



Supporting E-Learning at the University of Phoenix

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EDUCAUSE is a nonprofit association whose mission is to advance higher education by promoting the intelligent use of information technology.

The mission of the EDUCAUSE Center for Applied Research is to foster better decision making by conducting and disseminating research and analysis about the role and implications of information technology in higher education. ECAR will systematically address many of the challenges brought more sharply into focus by information technologies.

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Preface

The EDUCAUSE Center for Applied Research (ECAR) produces research to promote effective decisions regarding the selection, development, deployment, management, socialization, and use of information technology (IT) in higher education. ECAR research includes

- ◆ research bulletins—short summary analyses of key IT issues;
- ◆ research studies—in-depth applied research on complex and consequential technologies and practices; and
- ◆ case studies—institution-specific reports designed to exemplify important themes, trends, and experiences in the management of IT investments and activities.

While technologies offer many new learning possibilities, they also present new challenges. Institutions must adapt pedagogical practices, ensure technical proficiency, and develop and maintain a reliable and robust technical infrastructure to use e-learning effectively. These demands translate into a host of new instructor and student support requirements that institutions must address.

To help institutions achieve these goals, ECAR and IDC conducted research to learn

about the evolving student and instructor support requirements for online distance-learning courses, hybrid courses, and traditional courses that leverage technology. The research examines the issue from the perspectives of support providers and support users. From the provider perspective, ECAR examines central resource organization structures, resource availability and effective practices, and the challenges presented by e-learning's increasing popularity. From the user perspective, ECAR examines the e-learning course creation or adaptation process, challenges faced, and the effectiveness of support received for the process. The research also examines instructors' and students' technical proficiencies and support requirements. This research proceeded in three phases.

Phase 1: Online Survey

ECAR conducted an online survey of the EDUCAUSE membership to develop a baseline on the state of e-learning courses and their central support activities in higher education. It received 274 valid responses, which represents 18 percent of the surveyed EDUCAUSE membership. The survey's general topics included:

- ◆ online distance learning, hybrid course offerings, and student and faculty participation;
- ◆ student and instructor technical proficiency, e-learning activities, and support requirements;
- ◆ availability of instructor training and technical, course/curriculum, and support resources;
- ◆ infrastructure and organization of support resources; and
- ◆ current and future challenges to meeting support requirements.

Phase 2: Telephone Interviews

We conducted the second-phase interviews to drill down into the “whys” and “hows” of central resource support models for e-learning. We recruited interview candidates from a group of willing respondents from the initial survey; EDUCAUSE staff and an ad hoc advisory committee comprising EDUCAUSE members involved in e-learning also helped with recruiting. We selected candidates on the basis of several criteria, including reputation as a leader in e-learning, percentage of hybrid and/or online course offerings, and degree of faculty and student involvement in e-learning. During January and February 2003, ECAR invited 23 institutions to participate in qualitative interviews, and 19 institutions accepted the invitation.

ECAR and IDC created interview guides to solicit in-depth opinions on the issues touched on in the survey research. IDC and ECAR analysts conducted telephone interviews with support provider representatives (for example, a manager from the central IT department, a manager from the instructional technology unit, or a representative from the institution’s faculty resource center) and support user representatives (such as the academic senate chair of the instructional

technology committee or an appropriate dean or department chairperson) from each institution.

Phase 3: Case Studies

For the case study field research, ECAR and IDC chose six institutions from among the qualitative research participants and other institutions that have significant e-learning initiatives or have implemented noteworthy central e-learning support models. The case studies seek to gain a deeper understanding of the various central e-learning support models and, by extension, what has worked well and what needs improvement. We assume that readers of the case studies will also read the main report, which incorporates the case studies’ findings within the report’s generalized context.

