit. NOTE Monetary value may be included.

The interrelation of the terms is seen as follows:



The main term for expressing the influence of libraries and their services will thus be "impact". The term is used neutrally, describing a difference or change in individuals or groups without saying whether this difference or change is benefiting the persons. The changes described by "impact" can be tangible or intangible, direct (immediate) or long-term, small or far-reaching, intended or unintended, actual or potential.

Impact of libraries

Contact with library activities and services can have different impact on groups or individuals, depending on the previous experience and competences of the persons. Library impact can be roughly differentiated into impact on individual persons and social impact, the latter including the effects on the library's institution or community.

Impact on individuals

Most projects that tried to assess library influence have been concerned with the impact on individuals, including the influence on specified groups such as attendants of a training lesson or pupils of a school class. The following changes in individuals (or specified groups) have been identified as being possibly – at least partly – caused by contact with libraries:

- changes in skills and competences
- changes in attitudes and behaviour
- higher success in research, study, or career
- increase of individual well-being.

Even during a short library visit users can acquire new skills, e. g. in database or catalogue searches. Frequent use of library services can result in more essential changes, e. g. increased use of online information sources or a confirmed habit of reading.

Identifying library impact on individuals has often focused on the library's information literacy teaching, especially in institutions of higher education. The library's teaching is in many cases part of the general study courses and therefore undergoing the same evaluation processes. Libraries have to show the outcome of the resources they put into the teaching. Another reason for the broad literature on library teaching impact is probably that this is one of the few cases where the library can show a direct and indubitable result of its activities. Pre-and post-tests can show whether training has increased the participants' competences of seeking, finding, procuring and evaluating information sources.

The library's influence on a user's success in research and learning, job finding and career is especially of interest in the academic sector. Universities use quality criteria such as:

- short duration of studies
- high grades in examinations
- student retention
- high employment rate after examinations
- the quality of research publications (high impact factor, publishing in peer-review journals).

If libraries can show that they play an effective role in reaching such goals this will sustain their reputation in the institution.

The library's influence on the personal well-being of their users will perhaps not be the crucial issue for funding institutions. But it can be highly relevant for a community that the library is experienced as a safe, quiet and comfortable place, not only for reading and studying, but also for meeting people or joining events. The sense of belonging somewhere can further integration and thus contribute to social peace.

Social impact

Though the library's impact on individuals is more or less a direct influence, it is generally not easy to "measure" it. The impact on society (society at large, the population in a community, the members of an institution) is often indirect and therefore still more difficult to identify. Social impact means that the existence of a library and its services has a positive influence on the population that uses it – and sometimes also on the non-users. That positive influence comprises issues such as:

- social inclusion
- free access to information
- options of education and life-long learning
- local culture and identity
- better health care.

A potential benefit for future generations can be seen in libraries preserving the documentary cultural heritage of a region or country.

Methods for assessing the impact of libraries

Most projects that tried to assess library impact had to acknowledge that there are few methods identifying actual impact, but that they had to use surrogate measures. The ISO working group decided to differentiate between methods that provide direct proof of library impact and those that only indicate the possibility of such impact. That last-named group comprises the following methods:

- statistical counts
- performance measures
- user satisfaction surveys.

Generally, the best way for clearly identifying a positive impact of libraries will be to combine several methods and compare the results.

Methods that only indicate an impact

The normal yearly statistics of libraries show the quantity of input and output. Performance measures assess the quality of the library's services and the cost-effectiveness of service delivery. Both statistical data and the results of performance indicators can be used for detecting developments that point to library impact.

Example 1: A course of information literacy training is offered several times in succession. The number of attendants is continually increasing. This could indicate that previous attendants promote the course because they believe they profited by it.

Example 2: The performance indicator "Downloads per capita" (= per member of the library's population) shows a higher value. This result demonstrates on the one side that the library's electronic collection is adequate to user needs (quality), on the other side that the users have become familiar with electronic resources, maybe due to the library's promotion of these resources (impact).

In the discussions on library impact, user satisfaction with library services has sometimes been regarded as an impact. User satisfaction is generally ascertained by surveys that ask for a user's one-time or long-term experience with library services or for experience compared to expectation.

But if "impact" is defined as difference or change in an individual or group resulting from the contact with library services, satisfaction of users with their library experience cannot yet be named an impact. Satisfaction will probably incite users to additional library use and can predispose them for being influenced in their behaviour or skills. A high degree of satisfaction with specified services might therefore indicate that users have been influenced.

Example:

- high satisfaction with the reference service can indicate that users got valuable information and/or acquired new skills.

If statistics or the results of performance assessment and satisfaction surveys are taken singly, these data generally cannot prove an impact of library use on users. However, if the data are collected systematically over time, the results will allow assuming that specified library activities and services have had an impact on the users. Such "indicated impact" should be followed up by methods like surveys or interviews in order to support the assumption.

Methods that can prove impact

The ISO working group decided to adopt a differentiation that David Streatfield used in 2002:

- observed evidence
- solicited evidence.

Observed evidence

Observation is a method of data collection in which the situation of interest is watched and the relevant facts, actions and behaviours are recorded. It involves that the researcher observes actions and behaviours directly instead of using research instruments such as surveys or questionnaires. Therefore data gained by observation can be seen as more objective then those obtained by questioning users.

Observation can be differentiated as to being

- structured or non-structured
- with or without the researcher's participation
- open or covert.

Examples of such methods are:

- observing user behaviour before and after contact with library services
- data mining of user behaviour
- comparison of usage data with a user's professional or educational success
- users' self-recording of their library activities and their progress in skills and knowledge, eg via portfolios
- tests for ascertaining an increase of skills and competences (eg before and after user training).

These methods will not always lead to statistically valid results. The comparison of a person's library use data with the same person's success (eg in examinations or in getting a job) may not be possible when data protection regulations hinder the storing of usage data. The easiest way for identifying a direct influence of the library will probably be to use tests, especially in information literacy training. Though even in such cases other influences may have intervened, still a certain impact of the library's teaching can in most cases be perceived.

Solicited evidence

The concept of "solicited evidence" covers all methods that focus on the users' estimate of actual benefits received from the library or of potential benefits that a library could deliver. The methods, derived from social sciences, are also called "soft" methods, as they rely more on opinions than on hard data.

The methods can be subdivided into written questioning (surveys) or oral questioning (interviews, focus groups). Oral questioning is usually less standardised and will yield more subjective opinions. Written surveys are more or less standardised and predominantly deliver results that are quantifiable and numerable. If a large target population has to be questioned, structured and standardised questionnaires should be preferred in order to cope with the quantity of results and to ensure comparability of the answers.

The following techniques have been used when trying to assess library impact:

- surveys (in-house questionnaires, telephone, mail or online surveys)
- interviews (individual and group interviews)
- focus groups
- self-assessment of users, normally through a questionnaire where the questions require respondents to rate their skills, knowledge, or confidence on a scale.

The results that have been gained by using these methods must always be made quantifiable in order to show grades and patterns of impact.

Example: The percentage of respondents in a survey answering that the library has helped them to save time has gone up from 48 % to 53 % within two years.

Though direct answers as to benefits received could only be given by actual library users, non-users are often included in surveys in order to assess their general estimate of library value and their reasons for non-use.

In most cases, the techniques of soliciting evidence for library impact produce a large fund of "anecdotal evidence", stories about the personal experience when using library services and resources.

Such stories are invaluable for the illustration and plausibility of the sometimes "dry" results that have been achieved with other methods.

Problems of assessing library impact

The main difficulty is evidently that the library's influence on a person or group is generally not the only and possibly not the strongest one. A person can adopt ideas or learn skills from friends, colleagues and teachers or via the media and probably would not be able to differentiate between influences. Generally, it will only be possible to determine whether the library has had some impact among others.

Other difficulties in impact evaluation are:

1. The impact of library services is for the most part intangible and difficult to quantify.
2. Long-term effects cannot be ascertained if the users are no more available.
3. The results of the qualitative or soft methods shown before have a subjective bias.
4. Librarians are not familiar with the methods needed for impact assessment.
5. The expenditure of time and effort can be considerable.

It should also be considered that users' experience of library services and resources can vary greatly, depending on the users' previous knowledge and skills, on their expectation from and attitude towards the library. The same library service delivered in a similar way can have different impact in various cultural and economic surroundings.

Impact surveys

User surveys have been for decades familiar instruments for monitoring the performance and especially the service quality of libraries. In most cases they are designed as satisfaction surveys, asking for user satisfaction on a specified scale.

User surveys that are designed for assessing a library's impact ask the users what advantages or benefits they have experienced when using library services. The questions include the usage of the library's online services. The questionnaire can ask for a one-time experience ("your last visit") or for the user's general experience.

A prototype of an impact survey was developed in the context of the "Global statistics" project conducted by IFLA/ISO/UNESCO in the years 2006 to 2008 (Ellis et al., 2009). The questionnaire has two partly different versions for public and academic libraries. Both versions were recently used – with slight changes – in practical tests. The academic survey was tested in the University of Salamanca by a member of the ISO working group; the public library survey was tested in four public libraries by an Italian librarian. In both cases, the survey structure proved rather practical and appropriate for its purpose. The results of both projects will be used in the development of the ISO standard, but will also be published separately.

The main questions of an impact survey concern of course the benefits that a user experienced by library use. Issues that could be addressed are:

- the gain of information and knowledge
- the acquirement of new skills
- the library's help in study, research and learning or in the respondent's profession
- whether the library has helped the user to save time and effort
- whether the user perceives the library as safe, quiet and comfortable place
- whether the user has experienced the library as centre for contacts and communication.

Another way to identify the library's value for a user is to show a scenario where the library is closed and to ask where – if at all – the user could find the same help and information:

- from another library?
- via the Internet?
- from teachers, colleagues, friends etc?
- via the media (newspapers, radio, television)?
- perhaps, but it would take more time and effort
- not at all

In addition to these and similar questions, the impact survey can ask for the type and duration of library use of the respondent in order to have background data for the "benefit" answers:

- the frequency of library visits and/or online services use
- the spectrum of activities when visiting the library or its online services
- which services are used most frequently.

The questions will usually have pre-defined options for answers, but additional comments should be possible, as they give much more detailed information about users' opinions.

The economic value of the library

On the one side the economic value of library services can be seen as a secondary aspect of library impact, lower-ranking than the social value for individuals and groups. On the other side, the library's value expressed in terms of money might be the more interesting issue for institutions involved in financing libraries. Especially in times of serious economic problems, librarians should be able to present arguments for defending library budgets by showing monetary outcomes.

Assessing the economic value of libraries can have two different meanings:

- The economic impact of libraries: a direct positive influence of libraries on the economic life of the community, the region or even on the national economy (eg the library as an employer, as a purchaser of local goods and services or as attracting tourists and visitors).
- The value of library benefits expressed in monetary terms. The result may be compared with the library's investment into these services. The following methods have been used for the calculation:
  - Comparison with market prices (where they exist), monetary values (surrogate prices) are established for library services.
  - Calculations by time and average salary of users are used to establish monetary values: time spent with library services or time saved by using library services.
  - Users (and non-users) are asked to estimate the monetary value of a library or of a library service (eg a loan) for them or for society. The methods used range from simple questionnaires to contingent valuation.

"Contingent valuation" is at the moment probably the best-known method for assessing the economic value of library services. The method was developed for identifying the financial value of non-profit organizations and services (eg in health care, environmental protection, education or culture). Persons directly or potentially interested in such services are asked to rate the value of an organization or service in financial terms, expressed by their "willingness-to-pay" (What would you pay for maintaining this library/this library service?) or by their "willingness-to-accept" (Which sum would you accept as an equivalent if this library/this library service were given up?).

Economic valuation of libraries will be most convincing when evidence of the social impact is added in the reports.

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The 'Understanding Library Impacts' protocol: demonstrating academic library contributions to student learning outcomes in the age of accountability

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Introduction

Stakeholders in U.S. higher education are increasingly demanding evidence that the value of an undergraduate education is worth its cost. Higher education institutions have responded with renewed transparency regarding costs and retention rates and new mechanisms for assessing and communicating student learning such as the Voluntary System of Accountability (VSA, 2011). Academic libraries are also searching for new ways to communicate their impact on student learning. The library profession has made significant progress in user-oriented assessment (eg ARL, 2010), but academic libraries still need practical and effective methods for linking library use to student learning outcomes valued by the academy and employers.

The 'Understanding Library Impacts' protocol (ULI) is a set of library assessment instruments designed to detect and communicate library contributions to student learning outcomes. The ULI protocol features a critical incident survey for exploring student information and library use during high-impact academic experiences. A 'learning activities crosswalk' connects students' use of the library to learning outcomes associated with academic work and to external student learning outcomes frameworks. The protocol was initially developed using qualitative methods in two studies and converted to a survey format. This paper presents results of a pilot test of the survey form of the protocol conducted during spring 2011 with a population of undergraduate history majors in the United States.

Methodological considerations

The ULI protocol is guided by an operational definition of library impact provided by Caroline Wavell, Graeme Baxter, Ian Johnson, and Dorothy Williams (2002):

> *"[library impact is] the overall effect of outcomes and conditioning factors resulting in a change in state, attitude or behaviour of an individual or group after engagement with the output and is expressed as 'Did it make a difference?'"*

To meet this standard, the ULI protocol intends to 1) link library use to appropriate student learning outcomes, 2) generate credible evidence that libraries contribute to those outcomes, and 3) identify factors of library use that influence student achievement.

Student learning outcomes

The ULI protocol does not assess student learning directly; teaching faculty in the academy fulfill this role. Instead the protocol links student information behaviors with locally defined learning objectives at course and program levels. The protocol also links library use to two broader student learning outcomes frameworks important to higher education stakeholders: the AAC&U VALUE rubrics and Tuning outcomes for History.

The American Association of Colleges and Universities created the 15 VALUE rubrics to guide assessment of broad abilities such as critical thinking, inquiry and analysis, writing, and quantitative reasoning expected of all college graduates (AAC&U, 2007, 2010; Rhodes, 2008, 2010). The Tuning outcomes represent discipline-specific expectations

for learning outcomes (Gonzalez and Wagenaar, 2005; Adelman, 2009). The Tuning outcomes for history used in this study were generated through a consultative process including faculty, recent graduates, and employers in Indiana in 2009 (Indiana Commission on Higher Education, 2010), hereafter referred to as ICHE. The ULI protocol links library use to the VALUE and Tuning frameworks allowing libraries to communicate contributions to student learning within and across institutions.

Generating credible evidence

The ULI protocol draws on findings from the literature of college impact which suggests that the quantity and quality of student effort are principal predictors of student learning (eg Pace, 1990; Pascarella & Terenzini, 2005). Accordingly, undergraduate capstone experiences and upper level coursework in the academic major serve as the units of observation in a ULI study. Capstone courses are high impact, culminating experiences for undergraduate students in which they complete a project in their academic major "that integrates and applies what they've learned" (Kuh, 2008, 11). These are times in an undergraduate career when faculty expectations for student learning and student effort to meet those expectations should be at their highest. The ULI protocol's focus on the capstone experience allows the exploration of student information use as a component of student effort toward related outcomes.

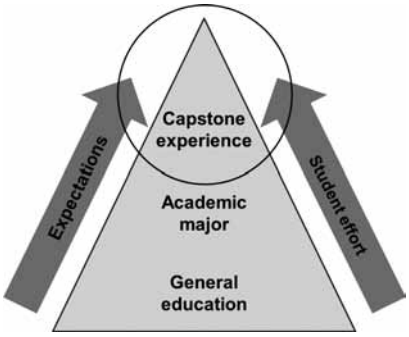

Figure 1: The capstone experience as a focus for library assessment

Identifying factors of use

It is not enough to connect library use to student learning; library managers need to know how the library makes a difference to support improvement efforts. The literature of information seeking and use (INSU) suggests that library assessment tools should:

- respect the iterative nature of the information search process as users continuously refine their questions in light of new information (Taylor, 1968; Wilson, 1999; Kuhlthau, 2004),
- respect the holistic nature of the information search process in which users progress through stages possibly accompanied by feelings of discomfort or anxiety (Kuhlthau, 2004),
- select units of observation which will help answer "how" and "why" questions, recognising that individuals may not consider their information behaviors to be separate from their work tasks (Solomon, 1997c; Zach, 2004), and
- ask questions in open-ended and neutral formats to identify connections between information use and task success or failure (Dervin, 1992; Solomon, 1997a, b, c).

The Critical Incident Technique (CIT) is a research method well-suited to this type of research problem. Formalised by John Flanagan (1954), the CIT has been described as a systematic method of learning from observations of human behavior to derive a general understanding of a given activity, such as student learning. Participants in CIT studies are asked to 'place themselves in the moment when' they were performing a task or participating in an activity. Questions and probes gather data about the activity. And analysis of reports from multiple participants reveals the factors influencing success or failure in the activity. Early CIT studies gathered data through observation, but interviews and surveys are commonly used today. The CIT has been used widely in library and information science (LIS) research (eg Urquhart, Light, Barker, Yeoman, and Cooper, 2003; Radford, 2006; and Tenopir, King, Edwards, and Wu, 2009).

Design

A pilot study using the ULI protocol was conducted at a liberal arts college and a liberal arts university in the U.S. during the spring of 2011. Undergraduate history majors completing their end-of-course capstone project constituted most of the study population; sophomores and juniors taking a research methods course at one site also participated in the study. Students in each course were expected to complete an original 20-40 page research paper using primary sources to support their argument.

The premise behind the ULI protocol is simple: Students use library resources, services, and facilities during effort on high-impact academic experiences, thereby supporting student achievement of associated learning outcomes. A learning activities crosswalk and a critical incident survey are used to explore this assertion.

The learning activities crosswalk

The learning activities crosswalk for the current study is intended to connect library use to student learning outcomes and consists of four elements: 1) learning activities, 2) student learning outcomes (SLO) associated with capstone coursework, 3) elements from the AAC&U Value rubrics, and 4) ICHE Tuning learning outcomes for history.

Learning activities

The learning activities associated with capstone history assignments were shaped by findings from a qualitative study (Rodriguez, 2007) and are informed by the stages of Carol Kuhlthau's Information Search Process (2004):

- getting oriented
- choosing a topic
- developing a thesis statement
- gathering evidence to support my thesis
- creating a bibliography or documenting my work
- writing or creating the final product for the assignment.

Student learning outcomes

Faculty members at the study sites contributed capstone course syllabi, assessment rubrics, and departmental curriculum maps for analysis. Student learning objectives (SLOs) associated with capstone coursework were extracted from those documents and unitised in preparation for content analysis. Departmental SLOs were mapped to a set of SLOs common to capstone projects within the discipline. Links were created between learning activities and associated SLOs from the common set.

VALUE rubrics

The second link in the crosswalk identifies associations between the SLOs and elements from four AAC&U VALUE Rubrics: critical thinking, inquiry and analysis, information literacy, and written communication.

Tuning outcomes

The third link in the crosswalk pairs SLOs with learning outcomes identified in the ICHE Tuning History project. These discipline-specific outcomes cover a range of competencies expected of college graduates including historical knowledge, thinking and analytical skills, communication skills, and personal motivation and initiative.

Critical incident survey

The critical incident survey, refined through two qualitative studies, is designed to explore student experiences during capstone coursework. Respondents to the online instrument first recall the deliverables and learning outcomes associated with the capstone project. These questions serve as primers to encourage the respondent to think back to when they were working on the project.

The core of the instrument includes four blocks of partially open questions which identify specific types of library use made by students during their capstone projects. Response items are presented in multiple choice lists including none and other/write in options. Items for each category were drawn from prior qualitative studies and suggestions from study sites.

- electronic resources (eg databases, e-resources, digitised primary sources)
- traditional resources (eg books, archives, media, micro-formats)
- services (eg reference, instruction, research consultations, interlibrary loan)
- facilities (eg individual and group study space, computers, photocopiers).

For each use type, respondents identify the most important library use for their project, the learning activities during which it was used, how it helped, and what kind of problems were encountered. The survey closes with open-ended questions about the students' capstone experience and demographic questions.

Responses were entered into a MySQL database to support analysis and study sites received access to secure database-driven websites for viewing statistics, reports, and answers to open-ended questions. Respondents were entered in a drawing for $25 gift certificates to the campus bookstore as an incentive for participating.

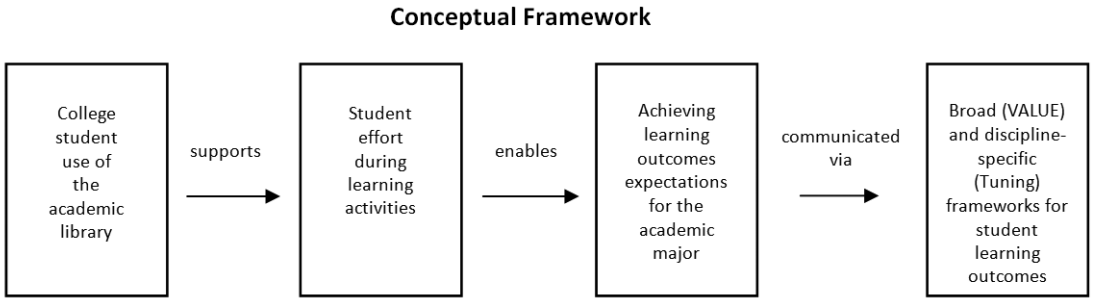

Figure 2: Conceptual framework for the Understanding Library Impacts protocol

Results

Selected results from the pilot study are presented to illustrate the ULI protocol in action. At this conference in 1999, Jennifer Cram stated that: "the primary purpose of measuring the value of a library must be to see if the library is doing well, not to judge whether it is doing better or worse than other libraries" (p. 2). In this tradition, the results presented in this paper are not intended to compare two libraries, but to illustrate the protocol.

Learning activities crosswalk

Study site A provided a curriculum map describing the learning outcomes expected of students completing research papers in the research methods course and the senior seminar. Study site B provided a list of expectations for all four sections of the senior seminar as presented in a shared syllabus. Learning outcomes from both sites formed four clusters: discipline-specific skills, developing a thesis statement, using evidence to support the thesis, and writing the paper. Each step of crosswalk construction was completed linking activities to SLOs, and SLOs to VALUE rubric elements and Tuning outcomes. Inter-coder agreement is illustrated below.

	% agreement	mappings
Departmental SLOs to the common set of SLOs	Site A 94.4% Site B 84.6%	18 13
Activities to the common SLOs	86.5%	23
SLOs to VALUE rubric elements	89.7%	39
SLOs to Tuning outcomes	93.3%	30

Table 1: Inter-coder agreement for crosswalk mappings

Response rates

Forty-one out of 74 (55 %) of the students in the population responded to the survey. Eighty percent of the respondents were female, as one study site was an all-women's institution. Most respondents were of traditional college age and full-time students.

	Site A – research methods (N=17)	Site A – Capstone Seminar (N=13)	Site B – Capstone Seminar (N=44)
Response rate	53%	46%	55%
% female	78%	33%	100%*
Academic class	89% sophomores/11% juniors	50% juniors/50% seniors	100% seniors
% traditional college aged (17-22)	100%	100%	96%
% enrolled full-time	100%	100%	96%

*Table 2: Demographics of respondents (*Site B is an all-women's institution)*

Library use

The 41 respondents in this study reported using 585 types of library resources, services, and facilities (eg books, e-journals, study space, reference questions) during their projects. The most common types of use are reported in figure 3. All respondents reported using the library catalog and books and all but one of the respondents used interlibrary loan to request materials from other libraries. A majority of the students relied on multiple electronic resources. Computers, printers, and study space were heavily used and over 60% of the respondents reported attending library instruction classes and asking reference questions.

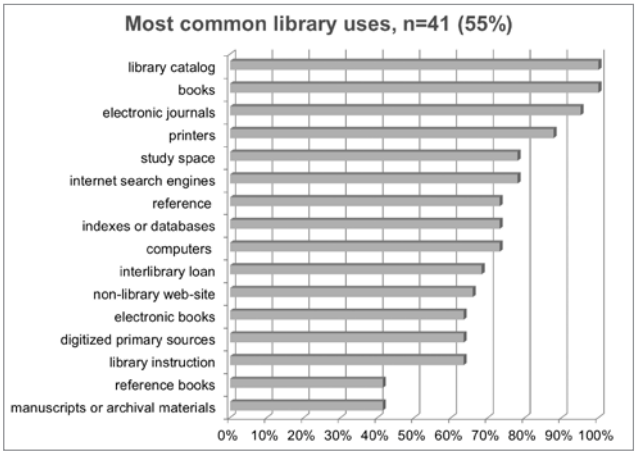

Figure 3: Most common library uses, n=41

'Most important' library uses

Students identified the most important electronic resource, traditional resource, service, and facility for their project, the learning activities during which they were used, and factors of use that helped or hindered their academic work. Figure 4 illustrates the proportion of students reporting 'top-ranked' library uses by type and activity.