ECAR wishes to thank the University of Phoenix leadership for their time, assistance, and diligence in support of this research. In particular we thank Mary Alexander, director of institutional and academic services; Nancy Cervasio, director of student services, online operations team; Vince Grell, senior director of admissions, online operations team; John Kline, vice president of operations and finance, online operations team; Doug Klingenberg, director of online faculty services, online academic affairs team; Joe Mildenhall, director of online technology, Online Campus; Brian Mueller, chief executive officer, University of Phoenix Online; Dennis Myers, associate director of information systems, online; Laura Palmer Noone, president; Steve Garbade, director of online IT operations; David Pinkus, IT senior director of software, Apollo Group; Russ Paden, vice president of academic services, online academic affairs team; Kelly Sanders, faculty scheduling manager, online academic affairs team; Jennifer Scott, director of academic affairs, online academic affairs team; Kim Spence, faculty recruiting manager, online academic affairs

team; Craig Swenson, provost and senior vice president; and Elizabeth Tice, associate vice president–academic affairs, and dean, College of General and Professional Studies. Additionally we thank the deans, associate deans, instructors, curriculum managers, instructional designers, and students who participated in two roundtable discussions.

We hope that readers of this ECAR case study will learn from their experiences.

Introduction

In July 2003, thousands of students from around the world will come to Phoenix to graduate from the University of Phoenix's online program. Not only will they receive their diplomas, but many will also meet the members of their learning groups for the first time. Some students anticipate this meeting almost as much as their graduation because many learning group members have attended online courses together throughout their program of study. They have formed strong personal bonds as they worked together online to earn their degrees.

The graduation gathering exemplifies the University of Phoenix's intersection of technology and personal contact in its online program. The university stresses the importance of the personal touch in its course structure, support services, and culture, yet students access their courses and most services online. This is just one example of the University of Phoenix's special nature. It is a higher education institution built specifically to serve the adult learner, with specially developed programs, curriculums, and services to serve this targeted audience. This case study provides a general overview of the University of Phoenix and examines the role support plays in the university's successful online program.

Case Background

John Sperling founded the University of Phoenix in 1975 to create a higher education institution geared toward the unique educational needs of the adult learner. "His research convinced him that working adults required a different education model than that found in traditional higher education. He came to the realization that it would never be possible to fully develop his idea within the structure of an existing university."¹ The adult learner, he believes, wants to learn in a practical context. "Our students want to go beyond the course materials; they want to know how it works in the real world," explained Laura Palmer Noone, president, University of Phoenix.

To fulfill this vision, the University of Phoenix's programs, curriculum, and course structure revolve around working adults' needs, bridging theory and practicality. The University of Phoenix offers graduate and undergraduate degrees in management, information systems and technology, education, health sciences and nursing, social and behavioral sciences, and general sciences. Its curriculum blends academic study and coursework that forces the student to apply theory in a real-world, practical context. Courses are intensive five- to six-week workshops, conducted in weekly class increments. Each student progresses through the program as part of a learning group of 10 to 13 people who take all courses together. They complete the course's group projects in learning teams of three to six individuals.

Students must be at least 23 years old and be employed or possess significant work experience. Most are currently in permanent jobs, reflected in the claim that 60 percent of students receive tuition reimbursement from their employers. Students have convenient

access to classes through 120 campuses and learning centers and the online program. Most instructors are part-time faculty practitioners who weave their professional experiences and insights into the courses.

The university's vision has struck a resonant chord with many adults. According to the U.S. Department of Education, in 2001 the University of Phoenix had the largest private institution student enrollment in the country. As of February 2003, the university's enrollment surpassed 153,000 students.

E-Learning Snapshot

In 1989, the University of Phoenix expanded its course offerings to an online format to enable adults to take courses anytime and anywhere. Wherever possible, online courses mirror the classroom or "on-campus" experience. Both modalities offer the same programs and curriculum and cohort course structure. Part-time faculty practitioners teach the courses, building personal content into a standard curriculum created collectively by faculty and the university.

For online courses, instructors post lectures online every week, and class participants use asynchronous threaded discussions and e-mail as primary communication modes to complete assignments and give feedback. The instructor typically logs on twice a day to stimulate interactions with the students and post new content throughout the week. The faculty member takes atten-

dance by tracking logins and participation. If students miss more than one class, the university withdraws them from the course.

Students must have access to a Pentium-class computer, an ISP connection, and a 56-Kbps modem to complete an online course. Microsoft's operating system and software are preferred, but not required. Students sign an agreement attesting to this availability before enrolling.