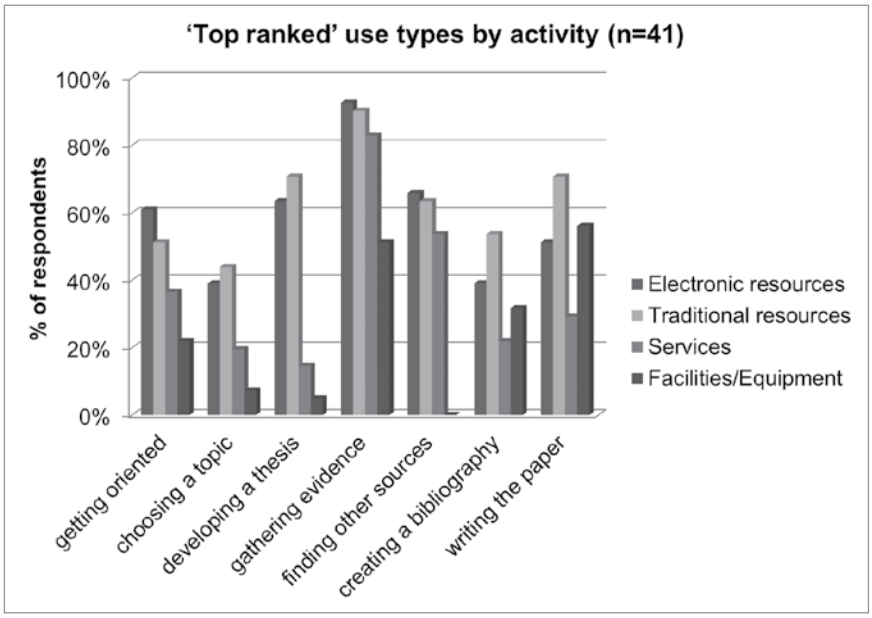

Figure 4: Top-ranked use types by activity, n=41

Linking library use and learning outcomes

The learning activities crosswalk facilitates linking student reported library use to expectations for student learning. For instance, figure 5 presents the proportion of students from each site who reported use of their 'most important' resources during the 'gathering evidence' activity. Table 3 presents 1) SLOs from the common set associated with this learning activity, 2) VALUE rubric elements associated with those SLOs, and 3) Tuning outcomes associated with the SLOs. The learning activities, 'gathering evidence' in this case, connects student reported use of the library to expectations for student learning associated with the academic major. In the current study, use data is reported in the aggregate and respondents' identities remain confidential. However, ULI use data are collected and stored by individual student, and could in future projects facilitate connecting library use to assessment results at the individual student level.

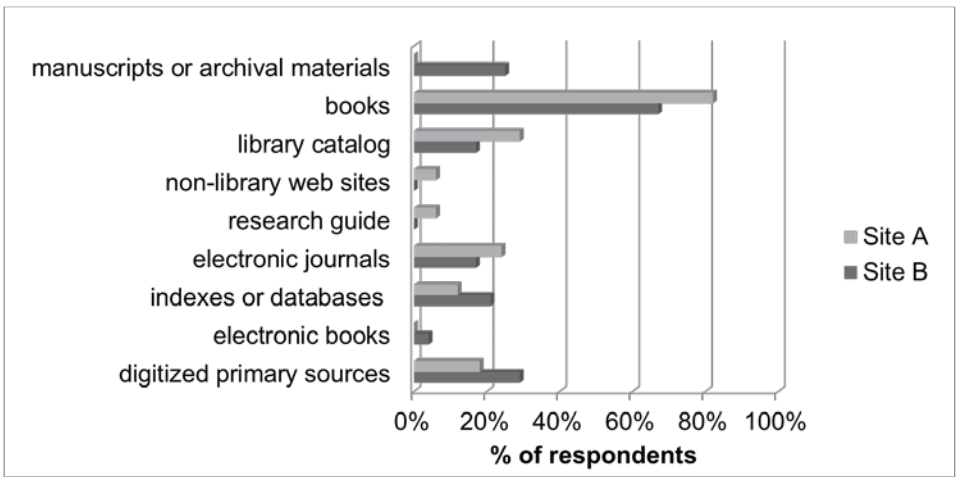

Figure 5: 'Most important' resource uses students reported while 'gathering evidence'

Student learning outcomes associated with the activity 'gathering evidence'	
• Locates secondary and primary sources • Distinguishes among types of sources	• Evaluates and interprets primary sources • Advances argument in support of thesis using evidence from primary sources
Associated VALUE Rubric elements	**Associated Tuning Outcomes**
Critical thinking – Evidence: Information is taken from source(s) with enough interpretation and evaluation to develop a comprehensive analysis or synthesis. Written Communication – Sources and Evidence: Demonstrates skillful use of high-quality, credible, relevant sources to develop ideas that are appropriate for the discipline and genre of the writing	Read, analyse and critically evaluate texts and other primary sources. Formulate and test plausible historical hypotheses and marshal an argument.

Table 3: Learning outcomes associated with the activity 'gathering evidence to support my thesis,' n=41

Factors of use

Students next reported on helpful or problematic aspects of their 'most important' library uses. The response categories to these partially open questions were developed and refined in qualitative studies (Rodriguez, 2006, 2007) and augmented with items from other studies (Kuhlthau, 2004; Saracevic & Kantor, 1997a, 1997b). Forty-one students identified 751 factors of library use, 75% of which were 'helpful'. Pilot participants contributed 17 new factors of use (2.26%) by checking 'other' and writing in their own categories. Fifteen of the user-contributed factors were 'problems' such as 'I got yelled at for ILL requesting items the library owned and stored offsite' or 'the printer was slow.'

Factors of use were classified by theme. For instance, the following five response items were placed in the category 'help finding information':

- I learned about information sources for my project (help)
- I learned new skills (help)
- helped me when I got stuck (help)
- the assistance I received wasn't helpful (problem)
- it was difficult to find someone to help me (problem)

Participation rates for each theme were computed by determining the proportion of participants who cited factors classified in specific themes (figure 6). A rate of 25% has been proposed as a threshold for determining the validity of categories in CIT studies (Butterfield et al., 2005). The most prominent theme was 'access to information,' which included responses such as 'provided the best information for my project' and 'it was difficult to find.' Convenience, ease of use, availability of space, help finding information, and affect of staff are other strong themes among these respondents.

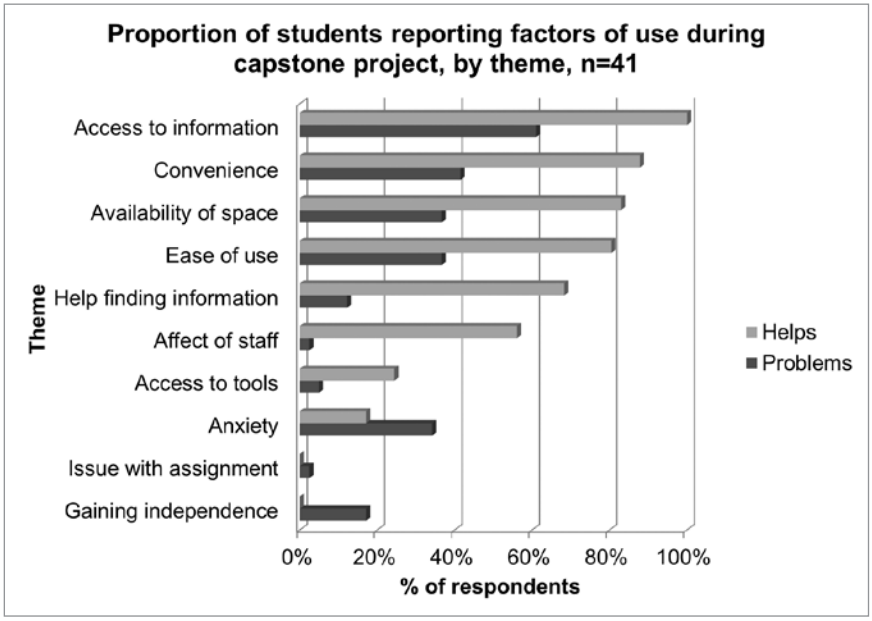

Figure 6: Participation rate for factors of use, by theme, n=41

Open ended questions

Two sets of open ended questions elicit student feedback regarding their experiences.

Challenges

Respondents identified a challenge they faced when completing the project, during which learning activity it occurred, and how it was overcome. Forty-nine percent of the challenges were related to finding and evaluating information, while 51% related to the assignment itself or time management. Assignment-related challenges were mostly related to developing a thesis statement and writing.

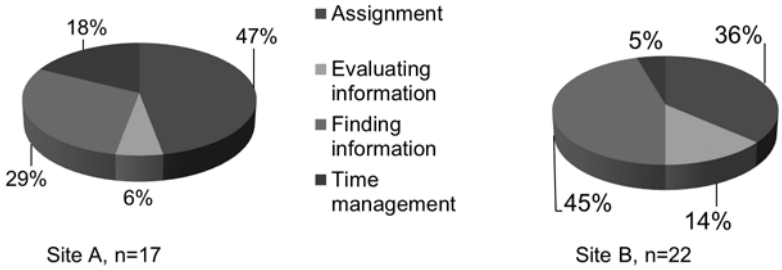

Figure 7: Sources of challenges reported by students, n=39

Most important library use

A set of open ended questions applies a variation of the contingent valuation method to understand what library uses were most important for these students and what they would have done if their top-ranked use hadn't been available. Thirty seven of 41 respondents answered this question. Interlibrary loan, books, and the online catalog were the top responses, likely reflecting the nature of the assignment.

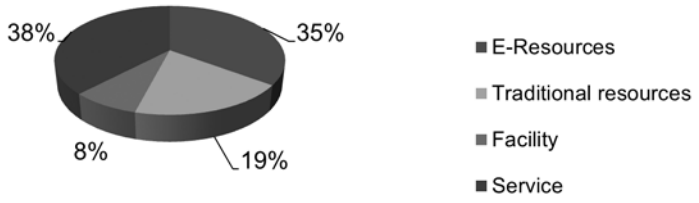

Figure 8: Top ranked library uses by type, n=37

Twenty seven respondents identified activities they would have engaged in if their top ranked choice had not been available. A majority (74%) said they would acquire needed materials either by purchasing them or visiting other libraries. Further analysis reveals that 25 students thought they would have incurred additional time commitments (80%) or financial costs (20%) if their top ranked uses hadn't been available.

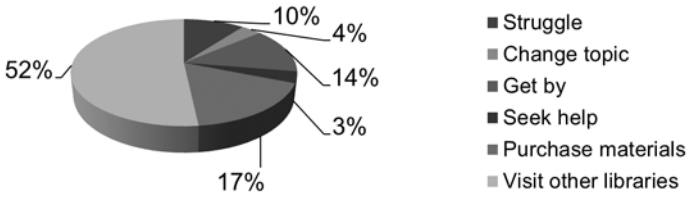

Figure 9: Alternate activities, n=27

Qualitative data gathered in these two question sets reinforced the authenticity of the responses and provided study sites with powerful stories to support library advocacy. For instance, when asked what she would have done if her top ranked library use, online journal databases, hadn't been available, respondent 3 at Site B wrote:

> *"[I would have] Floundered and sobbed uncontrollably. I honestly have no idea. I may have been able to get by with just the books I checked out and Google searching, but those databases, JSTOR specifically, really helped me."*

Conclusion

A central purpose of the academic library is to support the teaching and learning goals of its parent institution. The Understanding Library Impacts protocol (ULI) generates evidence of library impact by exploring library and information use as a component of student effort.

In this study, librarians and history faculty helped facilitate an evaluation of the ULI protocol at two study sites. The critical incident survey delivered rich evidence regarding student information behaviors during capstone coursework. Further probes isolated the students' most important library uses and the learning activities these uses supported. The learning activities crosswalk provided a method to link those behaviors to locally defined learning objectives and external frameworks for communicating student learning outcomes. Other questions isolated the 'factors of library use' that were helpful or problematic to students. Managers at the study sites can potentially use data regarding these 'helps' and 'problems' to support internal improvement processes. Responses to open-ended questions reinforced other findings in the study and revealed details of library impact on student learning.

Next steps and future opportunities

A broader study with undergraduate history majors will be carried out to refine the protocol in late 2011. Future studies are planned to examine the protocol with other disciplines.

The purpose of this project was to evaluate a method for linking library use to expectations for student learning. The next challenge for libraries will be integrating library use data with other institutional assessment data. ULI results are positioned to support this purpose. For instance, individual-level results from ULI studies may integrate well with assessment management systems as described by Megan Oakleaf (2010), allowing libraries to investigate relationships between library use and a variety of outcomes of interest to academic departments and institutions.

In this age of accountability, academic librarians must develop credible methods for demonstrating library contributions to the teaching and learning missions of their parent institutions. Librarians must collaborate with teaching faculty and campus assessment professionals to be successful in this endeavor. Pursuing these partnerships with tools like the Understanding Library Impacts protocol will bring academic libraries into important campus conversations about student learning.

Acknowledgements

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Collection development as a political process: a case from Norway

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The Buskerud bandits

In 2007 Buskerud County Library Service decided to focus on weeding and library collection development. The people engaged in this work were soon dubbed the Buskerud bandits. By becoming involved in practical and creative change in the libraries in Buskerud, the county library service wishes to foster a common practice of weeding, collection development and reorganising of the physical library space. The starting point for the practical work is a "weeding stunt" and physical reorganisation of the library. Fewer books on the shelves provide more room for changes to the actual library space.

Library of the year

Each year The Norwegian Library Association award a library the prize: "Library of the year". The Buskerud county library was awarded the prize in 2010. According to the statutes the award is given to a library that in recent years have applied new ideas or who have distinguished themselves through good and effective cooperation with other organisations. The jury's justification was the following: "Buskerud county library has through new projects and new measures helped to develop the role of regional development. Buskerud County Library is part of the Joint Library of Drammen. Cooperation with the Drammen public library and University College library of Buskerud has resulted in a dynamic library environment that has become visible far beyond their geographical boundaries. Through its innovative activities, the county library engage and inspire the library environment, both in their own county and throughout Norway" (my translation) (Norwegian Library Association, 2011). One of the initiatives that was specially highlighted by the jury was the work of the Buskerud bandits.

Political support

On September 12th local political elections for municipalities and counties were held in Norway. A conservative party in Buskerud gave special attention to The Buskerud county library in their party program. It is an important inspiration to us that our high profile get us attention from the political stake-holders. We make sure that the local politicians are informed of our activities and that they take pride in a well functioning county library. We invite politicians to our conferences not only for opening the events but also for attending events of national importance in the library field. We strive to give the politicians many opportunities to learn more about the importance of libraries.

Action research

The method used for our "stunts" are action research. In Norway action research has a relatively high standing, and is much used especially in pedagogical research. One can argue that with action research the researcher is given a useful tool for handling both praxis and theory. To describe the ongoing activities in a field one need both an inside and an outside perspective. In using action research as a method, our goal is to contribute to a change of practice not only in the specific situation but also to develop generalisable knowledge usable for the whole of the library community.

> *Life is a process of asking questions to reveal new potentialities. Action researchers ask questions of the kind, – I wonder what would happen if …? They aim to disturb fixed systems of knowing rather than maintain them (McNiff, 2002, p. 18).*

Kurt Lewin was the first to use the term "action research" in about 1944. In his 1946 paper "Action Research and Minority Problems" he described action research as "a comparative research on the conditions and effects of various forms of social action and research leading to social action" (Lewin, 1946, p. 38). The method uses "a spiral of steps,

each of which is composed of a circle of planning, action, and fact-finding about the result of the action" (Lewin, 1946, p. 38).

Action research in collection development

Our approach to weeding is direct action. In the tradition of action research we plan our "stunts", do the "stunts" and collect facts about the results. The action phase allow for much creativity. Creative work is hard, process-oriented, intensive and fun. The Buskerud bandits usually start the day quite literally by turning over a new leaf and starting afresh. Ideas and practical solutions follow each other in close succession. This type of change requires a very open, secure and broad-minded staff, who can work out solutions together with those who do not work in the library on a daily basis.

It is a distinct advantage that those who participate have concrete work experience from different types of library. In our case we have experience from professional, public, county and school libraries. Diverse backgrounds provide a broader discussion and experience basis, which gives greater weight to the arguments, while the solutions are based on solid practical experience. Being attentive and showing respect for the opinions of others in turn create a culture characterised by humour, curiosity, generosity and openness. These are all very useful qualities when working with change processes.

The purchasing programme for contemporary fiction and non-fiction

Since 1965 Norway has had a programme for the public support of contemporary fiction and non-fiction for children, young people and adult readers. The purchasing programme guarantee the publishers a sale of a certain minimum number of copies of each book published. Today the The Arts Council Norway buys, on an annual basis, 1 000 copies of about 200 different titles for adult readers and approximately 1550 copies of 110 titles for young people. In addition the Council has since 1991 bought about 50 Norwegian translations of fiction originally published abroad and about 15 titles of non-fiction written for young people. Since the start of the programme all the books have been distributed as gifts to the public libraries, and since the late 1980's also to 550 libraries in primary schools.

The Arts Council Norway says the following about the importance of the programme:

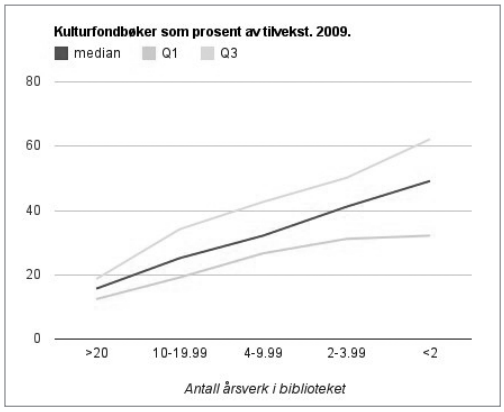
> *The reading public benefits from the programme by finding complete collections of modern fiction in their local public library, however small it is. This makes possible the meeting between a book and its reader, and is really what the program is all about (Arts Council Norway, 2011).*

The quote reflect the main problem for many libraries. To keep complete collections in every library puts a considerable strain on the physical space and is time consuming for the staff. The problem many libraries experience is that many of these books are just filling up their libraries without ever being read. In difficult economic times with little money to buy material, the collections rely too heavily on the purchasing programme with library users finding little else on the shelves.

The programme enjoys broad support in society, though being a subject of public debate from time to time. The Council argue that a small and scattered population, and the unusual situation of three official languages in Norway, a full-scale national book production scheme would be impossible if the market should rule alone.

Cecilie Naper, associate professor at the University College of Oslo and Akershus has done research on the purchasing programme. In a report from 1996 one of her conclusions is that although the purchasing programme has helped to cultivate a broad and varied Norwegian literary field, the reading is still focused on the fiction genre and a handful of writers. Genres such as poetry and drama are very weak in the library field of Norway (Naper, 1996).

The chart made by Tord Høivik at the Oslo University College give a good description of how reliant small libraries are on the purchasing programme. For libraries with two or fewer employees the percentage of accessions from the purchasing programme is almost 70. With decreasing budgets the libraries get more and more alike in their collections of books.

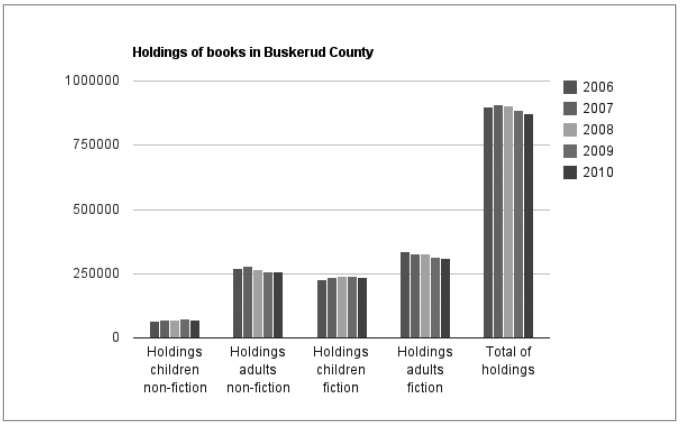


(Tord Høivik, 2011)

Book holdings in Buskerud and Norway

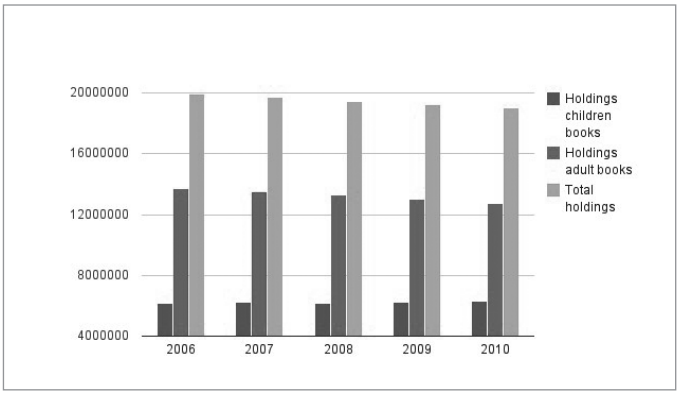
Do we see any effects on holdings from the work the Buskerud bandits have done?

As for Buskerud County we see a small change from a positive accession rate to a negative accession rate in the book collections since 2007.



(Source: Statistics Norway)

There has been a 4 % decrease in the total holdings in the period from 2006 to 2010. The trend in Norway has for many years been a positive accession rate. The last three years may indicate a shift with a total decrease in holdings on 4.7 %. The situation differs for children and adult books with a decrease in adult books on 7.8 % and a small increase in children books on 1.7 %.



(Source: Statistics Norway)

Community of collection development

One goal the Buskerud county library strive towards would be to gather a group of librarians who take a particular interest in weeding and interior design. This group of people, a community of practice, will in turn be able to help other libraries. The goal is to become reflective practitioners in collection development.

One thing the Buskerud bandits have discovered is that it is often easier to weed books in libraries other than one's own. There will be less of a personal relationship to the collection and one can more easily give up one's "darlings". However it is necessary to have good local knowledge of the library users and the collections.

The same is true for the physical space. New eyes can often better see new solutions to better cater for cultural and learning activities.

The theory of communities of practice is rooted in the work of Etienne Wenger and Jean Lave, done at the beginning of the 1990s on situated learning. They contended that learning should be seen in relation to the context in which it occurs. These learning communities were termed Communities of Practice (CoP). The term CoP denotes informal learning cooperative groups as a basis for skills development. Wenger defines Communities of Practice as:

> *Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly (Wenger)*

Special focus on collection development and use of statistics

The library field experience an increased focus and use of statistics in Norway. The white paper concerning the Norwegian library sector was adopted in June 2009. One of the important proposals had to do with statistics and analysis. Based on indicators and mapping, updated status reports will be developed for the whole library sector in Norway. The Norwegian Government acknowledge the need for a more knowledge based library practice.

The Buskerud bandits have had a special focus on turnover rate, to show the librarians just how crammed the shelves in Norwegian libraries are. Together with a special attention on the physical library space there is now an increased focus on collection development.

The spring of 2011 the course "Statistics for advocacy" was translated into Norwegian and held in Buskerud county. IFLA has developed a coherent series of training modules for competence building in library associations focused on advocacy and "Statistics for advocacy" is one of six in the training package. The course is offered throughout Norway and the aim is to empower librarians to mobilise people, politicians, parties and governments at all levels to support libraries – based on their actual contributions to society.

The lead has been taken by "Samstat", a library organisation which advocates for better national library statistics, and answers to the national body that collect library statistics, The National library and Statistics Norway.

Another activity that is about to start up is a community of practice on the use of statistics in Buskerud. A group of library leaders will together share and develop their statistical activities. Their aim is to improve the use of statistics and to use it more often in political and strategic processes.

Norwegian version of CREW manual

The Buskerud bandits base their weeding on the American manual: *Crew: A Weeding Manual for Modern Libraries (**www.tsl.state.tx.us/ld/pubs/crew**)*. The manual has been in use for over 30 years and has been translated and adapted into Norwegian by the undersigned. There is a demand for CREW because there exist few guidelines in Norwegian. The Norwegian version of CREW is, from this fall, on the curriculum of the Norwegian school of library and information management. The guidelines are of course of importance internally in the libraries, but are also a very useful tool for better advocacy on why we weed towards the public, owners and politicians. Few Norwegian libraries have a plan for collection development, and CREW also serves as an important inspiration in that respect.

The case of Lier Upper Secondary School

Before the summer holiday started in 2010, school librarian Birgithe Schumann-Olsen called for both ideas and practical efforts to contribute to the renewal of the library. The Buskerud bandits turned out with the objective of renewing as much as possible in the course of one day.

The library at Lier Upper Secondary School is relatively new and has an area of 180 square metres. It is situated in an annexe, which links two buildings together. The library occupies a central position on the second floor between the staff room and the classrooms. This ensures good relationships between staff and pupils. The library is very attractive with a lot of natural light coming from the windows on both long sides of the building. The end panels on several of the bookshelves are decorated with old photos of Lier, which gives the library a distinctive character.

Reactions from school librarian, teachers and pupils to the makeover

The school librarian has received nothing but positive reactions to the changes. She hears comments from the teachers that the reorganisation has provided more space, more light and a greater feeling of openness. It was also said that the photos on the end panels came more into their own, now that the shelves are standing at an angle.

Nobody noticed that 500 books have gone, but then no one has asked for any of these discarded books either. More space on the shelves has given more room to display books and has reduced the need to reshuffle the collection. The fact that a whole shelf section was removed has increased the openness. Even if people do not notice it has gone, they recognise the effect its removal has produced.

It was on the librarian's own initiative that the extreme makeover took place, but immediate superiors were informed ahead of time. Afterwards she received very positive feedback from both her immediate superior and the Head teacher. The librarian referred to photos and articles on the whole process. The work attracted comments both orally and on Facebook by the Head of the school.

Sharing the experience

Sharing the experiences are very important to The Buskerud bandits. It helps building the community and develop reflective practitioners. The results of the stunts are documented in various forms, as pictures on Flickr (flickr.com/photos/buskfyb/collections/72157623334641144), as films on Vimeo (vimeo.com/12968916), as reports on our web page, as well as in the news media. By showing examples of what we do, we increase the focus on collections and the physical library space. The Buskerud bandits' work and resulting success has become an export commodity. Nine counties across Norway have had a whole day seminar on weeding and collection development where the undersigned is the lecturer.

Conclusion

This paper show that a local initiative can achieve national impact. A long-term commitment, a variation of different activities and initiatives do pay off. Our aim is a decreased focus on the artifacts to a higher focus on library space, services and how we best can assist our users.

The Buskerud bandits are one example of change happening over time. Long-term priorities have the greatest effect on change. We have found that the concept of communities of practice can lead to useful and effective methods for developing skills.

In Buskerud we have found that statistics can be used in several different ways: To guide concrete actions, to make library staff aware of the need for action and to create public interest and debate around the work librarians actually do. The process in Nesbyen has been used as a starting point for integrating statistical reasoning into the daily practice of the libraries in Buskerud County.

Libraries need to prove their value to governments and public. There is great need for assessment measures that prove our impact and value to the society. Buskerud county library has taken several measures for establishing such an evidence base in Buskerud County.

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Evaluating "their" selections – the value of customer ebook purchases

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Introduction

Collection development has always been a challenge. Budget issues, space problems, and huge customer expectations are among the problems confronted by academic librarians. Over the last 10 years, these issues appear to have intensified with the impact of technological advances in digitising content such as journal articles and books. Librarians are confronted with a variety of purchase models for eBooks created by publishers and vendors. These models include purchasing individual electronic books from a vendor, selecting collections of eBooks offered by a publisher, acquiring pre-determined subject collections of eBooks, subscribing to databases of eBooks owned or leased, and implementing a patron selection/customer initiated/demand driven acquisitions project. Each method provides a variety of differences depending on the model. At the same time, the demand for printed books continues to decline in most academic libraries.

The University of Texas at Dallas was originally a research center created by the founders of Texas Instruments and became a public university in 1969. Over 65% of the student body is enrolled in quantitative programs within the School of Management, the Erik Jonsson School of Engineering and Computer Science, and the School of Natural Sciences and Mathematics. Over 73% of graduate students are enrolled in the same Schools. Only 25% of undergraduates reside on campus. The non-traditional base of the University appears to make the acquisition of eBooks particularly helpful for commuting students.

The Eugene McDermott Library at the University of Texas at Dallas is a medium-sized academic library which provides a hybrid model of acquisitions for a highly quantitative customer base. The development of the collections has been strained by the financial demands from continuations as well as space needs for study. As money available for books continued to decline, the Library cancelled its approval plan in 2007. While the approval plan was adjusted twice in the early 2000s, the results were not always relevant for the curriculum. For the 2006 titles, 42.6% of the items have never circulated through 2011.

The Library assumed considerable risk in exploring various acquisition models for eBooks. The models included selecting individual titles from an eBook vendor, subscribing to databases of eBook titles, purchasing a growing collection of eBooks through a consortium, ordering through an approval plan, and buying subject collections of eBooks directly from a publisher. The University began acquiring electronic books in 1999 and has nearly 1,000,000 cataloged titles available in the library's catalog. Of most importance is the experimentation with customer selected eBooks. During the last 3 years, the Library used several approaches to enable students and faculty to select eBooks. The customers are not aware that their use of the book purchases the title for the library. Since the initial selection of electronic books, the usage of the online collections has remained strong as compared to the circulation of print materials.

By 2008, in addition to the models described above, the library took the step to experiment with patron selection. The project consisted of 3 projects. The initial model was to work with EBL. Secondly, the library became a member of the pilot project created by ebrary. Finally, the library was approached by Elsevier for yet another customer selection model. These models were part of the development plans in addition to other selection of print and eBook models. The checking and ordering process created by the variety of models was tricky and required extra effort to limit the amount of duplicate titles.

Data analysis

The Library analyses usage statistics in print/electronic collections and subject areas to determine how the purchased and leased materials are used. The analysis provides insight on how to best develop the resources available to its customers. Usage of electronic books is as difficult to understand as print circulation transactions. Were print books read cover to cover, was a chapter used, or was the book even opened? For electronic books, each vendor creates

interesting statistics concerning if the book link was clicked on, how long the item was used, were pages accessed or printed, or if the piece was downloaded for a couple of days.

The objective for this analysis was to determine the usage of the new books within the print collection as compared to various eBook purchases made by customers. The eBook collection selected was purchased through EBL. The period from 2008 through August 2011 was selected as it incorporated 36 months of customer selection, librarian eBook selections through YBP, and print orders also made by librarians.

During the period from 2008 to August 2011, print orders declined by 36% to 3,293 titles. For the print collection, circulation data was extracted from the Voyager system based on the titles acquired in a particular budget year. Usage of each title was evaluated for the following years and totaled for the life of the item.

When reviewing the print titles purchased in 2008, the analysis showed that 38% of the titles had never circulated while 27% of the books had only been checked out once in over 3 years. The other 35% of the 2008 titles had been checked out more than one time. The level of circulation of new volumes in 2008 corresponds to the results given by Spitzform (2011) at the University of Vermont.

Stewart (2011) reports on usage of monographic collections and cites a recent study from Cornell University. For items purchased since 1990, 55% of the titles had never been checked out. He compared these results to those reported in the famous University of Pittsburgh study written by Allen Kent in 1979 which showed that 40% of titles in their collection never circulated. Even after 3 ½ year, the circulation numbers for print books purchased at the University of Texas at Dallas are higher than these studies but use varies greatly by discipline. Statistics for the print books acquired in 2009 and 2010 show lower circulation because of the length of ownership.

While the usage numbers are slightly higher at McDermott Library, a longer time period is required to determine if the print items continue to be checked out and with what level of frequency. The previous usage studies could become obsolete because of the presence of electronic resources within library collections. And, the true usage of information by customers would require an evaluation of how they integrate library resources with other electronic materials.

In addition to print purchases, the University of Texas at Dallas entered into a buying relationship with EBL in 2005. Initially, the librarians selected titles from subject and title lists provided by EBL. When Blackwell and later YBP provided a means to select items from EBL, titles were ordered using the approval system. In addition, the library was able to purchase items from other eBook suppliers. By 2011, the library had a purchasing relationship through YBP with many companies including EBL, Wiley, ebrary, and Sage.

By 2008, the Library added customer selection to the ordering processes. This initiative built on a project developed within Interlibrary Loan which capitalised on rapid ordering through Amazon using a credit card and quick delivery of certain requests which matched a set of criteria. The customer was told that the library was going to order and own the title rather than borrow the item. For the eBook project, the customer was not told that clicking on a link within a bibliographic record and using the item for a period of minutes would result in the order of the item. The customer selection model required profiling which included selecting the trigger for purchase. The trigger would be to set the number of uses by a customer before the book was purchased. Other parts of the profile included choosing appropriate publishers, identifying specific subject classes, setting the date of publication for the records chosen to load into the library catalog, and specifying the cost limits per item. For the profile, the library selected to purchase a title after the second use and to load records for recently published material rather than recently digitised items. Rather than load tens of thousands of records, the Library started the program slowly and reduced the number of duplicates from titles already owned.

During the initial 36 month period, 441 titles were purchased by customers from over 9,500 records loaded into the catalog. Those titles were used 2 times before the purchase was triggered and were accessed 3,035 times or an average or 6.88 times per title. An additional 800 titles were used one time but have not been accessed the second time to create the book purchase. EBL categorises these titles as short term loans. The 441 titles cost $41,746 ($95 per volume) and the short term loans cost $15,509 for 1,236 titles. Since 2005, librarians have spent $195,616 for 2,029 volumes and over 50% of the titles have been accessed. The total cost of the EBL purchases acquired since 2005 is $252,871.

In comparing the subjects purchased by librarians and through customer selection, there are some differences created by the EBL profiling. The EBL profile included the following Library of Congress classification number: BF (Psychology), G (geography), all H (social sciences), all J (political science), K (law), QA (computer science and mathematics), and all T (technology). Customer selection came from these subject areas and did not incorporate the entire range of subjects available from librarian selection. The librarians purchased from any area of the Library of Congress classification. In addition, they were able to choose from books offered from EBL and ebrary. Despite

specifying certain subjects, the library did receive bibliographic records outside these areas and many books from those areas were selected and resulted in purchases or short term loans.

While there are sometimes significant differences between the usage of customer and librarian purchases, it is not always clear if the statistics are meaningful. Various factors could impact usage including the need for a specific book or work authored by a particular person, when the book was purchased during the 3 year period, and the level of competition for a particular work.

Overall, customer selections amounted to 38% of the EBL purchases from 2008-August 2011. Purchase of EBL books classified in the call numbers of H, Q, and T was 83% for customer selections and corresponds to the major concentrations of the University's curriculum. In reviewing the purchases against usage, nearly 30% of the books were never used outside the initial year of purchase for customer purchases but 45% of librarian orders. It remains to be reviewed if this is because of the shortage of the time period studied or if the use was by one person for one study. It could be a reflection of a particular course or a special assignment. If this finding was observed over time, the number of uses needed to trigger the purchase could be increased. Since each use costs a portion of the purchase price which is not absorbed when the item is purchased, increasing the number of uses would increase the amount of short term loans but could prevent the purchase and lack of subsequent use.

EBooks classified in social sciences (H), science (Q), and technology (T) constituted the areas most used. For the customer selections 83% of the total usage was in the H, Q, and T call numbers while the librarian selections showed 80% in the same subjects. While those statistics are relatively consistent, the usage varies greatly within the classification. The subjects of Industry (HD), Commerce (HF), and Finance (HG) accounted for 84% of the usage in the H classification for customer selections but only 60% for the librarian selections. The librarian purchases and subsequent usage had broader appeal than the items selected from customer purchases. Twice as many criminology books were purchased by the librarian and constituted 17% of the usage in H as compared to 3% of the usage in customer selections. The librarian selections in economic theory (HB) were twice as likely to be used as compared to those purchased by customers. Customer selection in finance (HG) constituted 30% of the usage of H, but only 5% of the usage of librarian selections in the same subject. Further study of the differences with respect to specific books is required.

For the eBooks purchased by customers in the T classification, 73% of the usage was in electrical engineering (TK) and 11% of the usage was in civil engineering (TA). For the eBooks purchased by librarians in the T subject area, 76% of the usage was in electrical engineering (TK) and 10% of the usage was in civil engineering (TA). The similarity of the amount of use in these subjects varies from the H analysis above.

The usage of the librarian selected eBooks in the Qs suggested an acceptance by some portion of the customer base. This factor could be a result of the lack of profiling for customer selections in the science subject area. The finding suggests that additional profiling in the Qs would increase the number of books selected for purchase. The finding indicates that librarians could increase their selection of eBook science materials. Since the Qs are a very broad area, profiling should concentrate on areas where usage occurred for librarian selections. Those areas include physics (QC), chemistry (QD), natural history (QH), and physiology (QP).

On average, print books are not used with the same intensity as eBooks in the 21st century. For print titles purchased in 2008, each book had an average use of 1.7 times. This statistic compares to customer selection usage of 6.9 uses per title and librarian selection of EBL eBooks at 4.6 times. In addition to the title, author, or subject, usage of the materials is contingent on the assignments made by the faculty as well as the timing of course offerings.

The loading of thousands of unused eBooks is a cost to the organisation. Purchase of print collections that are never used results in price of the item, space/shelving costs, and environmental costs such as heating/cooling and electricity for lighting the area. All customer purchases resulted in at least two uses while short term loans resulted in one use. Librarians purchased eBooks that have not been used, but it is difficult to determine the percentage of unused EBL titles.

At UT Dallas, librarians are purchasing subject eBook collections from individual publishers including the American Psychological Association and Springer. While the average cost of each book is lower, the demand for all titles in the collection corresponds to the "Big Deal" model for ejournals. The Library is concerned that eBook subject packages might not be sustainable given the annual maintenance costs as well as the number of books never accessed. Some packages contain archival titles that might not be as relevant as newer titles. In addition, some subject collections are very broad and many titles could be outside the current interests of the University faculty. The Library will continue to study the usage of subject collections to determine how they fit with the overall collection development plans.

Unused eBooks are a concern. Subscribing to databases of eBooks such as Safari Tech or ebrary Academic provides continuous access to a large and growing set of eBooks, many of which are aging in usefulness. For example, the statistics for the ebrary subscription from 2008 through July 2011 showed that only 10,897 of the 44,853 titles were used or 24.3%. In addition, there were 38,277 sessions and 650,052 pages viewed. For Safari Tech, 53% of the titles were not used in 2010, but there were 10,696 sessions with an average length of 15.22 minutes.

Conclusion

Many academic libraries have experimented with the acquisition of electronic books and in particular customer-initiated selection. The experiences at University of Texas at Dallas are interesting because of the length of time using the customer model as well as the size of the eBook collections.

Comparing the demand for print and electronic formats based on circulation or usage of the material brings a level of analysis to questions involving the future of collection development. The usage at UT Dallas indicates the profile for customer selection is critical to the acquisition of quality materials. Given the usage of customer selection, the University will continue and increase the level of commitment to this model of acquisition. The usage of customer selections is strong, money is saved from enabling short term loans rather than purchasing, and space is saved. While not all students and faculty use eBooks the demand as reflected in the statistics provided by vendors indicates a level of acceptance for the format.

Our customers have many options for gathering and using information. Libraries must continue to evolve to meet the needs of their customers. Demand for electronic resources continues to increase and libraries should be prepared to develop their collections to meet these needs. While hybrid models are critical in the short term, the future of information delivery is electronic.

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Two decades of user surveys: the research library as seen through the eyes of its customers

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Steve Hiller
Director, Assessment and Planning, University of Washington Libraries

Overview

The University of Virginia (U.Va.) Library and the University of Washington (UW) Libraries were pioneers in the development and utilization of customer surveys. UW conducted its first large scale survey in 1992 and has continued their surveys on a triennial basis. U.Va. mounted its first faculty survey in 1993, and its first student survey in 1994. U.Va. deployed surveys on a three to four year cycle until 2008, when it began surveying a sample of customers on an annual basis. Both U.Va and UW have vigorous and varied library assessment programs. Customized surveys, the topic of this paper, are an important element of their assessment programs, but only one of many tools in the assessment arsenal.

In 2001 as part of the 4th Northumbria International Conference, the authors presented a paper entitled, "A Decade of User Surveys: Utilizing and assessing a standard assessment tool to measure library performance." (Hiller and Self, 2002) This article updates the earlier paper with data collected during the last decade.

The two decades from 1992 through 2011 have seen unprecedented change in the world of research libraries. In 1992 research libraries were defined and ranked by their print collections. Customers had to physically come to the library building to use most library resources. Today, online resource use dwarfs in-person use of collections. The physical library has changed from a model that emphasized collections and in-person services to one that enhances collaborative learning and provides selective on-site support.

At both institutions the surveys have changed and evolved over the years to keep pace with changes in the academic and information environments. In the 1990's survey logistics consisted of using reams of paper, manila envelopes, and rolls of postage stamps. Today, these cyclical surveys are conducted using the Web. The Web has also facilitated the development and application of standardized surveys such as LibQUAL+® and led to changes in survey methodology and analysis. The world, both for research libraries and survey methodology, is a vastly different place in 2011.

The large scale customer survey: strengths and weaknesses

The large scale customer survey is a widely used and accepted methodology. A survey can indentify user issues, concerns, and needs. It measures performance from the perspective of the user. It can provide a wealth of data that can be analyzed using standard statistical techniques. If the number of responses is large enough, one can make statistically valid generalizations. A survey can also provide opportunities for open ended comments by the user, which supplement the quantitative data, and are sometimes very helpful in illustrating a point. The survey results can, and generally should, lead to changes and improvements in the library. Because the survey is such an accepted tool, the results are generally useful in institutional assessment and accreditation.

However, user surveys do have their limitations. The respondents rely on their memory, and provide their perceptions of services and resources. Thus the results are a compilation of perceptions, not a record of actual library performance. The ability to generalize from the survey respondents to the population depends not only on response size but representativeness as well, especially at sub-group levels.

In the digital era of today, it is easy to launch a web survey using inexpensive software, such as Survey Monkey or QuestionPro. However, constructing a survey is not a simple task. It is difficult to frame complicated questions, and poorly worded questions can skew the results. Constructing a survey properly can be difficult and costly, especially the first time. The ease of mounting surveys, through using web tools, means that everyone receives many requests to fill out surveys. Thus survey fatigue is a real problem, making it difficult to get good response rates.

For these reasons we believe the large scale survey should not be the only tool in the library assessment arsenal. However, it is a valuable tool, especially useful for using longitudinal data to demonstrate changes over time.

Surveys at the University of Virginia Library

The University of Virginia (U.Va.) is well known for its undergraduate liberal arts education. It is a state supported institution that works to maintain a national and international reputation; one third of its undergraduates are from out of state. The university has notable professional schools of law, medicine, and business, and it offers the Ph.D. Degree in 46 fields. A total of 15,000 undergraduates and 6,000 graduate and professional students are enrolled.

The U.Va. Library conducted its first large survey in 1993, asking a sample of 500 fulltime faculty to fill out a paper survey. A sample of undergraduates and graduate students were surveyed the following year. The surveys have often asked the same questions to graduate students and undergraduates, but the results have always been tallied and analyzed separately. Undergraduates and graduate students have very different library use patterns and priorities.

Faculty surveys were also run in 1996, 2000, and 2004. Student surveys were done in 1998, 2001, and 2005. Starting in 1998, paper surveys were phased out, and the web became the primary mechanism for delivering the survey.

In 2006 the U.Va. Library conducted the LibQUAL+® survey. LibQUAL+® is distinctly different from the customized instrument U.Va. had run in the past. This standardized instrument allowed U.Va. to make comparisons with peer libraries, and to compare user ratings of perceptions with their desired and minimum ratings. The relation between minimum, desired, and perceived was explored in depth for one particular question (IC-8: print or electronic journals I need for my work); the results of this study were published and widely reported. (Self, 2008)

Although U.Va. had a very positive experience with LibQUAL+®, the decision was made to return to locally developed surveys. The response rate for LibQUAL+® was distinctly lower than had been the case for the local surveys, and U.Va. wanted the ability to customize surveys, to add and delete questions, and to edit the actual text of the questions.

In 2008 U.Va. moved to a practice of conducting annual surveys. Faculty and students are surveyed at the same time, but the results for faculty, undergraduates, and graduate students are tallied and analyzed separately. Each year a sample of 500 graduate students and 750 undergraduates are asked to fill out the survey. Only one third of the faculty (about 350) are invited to participate each year. Limiting the survey to one third of faculty each time reduces the chance of survey fatigue. A relatively brief survey report is issued each year, with a more comprehensive report every three years.

Surveys at the University of Washington Libraries

The University of Washington (UW) Libraries conducted the first of its triennial surveys in 1992; the seventh iteration was run in 2010. The UW surveys initially focused on satisfaction and use, but in later years have included measures of importance, impact, usefulness, and priorities.

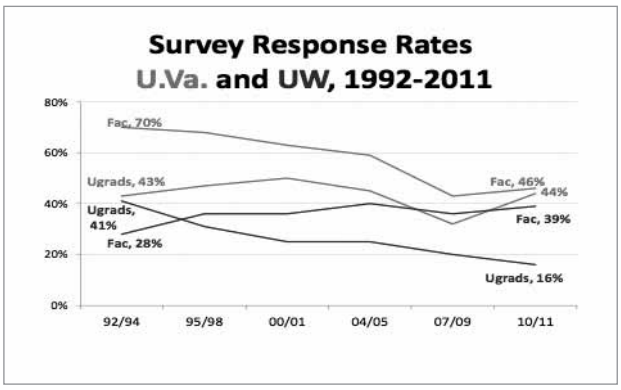
In each iteration the UW surveys all faculty, and a sample of students. In 2010 a total of 1634 faculty members responded to the survey. The user groups are surveyed at the same time, but questions differ between groups, and the questions change over time. The first four editions of the survey were on paper; in 2004 the web became the primary mechanism for the survey. However, the final reminder notice to faculty who have not submitted a survey also includes a paper survey. The percentage of faculty surveys returned in paper has declined from 33% in 2004 to 18% in 2010.

In 2002 UW created an in-library use survey to better capture use of the physical library, given the decline in the frequency of visits by faculty and graduate students. It has been repeated on a three year cycle since then. UW also participated in the annual testing that accompanied the development of the LibQUAL+® instrument from 2000 through 2003. While LibQUAL+® had some attractive features, including the ability to do some comparison with other institutions, it was decided that a locally developed survey would provide more useful results.

Survey response rates

The response rates for the two libraries show some contrasts. As shown on the chart below, U.Va. started out with a very high rate – 70% of faculty in the sample responded in 1993. Over the years, as surveys became more commonplace, the faculty response rate declined until it leveled off in the mid-40s. UW, on the other hand, started much lower with a faculty rate of 28% in 1992, but has climbed to 39% in the latest survey. UW has a large teaching and research faculty, about 4000 strong, and the emphasis has been of getting large numbers of survey participants. Over 1,600 UW faculty responded to the survey in 2010. It should be noted that UW surveys faculty in all academic programs, including Health Sciences, Law and the UW Tacoma and UW Bothell campuses, while U.Va surveys only those populations served by the central U.Va Library. At UW, Health Sciences response rates run somewhat lower than other areas.

Student returns at U.Va. have been more consistent, undergraduates have always been in the 30s or 40s, while graduates have usually been in the 40s or 50s. At UW we see a decline in undergraduate participation from 28% to 16%.



Overall findings

At U.Va. the faculty place great value on online access, interlibrary loan, and document delivery. Graduate students value online collections and online access. Undergraduates value space and comfort; the library as place is important to them. Customer service ranks high in both satisfaction and importance among all user groups.

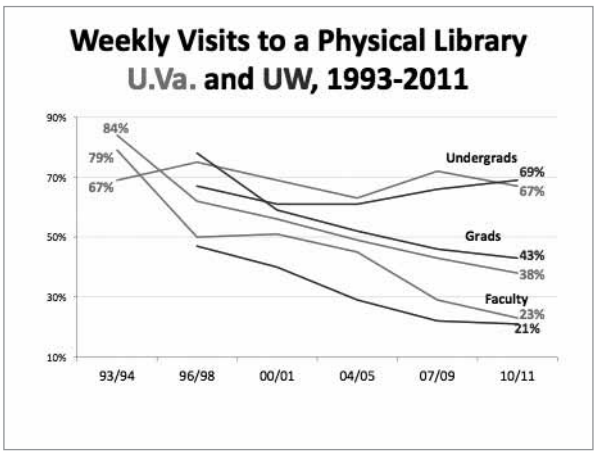
At the UW, faculty value collections, graduate students value access, and undergraduates value place. All three groups give the libraries a lot of support and even love. But the UW surveys are now moving beyond love and satisfaction to importance and impact.