Adults have embraced the institution's online program. According to the February 2003 10-Q SEC Filing of the Apollo Education Group, of which the university is a wholly owned subsidiary, University of Phoenix Online degree enrollments increased 68 percent in one year—from 37,600 students in February 2002 to 63,000 students in February 2003. During the same period, degree enrollments at the University of Phoenix (excluding online) rose 14 percent, from 78,700 to 89,300 students. As Table 1 illustrates, financial results reflect the success of this growth. For the most recent six-month period for which financial results are available (at the time of writing), tuition revenue rose by 66 percent and net income by 87 percent.

The growth promises to continue in the future. In February 2003, 180,000 people either called or e-mailed the university for information about its online programs. Typically, 5 to 6 percent of the people who inquire enroll in a course. The gradu-

Table 1. The University of Phoenix Online's Revenue and Income

	Six Months Ended 2/28/03	Six Months Ended 2/28/02	Year Ended 8/31/02	Year Ended 8/31/01
Tuition and Other Net Revenue (in Millions)	\$227.2	\$136.5	\$327.5	\$180.5
Net Income (in Millions)	\$44.3	\$23.7	\$64.4	\$31.7

Source: February 28, 2003, 10-Q, and August 31, 2002, 10-K SEC Filings

ation rate of the online program ranges from 60 to 65 percent. The University of Phoenix Online employs approximately 7,000 faculty members.

Online Program Effectiveness

Students learn as they become immersed in the course. Brian Mueller, chief executive officer of University of Phoenix Online, described a typical student's progress in a course: "As you review the threaded discussions throughout the course, you note a change in the student's vocabulary and conceptual thinking. The quality of the discussion, the questions, and the assignments improves. It is clear that he develops the vocabulary, the concepts, and the ideas that are relevant to the subject area."

According to Craig Swenson, provost and senior vice president, the online pedagogy is effective. The university's Adult Learning Outcomes Assessment System (ALOA) and Academic Quality Management System (AQMS) track student achievement and institutional effectiveness through cognitive and affective assessments and survey results. "The University of Phoenix's earlier assessments indicate that there is no significant difference between the cognitive outcome scores of online students versus campus students," Swenson said. He also noted that a higher percentage of online students pass the CPA exams and score at the national norms on the ETS major field test on business.

Drivers of E-Learning at the University of Phoenix

E-learning evolved at the University of Phoenix as a natural outgrowth of the institution's mission to serve its working adult students by improving access to its educational and other resources. In partic-

ular, e-learning enhances two institutional goals: creating an adult-centric institution and extending its reach.

Creating an Adult-Centric Institution

The University of Phoenix offers a unique mix of academic and business practices. At its inception, Sperling decided to build a higher education institution tailored to adult education needs rather than modify an existing institution's college or school. This decision enabled the University of Phoenix to combine effective practices of both the academic and business worlds. For example, the university created a for-profit organization to build in more accountability. Since the university relies on tuition as its main source of revenue, student enrollment provides immediate and persuasive feedback about its performance.

Its unique approach has created a strong culture and sense of mission, "partly because over the years we had to link arms and circle the wagons," stated Swenson. "There is a great deal of solidarity and passion here. There is strong loyalty to the institution and its vision." Indeed, administrators and staff members are real examples of the University of Phoenix vision, often having worked professionally before joining the university; many teach and take courses in addition to their full-time jobs.

The result is an institution that is very cognizant of and empathic to its targeted customer—the adult student. The average age of entering students is 34 years old, and the University of Phoenix realizes that for them, education solves a problem; it is not a rite of passage. Swenson explained, "The University of Phoenix strives to answer the following questions at the end of every night of class, at the end of every week of course, at the end of every course, and at the end of

every program: First, do the students know what they should know? Second, can they do what they should be able to do? Third, have we helped them develop values that are appropriate to their profession? And fourth, are they achieving their life and career goals? It is part of our university's attitude, and it relates to our for-profit orientation. If we focus on the right things—student knowledge, skills, and attitudes—and we achieve the right outcomes, the enrollment and the profits will take care of themselves.”

This business-like approach encourages the university to adapt itself quickly to fulfill evolving adult students' education needs by creating new programs, processes, and resources.

Online Program Extends University's Mission, Reach

According to Palmer Noone, the University of Phoenix conceived the online program originally as a logical extension of the university's larger mission, fulfilling adults' desire for greater convenience and access. The online program's project orientation and asynchronous threaded discussions promote steady activity throughout the course; there are no scheduled classes to attend. Online access enables students to integrate learning into their lives anytime and anywhere, accessing classes during a business trip or after the kids go to sleep at night. The University of Phoenix extends online access to student services and resources as well, so students don't have to drive to a campus to register for courses or research materials at a library. The online program also extends the university's reach: any qualified adult can take a course, not just those who live near a campus.

Program drivers may expand beyond the university's original goals of convenience and reach. Mueller believes the online program's

team orientation also addresses the evolving student. “I think a person's learning expectations are changing. A lot of high school and college students are dropping out, while our enrollment continues to soar,” he explained. “Many younger people don't like passive, one-way communication. They flock to the Internet to interact with their friends, instead of watching TV. People are less willing to accept passive learning—especially in younger generations. They get bored with lecture-style classes.” Mueller believes the interactive and social nature of the online program's learning groups fosters enrollment growth also. “People get to know each other,” he continued. “A student wants to go online to see what his classmate from California said, if his instructor responded to his question, or if someone responded to his controversial statement.”

Supporting E-Learning at the University of Phoenix

The University of Phoenix faces several challenges in supporting faculty, student, and staff use of its e-learning system. It addresses these issues by systematizing training for faculty and students and creating a highly robust infrastructure that amasses processing power and redundancy on the back end and keeps things simple on the front end with a user-friendly interface.

Key E-Learning Support Challenges: Faculty and Students

Inexperience presents a key challenge for the novice instructor. The university does provide extensive training, but teaching in an online environment for the first time can be overwhelming. An instructor has to learn how to manage both the classroom and the technology. One instructor compared his role

to that of an air traffic controller: “You have to know when to jump in, when to sit back, when to enforce your presence, when to let things gel. You have to be prepared to react and manage situations based upon your experience and background.” As he gains experience, he said, he “learns administrative tricks of the trade: how to effectively keep track of activity in the classroom and how to report feedback to students.”

Time management is critical. For example, neglecting to make the necessary time commitment is the most frequent reason prospective faculty members fail the University of Phoenix’s training program; they do not spend enough time with the students. When teaching a course, one instructor estimates that it takes five times longer to teach a course the first time versus the fifth time. He has to build his “sweat equity” until he hits his rhythm with the course and retools it to increase efficiency.

As college size increases, intra- and interdepartmental communication also becomes a challenge. One college alone employs 3,000 faculty members. Communicating new policies, procedures, or even meeting times is cumbersome. Not every faculty member reads e-mail regularly or attends online workshops or quarterly online meetings, making it difficult at times to enforce consistency and best practices among the faculty members. To address this, some colleges have online lounges or forums to create a 24 x 7 place for faculty members to discuss departmental issues. On a broader scale, keeping current with other college and institutional activities challenges faculty, too.

For the novice student, the online program’s intense pace can be overwhelming, especially in the introductory courses. The beginning student must master the technology, the online environment, and

the content quickly. He also must confront any fears or reservations about returning to school and his ability to complete the entire degree program. Faculty members find they have to be both instructor and counselor at times. Learning teams are an especially important support resource during the introductory course. Instructors also have to socialize new students into the online environment. “Online is their only means of communication,” stated one instructor. “It is very important to teach them protocols for effective communication tone and style, policies on plagiarism, and how to work together effectively in a virtual environment.”

The University of Phoenix’s E-Learning Support Infrastructure

The University of Phoenix has built numerous resources to help online faculty and students specifically. “We feel the online student and faculty needs are different,” Swenson stated. “You can’t expect your on-campus service infrastructure to serve online students effectively.”

IT Infrastructure Is Essential to Operations

The university fully understands the importance of maintaining a reliable and scalable IT infrastructure in a high-volume online course environment. Its existence should be transparent to students and faculty members, who should be able to log on to their courses without a hitch and remain unaware of the complex system behind it.