Use of the physical library

Although the two institutions are different in scope and focus, the longitudinal data, over twenty years, show remarkable similarity in the frequency of in-person visits to the library:

In 1993/94 84% of graduate students and 79% of faculty at U.Va. reported physically visiting a library at least once a week. By 2010/11 those numbers had fallen to 43% and 21%. Undergraduates have not changed their patterns appreciably. In 1993/94 67% reported weekly use of the physical use, and the same number applied in 2010/11.

At the UW a similar pattern is seen. Undergraduate use has been relatively constant, scoring a 69% in 2010. However, faculty and graduate use of the physical facility has consistently fallen, reaching 21% for faculty and 43% for grads in 2010.

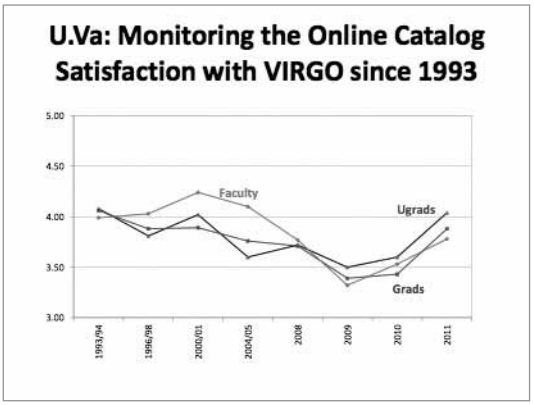


In their in-house surveys, UW has discovered that undergraduates have become the overwhelming presence in the physical library:

UW In-Library Use Survey
User Percentage by Group 2002-2011

	2002 n=3878	2005 n=3266	2008 n=3196	2011 n=3379
Undergraduate Students	59%	64%	69%	74%
Graduate Students	25%	22%	20%	17%
Faculty/Staff	7%	5%	4%	4%
Not UW affiliated	8%	8%	5%	4%

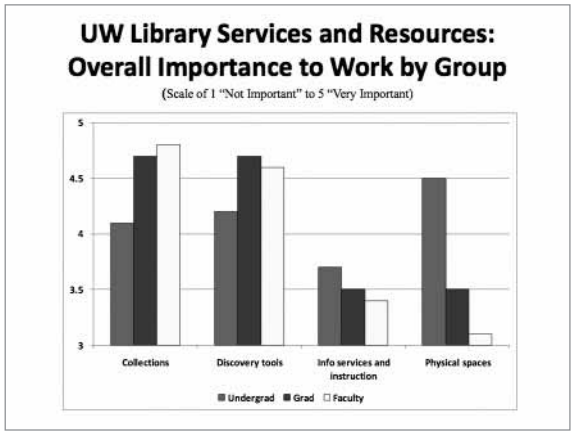
Using survey data to address specific issues



At U.Va. questions had risen regarding the functionality of the online catalog. A number of complaints had been received. Using longitudinal data it was determined that satisfaction with the catalog (VIRGO) had declined significantly over the years. The longitudinal data were used to secure funding for a VIRGO revision project. A new version of VIRGO came available in 2010, and the survey data for 2011 indicated the project was a success. All three user groups showed a distinct uptick in their satisfaction levels for VIRGO.

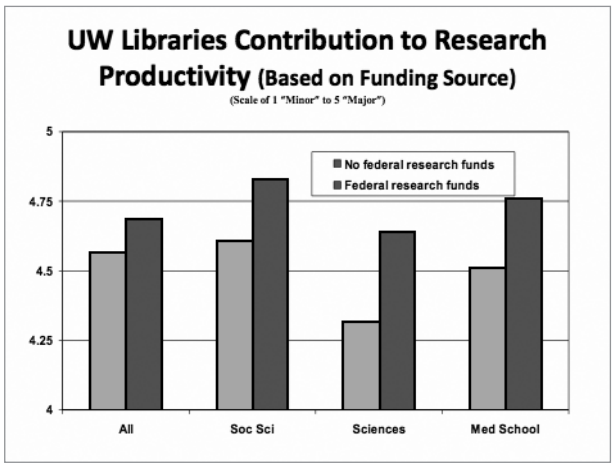
Importance of library resources and their contribution to academic success

Recent surveys at UW have given attention to questions of the importance of library services, as well as drilling into the data to determine just what is important for each user group and sub-group.

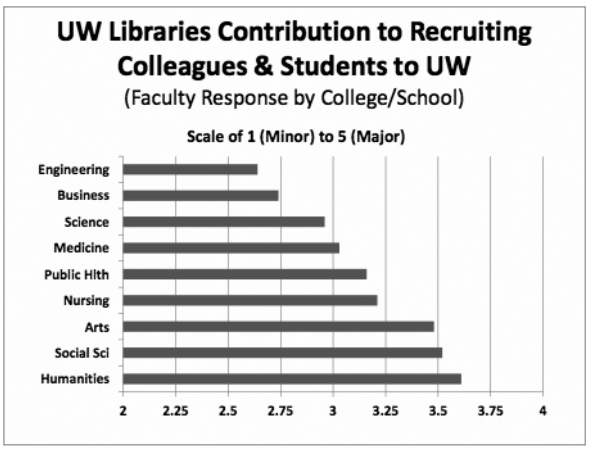


UW faculty care most about collections and discovery tools, while undergraduates care mostly about the physical space.

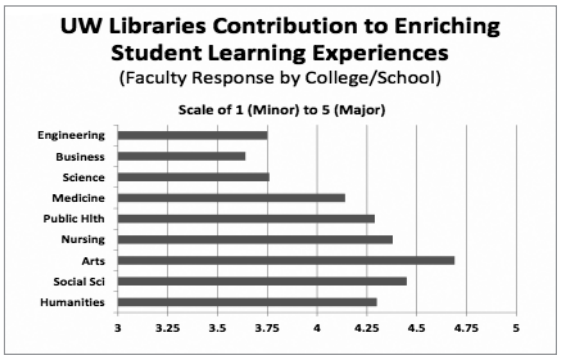
The chart below shows that UW faculty who receive federal research funds recognize the contribution of the libraries.



Likewise UW faculty report that the Libraries help recruit students and colleagues:



And the libraries contribute to student learning:



Other assessment techniques

As noted above, the large scale customer survey is not the only assessment tool used at these two libraries. Both libraries use the Balanced Scorecard, usability testing, focus groups, structured interviews, and direct observation of customers. UW does in-house surveys on a regular cycle. U.Va. has a history of doing data mining and producing statistical compilations.

Putting the data to use

The survey results have led to many changes and improvements at the two libraries:

- additional resources for the science and arts libraries
- keeping the undergraduate libraries open 24 hours
- support for the transition from print to e-journals
- improved study and collaboration spaces
- reallocation of internal budgets and staffing
- support for external budget requests
- development of the strategic planning process
- implementation of performance measures
- enhanced usability of discovery tools
- identification of issues and problems requiring further study.

Conclusion

Survey research offers librarians the opportunity to learn, in an empirical way, what their customers need and want, and their level of satisfaction with library services. Surveys conducted repeatedly over a long period of time provide a record of the changing library environment and an indication of the library's success in responding to those changes. While there are a number of Web-based standardized survey instruments now available, the locally designed or adapted survey can provide valuable information in the context of its institutional environment. It is not the only assessment tool, but it is a crucial tool.

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Both libraries have made their survey instruments and results available on the Web at:
www.lib.virginia.edu/mis
www.lib.washington.edu/assessment

The Library Impact Data Project: hit, miss or maybe

Graham Stone, Dave Pattern and Bryony Ramsden
University of Huddersfield

Background

In 2009/10, data at the University of Huddersfield was analysed for over 700 courses over four years – 2005/6 – 2008/9. This investigation suggested a strong correlation between library usage and degree results, and also significant under usage of expensive library resources at both School and course level. Three indicators of library usage were used:

- access to e-resources
- book loans
- access to the library.

Data was then matched against the student record system (SITS:Vision) and anonymised. The correlation between library usage and final degree was particularly strong in relation to access to e-resources and book loans, and existed at School and course level.

In April 2010 the initial findings were presented at the UKSG Conference (White and Stone, 2010). It was highlighted that the correlation between library usage and grade had not yet been significance tested and that it was not known whether Huddersfield was an anomaly or the norm. To this extent, other academic institutions were invited to benchmark against the findings. As a result, a number of universities from across the UK higher education sector expressed an interest in becoming partners in this project.

Library Impact Data Project

In February 2011 the University of Huddersfield along with 7 partners; University of Bradford; De Montfort University; University of Exeter; University of Lincoln; Liverpool John Moores University; University of Salford and Teesside University successfully bid and were awarded JISC funding through the Activity Data programme (JISC, 2011) to investigate the hypothesis that:

"There is a statistically significant correlation across a number of universities between library activity data and student attainment"

The Library Impact Data Project (LIDP) (Various, 2011) aimed to analyse users' actions with regards to library usage and then linking those to final degree award. By identifying a positive correlation in this data those subject areas or courses which exhibit high usage of library resources can be used as models of good practice.

Data requirements

By partnering with universities that represent a cross-section of size and mission the project aimed to provide a rich data set on which to work. Table 1 shows the list of requirements the project asked of its collaborators. The minimum data requirements for participation in the project are highlighted in bold.

Academic year of graduation	eg	2009/10
Course title		Software Development
Length of course in years		3
Type of course		post grad
Grade achieved		2:1
School/academic department		School of Computing & Maths
Number of items borrowed from library • either the total number borrowed by that student • or separate values for each academic year	eg	50 items during the 3 years of the course 11 items in 2007/8, 16 in 2008/9, 23 in 2009/10
Number of visits to the library • either the total number of visits by that student • or separate values for each academic year		
Number of logins to e-resources (or some other measure of e-resource usage) • either the total number of logins made by that student • or separate values for each academic year		

Table 1: Data requirements

In addition, some of the partners submitted extra data such as network logins. As the research centred on undergraduate students, partners were requested either to extract their data independently of other students or to provide a key so that the data could be extracted at Huddersfield. Year of graduation was only necessary if partners intended to produce longitudinal analysis across different intakes of students.

The data extract was required in an Excel-readable format, to aid preparation and ease of transfer to SPSS/PASW for analysis.

Legal issues

From the outset, a major issue for the project was to ensure it was abiding to legal regulations and restrictions. At the initial bidding stage, partners were asked to discuss privacy issues with their institution's legal advisor, records manager and/or ethics committee.

In order for Huddersfield to handle the data, the UK Data Protection Act required that the data provided should not include any information that could be used to identify any named individual, eg their name or a campus network ID. In addition, any small courses were excluded to prevent identification of individuals ie where a course had less than 35 students and/or fewer than 5 of a specific degree level.

The project contacted JISC Legal prior to data collection to confirm procedures were appropriate, and additionally liaised with the University of Huddersfield Records Manager and the University's legal advisor. Advice was also taken from another project in the strand, the UK OpenURL Router Services (Edina, 2011), which uses the following statement to notify library and resources users of data collection:

> *"When you search for and/or access bibliographic resources such as journal articles, your request may be routed through the UK OpenURL Router Service (openurl.ac.uk), which is administered by EDINA at the University of Edinburgh. The Router service captures and anonymises activity data which are then included in an aggregation of data about use of bibliographic resources throughout UK Higher Education (UK HE). The aggregation is used as the basis of services for users in UK HE and is made available to the public so that others may use it as the basis of services. The aggregation contains no information that could identify you as an individual."*

Focus groups were also provided with a briefing and a consent form to ensure participants were fully aware of how the anonymised data from the group was to be used and advising them that they could leave the group at any point (see below).

Results

Due to limitations on what data format was available, testing methods took some time to refine. While usage data was continuous, the final mark was not, and took the form of degree format rather than a percentage score. As a result, following several attempts using various methods, the Kruskal-Wallis (KW) test was selected, in combination with the Mann Whitney U test (MW). These tests combined analyse differences between groups of data, the former checking for differences between groups overall without specifying where differences lie, the latter allowing for several tests to be conducted analysing differences between specific groups. The size of the difference can then be measured using a simple manual calculation.

The tests themselves are not without problems, and follow a convoluted process. Before the KW test can be run, the data must be tested to ensure it does not follow a normal, bell curved distribution. Following the KW test, data must be analysed visually using boxplots in order to decide what degree results to compare in the MW tests (see figure 1).

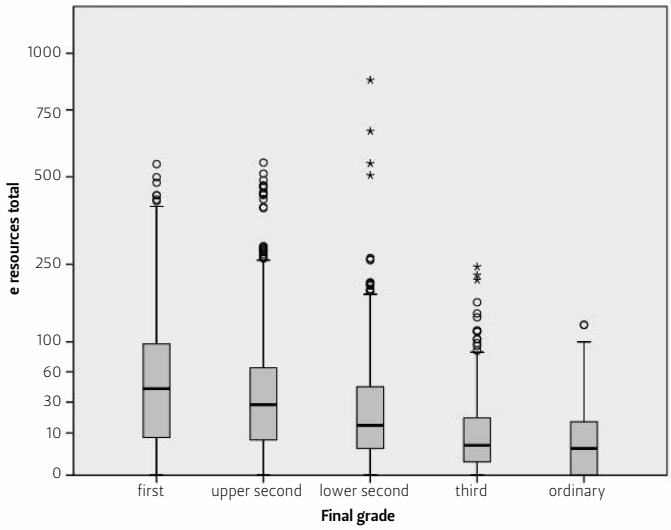

Figure 1: A boxplot of e-resource usage, indicating a difference in usage between high and low degree results.

However, the number of MW tests that can be conducted is restricted as the more the test is run on one set of data groups, the more likely a difference will be found accidentally, and the higher the significance level is required. Had the data set been smaller (for example of a specific course), analysis could have been conducted to indicate whether there was a specific direction of usage and thus a decrease in degree result as usage declines. However, as the combined data for all institutions measured in excess of 33,000 records, and analysis for individual institutions was conducted across all undergraduate degrees, it was not possible to measure a directional relationship.

Data analysis indicated that there were differences between degree results in terms of using electronic resources and borrowing items from the library. Effect size, when at a significant level, indicated that the higher degree had higher usage than the lower degree, albeit to a varying extent. Course level analysis is expected to indicate larger effect sizes, but would naturally be dependent on the course itself: course usage will depend on the nature of the subject of study and the nature of the assignment requirements. The data overall is expected to be skewed somewhat due to the inclusion of 'anomaly' courses such as computing or art, where usage of library resources may not necessarily be common or measurable.

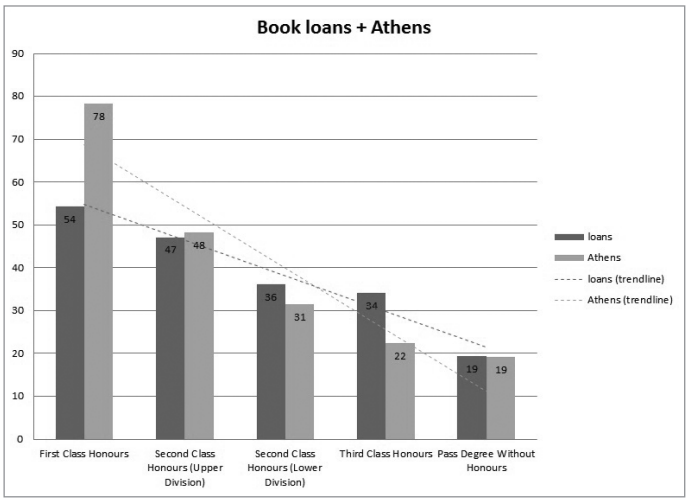

Figure 2: Example of book loans and Athens logins vs. degree classification

Figure 2 shows a typical result from one of the project partners based on averages. Our research supports the visual representation of variance between degree results and usage, and does so across a range of data eg subjects, which supports our hypothesis that library usage does impact on students' attainment.

Focus groups

Focus groups were conducted to seek out qualitative data as to why some courses or students would or would not use library resources, and were considered particularly useful for investigating anomaly courses further. All institutes were asked to conduct groups, and were provided with:

- guidelines for how to conduct the group
- a script to introduce the purpose of the group
- a statement of research purpose with contact details and clearly indicating students could leave at any point
- consent forms
- questions modifiable by the host institution to reflect their resources and/or add any other questions they chose
- a short survey of library resource usage to compare to the responses provided during the discussion

Groups were advertised to students in various ways, but all included an incentive to attend in either print/photocopying credits or vouchers, both to the value of £10. Different institutions had varying success in gathering participants, but most were able to hold at least one small group. All institutions were asked to ensure their own ethical guidelines were fully adhered to, but were provided with materials based on the guidelines at Huddersfield.

Questions for the groups covered a wide variety of subjects regarding frequency of resource use, how they felt their usage levels compared to others on their course, whether they had ever encountered any difficulties using resources, and what they felt was required for a good degree result. Additionally they were asked about previous experience of library usage, be it of public libraries or of an educational nature, and how much reading they conducted outside of that required by their lecturers.

The coding involved a process of making notes of potential themes arising: the process creates a sometimes lengthy list of broad themes with satellite elements of more descriptive themes which can then be designated a code word, with codes refined and reduced down to a manageable number. The code or multiple codes were attached where appropriate within the transcript. Codes were based around themes matching the questions raised, but also included elements relating to the nature of using library facilities as a study environment. Due to time limitations on the project, coding analysis was limited to studying the frequency of an item being discussed. While this is a very simplistic method of analysing the data, it does emphasise just how important a library resource or feature is to the student, regardless of whether their comment is positive or negative: if a student mentions they have had difficulties using a

resource several times during the group, it suggests that their difficulties have made an impact on many levels, be it of their perception of the resource, of library provisions, or of support.

Results varied according to the nature of the institution and the number of participants, but as a whole, students frequently discussed their information seeking process whether it involved library provided resources or not. They often had proactive, systematic techniques, yet varied in confidence of their skills in finding information. As a whole, library resources were often a point of in-depth discussion indicating that they were important to students, regardless of whether they perceived difficulties in using them or not. Technology was unsurprisingly integral to this information seeking process, with students discussing specific software packages they used, as well as visiting the library to use the computing facilities in general.

Toolkit

One of the planned outputs of the LIDP was the release of the types of activity data required and methodology required for others to test their data. This took the form of a toolkit which was released in September 2011 (Stone, 2011a). The toolkit describes how other universities can capture their data in order to compare results as described above. It also discusses the data protection and legal issues which may be encountered.

A significant part of the toolkit also gives advice on the types of statistical testing required in order to prepare and analyse the data. Appendices are included to assist universities in running the various focus groups discussed above; these include a consent form, a list of questions used by the project partners and a quick survey.

In order to keep within the spirit of the project, which undertook to release the data collected, the toolkit provides guidelines for the release of data under an Open Data Commons Attribution License (Open Knowledge Foundation, 2011). Universities that choose to release the data in this way have been offered a link on the LIDP blog for others to use.

Further work

Non-low use

The Library Impact Data Project had a finite goal to investigate the hypothesis. However, as the project developed, a number of possible further studies were suggested, not least that by supporting the hypothesis for book loans and e-resource usage across all the partners the project could return to the inspiration for LIDP, the non/low use project at Huddersfield (Goodall and Pattern, 2011). Now that the project has shown that there is a statistical significance between usage and attainment there is an opportunity to engage non/low users on selected courses in order to understand why students do not engage.

One way of taking this idea further would be to use data already available to see if there is a relationship across all years of the courses. The initial non/low use study uncovered some interesting data usage by course year. Some courses have no statistical significance with final grade in year one, but others do. By delving deeper into this, staffing resources could be targeted more effectively to help students at the point of demand. To support this it would also be necessary to check the amount and type of contact subject teams have with the specific courses to compare library contact hours to attainment, although this would not reflect a measure of cause and effect for library staff!

Furthermore, there is an opportunity to investigate the use of library reading lists at Huddersfield (Pattern, 2011), for example, does wider reading lead to better attainment? Originally the project wanted to look into results from the National Student Survey (NSS), although this was not possible due to data protection issues for all the partners, however, individual universities could compare the NSS data to courses where there is high non/low use.

Business Intelligence

Numerical data may also be utilised for comparing socio-economic and demographic information at course, school and university wide levels to investigate whether there are any effects of gender, nationality (UK, other European and international could certainly be investigated); distance learning vs. on campus learning; sandwich and placement extended undergraduate courses vs. standard 3 year undergraduate courses. Qualitative data could also be utilised to modify and improve services, reflect on student support facilities and networks, and collection management considerations.

This was a popular theme in questions at the SCONUL and LIBER conferences. Some of these ideas have also been discussed at the recent Business Librarians Association Conference (Stone, 2011b). In addition, business intelligence could be used to help provide data for library directors, eg for the scenario 'if budget cuts result in less resources, does attainment fall'? In fact the Library Impact Data Project was recently cited in SCONUL's recent response to the Higher Education White Paper "Higher Education: Students at the Heart of the System" (SCONUL, 2011).

Conclusion

As work on the project has progressed, a number of similar projects have also been undertaken around the world, such as research undertaken by Jantti and Cox (2011) at the University of Wollongong in Australia and the recent report from the Association of College and Research Libraries (2010) in the United States. Early results show similar results to the LIDP, which adds to the evidence and gives further credence to support the hypothesis that:

"*There is a statistically significant correlation across a number of universities between library activity data and student attainment*"

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Quality assurance improvements in Australian university libraries

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Introduction

In 2005 the Libraries of the Australian Technology Network (LATN) initiated a project to review current practice in quality assurance across its member libraries, draw out examples of best practice, and identify gaps and possible areas for improvement within their libraries. The project was intended as a collaborative, information sharing exercise that could facilitate continuous improvement in quality assurance in the libraries.

In 2009/2010 LATN members were re-surveyed to investigate whether changes had occurred in the intervening period, including what improvements had been made and where there were still gaps.

This paper examines the changes which had taken place in the libraries in the intervening period. Reports examining the full range of changes which had occurred are available elsewhere: Tang and Levinge (2006a), Tang and Levinge (2006b), Coen (2010) and Tang (2010). This paper focuses on developments in three aspects of the management of quality assurance within the libraries: responsibility for quality assurance; the use of quality, planning and/or performance frameworks within the libraries; and individual work planning and training for quality. These aspects have been selected as they form part of the criteria used by Wilson and Town (2006) to assign libraries to a quality maturity level. The paper is therefore a consideration of the extent to which there has been growth in the quality maturity of the participating libraries over the past six years.

While the paper is based on the experience of Australian and New Zealand libraries, it addresses concerns and provides solutions which are appropriate internationally. It provides a range of options which an individual library could adopt depending on its own context.

The "Quality Maturity Model"

When embarking on the 2005/6 benchmarking review of LATN members' quality assurance practices, the reviewers found that an accepted scheme against which members' performance on quality assurance could be evaluated was lacking. In the United Kingdom, Wilson and Town (2006, p.75) similarly found that an appropriate framework for assessing the quality level of libraries was not present in the literature. They noted that "there is much in the literature ... about frameworks for measuring the quality of a product, process or service, but no framework for measuring the quality of the quality-process" (Wilson and Town, 2006, p. 76). In the absence of an agreed framework, Wilson and Town developed their own Library Quality Maturity Model which measured a library's quality maturity on a five-step scale, from Level 1 – Initial, to Level 5 – Optimising.

Specific attributes were associated with each level. For example, at Level 1:

- quality is achieved in an *ad hoc* way;
- customer satisfaction is reactive and unpredictable;
- quality depends on the capabilities of individuals, and varies with their innate skills, knowledge and motivations; and
- training for quality is *ad hoc* and reactive to an ability to undertake a specific task adequately.

By contrast, at Level 5:

- the entire organisation is focussed on continuous improvement in every service, product and process;
- all staff are encouraged to continuously improve themselves and their work;
- the organisation is able to identify weaknesses, and the means to strengthen the process, proactively with the goal of preventing problems;
- innovations that exploit the best practices are identified and transferred throughout the organisation; and
- training for quality is focussed on preparing staff for future organisational requirements.

Wilson and Town (2006, pp. 77-78)

Methodology for the LATN reviews

The author led the conduct and analysis of two surveys of the members of the LATN group.

- A 2005/6 study reviewed quality assurance practices at the member libraries, to draw out examples of best practice and identify gaps and possible areas for improvement within the libraries. It was based on a review of member libraries' websites, a questionnaire completed by a nominee from each member library, and follow-up in-person interviews with each nominee and the University Librarian of each institution.
- In 2009/2010 the same questionnaire was re-administered to investigate whether changes had occurred in the intervening period, including what improvements had been made and where there were still gaps. Had members made improvements to their quality assurance processes based on the findings of the first study or for other reasons? Due to restructuring and staffing changes at most libraries, with one exception the questionnaire was completed by a different nominee in 2009/10 than 2005. No interviews or site visits were conducted in 2009/10.

(Hereafter, for simplicity the studies will be referred to as the 2006 and 2010 reviews, although in both cases they commenced a year earlier.)

To elicit additional information, follow-up email exchanges were carried out in 2011.

A broad view of "quality assurance" was taken for the reviews including planning and performance measurement; use of frameworks, charters and service level agreements; benchmarking and evaluation. Responsibilities, training and communication in relation to quality were considered, together with the extent to which it could be said that quality was embedded in the culture of the library.

Participating libraries comprised:

- Auckland University of Technology in Auckland, New Zealand
- Curtin University of Technology in Perth, Australia
- Queensland University of Technology in Brisbane, Australia
- Royal Melbourne Institute of Technology University in Melbourne, Australia
- University of South Australia in Adelaide, Australia
- University of Technology Sydney in Sydney, Australia.

Approach of the current paper

The 2006 and 2010 LATN reviews did not attempt to assign the participating libraries to a level of Wilson and Town's (2006) Quality Maturity Model. However, reflecting on the changes observed since 2006, and using the attributes associated with the various levels of Wilson and Town's model, it could be argued that a maturing of quality assurance amongst some of the libraries has occurred.

The present paper examines this maturation by examining three of the criteria used by Wilson and Town (2006) to assign libraries to a quality maturity level:

- responsibility for quality assurance
- the use of quality, planning and/or performance frameworks within the libraries
- individual work planning and training for quality.

Australian university environment 2005 – 2011

Before considering the three aspects noted above in detail, it is necessary to note some of the changes which occurred in the Australian university environment between the LATN reviews.

This period saw a continuation in the growing competition between Australian universities and other higher education providers (national and international), and between Australian universities themselves (Yerbery in Williamson 2006, p. 549). This competition was coupled with a desire among many universities, including members of the Australian Technology Network, to be recognised not only or primarily for their teaching but for their research. In such an environment comparisons, benchmarking and rankings are of vital importance, to identify and/or publicise how the university is performing vis-à-vis competitors.

The government "reviewathon" of 1995 – 2005 noted by Yerbery (including a predominance of reviews, regulation and reporting) has also continued, despite a change of government in 2007. Under the current Australian government, there has been a particular emphasis on making comparative quantitative information on education publicly available. A somewhat controversial "My School" website has been launched and a "My University" site is planned for 2012.

During the period all but one of the parent universities of the members of LATN underwent at least one quality assurance audit by the Australian Universities Quality Agency, established in 2002 by the Australian Government as the national quality assurance agency in higher education. For their audits, universities were required to submit portfolios documenting their approach to quality assurance. During their visits, the AUQA auditors interviewed large numbers of staff and students. Preparations for such audits have focussed universities on their quality assurance documentation, processes and training.

In 2007 the previous government introduced Higher Education Workplace Relations Requirements compliance as condition of funding increases. One of the HEWR requirements was the existence of performance management schemes for university staff.

In such an environment, quality maturation could be expected.

Findings

In 2005/6:

- only one library had a specific person responsible for quality,
- only two had a documented quality framework and
- there was a gap across the whole group in individual planning and training for quality.

By 2011:

- three or four have a specific person responsible for quality,
- all six have a documented quality framework and
- all except one do individual work planning and training for quality.

Responsibility for quality assurance

In 2006 the reviewers found three models for responsibility for quality in libraries; centralised (with a designated quality officer), within a manager's portfolio, or devolved where all managers are responsible for implementing quality within the library. While no model was considered to be perfect, the reviewers argued that a centralised model at the early stages of development of a quality assurance program gave a dedicated driver to the development and implementation of the program. Once a quality program was in place more devolution could take place.

In 2006 one library had adopted a centralised model by appointing a designated Quality Librarian and one library was in the process of appointing a Quality Co-ordinator. By 2010 three libraries had appointed or designated a specific quality officer/librarian, while the library which had previously had a Quality Librarian in the initial stages of its quality development now believed its program was sufficiently mature that it could be allocated, together with other corporate functions to one of the library's operational units. This library feels the quality program initially established by its quality officer has now been in operation sufficiently long that the key policies, procedures and documents are in place. The documents require only maintenance and updating and periodic review. The quality cycle is established as part of the library's annual timetable so that responsibility for various activities can be shared without the danger that some activities will be overlooked. The culture of the management team has been changed so that, without prompting, managers adopt quality approaches in what they do and expect the same of their colleagues, so that quality no longer requires a specific catalyst or champion.

Titles and responsibilities of the central quality officer varied, for example: Quality, Planning & Research Librarian; Co-ordinator Project Management and Quality Assurance; Planning and Quality Co-ordinator; Quality and Planning Manager. Some were full-time, others part time. Some required qualifications in librarianship, others qualification in information management, business or management.

All job descriptions for the central quality officer placed an emphasis on co-ordination of the library's quality activities. All included planning, collation and analysis of statistics and performance measures, conduct of client evaluations, encouragement of best practice or continuous improvement, internal and external reporting and development of documentation.

Those libraries which had specific quality officers valued them. One library particularly appreciated having some designated time for quality assurance by a specifically designated person.

Use of quality, planning or performance frameworks

In 2006 one library had a functioning overall quality framework and one library had separate planning and performance frameworks. Other libraries reported use of the PDRI (Plan-Do-Review-Improve) cycle or used "elements of a quality framework" without an integrating document. Most had library plans but the outlook for some of these was only one year, and the plans did not always include quantitative targets or indicators of success.

Today this landscape had changed significantly. All libraries have a framework or have adopted the approach to quality required by their parent institutions.

The libraries which had adopted a quality framework and planning/performance frameworks in 2006 were ahead of their universities in these developments: when their universities subsequently developed frameworks, the libraries had had to adapt or overhaul theirs to ensure compliance with university requirements or integration with higher level approaches.

Two libraries have developed text documents outlining and linking the library's planning, performance and benchmarking frameworks or strategies. At one library, this document also explains the relationship between the library's approach to quality and that of the parent university. This university uses the Australian Business Excellence Framework and the Balanced Scorecard.

Other libraries have simply adopted the framework documents of their parent university, or a part of them. One for example uses a planning framework and an indicator framework, and a quality management system to continuously improve the plans and indicators. Another uses a balanced scorecard approach to planning and performance, "harmonising" its own scorecard with those of other units in the university's academic portfolio (including student services and learning and teaching units). A third library uses its university's "action planning template" which emphasises the four-step Plan-Do-Review-Improve (PDRI) cycle adapted from the Approach-Deployment-Review-Improvement (ADRI) approach. At this library, staff from the university's planning and quality unit conducted a workshop to ensure that area plans were explicitly linked to the university plan.

The library which in 2006 had a quality framework has now discontinued it. This library now refers to the quality assurance cycle of its parent university and the service management framework of the division (faculty) of which it forms a part. The library's strategic plan is now no longer based on the balanced scorecard but on its university's "blueprint" strategic planning document.

All libraries expressed the view that having a documented quality framework was useful in assuring quality in their library. The quantitative and cyclical nature of quality frameworks are key here, with libraries now being committed to developing plans with associated quantitative measures of success, to revisiting their plans and performance indicators regularly, and to reporting internally or externally on the extent to which targets are being met, and taking corrective action where necessary. Many of the quantitative measures incorporated in the frameworks are client satisfaction measures or measures which the library believes will result in client satisfaction.

Quality responsibility and frameworks in Quality Maturity Model

The appointment of quality officers and development of documented quality processes has clearly moved the LATN libraries beyond Wilson and Town's (2006) Level 1 of Quality Maturity characterised by individualism, ad hoc-ery and undefined processes:

Level 1 – initial. The quality management process is ad hoc, and occasionally even chaotic. Few processes are defined, and success depends on individual effort and heroics ... [Q]uality depends on the capabilities of individuals, and varies with their innate skills, knowledge and motivations Wilson and Town (2006, p. 77)

Through the work of the quality officers with their libraries' management teams and the adoption of quality frameworks, the LATN libraries are all at least at Level 2 of Quality Maturity:

Level 2 – repeatable. Basic quality management processes are established. The necessary management processes are in place to repeat earlier quality levels... [Q]uality policies and procedures to implement these policies are established; ... such management processes are practised, documented, enforced... Wilson and Town (2006, p. 77)

Most importantly processes are repeated, so that the libraries can build on earlier success or identify and make improvements as required.

It could be argued that one or two of the libraries are moving towards Level 3 quality maturity:

Level 3 – defined. The quality processes are documented and standardised. All work derives from the organisational strategy. Wilson and Town (2006, p. 77)

The existence of a "defined, documented, organisational strategy, from which all work processes are derived" is however but one of the characteristics of Level 3 quality maturity. Other requirements are "an organisation-wide understanding of the activities, roles and responsibilities of each member of the library staff and how they fit into the organisational strategy" and "training for quality is a cycle of training needs assessment and programme provision" (Wilson and Town 2006, pp. 77-78). To what extent are the LATN libraries exhibiting these characteristics?

Individual work planning and training for quality

One of the most marked changes between 2006 and 2010 was the growth in individual work planning and performance review. In 2006 this was identified by the LATN reviewers as a gap across the network; by 2010 all but one library had an individual work planning and performance review process in place. Ideally use of such plans and assessments should assist in taking quality beyond library management, to develop amongst all staff an awareness and culture of continuous improvement, and an alignment between the staff member's efforts and the strategic direction of their team, library and/or university.

The schemes in place share much in common:

- a template based on a university-wide version
- an annual timeframe
- space for the staff member to list a number of objectives, goals or focus areas

- some indicators by which completion of the objectives will be determined or measured
- space for the staff member and their manager to record progress on/completion of the objective
- identification of the staff member's development needs, to facilitate the completion of the objectives or other career/work goals as set out in the document.

Variations are also evident. Only on one library's form is the individual staff member specifically required to indicate a unit/library/university initiative or objective to which their proposed objective is related. However the guidelines to completing the forms of other libraries make it clear that alignment with university/library goals and directions is expected.

The connection of the individual work plan and performance review to the quality cycle and continuous improvement is implied in all but one of the approaches but made explicit in only a few. The guidelines for completing the template at one institution use a quality cycle with four phases (Prepare, Meet, Do, and Review, feedback & support) to explain what is intended at each stage of the process.

It could be argued that use of individual work planning and performance measurement provides training for staff in quality, through familiarising staff with approaches such as PDRI/ADRI and continuous improvement and encouraging the use of targets and specific indicators of success and alignment of their actions with unit/library/university goals and strategies. If so, then the increased use of individual work planning and performance measurement can also be seen as sign of maturation of quality under Wilson and Town's (2006) model. Training for quality has moved from "ad hoc and reactive to an ability to undertake a specific task adequately" (Level 1), through "training for quality is provided as a programme of training for specific work tasks and/or is reactive to events" (Level 2) to "training for quality is a cycle of training needs assessment and programme provision" (Level 3). (Wilson and Town 2006, pp. 77-78)

Through their individual work planning schemes, the libraries are also moving to achievement of another characteristic of Level 3: "there is organisation-wide understanding of the activities, roles and responsibilities of each member of the organisation, and how they fit into the organisational strategy. (Wilson and Town 2006, p. 78)

Conclusion

Clearly then there have been improvements in quality assurance among LATN libraries since 2005. These are probably largely a consequence of the increased focus on quality in higher education in Australia during the corresponding period. However there has also been a contribution to the improvements through the libraries learning from each other through the LATN quality assurance benchmarking studies.

Wilson and Town's (2006) Quality Maturity Model has provided a framework within which to measure improvement to date. Clearly all the LATN libraries have some way to go before it could be argued that they have reached Level 5 quality maturity. However the beauty of Wilson and Town's model is that it gives libraries a roadmap for where they might go and what they need to aim for.

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Strategy development at the University of Texas Libraries utilising the Balanced Scorecard

Meredith Taylor

Introduction

This paper will present a case study of the strategic planning process that the University of Texas at Austin Libraries has been implementing since September 2010. Our organisation is working hard at embedding a strategic planning process within our organisation that increases accountability and transparency while empowering all staff to participate in charting the future of the organisation.

The use of the Balanced Scorecard by University of Texas Libraries ("UT Libraries") as its strategic management tool planning effort is discussed in this paper, but this case study may also be of interest to other libraries interested in learning about how our organisation implemented a planning process that involved both staff members and executive management, in a multi-phase initiative that has resulted in widespread organisational support, regardless of the tool (ie Balanced Scorecard) used to manage the strategic objectives of the effort.

Why strategic planning, why now?

UT Libraries serves more than 51,000 undergraduate and graduate students and over 3,000 faculty members with its eleven campus libraries located at the university's flagship campus in Austin, Texas. In 2010, UT Libraries began implementing a strategic planning process that utilised the Balanced Scorecard. The planning process was undertaken for numerous reasons including university-wide budget reductions, an institutional mandate for a five-year budget plan, a reduction in the number of staff and the results of a climate survey indicating the existence of issues with the health of the organisation.

Unlike many states that started to feel the effects of the 2008 economic recession immediately, Texas did not start to experience state-wide fiscal troubles until 2009 and 2010. The state financial crisis resulted in two university-wide budget rescissions totaling 7.5 percent in the 2010 and 2011 fiscal years. Additionally, during the 2011 legislative session, state lawmakers further reduced the University of Texas at Austin's overall budget by about 15 percent for the 2011-2013 biennium. In order to prepare for the budget rescissions and the future fiscal uncertainty, the university put in place a new requirement that all campus units create a five year budget plan.

In order to compensate for the 2010-2011 rescissions and prepare for the budget reduction in the 2011-2013 biennium, the size of the staff of the UT Libraries was reduced from 290 to 230 FTEs (not including student workers) through retirements and attrition. A 21 percent reduction in budgeted staff made it an organisational necessity to define our goals more clearly and adhere to our priorities more strictly in order to ensure we were optimising the skills and energies of our reduced staff.

Another motivating factor for undertaking the strategic planning process was the result of the administration of the Association of Research Libraries' (ARL) ClimateQUAL survey in the spring of 2010. ClimateQUAL is an organisational climate survey that assesses organisational commitment to the principles of diversity, organisational policies and procedures, and staff attitudes. The results from the survey indicated that our staff felt that our organisation needed to improve in the areas of planning, distribution of rewards within the organisation, facilitation of teamwork across the organisation, communication and transparency, and fairness of and consistent application of procedures.

In September of 2010, a seventeen member Strategic Planning Task Force ("Task Force") was formed to undertake the strategic planning process. The members were selected by the executive administrative team and represented five of the six divisions in the library. The membership included both professional librarians and non-exempt employees. Twelve managers and staff and five administrative members comprise the Task Force, including the Director/Vice Provost of UT Libraries.

Early in the strategic planning process the group had to choose a strategic management tool to use for the development and deployment of strategy within our organisation. We reviewed many of the strategic tools available, but we decided on the Balanced Scorecard for two important reasons. The University of Texas at Austin's executive academic team had promoted the use of the Balanced Scorecard on campus and the Task Force thought it was very important to select a tool that was understood and valued outside the library, so that the UT Libraries could utilise it effectively to share its strategic vision. Additionally, as a result of the ARL Balanced Scorecard Cohort, the tool was being used in other research libraries, and having access to a community of users at other similarly-situated research libraries was deemed highly desirable by the Task Force. A final argument for selecting the Balanced Scorecard over other tools was the fact that the facilitator of the Task Force had previous training in Balanced Scorecard development.

Our strategic planning process

Once the Task Force was formed its first job was to immerse itself in existing data as well as create new data in order to embark on a data-driven and data-supported strategic planning process. From September until December 2010 the Task Force educated itself about the current state fiscal situation (in anticipation of the 2011 legislative session), the state of higher education in Texas, the climate of the University of Texas at Austin, our customers, and our staff.

In order to learn more about the state economy and higher education in Texas, the Task Force relied on a white paper authored by the Vice Provost/Director of the Libraries, Dr. Fred Heath. Additionally, during the fall semester the task force authored a climate paper/environmental scan of the University of Texas at Austin, looking at the demographic changes of our students and faculty, institutional priorities, and emergent trends, issues and initiatives. Learning more about our customers involved reviewing numerous years of LibQUAL+ data (UT Libraries has administered the survey six times since its creation in 2003), focusing on gaps and trends. Data about our staff came from four sources: the results of the ClimateQUAL survey, operating statements that included budget, services and staff FTE for all units, a new online feedback management tool called Idea Informer that we launched in order to get staff opinions (both attributed and anonymous), and written comment cards distributed throughout the organisation.

In December 2010 we hired a consultant (we were not part of the first ARL cohort of Balanced Scorecard Libraries) to facilitate a strategic planning process that involved a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis, and the creation of a strategy map. During the SWOT analysis, different teams of Task Force members were assigned a data source (external climate paper, institutional climate paper, LibQUAL+ results or ClimateQUAL results) and those sources were mined for inputs for the analysis. The Task Force felt strongly that the SWOTs that were identified should come from the data available to us, not just the group's perceptions and opinions.

The results of the SWOT analysis were organised into objectives on the strategy map, from which the Balanced Scorecard was created. The strategy map identified thirteen strategic objectives across the four perspectives of customer, financial, process, and learning and growth. The three objectives for the customer perspective included 1) Be Integral Component of University Success, 2) Raise User Satisfaction, and 3) Enhance Library Relevance. The financial perspective included two objectives, 4) Manage Budget and 5) Increase Revenue. The four objectives identified in the process perspective were 6) Realign Services to Users, 7) Revise Collections Priorities, 8) Optimise Facilities, and 9) Improve Discovery and Access to Resources. The learning and growth perspective contained four objectives including 10) Define and Adhere to Priorities, 11) Standardise Personnel Procedures, 12) Improve Communication and Staff Inclusion, and 13) Realign and Develop Staff.

From the thirteen objectives identified on the strategy map, 21 initiatives were adopted in order to support the realisation of those objectives. The mapping of these 21 initiatives to the thirteen objectives is listed below in Table 1.

Perspective	Strategic Objectives	Initiatives
Customer	Be Integral Component of University Success	All 21 initiatives
	Raise User Satisfaction	All 21 initiatives
	Enhance Library Relevance	1) Branding and Marketing 2) Website Redesign
Financial	Manage Budget	3) Programmatic Budget
	Increase Revenue	4) Scholarly Communication Inflation 5) Grants 6) Fundraising
Process	Realign Services to Users	7) Services to Users
	Revise Collections Priorities	8) Collections Priorities
	Optimise Facilities	9) Optimisation of Facilities 10) Facilities Process
	Improve Discovery and Access to Resources	11) Discovery 12) Digital Initiatives 13) Campus Delivery
Learning and Growth	Define and Adhere to Priorities	14) Continuous Planning 15) Best Practices
	Standardise Personnel Procedures	16) Personnel Issues 17) Career Advancement
	Improve Communication and Staff Inclusion	18) Communication 19) Staff Inclusion
	Realign and Develop Staff	20) Staff Development 21) Process Improvement

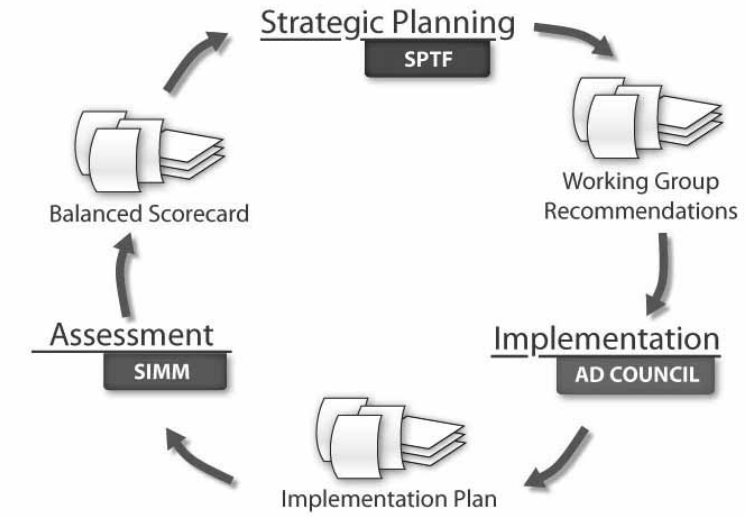
Table 1: UT Libraries Strategic Objectives and Initiatives

The 21 initiatives identified were prioritised into three rounds and have been sequenced for implementation over the next one to three years. Each initiative has been or will be convened by a Task Force member and has an Administrative Owner from the executive management team and has a working group of six to ten staff from across the organisation that are undertaking the charges of the initiative that were identified by the Task Force. The members of the working groups were selected from a library-wide call for participation that resulted in an unexpectedly high response rate; of our staff of 228, 97 employees (or 43 percent) stepped forward to become involved in the planning and execution of our initiatives.

The first round of nine initiatives was launched in February 2011, and by August 2011 six of the working groups had completed their work and issued a final report with recommendations to the executive management team, with two more working groups scheduled to complete their work by September 2011. Implementation plans are drafted by the executive management team from the recommendations put forth by the working groups so that they can be implemented at operational levels throughout the organisation.

The development of the Balanced Scorecard

The graphic below describes the continuous planning process UT Libraries is diligently working at embedding within our organisation, and we regard the Balanced Scorecard as a very important evaluation and management tool within that process.



The development of the Balanced Scorecard was undertaken by the Task Force (without the help of a consultant) after the completion of the strategy map and the launching of the strategic planning initiatives in January and February 2011, respectively. The completion of the first version of the Balanced Scorecard took approximately five months, during which we simultaneously launched the nine strategic initiatives and their working groups. The Balanced Scorecard has 34 measures: nine in the customer perspective, four in the financial perspective, nine in the process perspective and twelve in the learning and growth perspective. Our consultant returned for a two-day strategic planning retreat in August 2011 and gave us valuable insight into some needed revisions to our Balanced Scorecard, which we will be undertaking as a group shortly. Based on our current organisational capacity and the measures we have identified, we plan to use the Balanced Scorecard for evaluation on a semester basis. We anticipate using the Balanced Scorecard to evaluate our organisation on its thirteen strategic objectives for the first time in December 2011.

Lessons learned from the strategic planning

Our organisation has had many successes during the intensive strategic planning of the past year, but we have also had some challenges. Below is an elucidation of our lessons learned that may help guide other organisations in similar circumstances who are undertaking a strategic planning process, and those developing an organisational Balanced Scorecard.

- **Create the Balanced Scorecard in one or two marathon sessions.** We have been challenged trying to finish the Balanced Scorecard while the Task Force has also been managing the nine strategic initiatives it launched during the first round of strategic initiatives. We will undertake another full strategic planning session in August 2012; by that time we will have used the Balanced Scorecard at least three times for evaluation. We will undertake any revisions to the Balanced Scorecard during that retreat instead of trying to do them while other planning business competes for time and attention on regular meeting agendas.

- **Developing a good Balanced Scorecard can be difficult.** Here are a few of the many things we have learned about the process:

  - Only track measures that the most senior person in the organisation is interested in. Often staff want to put measures on the Balanced Scorecard that are not worthy of the attention of a Library Director/Vice Provost.
  - Have the fewest number of measures possible; somewhere between 15-25 measures is ideal. An outside consultant can be very helpful in getting the number of measures trimmed down; neutral third parties can often be more effective than someone from within the organisation when trying to remove measures.
  - Developing a Balanced Scorecard can be an exercise in diplomacy. Having a measure on the Balanced Scorecard can be really important to some staff, and really frightening to others. Some staff feel that having their work represented on the Balanced Scorecard is a validation of the importance of their role within the organisation, and they will fight very hard keep their measure on the Scorecard. Others might feel uncomfortable that their work

is being scrutinised and will therefore be hesitant to see the measure on the Scorecard or reluctant to provide the data needed to score it.

- Decide early on whether you want the Balanced Scorecard to be a "report card" of your organisation's performance or a decision-making tool that will guide your actions. Making this decision early on will affect the type of measures you put on the Scorecard.
- The frequency of your measures is important. Having more frequent measures will allow you to use the Balanced Scorecard as a decision-making tool. If your Scorecard has a lot of annual or biennial measures it will end up being more of a report card than an actionable tool. Our organisation continues to struggle with this because we use many fiscal measures and customer service data from LibQUAL+. We have had to become more creative about the timeframe for the measures which has required more data collection and analysis.
- Even though they are more difficult to identify, try to have as many lead measures as possible. Lead measures drive the results, while lag measures reflect the outcome. Lead measures provide predictive information and guidance while lag measures represent a snapshot of performance, after the fact.
- When creating measures ask yourself the question, "If we are successful in accomplishing this strategic objective how will we know?" This simple question will help your organisation focus in on the metrics that are important and measurable and should result in fewer, more targeted measures.
- Create good measurement definitions and include all calculations so that you can remind data owners how the data should be generated, especially for measures that are only generated on an annual basis.