Although supporting more than 160,000 online and on-campus students, faculty, and staff may seem to be a daunting task, the university’s network has ramped up over time, building on the base of a stable infrastructure. Growth is almost routine. “We

have been growing rapidly now for so many years, it is standard procedure for us to do things quickly," said David Pinkus, IT senior director of software, Apollo Group. "Projects with 30- to 60-day cycles are normal for us. We have all the contacts, the vendors, and the templates in place. When we need to expand, it is just a couple of phone calls and everyone knows what they have to do."

The support effort is not without its challenges. The university built its network internally because it could not find an off-the-shelf solution to serve its vast size. "Our biggest challenge is that we use standard technology, but we use it in a very nonstandard way," explained Steve Garbade, director of online IT operations. "It becomes very complex to support because there is no one else in the world that uses a system in the same way." The IT department uses off-the-shelf components and technology where it can. To scale its networks, the IT department uses trend analysis to extrapolate future network and server capacity requirements, and install upgrades accordingly.

On the back end, Galaxy—the University of Phoenix's Java-based administrative system—stores and processes all student information. It uses a Java Version 2 Enterprise Edition framework, an Oracle back end, and a heavy client on each desktop. All clients go through a BEA Systems Web Logic middle tier before connecting to the institution's databases. The university considered Web access when designing the system, but Web functionality was not robust enough when the IT department designed the system two years ago. A replacement system operates in parallel to provide redundancy. Because of the need for a fast environment for online transaction processing, the university offloads data analysis, report generation, and information from the university Web site and online environment to secondary systems.

A staff of 12 people maintains the university's 50-plus servers. The IT department uses Windows 2000 to operate a Web farm on a Microsoft Internet backbone, and specialized servers handle four areas:

- ◆ three rEsource² servers store online course materials,
- ◆ three ApplyWeb servers process students' online applications,
- ◆ three financial aid servers process financial aid applications, and
- ◆ 10 to 12 e-campus servers handle the student and faculty Web site.

The IT department installs specialized servers in clusters of three for maintenance. Clustered databases operate on the back end.

The messaging environment is also critical because the online program's pedagogy is based on communication. In a typical week, the system will process more than 1.7 million messages. Every student and faculty member has a mail account, and the university maintains a bank of inbox servers to support a quarter-million inboxes. The university uses newsgroups for threaded discussions because the information is only stored once; each student does not own a copy of it. Classroom servers store a set of discussion folders for each online class, including a main course folder, a course material folder, a folder for assignment submissions that can be read only by faculty members, and learning team folders for projects. Folders for each course are automatically built by accessing roster information from the databases to create the necessary folders and assign student and faculty access rights.

Currently the IT department maintains three sets of classroom servers: five for undergraduate courses, five for graduate courses, and four for general studies. The university plans to deploy classroom servers by program, to total eight sets of two servers. Over the longer term, this will enable

the IT department to scale more broadly, subdividing programs that outgrow current servers.

Students access classroom information in one of two ways: Web-based access through a dedicated set of servers on the Web farm, or through Microsoft Outlook Express. Each method backs up the other in case of a problem.

In a high-volume environment, monitoring traffic load is important, too. The IT department has determined that its peak load occurs on Wednesday nights at 8:00 p.m., when about 12 percent of online students connect concurrently. Dual network paths ensure redundancy in case of outages.

The University of Phoenix approaches student technology requirements conservatively to enable as many students as possible to attend classes via dial-up modem. This strategy also facilitates its IT operations, as course content requires little horsepower to process; it is either text or Flash based.

A Top-Down Approach to Course Development Minimizes Support

The University of Phoenix develops its course curriculums centrally, architecting a framework into which the faculty member inserts his content. The curriculum is modality independent; it applies to either a campus or an online version of a course. A systemized approach is important because the university hires many part-time faculty practitioners for their content—not teaching—expertise. Most faculty practitioners do not have the training to create a pedagogically effective course by themselves, so the curriculum guides them through course creation by designating the required resource material, assignments, activities, and assessments. The university relies on the faculty member to contribute his individual knowledge, points of view, and experience.

When creating a course curriculum, each college starts at the vision level and then works down to the details. About two years ago, each college dean—aided by the program chairs, an academic council made up of faculty and content experts—articulated the domains and competencies for each of its programs. For example, the undergraduate school of business outlined the required knowledge and skill sets each undergraduate student should possess upon graduation. The college mapped the curriculums of its current courses to its stated domains and competencies to identify any gaps or overlaps, and modified course curriculums accordingly. In some cases, it embedded specific assignments into different program courses to address specific competencies. Now each program has a framework of courses and their curriculums to meet its stated competencies.

Each program is reviewed periodically to ensure its curriculum is still current and relevant to the overall program framework. Every fiscal year, the university uses input from various faculty feedback mechanisms—academic program councils, end-of-course evaluations, and subject area meetings—to develop a master curriculum agenda of new courses to create or current ones to update.

When updating a course, a curriculum development manager handles the logistics and an instructional designer retools the course. Working with the “expert teams” of content experts, along with the faculty members, program manager, or dean, they revisit the course’s curriculum and the accumulated faculty feedback to determine if any modifications are required. “Once we have topics and objectives and we understand how everything fits together,” said one curriculum development manager, “that helps us to determine the required

resource material, assignments, activities, and assessments for the course. If we have that firm backbone, the course almost writes itself." It takes about three months to finish the course redesign, using the expert team as necessary for input, and then the course goes through a stage of piloting and perhaps adjustment prior to full implementation.

rEsource: The Next Step in the University of Phoenix's Course Design

A text-based document called a unit module lists the course's topics, objectives, and assignments for each week plus a content outline for the faculty module. However, the university is phasing in a new Web-based course format called rEsource. It breaks each course down into weekly increments and organizes all the learning material around the week's objectives, which are posted on the course Web site. "rEsource reshuffles how the online instructional material, logistical information, and assignments are presented," explained a curriculum manager. "It is like reshuffling several decks of cards all together so that everything is organized by weeks. A student accesses the week-one link, and it will include the assignments, the readings, simulations, and any other material. It just integrates things in a user-friendly manner for the students and helps them to see how all the materials fit together in a course." rEsource early adopters currently include the College of Graduate Business and the College of Information Systems and Technology; other colleges are transitioning.

rEsource also introduces another course component: very low-level, Flash-based simulations to enable students to role-play in real-world situations. For example, during one simulation used in the Graduate School of Management, the student plays the role of an MBA-prepared manager working for

a fictional organization. The manager must make a key set of decisions for the company on the basis of available information such as marketing reports, financial data, and opinions from subject-matter experts to meet a specific goal. There are typically three or four cycles in each simulation in which the student has to make decisions. Once the student makes a decision, the simulation gives immediate feedback. A student can take hundreds of different paths in the simulations. The results will vary tremendously, and just like in the real world, there is usually not just one right answer.

rEsource improves course material access also. The University of Phoenix leverages its large enrollment to create customized textbooks for its courses—a common practice in corporate and military training—which students purchase directly from the university. Publishers are willing to reshuffle and customize textbooks to complement course curriculums. Additionally, the university hires authors to "custom-write to fit" their work for specific courses. rEsource offers material in an electronic format, which makes updating material easier and eliminates the need to order and ship textbooks.

Intensive Faculty Training Program Indoctrinates Candidates into Online Program

As the University of Phoenix continues to grow, one challenge is to employ an ample number of faculty practitioners to teach the rising number of classes. The University of Phoenix's academic affairs team recruits, trains, and manages the faculty members who teach the approximately 1,300 online classes per week.

The college deans, program managers, and academic council create a faculty profile for each program that specifies education and professional qualifications. The academic af-

fairs team analyzes enrollment trends to determine the faculty expertise requirements. For example, one year IT programs may be popular; in another year, marketing is the hot area. The academic affairs team works with the marketing department to develop a targeted recruitment campaign of mailings, Internet ads, and advertisements in trade publications to attract interest from qualified individuals, who contact the university.