- **Increase organisational commitment by creating a strategic planning process that utilises staff from across the organisation.** Utilise a team approach that taps the expertise of executive management, as well as managers and staff. Having a planning process that has input from across the organisation helps to get buy-in for the plan and increases the likelihood of embedding it in the organisation. We have seen an unprecedented embrace of our strategic planning efforts within our organisation and have observed a surprisingly high willingness to participate in the process on both the Task Force and working group level.

- **If you create a cross-organisational strategic planning effort, recognise that it will take longer to create and execute the strategic vision and planning efforts.** Simple logistics slows down the process, as does soliciting feedback and reaching consensus.

- **Be prepared to have a detailed implementation plan that includes mechanisms for evaluation, tracking and reporting out to your organisation.** This is especially important if your staff are skeptical about the strategic planning efforts based on previous undertakings. Be committed to providing staff a transparent accountability of the implementation of the strategic initiative recommendations, in order to prove the worth of the investment that your organisation has made in strategic planning and demonstrate the integrity of the process.

- **Be prepared for strategy development to take a lot of staff time.** UT Libraries invested over 1,000 hours of staff time in meetings and facilitated sessions during the first six months that the planning was underway. We recognise that spending that amount of staff time during a time of a reduced workforce can be daunting, but we feel that taking the time to chart a strategic direction is even more important in challenging and uncertain times.

The future of strategy development at UT libraries

The University of Texas Libraries is committed to embedding a planning and continuous improvement process into the fabric of the organisation in order to provide strategic direction, optimise our staff and resources and enable organisational accountability. Our planning process has required a considerable investment in time and effort, but we see it as a crucial step towards ensuring that UT Libraries continues to be an integral component of the success of the University of Texas at Austin.

Simpson's Paradox as a challenge in library assessment: an example using LibQUAL+™ Long and LibQUAL+™ Lite data

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Many librarians may be unaware of Simpson's Paradox1 (Simpson, 1951). Simpson's Paradox involves the phenomenon that relationships or patterns in score means may disappear, or even reverse, when nested data are analysed at different hierarchical levels (eg, for users across all libraries completing a library service quality assessment, versus separate analyses computed at each individual library; or for users across all branches of a library, versus separate analyses computed for each branch with the same library). Librarians need to be aware of this phenomenon, lest they reach wildly incorrect interpretations of their assessment results. The purpose of our paper is to explain and illustrate Simpson's Paradox.

Mean ratings on LibQUAL+® Long versus LibQUAL+® Lite

Most scholars of library service quality are well aware of the LibQUAL+® Lite protocol. An overview of research related to LibQUAL+® Lite can be obtained by consulting Cook, Thompson and Kyrillidou (2010), Kyrillidou (2009), Kyrillidou, Cook and Thompson (2010), and Thompson, Kyrillidou and Cook (2009a, 2009b, 2010a, 2010b).

LibQUAL+® Lite is a protocol under which a given library user completes one "linking" item from each of the three LibQUAL+® Long scales (ie, Service Affect, Information Control, and Library as Place), plus five additional items randomly selected from the remaining 19 items (ie, 22 items – 3 linking items = 19 remaining items). A given user completes (a) two items randomly selected from the remaining eight (ie, 9 Service Affect items – 1 linking item = 8 remaining items), (b) two items randomly selected from the remaining seven (ie, 8 Information Control items – 1 linking item = 7 remaining items), and (c) one item randomly selected from the remaining four (ie, 5 Library as Place items – 1 linking item = 4 remaining items). Although a given user completes only eight of the 22 core items, nevertheless all 22 items are completed across the users of a given library.

Previous research findings

Researchers (Cook, Thompson & Kyrillidou, 2010; Kyrillidou, 2009; Kyrillidou, Cook & Thompson, 2010; Thompson, Kyrillidou & Cook, 2009a, 2009b, 2010a, 2010b) have conducted randomised clinical trials (RCTs) comparing, within given institutions, the mean total, scale, and item ratings of users randomly assigned either the LibQUAL+® Lite or the LibQUAL+® Long protocol. The following conclusions have in general been supported in this research:

1. Mean ratings tend to be lower (ie, less favorable) on the LibQUAL+® Lite protocol, apparently because more users are willing to complete the shorter protocol, and thus the views of more users tend to be collected, including more people with somewhat less positive views of library service quality; and

1 Simpson's Paradox is not to be confused with Simpson's in the Strand. The first is a statistical phenomenon, while the second is a well known restaurant located next to the Savoy Hotel in London. Simpson's in the Strand features lovely roast beef carved at tableside from a silver trolley by a waiter dressed in starched white cottons. Simpson's in the Strand was founded in 1828: ***www.simpsonsinthestrand.co.uk/history.php*** and Stephen Town will take you there, if you are very nice to him.

2. The smallest differences in mean ratings tend to occur on the Service Affect as against the Information Control and the Library as Place scales.

Contradictory Canadian consortium results

In 2010, 47 Canadian libraries as a consortium participated in LibQUAL+®. Related comparisons of LibQUAL+® Lite and LibQUAL+® Long mean ratings for these data were presented by Kalb, Hong, Czarnocki and Champagne (2010). Kalb et al. (2010) interpreted their results as showing that LibQUAL+® Lite scores tend to be higher than LibQUAL+® Long scores, a result which contradicts previous findings (Cook, Thompson & Kyrillidou, 2010; Kyrillidou, 2009; Kyrillidou, Cook & Thompson, 2010; Thompson, Kyrillidou & Cook, 2009a, 2009b, 2010a, 2010b).

Table 1 presents selected findings from the Kalb et al. (2010) report. Note that for postgraduate students the mean LibQUAL+® Lite mean rating was slightly higher than the LibQUAL+® Long mean rating.

Group	n	M	(SD)	Cohen's d
Undergraduates				
Long	6194	6.930	(1.127)	0.024
Lite	10627	6.902	(1.166)	
Postgraduates				
Long	1532	6.918	(1.108)	-0.020
Lite	9159	6.940	(1.128)	
Faculty				
Long	871	7.073	(1.133)	0.249
Lite	3309	6.783	(1.199)	

Table 1: 2010 Long and Lite Perceived Quality Scores for All of Canada

What explains the contradictory findings reported by Kalb et al. (2010) versus the findings in the other reports? One explanation may be that the previous reports (Cook, Thompson & Kyrillidou, 2010; Kyrillidou, 2009; Kyrillidou, Cook & Thompson, 2010; Thompson, Kyrillidou & Cook, 2009a, 2009b, 2010a, 2010b) each involved randomised experiments in which users were randomly assigned to receive one of the two protocols.

On the other hand, in the Kalb et al. (2010) study, only two of the 47 institutions used both protocols. Among the 47 institutions, (a) two institutions randomly assigned both protocols, (b) 11 institutions used only the LibQUAL+® Long protocol, and (c) 34 institutions used only the LibQUAL+® Lite protocol. Thus, the mean ratings may differ across the two LibQUAL+® protocols because the institutions using one versus the other protocol themselves differed.

However, another (not necessarily contradictory) explanation involves the fact that Kalb et al. (2010) computed means for the data as a whole, aggregated across all institutions, while in the previous studies means were computed and compared only within institutions, and not across the institutions being studied. Thus, Simpson's Paradox may also explain the Kalb et al. (2010) findings.

Simpson's Paradox

Thompson (2008, pp. 9-11) explained Simpson's Paradox in the following way. Consider a hypothetical study in which a new medication, Thompson's Elixir, is developed to treat patients with serious coronary heart disease. The results of a randomised clinical trial (RCT) five-year drug efficacy study of the new medication are presented below. Patients randomly assigned to "Treatment" receive Thompson's Elixir, while patients randomly assigned to "Control" receive a placebo sugar pill.

Outcome	Control	Treatment
Live	110	150
Die	121	123
% Survive	47.62%	54.95%

The initial interpretation of the results suggests that the new medication improves five-year survival, though the elixir is clearly not a "cure all" for these very ill patients. However, mindful of recent real research suggesting that a daily aspirin may not be as helpful for women as for men as regards heart attacks, perhaps some inquisitive women decide to look for gender differences in these effects. They might discover that for women only, these are the results:

Outcome	Control	Treatment
Live	58	31
Die	99	58
% Survive	36.94%	34.83%

Apparently, for women considered alone the elixir appears less effective than the placebo.

Initially, men might rejoice at this result, having deduced from the two sets of results (ie, combined and women only) that Thompson's Elixir therefore must work for them. However, their joy is shortlived once they isolate their results.

Outcome	Control	Treatment
Live	52	119
Die	22	65
% Survive	70.27%	64.67%

In short, for both women and men separately, the new treatment is less effective than a placebo treatment, even though for both genders combined the elixir appears to have some benefits.

The paradox is that any relationship between variables may be changed, or even reversed, when data are analysed at different levels of aggregation. For example, the means of all users completing one form of an assessment survey (eg, LibQUAL+® Lite) might be higher than the means of all users who completed a different form of a library service quality assessment survey (eg, LibQUAL+® Long) when we ignore the users' institutional affiliations, and yet, for the exact same data, when we compute means separately at each institution, the means of all users completing one form of an assessment survey (eg, LibQUAL+® Lite) might be lower than the means of all users who completed a different form of a library service quality assessment survey (eg, LibQUAL+® Long).

Discussion

One implication of Simpson's Paradox is that librarians ought to make comparisons at the level of analysis for which a given protocol was designed. If LibQUAL+® was designed only to compare libraries across institutions and not users or user groups ignoring their institutional affiliations, all analyses ought to be conducted within institutions.

Simpson's Paradox tells us that we can obtain completely contradictory results for aggregated versus disaggregated comparisons, even for the same data set! And the comparisons that are most ecologically valid are those comparisons made in the usual context in which the analyses are conducted (ie, at the institutional rather than at the national level). In summary, our message to persons interested in studying library service quality is simply: Beware of Simpson's Paradox!

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Plan, implement, review and improve: developing a culture of continuous improvement at the University of Sheffield Library

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Introduction

This paper sets out the process by which the University of Sheffield increased the percentage of students who responded either 'agree' or 'definitely agree' to the statement "The library resources and services are good enough for my needs" in the National Student Survey (NSS)[1] between 2005 and 2011.

The starting point

In preparation for the NSS, the University of Sheffield Library participated in LibQUAL+®[2] in 2004. In the same year the University commissioned its own student satisfaction survey from The Oxford Research Agency (TORA)[3]. The information from each of these surveys helped the University Library to identify potential areas of weakness and develop action plans ahead of the first NSS.

LibQUAL+®

The University of Sheffield Library's results were broadly in line with results from other SCONUL participants that year, in that the main areas of concern were around 'Library as place' and 'Information control'. In particular, issues relating to the quality of the Library's estate and book availability were highlighted.

In terms of the quality of the Library's estate, the University had already committed to a major capital investment that would address the issues, and building work on the Information Commons was due to start in Spring 2005. The action plan therefore focussed on book availability issues in order to discover whether this was also a resourcing issue, or whether there were other things that could be done.

TORA satisfaction survey

The TORA survey provided more details about satisfaction levels, and overall, 69% of students said they were either satisfied or very satisfied with Library services.

1 The National Student Survey *www.thestudentsurvey.com*

2 LibQUAL+® *www.libqual.org/home*

3 Now SPA Future Thinking, a new company, the result of a merger between a number of specialist agencies in 2010 and 2011 *www.spafuturethinking.com*

At the time this was thought to be a reasonable result, as the University Library is not a particularly well-funded library service. According to UK SCONUL Statistics (SCONUL, annual), the University of Sheffield's library spend per fte was one of the lowest in the Russell Group, a group of 20 leading research intensive UK universities. However, the levels of very satisfied were comparatively low at only 12%, so this was highlighted as a concern.

Respondents were asked to make two choices from a selection of possible improvements. The most asked-for improvement was to provide more copies of key textbooks. This wasn't a surprise given the LibQUAL+® results, but the fact that 50% of respondents asked for this as their first choice, and a further 15% asked for this as their second choice was a surprise. Clearly this was a major issue for students and needed further investigation.

What students wanted

So, top of the wanted list was more books, but there were other issues highlighted in the verbatim feedback, the most significant of which were:

- have the book for as long as they need it
- more photocopiers
- more electronic resources
- services delivered to where they were

In particular, there was a lot of feedback around the length of loan suggesting high levels of dissatisfaction with the short loan collection, which at the time was everything due back at 11:15 the following morning.

This supported a survey of the short loan collection that we'd undertaken a few months earlier that found that in the main library, the average loan per short loan item was just 1.5 issues per semester. In addition, there were long reservation queues for non-short loan copies (ie 2 day, 3 day, 1 week, 3 week loan copies), whilst short loan copies collected dust.

The response

The first of what was to become many 'book summits' was held in August 2004 to brainstorm ideas around a response to this feedback. The key outcome was that summit participants decided that more money wasn't necessarily the solution. Course textbooks were available, but they weren't being used. It was therefore agreed to explore three options:

1. A new partnership approach where the Library would work more at the strategic level with departments and faculties, and develop a library toolkit, which would include:
   - Working with academics to look at managing expectations around reading lists
   - An online information skills resource
   - A course pack and e-offprints service.
2. Develop a Service Level Agreement (SLA) with a Service Quality Team drawn from academic and student representatives to oversee the Library's performance against the service measures.
3. Investigate why books weren't circulating effectively, particularly Short Loan items.

National Student Survey

In 2005, only 62% of University of Sheffield students responded either 'agree' or 'definitely agree' to the statement "The library resources and services are good enough for my needs." Not all institutions took part in the survey in 2005 as it was optional, but of the 131 institutions that did take part, Sheffield was ranked 115th for its library resources and services. Although a good start had been made on improving the situation, it was clear that there was more work to do.

The Circulation Review – a case study

Drivers

The principal driver for the circulation review was book availability, but there were other drivers too. Self-service issue and return had been introduced in the main library in 2001 but was promoted heavily as part of the Information Commons planning. This was because 24/7 access, piloted at exam time in the summer of 2005, would be introduced as standard, with for the first time, longer opening hours than service hours. During the 24/7 pilot it became clear that the complexity of the existing loan periods were not suited to a 24/7 self-service environment. As Library staff were finding it difficult to answer basic questions about the lending service, or to justify why things were done in a particular way, it was clear that the existing service wouldn't work well in an extended 24/7 self-service environment.

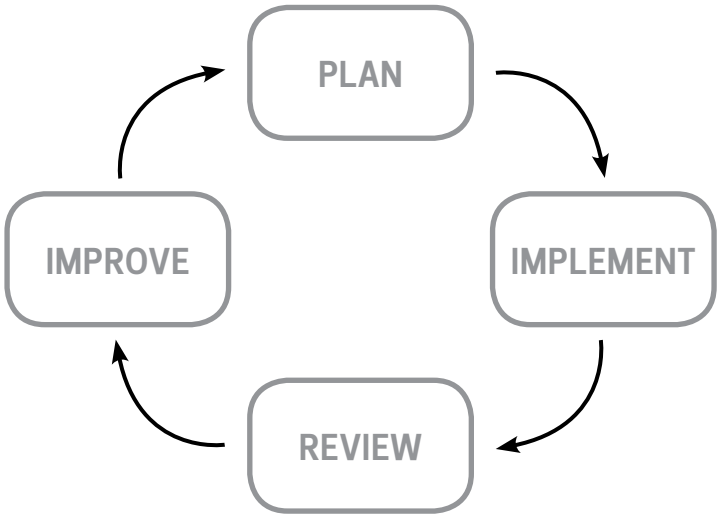
What the Library wanted for the students

The survey results showed that students were demanding better access to material, at the precise time this material was required and for as long as it was needed. It was also realised that these demands would increase once the Information Commons was operational and students had access to study facilities 24/7. A consistent, easy to use, easy to understand and well documented circulation policy which would work well in 24/7 self-service environment was needed but in 2004 the complicated lending rules and regulations meant that even Library staff found it difficult to answer simple questions and the rigid fines and renewals policies meant that Library staff spent time dealing with complaints and handling conflict at the expense of providing support for students.

It was also realised that an efficient reservations service was key to ensuring that material circulated quickly between borrowers but again, due to restrictions placed on it, the reservations service in 2004 was largely manual and not suitable for operation within a fast paced 24/7 environment.

The circulation review

A project group, one of the first in the Library, was set up in 2004 to review the circulation policy. The group used small project methodology (Watson, 1988) and a simple planning cycle model of 'Plan, Implement, Review and Improve' (PIRI).



For the first time staff of all grades and from all sections of the Library were included in the planning process and there was also representation from the student stakeholder group in the form of the Students Union Education Officer. This paid dividends immediately in terms of gaining a wide range of perspectives but also in the long term in achieving "buy-in" from frontline staff and student groups.

The project group also consulted throughout the project with the Library User Group; a group of academic staff and students who meet regularly with members of the Library's Learning and Research Services Team and the Library Executive.

A sample group of students were surveyed in April 2005 about their attitudes to current lending policies and from their responses the project group made the following recommendations:

- create a standard loan dependent on borrower type
- create a short loan of 2 days
- offer Library use only copies of high demand items and locate these with the for loan copies
- send no recalls unless exceptional circumstances so that customers knew at the point of borrowing what the due date would be
- introduce fines on all overdue items and for all categories of borrower, including academic staff
- remove some renewal restrictions.

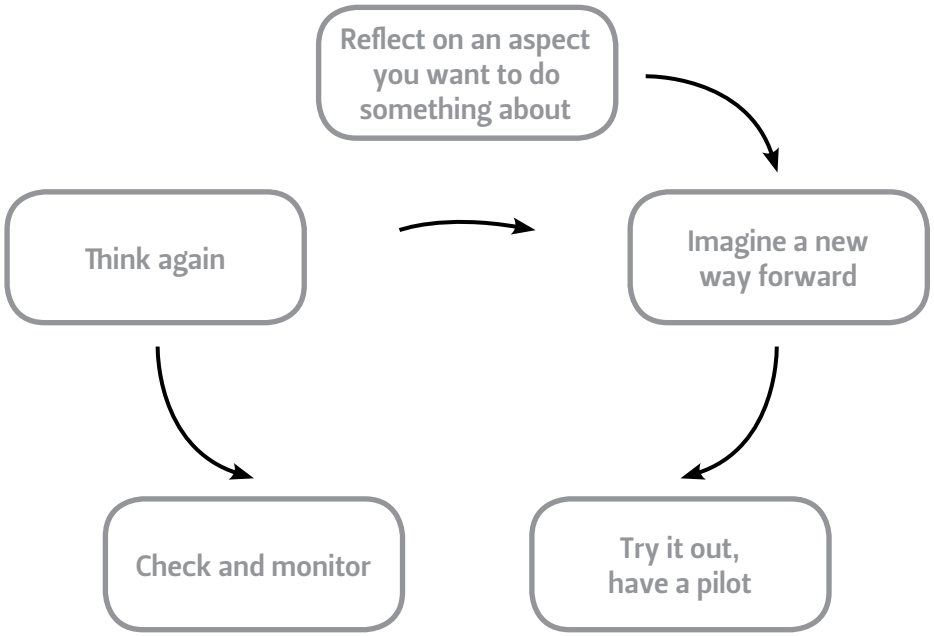
The changes were piloted at one site for one year initially and towards the end of this pilot the students at the pilot site were surveyed. Responses showed that most were in favour of the changes so the pilot was extended across all sites for another year. Another survey was undertaken at the end of this pilot and whilst the surveys showed that a large majority were in favour of the changes and these were incorporated into the Library policies, the responses did also reflect other problem areas highlighted by the new loan periods and also the impact of the opening of the Information Commons.

The reservations project

One particular area highlighted in the survey was the dissatisfaction with the reservations service and from the comments it became clear that this service was no longer meeting the needs of the customers due both to the impact of the new loan periods (there was no longer a very short loan which guaranteed the early return of an item) and also due to the fact that the majority of copies of heavily used stock had been relocated to the Information Commons, but single copies had been retained at other sites. The comments supported the Library's own statistics where the service level agreements on reservation satisfaction times were failing due to the fact that online reservations were only possible if all copies at a site were on loan.

This meant that, for very different reasons the Library was again faced with the problem of ensuring the efficient circulation of its stock but it was felt that the answer was not to go back and rethink the whole circulation policy as most of it was working well but to find a new way of developing the service.

Although intended as a self-reflection tool, the basic principles of Action Research (McNiff, 2002 and 2010) can help here. Instead of going back to the original 'plan' in the PIRI cycle, Action Research principles can encourage a new way forward from the progress already made rather than by going back to first principles. In terms of the Library Services Review the original aim was to improve the lending service and the initial imagined new way forward was the simplified loan periods. The responses from the survey caused the project group to think again and the result was that although the aim was still to improve the lending service, the new way forward was to improve the reservations service.



A second project group was set up in 2008 and, with input from a wide range of staff including members of the Reservations Team plus a representative from the student body, was tasked with looking creatively at how to improve item delivery times. Due to the restrictions of the library management system (LMS) the only way that was guaranteed to ensure that all on loan copies were reserved irrespective of site was to allow the reservation of all copies and so the group made the following recommendations:

- customer requests online reservation of all items, including not on loan copies
- customer chooses site for collection
- staff at that site search for not on loan items
- reservations sent to other sites if site for collection could not supply.

It was realised that implementing this system posed an extremely high risk of overburdening both staff and the Library's inter-site transport scheme and that there was no way of piloting it at just one site, but with complete buy in from the reservations teams at all sites, a decision was taken to trial it anyway and refine it as necessary.

The new service proved extremely popular and immediately put a strain on the staffing resources and transport system as predicted. An emergency review was held and limits imposed on the numbers of reservations allowed. It was also decided not to guarantee a site for collection and where possible a reservation would be satisfied at the site where the book was returned.

Towards the end of the pilot a survey of users of the reservations service was carried out to gauge opinion of the new service and the results were unequivocal:

- 88% said they got the book within a week, and 43% said they had received it within 2 days
- 93% said that speed of availability was more important that being able to choose collection site
- 90% of comments were positive and ranged from OK/Good to "Wow!!".

LMS statistics backed up the survey with 79% requests satisfied within 1 week and 93% requests satisfied within two weeks.

On the strength of the survey result, the LMS statistics and informal feedback from staff and students, the Library Executive agreed to incorporate the reservations service into the Lending Service policy and provide the necessary additional resource.

Some tremendous benefits had been achieved by the new reservations service and not only in terms of request delivery times. Throughout the project frontline staff had felt supported and involved, so were willing to sustain the service even during the stressful periods and real culture change and commitment to continuous improvement had begun to develop.

The lending services review

As part of the survey students and staff were also asked to comment on the lending service in general and while customers were generally very pleased with the service, a significant number mentioned the issue of the short loan copies. In particular that:

- short loans were much more likely to satisfy reservations as they were usually due back the soonest
- borrowers with longer loans more likely to be able to renew
- short loans were only in demand for a few weeks of the year but retained their short loan status all the time
- higher fines were payable on the late return of short loan even if the item was no longer in demand.

A third project group was set up in 2009 to look at how to respond to these comments. Using McNiff's Action Research model, the aim was still to improve the lending service but a new way forward had to be devised to implement a loan period that was driven by actual demand. Several suggestions were made as to how to manage the varying demand on the Library stock but most involved a great deal of staff intervention.

The solution finally agreed to trial by the group was a loan period that would automatically alter to meet demand on the stock, a kind of variable dynamic loan. In practice this would work in the following way:

- all copies of a book would be issued as normal loans dependent on borrower type unless already reserved at time of issue, in which case they would be issued for a shorter, reserved loan period
- once all reservations were satisfied then the loan status would revert back to normal.

The piloting of this suggestion was another huge gamble as this had been suggested several years previously but had been vetoed by the Liaison Librarians, and the academic staff. By involving these groups of staff in the previous projects they were now on side and willing to trial the changes.

Once again the changes were piloted and students were surveyed. The results were as follows:

- 90% said new loans were an improvement
- 81% agreed that unlimited renewals were an improvement
- 75% said that held shelf period was about right
- 67% said that normal loans were about right
- 52% said that reserved loans were about right
- 40% said that fines were about right with 56% saying they were too high.

Future work for the Lending Services team will be to work towards fining only on reserved items (not possible using the current LMS), and also to look at even further improvement of delivery times of reserved items by offering 24/7 collection and possibly a true "click and collect" service.

The benefits

The measurable benefits of the changes implemented over the last 6 years have been as follows:

- simplicity – easy to communicate, easy to understand and has facilitated longer opening hours on a self service basis at all Library sites

- better circulation of stock
- staff having to deal with less conflicts so can spend more time on adding value
- student satisfaction greatly improved.