The university invites interested candidates who pass the initial qualification screening to participate in a four-week online training program. Currently 40 to 50 training programs operate per month. The online program enables potential faculty members to train in the modality in which they will teach. It also weeds out those who may be uncertain about their teaching commitment and those with marginal online teaching skills. Only about 50 to 60 percent of those who apply to teach pass the training program.

During the training program, the candidates observe an actual student online course and attend an online training class each week. The training classes present scenarios about potential teaching situations and require recruits to address them. The training program schedule is as follows:

- ◆ *Week 1: Introduction.* Candidates review the University of Phoenix, its philosophy, and its online course model. They learn about the course software.
- ◆ *Week 2: Class preparation.* Candidates learn the role of the course syllabus and cover online communication basics. They are introduced to the support systems and services available to faculty.
- ◆ *Week 3: Class facilitation.* Candidates receive instruction about classes, including how to stimulate critical thinking, facilitate discussion, and support learning

teams. They review the time commitment teaching a course demands.

- ◆ *Week 4: Evaluation.* Potential faculty members evaluate and assess an actual student's work throughout the week while practicing communication and specific processes.

If the candidate passes the training program and the credential review, he participates in a two-week mentorship with a senior faculty member who helps the candidate to infuse his personal knowledge into the course. The mentor observes the candidate while the candidate is teaching an actual week-long class, communicating feedback separately. Upon his successful completion, the candidate is hired to teach on a course-by-course basis.

The University of Phoenix also provides ongoing training for faculty members, including weekly online faculty development workshops. The academic affairs team e-mails an instructional specialist tip every Friday. There is an online faculty lounge for exchanging peer-to-peer information and advice. Each program hosts quarterly meetings to discuss content-specific issues.

Faculty and Student Resources Blend Personal and Technical Support

The University of Phoenix compensates for the lack of direct face-to-face contact with its faculty members and students by designing support resources that blend technology and the personal touch. Both serve important functions: the former enhances efficiency, the latter creates a bond with the person. "As we build more electronic resources and tools, the university understands that we are never going to eliminate the human element and expect to provide the level of service and high quality that we have built into this process," said John Kline, vice

president of operations and finance. “When we rolled out ApplyNet, our online application tool, some staff members thought we could add a link in an e-mail, send it to 100 people, and generate 30 or 40 applicants. It does not happen like that. We need to speak with the students to answer questions, guide them, and prepare them before they step foot into our classrooms.” For example, students and faculty members can access many resources online, but both are assigned a personal contact at the university for asking questions and addressing problems via telephone or e-mail. Additionally, procedures are designed with a specified frequency for contacting students proactively to check on their progress.

The academic affairs team provides faculty support also. Faculty members may train and teach courses in an online environment, but the academic affairs team provides a different personal contact in the recruitment, training, and teaching phases of employment. The first point of contact is a faculty recruiter, who answers initial questions and helps the candidate through the first phase of training. A mentorship scheduler assists the candidate with the second phase of training. Upon hire, the candidate is assigned to a faculty scheduler, who becomes the primary administrative contact. The academic affairs team overlaps the contacts as the candidate moves through the training process. For example, the mentorship scheduler contacts the candidate during the training program; the faculty scheduler makes initial contact during the mentorship phase.

There are five faculty schedulers and four mentorship schedulers. The academic affairs team tries to assign schedulers to academic areas to create a sense of ownership and familiarity with the courses, materials, program chairs, and faculty. Schedulers are frequently the first point of contact when a

problem arises. They must acknowledge the faculty member’s message within 24 hours to provide personal contact.

A team of 20 instructional specialists offer teaching guidance. They are seasoned faculty with several years of teaching experience who advise faculty members on teaching and problems—for example, maintaining effective tone and communication, or dealing with difficult students.

The operations team handles student support. An admission counselor, financial aid adviser, and academic counselor work together to advise the student as he applies for and completes his program of studies. Though managed by different departments, the three areas place teams in close proximity to each other to foster communication and teamwork. The three areas now cross-train employees, to further develop a sense of teamwork.

The university employs about 900 admission counselors, who provide the first contact for the potential student, explaining the academic program and course structures and the technology requirements. The online operations team segments counselors by specific areas such as military, employer, or potential program of study.