There have also been other benefits that are harder to quantify yet just as important:

- the inclusive methodology has resulted in stakeholders being willing to work with the Library on other projects
- library staff feel engaged, better supported, and therefore able to think more creatively and take a healthier approach to risk.

Current position

The University's student satisfaction survey was carried out by TORA annually from 2004 to 2009. By 2009, overall satisfaction with Library services had increased from 69% to 89%. Only international students were surveyed in 2010 using the International Student Barometer from i-graduate[4], and in 2011, all students were surveyed by i-graduate, including domestic students. Overall satisfaction increased further to 92% in 2011.

More importantly, the percentage of final year students that responded either 'agree' or 'definitely agree' to the statement "The library resources and services are good enough for my needs" in the NSS Survey has risen each year to 91% in 2011. There is also independent feedback in the form of the Times Higher Education student experience survey[5]. The University of Sheffield Library was overall top for 'Good library and library opening hours' in 2010 and joint first with the University of Oxford in 2011.

It is not possible to prove cause and effect, because the circulation review was not just about the changes to the lending service policy. It was about better engagement with Library staff, the students and other stakeholders, and other improvements were made elsewhere during this time through work on the 'new partnership' approach and the SLA. However, the correlation between the simplification of the lending service and increased satisfaction levels is significant. This has all been done without spending a lot of money; the major capital investment in the form of the Information Commons was never going to address the deep dissatisfaction with book availability and the Library's spend per fte is still the lowest in in the Russell Group (SCONUL, annual).

Lessons learned

Firstly, it's important to spend time getting people (staff, students and other stakeholders) to understand how what you're doing is part of a bigger picture, part of an overall strategy. Secondly, to consult widely and back up changes with evidence as this helps to deal with resistance, which often comes from people who see that the changes will directly impact on their job. Workforce planning helps too. Thirdly, service level agreements should be kept up to date and Key Performance Indicators or service measures refreshed regularly.

Small project methodology (Watson, 2002) was found to be helpful for the scale of projects undertaken by the University Library. It was also found that applying some Action Research principles (McNiff, 2002 and 2010) enabled the Library to take a much more dynamic approach to action management.

Where next

Satisfaction surveys will continue to be carried out regularly. They are an invaluable source of key information to help with action planning. As part of the Library's workforce planning process, an existing post has been re-configured so that 60% is spent on quality and feedback; monitoring trends, overseeing action plans, and providing advice on which development areas should be prioritised. The Library Management System (LMS) supplier, Talis, has helped the Library to process map its LMS processes to identify areas of inefficiency. There will also be a major review of processes to implement a new unified resource born cloud based LMS. The University is also investigating 'LEAN'

4 International Student Barometer *www.i-graduate.org*

5 Times Higher Education Student Experience Survey *www.timeshighereducation.co.uk*

starting with two pilot projects, with the Library participating in a pilot project on student registration. Lessons learned from this project will be used to inform the process of identifying other policies and workflows to streamline.

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Developing a values scorecard

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Summary

This paper defines a framework and categorization of the types of evidence required to prove the value and impact of libraries. It questions the limitations of current measurement for library value, and hence for contributing to academic and research library planning and advocacy. The paper describes and draws on some of the recent progress in value and impact measurement over the last five years. Scenario planning exercises conducted by both ARL and SCONUL are used to analyse the likely future value proposition emerging for libraries. A values-based value scorecard is proposed, which would demonstrate the transcendent value of academic and research libraries now and in the future.

Background and context

The challenge for library leaders to demonstrate value and impact is well summarised in a recent report:

> *" … there is a strong feeling among senior librarians that they have failed effectively to communicate the value of their services [and]…in rigorously demonstrating the value of their activities"*
>
> *"The focus of performance indicators up to now has tended to be on inputs and outputs … rather than addressing the much harder issues relating to impact and value. … we believe it is essential that more work is done to analyse the relationships between library activities … and learning and research outcomes … ." (RIN & RLUK, 2011).*

Thus there is a recognised demand for improved measurement of academic and research library value, and that these new measures, if successfully developed, will assist library advocacy.

A quest for value measurement

The requirement for value measurement was established in the literature some time ago (Orr, 1973). Orr distinguished between Quality as an indication of capability and utilization and Value as an indication of the beneficial effects of the library. In the intervening years much progress has been made on the measurement of library quality, but the challenge of creating effective value and impact measures has been more of a feature of the last ten years.

Work in the UK began with the SCONUL/LIRG Impact initiative (2003-05) (Payne, 2006), followed by the SCONUL VAMP initiative (Town, 2006). The first author of this paper presented a summary of the literature, and value theory and its relation to potential measurement practice in libraries, at the 8th Northumbria Conference in 2009 (Town, 2009). In North America the IMLS LIB-VALUE project (LIB-VALUE, 2012) and ACRL's 'Value of academic libraries' (Association of College and Research Libraries, 2010) involved work on similar concerns, with a particular focus in the former on Return on Investment (ROI). The first author's paper at the 3rd Library Assessment Conference in 2010 (Town, 2011) sought to move the locus of value measurement beyond the immediate boundaries of the library so as to reflect its more transcendent contribution. More recently there has been polemic against the narrowness of ROI as the basis for value measurement, with calls for a return to consideration of "virtues" (Neal, 2011). This last challenge is taken up in this paper.

The arguments about value measurement which the first author has made in the contributions above are as follows. There are cross-pressures on measurement methods on research libraries to prove worth in different ways. However, there has been a failure to categorically prove worth. Worth here is assumed to be about value (and including impact). The value which stakeholders seek from libraries is transcendent, in the sense that the impact demonstrated must be

beyond the library and immediate satisfaction or fulfillment. Library assessment effort to date has been (mainly) about quality rather than value.

Value is inextricably linked to values; thus values will provide the key and route to proof of worth. The transcendent library is one in which the value can be judged beyond immediate needs and demands, through contribution to less concrete aspects of institutional or societal intent. These intents also relate to the chosen values of institutions and societies.

Institutional scenarios and consequent values

In order to build a framework for value measurement which might provide a lasting contribution, the second author proposed an analysis of future research library scenarios.

Scenario planning has been in use in libraries at institutional level since at least the 1990s. More recently academic and research library collective organisations on both sides of the Atlantic have developed pictures of the future which might be used to define trends and possibilities, and thus inform strategy. In ARL's case this resulted in an assessment focused on the broad context of research in 2030 (Association of Research Libraries, 2010), and in SCONUL's case focused on the context of Universities beyond 2020 (Curtis et al, 2011).

In both cases, as the ARL report suggested, "Each scenario has a gap where the library can fill itself in ….". Thus a picture of the future library relevant to each future context may be developed.

The analysis for this paper has focused on the following questions:

- What values are assumed in the scenarios?
- How does this link to value?
- What is the resulting library value proposition?

The first ARL scenario, entitled 'research entrepreneurs', implies a future of greater competition and outsourcing of research, in which the value of information is high, and individual researcher reputations may be very high, to the extent of personality cult relationships. Libraries might have a role in this future linking data stores and in discovery tools.

The second scenario, entitled 'reuse and recycle' is based on collaboration in research. Here, information value is low, with the relationship focus across groups. Research management and professional training are important here.

The third scenario, entitled 'disciplines in charge', suggests and reasserts specialised Universities as the focus of research, in which data stores have high value. In this future, political skills are valued. Research information in this future is disaggregated, with potential consequences for libraries.

The fourth and final ARL scenario, entitled 'global followers' spells out the end of Western hegemony over research, with the further development of Asia-Pacific nations to dominant positions. In this context, intellectual property is assumed to become looser. Relationships with the east are critical, and from a library perspective this may result in a more open global communal library.

The SCONUL scenarios appear to assume that universities will survive as the focus for research as well as teaching, in contrast to some of the ARL research scenarios in which this is not likely. The SCONUL axes of uncertainty are between open or closed societies (and consequent higher education values), and the degree of market or state provision in higher education provision. Following the more accepted method of scenario planning, one future is discarded leaving three named SCONUL scenarios, listed here with their respective trend choices:

'Beehive':	Open/State
'Wild West':	Open/Market
'Walled Garden':	Closed/Market

Again, it is possible to work these through from a library perspective in terms of the results of the predicted balances of community good against state control; competition or consumer drivers; and insularity and information protection.

For the purposes of developing the likely important concepts of performance measurement to fit these scenarios, one important feature leaps out. That is that the value system applying in each future is absolutely critical to ideas

of the successful performance of organisations, and hence libraries. Thus chosen value systems will define the most important measures.

To summarise the conclusions from an assessment of the scenarios:

1. There is an assumption of elites throughout all futures (either individual or institutional)

2. There is an assumption of competition throughout all futures, although this operates at different levels in different scenarios

3. There is an assumption of quality being required throughout, and therefore quality management and measurement will not disappear as a feature in all likely futures

4. However what does vary is assumptions about values, and therefore value measurement will be different across these future scenarios

5. Assumptions about locus (for example in terms of workplace and national influences) are variable across the scenarios

6. Assumptions about work psychology are also variable, with consequences for people value.

A conclusion to be drawn from this is that value is likely to be a differentiating factor in preparing for a successful future (through choices for change and strategy). Libraries should therefore concentrate on building value in areas which are likely to match future values. However given the long term nature of the scenarios and the large variation in possibilities, it would be a high risk strategy to back any one prospective future to the exclusion of others. Quality would seem to be a constant requirement in any future, but a consequence of this is that if it becomes a given, then the differentiation it provides in competitive terms diminishes, reinforcing the need for some other basis of achievement and measurement which does provide this differentiation. Value measurement therefore probably needs to assume a greater import alongside quality measurement for libraries in the future.

Some of these futures are disturbing, but that is one of the strengths of scenario planning. Whilst none of these futures may actually come to pass, the sense of substantial change in many current cherished certainties produces challenges to our fundamental concepts of how libraries might operate and deliver in future. Another important point is that in many of these futures, change will be rapid and any kind of mitigation at library level will be difficult if not impossible. This reinforces the fact that libraries may need some different methods for advocating value to ensure their future existence.

Building a value scorecard

If value measurement becomes more important in future, how can we build a value measurement framework which will be robust enough to deliver effective assessment and advocacy through the kinds of major change envisaged in the scenarios above?

It might be helpful to consider sources for structuring value measurement. Value measurement must be linked to stakeholder values, otherwise the measures have no force or meaning. This implies that value measures cannot be chosen until the prevailing values set is agreed. Institutional values statements are one current key source for considering value measures. These may lack some of what arises from the scenario analyses, given their immediate focus; a combination of the two might provide relevance to both current and future contexts. The first author's institution, the University of York, is fortunate in having a University Plan strongly focused on values, providing the potential for suggesting relevant areas for new measures beyond traditional quality or activity metrics:

- Excellence
- Internationalisation
- Inclusivity
- Sustainability

It is possible to link the messages that these high level objectives provide to the York Library's values statement in a way that assists consideration of some new measures of value.

Traditional value measurement tools will only provide a partial answer to populating a coherent framework. For example, some economic value tools may only reflect instrumental aspects of library activities, and will therefore have a short-term focus. A full assessment of value will require assessment of more intangible benefits, particularly those relating to impact.

Consideration of standard methods for valuing intangible assets (also described as intellectual or knowledge assets) and applying them to libraries has received some recent attention, and begins to provide some new potential foci for measurement and assessment. Kostagiolis and Asonitis (Kostagiolis & Asonitis, 2009) provided a potential framework of the standard components of relational, organisational and human capital to contribute to management strategy based on the measure of both the intangible and tangible assets of the academic library. In this model library performance indicators are geared to a capital and asset focused framework. This approach has been taken up in other research to consider specific measures for intellectual assets within academic libraries in Thailand (Corrall & Sriborisutsakul, 2010). This contribution emphasized the link between assets and institutional objectives, and also reasserted the importance of collections and services as knowledge assets.

A value scorecard

Is it possible to create an expression of the full worth of the academic research library based on the measurement of both tangible and intangible value?

The scorecard approach is considered to be one of the four categories of measurement approach used in the assessment of intangible assets (Sveiby, 2010), and would seem the most appropriate for academic and research libraries to adopt. As Sveiby suggests "the various components of intangible assets or intellectual capital are identified and indicators and indices generated and reported in scorecards or graphs".

The proposed scorecard comprises four areas or dimensions of value measurement. Two of these reflect current thinking about intangible assets, but focus attention on asset creation and assessment rather than the process and delivery measures used in quality-oriented evaluation. The third brings in the requirement for impact assessment, and the fourth adds the dimension of time and progress into measurement frameworks.

All dimensions are labelled with the term capital. However this does not mean that they will all simply be reducible to accounting sums. In the scorecard approach no estimate of the monetary value need be made, and no composite numerical score or value arrived at, in contrast to ROI or ROA approaches. It is very likely that both qualitative and quantitative measures will help populate the scorecard, and the assumption is that a finished expression of library worth will be made in a more narrative form.

Dimension One: Relational Capital

It is perhaps surprising that there has been little or no previous consideration of the measurement of the benefit created or value added by library relationships within and beyond the institution. Libraries are fundamentally relationship organisations; activities and services and their development depend on relationships with users in both individual and collective forms; large sums are spent with suppliers, but this relationship has not apparently been actively measured for either quality or value purposes; academic and research libraries often have substantial liaison teams, but the effectiveness of these in building value has not been measured. The current worth of these teams have been questioned in some institutions, with occasionally serious consequences.

The proposed elements of this dimension for which specific measures need to be devised are:

Competitive position capital

This will involve defining measures for the reputation and reach of the library beyond institutional boundaries. Many leading research libraries trade on their reputation for their own benefit or for that of their institution. This is worth something, but it is currently difficult to quantify, say, the benefit of a national press mention of the library on acquiring a new special collection.

Relational capital

This element could be spilt into an evaluation of external relationship developments of the kind mentioned above, and a parallel evaluation of relationship development within the institution. The route to this is probably through an initial audit of relationships with various stakeholder groups. Relationship measurement matrices are available which

define various levels of effectiveness, but further work may be needed to direct these towards strategic added-value assessment.

Dimension Two: Library Capital

This dimension brings together both tangible and intangible library assets.

Tangible assets

Whilst there are measurement conventions in business and accounting for physical assets, a broader set of values exists in higher education and research contexts, and so value estimation of obvious physical assets may need to be more sophisticated. The three areas of tangible assets which need to be evaluated for a coherent sense of library value might include:

- Collections
- Environments
- Services

In the digital environment collection measurement (at least of a traditional statistical kind) has not been seen as important as hitherto. In a value framework it assumes much greater import in the direct benefit it confers to achieving institutional objectives. The issue of the changing value of collections in the context of licensed access superseding hard copy ownership has not been deeply considered. It is clear that unique and distinctive collections are likely to be a differentiating competitive factor in future; where are the specific measures which quantify the value of these collections?

The previous scenarios of the end of large-scale academic library buildings have not come to pass. Instead there is substantial investment in new types of library and related space. Each institution will have its own sense of the business case involved in such investment, but it would be difficult to claim that we have good measures available for the advocacy of such developments from a value (as opposed to quality or student experience) point of view. Libraries also tie up capital investment in physical storage which must have a diminishing marginal return. It would be helpful to have more precise value measures to inform, say, when to invest in collaborative storage.

The evaluation of services from a value as opposed to quality or efficiency perspective is also not well developed. In times of scarce resources better measures are required to allow discernment between currently apparently incommensurable alternatives. For example it may be easy to price a move to 24/7 library availability, but it is more difficult to judge what value this development generates against a similar sum spent on information content.

Intangible assets

If tangible assets prove difficult to evaluate, then intangible assets by definition are likely to be more difficult to measure. However much of what the libraries do is to add value around their principal tangible assets. Three areas here need to be assessed:

- Meta-assets
- Organizational capital
- Human capital

The term meta-assets is used here for those assets which libraries build to add value to the physical assets above. Clearly catalogues, finding aids and discovery tools are on the boundary between the physical and the intangible. Whilst these are often assessed from a quality point of view, they are also a growing element in the overall estate value, and tend to be neglected as a key component of overall library value. The same could be said of the substantial digital libraries created by leading research institutions, which have not attracted much measurement attention as yet, even from a basic statistical point of view.

There is no standard convention for assessing other aspects of organisational capital. Libraries have a large body of corporate knowledge tied up in their organisation and its processes and methods. This is one of the keys to library strategic success or failure, in the sense that existing organisational knowledge can be either a constraint on or a

driver towards the innovation necessary to prepare for a different future. It is surprising that academic and research libraries as knowledge services within knowledge institutions do not have a better handle on their own organisational knowledge assets.

Most substantial academic and research libraries invest around half their revenue budgets in people. Whilst a great deal of effort is expended on management of this asset, this is not usually accompanied by a similar degree of measurement and evaluation from a value perspective. Libraries obviously have a sense of the competence they require and seek to deploy through their people, but this does not seem to be used for advocacy, particularly as a counter to the common efficiency argument that reducing the head count must always be good. Staff value measures are difficult to glean from the few raw statistics collected; the narrative in annual reports appears to be one of the few places where staff competence and value is celebrated.

Dimension Three: Library Virtue

The first two dimensions are about providing the means to the main objective of libraries, which is to be virtuous. Virtue here is taken to mean doing good and generating benefit. This is the dimension in which proofs of library impact will be delivered. Much work is going on to demonstrate the impact of libraries of all kinds, and this dimension of the scorecard will be populated mainly with evidence of the social capital which the library generates beyond itself. It is sufficient here to supply a non-exhaustive list of the potential areas in which this might apply:

- Contribution to research
- Contribution to learning
- Contribution to employability
- Contribution to professional and vocational intent
- Contribution to inclusivity
- Contribution to other common goods

Dimension Four: Library Momentum

The final dimension introduces the concept of time into the overall mix. If Libraries need to prepare for a different future, then the pace of innovation will be a critical organizational asset. There already exist quality maturity matrices which allow measurement of organizational capability for change and innovation, but there is an additional value benefit to be realised and measured in this context. Further work is required to develop this idea into specific metrics, but some potential areas for value measures might include:

- Capital saved or gained by progress
- Capital assets developed early
- Facilitation of research capital
- Facilitation of learning capital
- Facilitation of quality
- Capital saved by sustainability

Discussion and conclusion

A question arises as to how this scorecard proposition relates to the balanced scorecard now used in some academic and research libraries. This work supplements use of other scorecards by broadening concepts of the range of measures which might be used within them. The original concept of the balanced scorecard incorporated value strongly in its strategy map (Kaplan & Norton, 2001). The generation of a value proposition for libraries fits with this

intent, and encourages the addition of value measures to this type of framework. In summary the extensions required for each perspective of the balanced scorecard might include:

- Financial – broadening to include capital development of all kinds
- Internal Process – broadening to include capital developed through these processes
- Customer – moving beyond immediate satisfaction to impact
- Learning & Growth – fundamental to human capital development, but requires extension to evaluating the full capital asset represented by people

In our view the value scorecard can be used alongside the balanced scorecard to add a more value-oriented picture of library strengths and contribution.

There are some obvious tests for a successful value scorecard. The first of these is whether it begins to provide measures that reflect and demonstrate transcendent contribution, beyond the library and its black box of processes and services. The second is that it has an obvious link to institutional values. The deployment of a scorecard will only be successful if it generates a cultural and behavioural effect, particularly in assisting innovation and change. Finally the scorecard should present a coherent and full picture of library worth, providing measures which are of strategic relevance to the library and the parent institution.

It is worth adding that because the scorecard must relate to chosen institutional values, then a 'balanced' scorecard may not be what is sought. In other words institutional values may emphasise some dimensions of value creation at the expense of others. There will need to be local consideration therefore of the precise make up of a value scorecard.

The population of the framework through either existing value measurement methods, or the development of new measures is required. This may also help identify what might be missing from the analysis. There is therefore further work to do to provide a working tool for libraries to adopt.

The potential benefit of the proposed value scorecard is to gather evidence which will assist both strategic planning and decision-making in relation to key areas for future investment. The final test will be whether libraries can measure and develop their performance in capital accumulation of all kinds to the benefit of their institutions and society more broadly.

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Development and implementation of a comprehensive authority control performance measurement system

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Introduction

Traditionally the catalogue of a library has been viewed as the cornerstone of a library's collection. The goals and functions of the library catalogue are to enable the library user to find, identify, select and obtain information resources. (Joint Steering Committee for Development of RDA, 2001:1.2). Authority control plays an important role in the catalogue to help fulfill these goals and functions by ensuring the assignment of a unique form of a heading as well as the use of cross-references from unused and related headings. In this way a structure is created that not only guides the user to the information resources, but also shows relationships between headings. The uniqueness of headings and cross-referencing are the pillars of authority control and make efficient access to library resources possible. (Library Technologies, Inc., 2011). Authority control can be regarded as the backbone of the library's catalogue (Marais, 2004:iii).

A recent survey, according to Cox & Myers (2010:216-217) that investigated how cataloguers' work is evaluated and measured concluded that 36 percent of the respondents reported that none of their records are checked for quality, while 30.9 percent reported that their records are only checked when questions are raised. This amounts to a significant 66.9 percent of the respondent's records that are never or seldom checked for quality. The survey also concluded that 55.1% of the respondent's work isn't measured quantitatively.

In the light of the catalogue being the cornerstone of the library's collection and authority control being the backbone of the catalogue, the importance of performance measurement of authority control cannot be underestimated. Subjective judgement should therefore not be considered, but rather be replaced by objective measurement which takes both quality and quantity into account.

Authority control practice in Unisa Library

Since 2000 the University of South Africa (Unisa) Library has been an active participant in the Library of Congress Name Authority Cooperative Program (NACO) of the Program for Cooperative Cataloging (PCC). Through this program participants contribute authority records to the Library of Congress Name Authority File (Library of Congress. Program for Cooperative Cataloging, 2011).

The NACO Program was established in 1977 and as it developed and more institutions became participants, Library of Congress requested participants to not only add current authority records, but also retrospective authority records. (Penney, 2007:231).

Participants follow strict standards to maintain the integrity of this large shared authority file. Statistics of the contributions are compiled twice-yearly and Unisa Library has been one of the top contributors over the past few years.

As a NACO participant the Library also contributes new subject heading proposals and subject heading change proposals to the Library of Congress Subject Heading File through SACO, the Subject Authority Cooperative Program of the Program for Cooperative Cataloging.

Development of the quantity and quality performance measures

According to the survey by Cox & Myers (2010:218) there is a perception amongst some professional cataloguers that quantification makes cataloguing less professional, because it turns cataloguers' work into products.

The authority cataloguing team of Unisa Library, however, view both quality and quantity as important. To ensure both the quantity and quality of the Library's NACO contributions, a comprehensive authority control performance measurement system was developed and implemented, using an objective approach. This system is considered comprehensive because it takes both quantity and quality measures into account.

Development of the quantity performance measures

The basis for the development of the system for the measurement of the quantity of NACO and SACO contributions was to award points to particular types of authority records. The rationale behind this approach was that complicated records require more research and effort and should be awarded more points than less complicated records. It was envisaged that this approach should encourage authority cataloguers to contribute a wider range of record types and gain valuable experience.

As part of this approach a minimum monthly quantity target was set. This target, as well as the points awarded to each category of authority records, was assigned through consensus by the authority cataloguing team. The original target was set at 270 points and was arrived at by estimating that an individual authority cataloguer should be able to create or update at least 135 records per month, if only records of the category where the least effort was required is contributed. It was agreed that the target should be adjusted after a period of three months, based on production statistics and the calculation of the median. As a result the target was adjusted after three months to 390 points. The adjusted target implied that an individual authority cataloguer should be able to create or update at least 195 records per month if the cataloguer contributed only records of the category where the least effort was required. The points system is illustrated in Table 1.

Category	Points (Target: original 270; adjusted: 390)
Update to names or uniform titles	2
Personal author without references	2
Personal author with references	3
Corporate author without references	3
Meeting without references	3
Uniform title without references	3
Corporate author with references	4
Meeting with references	4
Uniform title with references	4
Jurisdictional geographical heading without references	6
Family name subject heading	6
Non-jurisdictional geographical heading without references	6
Jurisdictional geographical heading with references	7
Update to subject heading	7
Non-jurisdictional geographical heading with references	7
Topical subject heading	8

Table 1: Points awarded to authority record categories and production targets

Development of the quality performance measures

Unisa Library made a commitment to a quality standard of at least 85% authority records without errors, required by the Library of Congress for NACO participants. The question was what constitutes quality in terms of authority control. According to Danskin (2006:10) quality is often defined as "fitness for purpose".

To effectively measure the quality of authority records, quality indicators that contribute to the purpose of these records had to be identified. Authority work has the purpose of selecting the form that subject headings, titles and names will take as headings for bibliographic records as well as the references needed to support those forms (Mason, 2011).

The 670 field is also important as it justifies the heading and the cross-references and may contain important information necessary to identify the person, corporate body or uniform title. It may also contain information that clarifies relationships between the heading and other headings (Library of Congress. Program for Cooperative Cataloging, 2005:37).

Considering the purpose of authority records, accuracy, completeness and compliance with standards of the following MARC fields was identified, through consensus by the authority cataloguing team, as crucial: the heading (1XX), appropriate reference fields (4XX and 5XX) and the transcription in the 670 field(s). The performance indicators identified for the measurement of quality are illustrated in Table 2.

Indicators	Accuracy	Completeness	Compliance with standards
MARC 21 fields	**Inaccuracies counted**	**Incompleteness counted**	**Non-compliance counted**
1XX Headings 100: Personal name access point 110: Corporate name access point 111: Meeting access point 130: Uniform title access point 151: Geographic name access point	• Inaccurate choice of heading • Inaccurate MARC21 coding (indicators, subfield codes, etc.) • Spelling/typing errors • Inaccurate capitalisation • Inaccurate transliteration • Inaccurate punctuation • Inaccurate use of numerals	• Incompleteness of elements • Incompleteness of database maintenance with regard to incorrect or incomplete forms of corporate name, meeting, uniform title or geographic name headings on bibliographic records	• Non-compliance with AACR2 • Non-compliance with LCRI • Non-compliance with MARC21 • Non-compliance with NACO guidelines • Non-compliance with ALA-LC romanisation tables
4XX See from tracings 400: Personal name see from tracings 410: Corporate name see from tracings 411: Meeting see from tracings 430: Uniform title see from tracings 451: Geographic name see from tracing	• Inaccurate choice of see reference tracings for variant access points • Inaccurate MARC21 coding (indicators, subfield codes, etc.) • Spelling/typing errors • Inaccurate capitalisation • Inaccurate transliteration • Inaccurate punctuation • Inaccurate use of numerals	• Incompleteness of elements • Omission of relevant see reference tracings for variant access points	• Non-compliance with AACR2 • Non-compliance with LCRI • Non-compliance with MARC21 • Non-compliance with NACO guidelines • Non-compliance with ALA-LC romanisation tables
5XX See also tracings 500: Personal name see also tracings 510: Corporate name see also tracings 511: Meeting see also tracings 530: Uniform title see also tracings 551: Geographic name see also tracings	• Inaccurate choice of see also reference tracings, for related access points • Inaccurate MARC21 coding (indicators, subfield codes, etc.) • Spelling/typing errors • Inaccurate capitalisation • Inaccurate transliteration • Inaccurate punctuation • Inaccurate use of numerals	• Incompleteness of elements • Omission of relevant see also reference tracings for related access points	• Non-compliance with AACR2, • Non-compliance with LCRI • Non-compliance with MARC21 • Non-compliance with NACO guidelines • Non-compliance with ALA-LC romanisation tables
670 Source note	• Inaccurate transcription of heading • Inaccurate transcription of variant access point • Inaccurate transcription of related access point	• Incomplete/missing transcription of heading • Incomplete/missing transcription of variant access point • Incomplete/missing transcription of related access point	• Non-compliance with MARC21 • Non-compliance with NACO guidelines

Table 2: Performance indicators identified for the measurement of quality
**Note that subject headings are not included in this table, as subject heading proposals are reviewed by the Library of Congress*

Implementation of the authority control performance measurement system

The comprehensive authority control performance measurement system was implemented in March 2010.

Implementation of the quantity performance measures

To implement the quantity measurements to determine the performance of individual authority cataloguers, it is necessary to gather monthly statistics from the library system. Unisa Library uses the Millennium Integrated Library System, which allows the identification of an individual authority cataloguer with a particular code (Acode 2) on an authority record. The system's review files and saved query functionality enables the gathering of statistics of each individual cataloguer and category of authority record.

The statistics for each category is recorded on an Excel spreadsheet for each individual cataloguer. This spreadsheet is designed to calculate the total points for each category as well as the grand total of points. Statistics for each cataloguer are reported monthly to the Deputy Director: Cataloguing Section.

Implementation of the quality performance measures

To determine the quality performance of individual authority cataloguers, a sample of fifty records per individual authority cataloguer (containing a variety of types of authority records) is reviewed through a six-monthly peer group reviewing process. The rationale for choosing group peer reviewing is that it has the advantage that authority cataloguers learn not only from their own mistakes, but also from those of others.

Every authority record in each cataloguer's sample is examined by all group members and input regarding the non-compliance with the performance measures (as set out in Table 2) is given. At the end of this process, records that meet the standards are calculated and expressed as a percentage of the total of the sample. The quality performance of each authority cataloguer is reported bi-annually to the Deputy Director: Cataloguing Section.

Results

The adoption of the points system for quantity measurement of authority resulted in authority cataloguers expanding their expertise by contributing a wider variety of authority record types. Statistics for 2008 and 2009, prior to the implementation of this system, indicate that records for personal authors dominated the contributions with few or no contributions of corporate authors and uniform titles. Statistics drawn post-implementation indicate a decrease in the contribution of personal authors, while contributions of corporate authors and uniform titles increased. The authority record statistics are illustrated in Table 3.

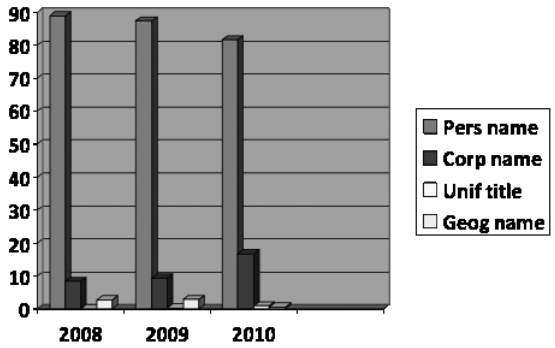

Table 3: Authority record statistics for 2009 and 2010

The decrease in the contribution of authority records for geographic names since the implementation of the system can be attributed to the fact that one of the authority cataloguers did a project in 2008 and 2009 contributing authority records for South African geographic names. However, only one cataloguer contributed geographic names in 2008 and 2009, while three cataloguers contributed geographic names in 2010. The contribution of subject headings (SACO

proposals) was also done by only one cataloguer prior to the implementation of the system, while three cataloguers contributed subject headings post-implementation.

The total output of authority records originally remained stable, but productivity increased after the target was adjusted.

The implementation of peer group reviewing of the quality of authority records resulted in the improvement in the quality of all the authority cataloguers' NACO contributions. The quality improvement from the 2010 mid-year peer review to the 2010 year-end peer review was an average of 8 percent. Improvement in the quality of authority cataloguers' contributions is illustrated in Table 4 below.

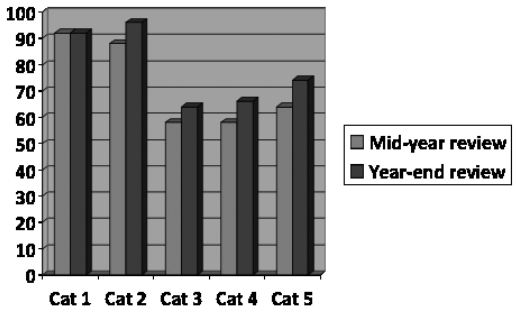

Table 4: Quality improvement in authority cataloguers' NACO contributions
**Cat= Cataloguer*

Limitations

The long term effects of the comprehensive authority control performance measurement system systems cannot be determined yet as the system was only developed and implemented in 2010. The short-term results seem to be promising though. Currently the quality performance measurement is only conducted twice yearly, but it is envisaged that more frequent reviews could take place.

Benefits

The comprehensive authority control performance measurement system has the following benefits: cataloguers developed their critical analysis ability and there is continuous professional development through the peer reviewing process.

Conclusion

The comprehensive authority control performance measurement system, taking both quantity and quality into account, resulted in more objective and effective performance reviews and evaluations of the authority cataloguers at Unisa Library. Authority cataloguers gained valuable experience and development and both quality and productivity has increased.

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Competing values: a preliminary report of a multistage examination of library administrators' perceptions of competitive behaviours

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Introduction

In every organisation, the head administrator sets the tone of business for the whole organisation in terms of the philosophies, values, and behaviours or examples of action that they provide the organisation. Thus, the organisation reflects (both in positive and negative means) those philosophies, values, and behaviours or examples of action provided by the head organisational administrator. Today's library service environment is very competitive in nature and requires library and information service organisations to continually develop and practice activities that generate effective strategic performance and value as well as effectively report these results to stakeholders in order to maintain or increase their competitive position or edge within the service environment. With decreasing resources, increased accountability demands, and increasing expectations of service and strategic value generation, today's library and information service administrators must provide their organisation with every competitive advantage in the value generation and reporting processes of their organisations possible in order to ensure their organisations have the best strategic opportunities and sustainable future: ie be more competitive.

Within this context, there is an assumption that an organisation with a competitive administrator would lead their organisation to competitively use and report organisational performance information would be have a competitive advantage over other libraries in the service environment by means of a more effective or competitive value reporting process. However, in a recent literature search there was no previous research on this specific assumption found. To test this assumption, the researcher's theorises that head library administrators that perceive that they are competitive at work will have more competitive libraries and use competitive and performance measurement information in addressing and reporting the library's performance and value to stakeholders. Under this theory, as the organisation and its actions reflect the characteristics of its leaders, a competitive head administrator might indicate a library with greater potential or capability to competitively use performance information which would enable the library to be more competitive in its service environment. Correspondingly, a non-competitive head library administrator may indicate a library with less potential or capability to competitively use performance information would not enable the library to be more competitive in its service environment. In order to determine the validity of the researcher's theory, as a first step it is necessary to determine the perceptions of competitiveness of head library administrators in order to establish evidence of any connection between perceptions of competitiveness and organisational competitiveness or competitive and performance measurement information use for future research.

Therefore, the purpose of the study is to determine the perceptions of competitiveness held by head library administrators in libraries in North Carolina. The purpose of the study is being achieved through addressing the overarching research question: "How do head library administrators in North Carolina perceive competitive behaviours?" with the following sub-questions:

1. How do head library administrators in North Carolina perceive their own competitive behaviours?

2. How do head library administrators in North Carolina perceive their peers competitive behaviours?

Methodology

The research methodology features a multistage mixed methods research design involving the use of surveys, key informants and case studies of academic and public library administrators' perceptions of competitive behaviours. This paper addresses the findings of the first stage of the research design.

In the first stage of the methodology (survey), a survey instrument was designed and implemented (after institutional review board approval) using the Qualtrics online web survey software to disseminate the survey instrument to the study population. The survey population (identified in detail below) was asked to provide qualitative and quantitative data identifying perceptions of competitive behaviours of library administrators. Within the first stage of the research design, respondents were asked to identify key informants (defined as members of the study population with intimate or expert knowledge or understanding of the topic in question) and case study site volunteers within the study population regarding perceptions of competitive behaviours or the use of competitive information to be used in the second and third stages of the study. A total of seven (7) different key informants were identified by respondents as a key of competitiveness from the 80 study participants. In the stages 2 and 3 of the study, the researcher will interview the key informants (identified by the study population in stage 1) to identify perceptions and behaviours associated with the trends and current practices of competitive behaviours and in the use of competitive and performance measurement information. Respondents reporting exceptionally strong and weak competitive behaviours or the use of competitive and performance measurement information in generating strategic value will be contacted by the researcher in the third stage of the study for an in-depth case study visit. The third stage case studies (as identified in stage 2) will examine the environment and factors associated with the exceptionally strong and weak competitive behaviours or the use of competitive and performance measurement information. The results of stages 2 and 3 will be reported in later publications when completed.

As part of the survey design, respondents were provided an "escape" question early in the instrument that would allow them to indicate their degree of interest in the topics being examined by the survey: this provided the respondent an opportunity to respond briefly to their interest in the topic in the event that they chose not to complete the survey and/or wanted to be excluded from survey non-response follow-ups (addressing survey burnout) while providing the researcher with a small scope gauge of interest in the topics by the study population. Figure 1 indicates that while 14.6% of respondents did not view the topics of the survey important to them and opted out of the survey process, 85.4% of respondents to the survey had an interest in the topics of the survey.

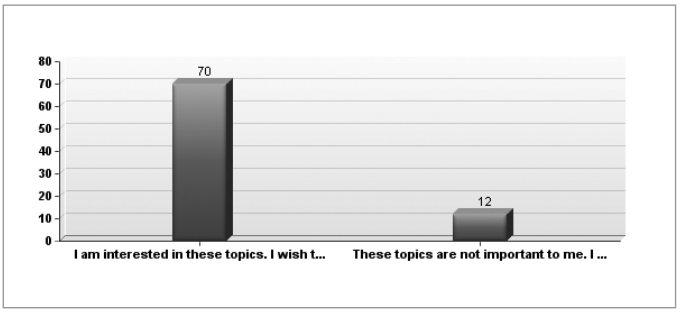

Figure 1: Respondent interests in survey topics

Data collection and management

Responses gathered from the survey were kept in both secure online/offline sites available only to the researcher. Quantitative data was statistically (descriptive, inferential) analysed in the Qualtrics software while qualitative data was analysed using content analysis by the researcher. Respondents were guaranteed anonymity in their responses by the researcher, thus all individual responses were kept confidential, no effort was made to attach responses to a specific respondent, and no individual respondent identifying information was released in the study findings.

Study population description

The study population included all of the seventy-seven (77) head public library administrators, fifty-eight (58) head community college library administrators, and approximately forty (40) – fifty (50) head academic library (private and public funded) administrators of the state of North Carolina (United States). The study population contained approximately 180 possible respondents for the study. In the end, there were 89 respondents to the survey for a

participation rate of 49.4%. Respondents were further segmented into the type of library setting in which they indicated they currently worked. The segmentation results are displayed in Figure 2 and indicate a fairly even distribution of responses by library type from the both the study population [51 of 103 (49.5%) of the possible academic library respondents and 38 of 77 (49.4%) of the possible public library respondents] and within the three academic library types (public four year, private four year, and 2 year public community colleges). Due to the anonymity of respondents, the geographic distribution of the responses could not be analysed as 1) the data was not collected to maintain anonymity, and 2) due to the sample size and the knowledge of the library service environment by the researcher, any attempt at analysing this data would have broken the researcher's promise of anonymity to respondents.

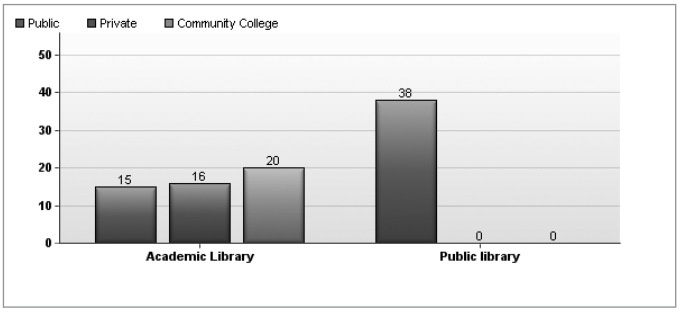

Figure 2: Respondents by library setting

As stated in the researcher's theory, the head library administrator was selected by the researcher for participation in the study to examine their perceptions of competitive behaviours as it might relate to a library potentially being more competitive in its service environment. To examine this assumption, Table 1 indicates that survey respondents possessed library administration experience with a mean of 6.43 years of professional experience before becoming a library administrator for the first time; a mean of 12.17 years of experience as a library administrator in their current setting; and a mean of 18.24 years of total library administrator experience. Thus, respondents reported experience seems to indicate that they possess knowledge of their own and their peer's competitive behaviours and can provide the leadership that guides the rest of the library (staff and stakeholders) in being a competitive library.

	Min Value	Max Value	Mean Value	SD	N Responses
Respondent Age	27	67	54.05	9.08	87
# years as library administrator in any library setting	1	39	18.24	11.07	83
# years as library administrator in current library setting	1	39	12.17	9.76	82
# years working before 1st library administrator position	1	40	6.43	7.19	83

Table 1: Respondent Demographics

In an effort to see if respondents possess additional types of previous administrative experience that may have aided them in their perceptions of competitiveness and competitive behaviour, survey respondents were asked to report on any administrative work experience they may possess prior to their library administration experiences. Figure 3 indicates the response rates of head library administrators reporting prior administrative experience from government agencies (24.2%), for-profit (19.4%), and other non-profit organisations (12.5%) before entering library administration. As government agencies and non-profit organisations are not generally identified as competitive organisations (similar to libraries), the results indicate that even among the few head library administrators with non-library administration experience before becoming a library administrator, approximately one half do not have experience in a competitive organisation.

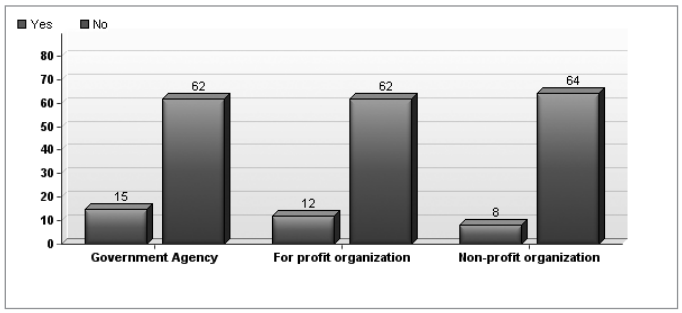

Figure 3: Reported administrative work experience prior to library administration experience

Based on the analysis of the demographic responses, the researcher's assumption for the selection of the head library administrator as the study population appears justified in that the respondent's reported administrative experiences (both inside and outside of libraries) provide them with reasonable experience and knowledge of their own competitive behaviours and perceptions. In combination with the even distributive nature of the responses, the researcher concludes that the study results should accurately reflect the current environment of practice and understanding regarding perceptions of competitive behaviours among the head library administrators in North Carolina.

Findings and discussion

The survey instrument was designed to gather data to validate the researcher's theory using the two under-arching questions of the study:

1. How do head library administrators in North Carolina perceive their own competitive behaviours?

2. How do head library administrators in North Carolina perceive their peers competitive behaviours?

In an attempt to examine how head library administrators in North Carolina perceive their peers and their own competitive behaviours, a series of questions was asked of respondents regarding their perceptions of competitive behaviour. When asked, "Would you describe yourself as competitive in nature at work?" 77.1% (54 of 70 responses) of all participating respondents indicated that they personally were competitive in nature at work. When asked, "Would you describe other head library administrators you know as competitive in nature at work?" 75.4% (52 of 70 responses) of all participating respondents indicated that other head library administrators were competitive in nature at work. Additional responses from the respondent's perceptions of competitiveness questions are displayed in Table 2 and Figure 4.

In analysing the responses within Table 2, the researcher noted several parallels of perceptions. When asked how others would describe them as competitive at work and how others would perceive them as competitive at work, the responses were identical and both of these responses were very similar to their own perceptions of their competitiveness at work. This may indicate that respondents perceive that their peers are very reflective of their own competiveness behaviours at work. When asked to report their perceptions of their own competitive behaviours and the competitive behaviours of their peers, the responses for their perceptions of their peers competitive behaviours was similar to their own reported perceptions but not as competitive. Taken together, this may indicate either a high level of group familiarity in perceptions of competitive behaviours and/or the possibility that respondents do not know much about their peer's competitive behaviours and thus use reflection to view their peer's competitiveness behaviours as being equivalent (but not necessarily as competitive) to their own perceived competitive behaviours in professional or psychological justification or compensation of their own professional understanding of competitiveness or ego (additional research is needed to explore this finding further).

Question	Above Average	Average	Below Average
Please rate your level of competitiveness at work:	21	38	1
Would others describe you as competitive in nature at work?	20	30	2
How would others rate your competitiveness at work?	20	30	2
How would you rate other head library administrators overall level of competitiveness at work	16	41	3

Table 2: Perceptions of competitiveness responses (Competitive in nature is defined as having or displaying a strong desire to be more successful than others in some aspect of one's life.)

In Figure 4, Study respondents were asked to indicate their perceptions of their own competitiveness in four different competitive settings common to head library administrators: hobbies, sports, their own work performance, and the performance of the library they serve as administrator. Respondents were asked to report both those settings in which they were and were not competitive for comparison and validation of responses. Responses indicated an inverse of responses in similar frequency and setting examined in comparison between those settings they were competitive or were not competitive, indicating respondents reporting validity was high.

When comparing how their peers may view them as competitive in each of the four settings against their own reported competitiveness, there was a similar finding as indicated in analysing Table 2 responses: respondents indicated peer's perceptions of their own competitive behaviours was similar to their own reported perceptions but again not as competitive as their own perceived competitiveness. This degree of similarity of responses (regardless of whether their own or their peer's perceptions) of competitiveness would be one of the expected findings if the study respondents are actually using reflection (instead of group familiarity of competitive behaviours) to view their peer's perceptions of their own competitiveness behaviours as being equivalent (but not necessarily as competitive to their own perceived competitive behaviours) in professional or psychological justification or compensation of their own professional understanding of competitiveness or ego.

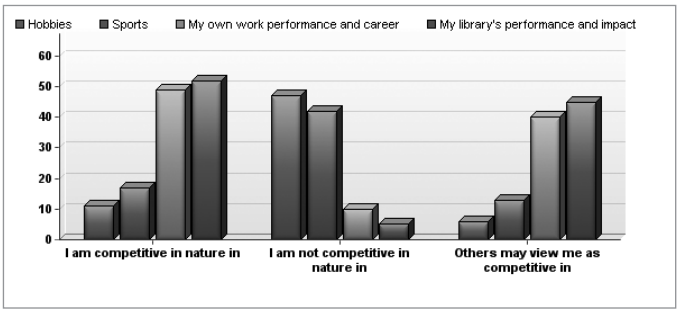

Figure 4: Respondent's perceptions of their competitiveness in different competitive settings

In addressing the last of the three under-arching questions of the study, examining how head library administrators in North Carolina perceive and use performance measurement information in generating the library's strategic value, respondents were asked to report their use of different types of performance measurement information and provide context as to its use and scope.

Limitations of the study

This study's results are limited to the academic and public library administrators in North Carolina who are participants and self-reported their perceptions of competitiveness behaviour and perceptions of their peer's competitive behaviours. The results are therefore limited by the integrity and understanding utilised by the respondents when completing the survey instrument. In spite of these limitations, the researcher perceives there is a great potential application for the study's findings in developing grounded theory for organisational leadership models relating to the competitiveness behaviours and perceptions of competitiveness of head library administrators as many library organisations outside of North Carolina are experiencing similar competitive pressures and need to be more effective competitors.

Conclusions and future actions

The purpose of the study is to determine the perceptions of competitiveness held by head library administrators in libraries in North Carolina. The purpose of the study is being achieved through addressing the overarching research question: "How do head library administrators in North Carolina perceive competitive behaviours?" with the following sub-questions:

1. How do head library administrators in North Carolina perceive their own competitive behaviours?

2. How do head library administrators in North Carolina perceive their peers competitive behaviours?

The conclusions to be drawn from the first stage of the study include:

- Regardless of library type, the majority of head library administrators perceive that they are competitive at work.
- Regardless of library type, the majority of head library administrators perceive that their peer library administrators are competitive at work.
- Regardless of library type, the majority of head library administrators perceive that they are not competitive outside of their own career performance or their library's performance.
- There is no statistical evidence to date that a type of library setting is associated with the perceptions of competitive behaviour of the respondents.
- There is no statistical evidence to date that previous administrative experience prior to becoming a library administrator is associated with the perceptions of competitive behaviour of the respondents.
- The majority of respondents perceive that their own competitive behaviours are similar to but slightly more competitive than their peer's competitive behaviours.
- Results indicate that most library administrators who report that they are competitive at work have a similar perception that their library's performance is also competitive.
- There is sufficient evidence to date to continue the established study design in support of the theory proposed by the researcher.

Future actions related to this study will include completion of stages 2 and 3 of the study design. In stage 2, the self-identified key informants will be interviewed. Respondents reporting exceptionally strong and weak competitive behaviours or the use of competitive and performance measurement information in generating strategic value will be contacted by the researcher in the third stage of the study for an in-depth case study visit of the respondent's library (pending respondent approval). The third stage case studies will examine any personal, organisational, competitive, or environment factors associated with the exceptionally strong and weak competitive behaviours or the use of competitive and performance measurement information within the library.

Additionally, the researcher will attempt to examine whether the study population is highly familiar with each other's competitive behaviours or if there is the use of reflection (or other method) by study participants to view their peer's competitiveness behaviours as being equivalent (but not necessarily as competitive) to their own perceived competitive behaviours. Finally, the researcher will examine whether there is any relationship between the perceived competitiveness levels of the head library administrator and the competitiveness of the library.

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