During the student’s first course, the admission counselor hands off the student to one of the university’s 240 academic counselors. The academic counselor becomes the primary point of contact until the student graduates, helping him with degree completion options, schedule changes, and university policies. So that counselors can empathize with students, the online operations team has started a two-week training program that introduces academic counselors to the online environment.

Online resources complement the personal touch. Students access numerous resources directly online, including

- ◆ university services tools that provide scheduling and grades, transcripts, and financial services;
- ◆ publications services providing electronic versions of the university catalog, curriculum guide, and program handbooks; and
- ◆ university links, which offer academic resources like the Center for Writing Excellence, Net G online training programs, an alumni network, proficiency testing, and the library.

Through the library Web site, students can access online article and research databases, financial records for more than 10,000 public companies, online reference materials, economic data and country profiles, and online research tutorials. Students can e-mail questions directly to university librarians for assistance. The library will create selected reading pages for faculty members that contain relevant readings and materials to enhance a specific course. The library receives more than one-quarter of a million hits per month.

E-Learning Technical Support Resources at the University of Phoenix

The University of Phoenix operates a 24 x 7 telephone call center that employs 350 people to assist all university faculty members, students, staff, and applicants. It maintains separate toll-free telephone numbers for faculty, students, and ApplyNet applicants; calls are vectored into separate tech support groups. Tech support fields between 25,000 and 30,000 calls per week, and as many as 7,000 calls in a single night. The area uses a predictive model to determine staffing needs, but there are definite times of peak usage. Classes begin on Thursday and end on Wednesday. Both are high-demand nights as students access their classes

for the first time and wrap up their weekly assignments. New students account for 40 percent of the calls.

The tech center emphasizes customer service as well as technical skills in its operations. The center is willing to invest considerable technical training in a job candidate with good customer-service skills. All technicians complete a three-month trial period to ensure they meet both the technical and customer-service requirements. The tech center tries to avoid the metric mindset associated with many call centers—there is no time limit per call; the technician is allowed to talk with callers as long as he is productively helping them. If he is unable to solve the problem, he escalates the call. Technicians are trained constantly in both the university technical operations and customer service, receiving far more than the university-mandated 40 hours of training per employee.

The university keeps its tech support in house because it is an integral part of the total university support package that spans admission counseling, financial aid, academic counseling, and tech support. The IT department doubts an outside firm could offer the same level of support, citing its own poor service experiences with computer vendors' outsourced tech support centers. In a rapidly growing environment, it is hard to keep an outside firm abreast of new developments within the university. The IT department wants to directly control the quality level of the technicians, too.

Tech support initiated 24-hour support in November 2000. Since the online program offers around-the-clock access, the university believes it should offer the same level of tech support. A growing international student base also drives a need for 24 x 7 support. When tech support began to offer 24-hour support, the call level initially surprised them. Between midnight and

5:00 a.m. each day, the center will typically field 200 to 350 calls.

The university also offers online support tools to set up accounts and online training, but it recognizes this is an area that needs to be, and is being, improved. However, the help desk will remain the primary source of support, in keeping with the university's emphasis on personal contact.

Innovation in Action: The Center for Writing Excellence

The Center for Writing Excellence provides many online reference tools, grammar tutorials, and resources that enhance a student's writing skills. Its most popular resource is the online writing lab that evaluates any student-submitted paper. The university offered a writing lab at each campus to assist students, but they were sparsely attended. So a few years ago the university began to develop an online alternative.

Today students upload the final drafts of their papers into the automated system and receive feedback from a university reviewer within 24 hours. The center has reviewed more than 153,000 papers since it launched the online lab a year and a half ago. The online writing lab is not an editing service; reviewers comment on writing structure, grammar, and academic writing style, but not on content. The faculty member reviews only the first four pages of a document.

Initially, the center hired two faculty members to review papers that students e-mailed to a general mailbox. The faculty member inserted instructional comments and feedback into the paper and sent it back to the student. Volume averaged 200 papers per month at the lab's launch—a small number considering the university's total student enrollment.

Within a year, however, volume rose to 5,000 papers a month. The e-mail routing

system became difficult to manage; bad attachments and bad addresses hindered the process. Eventually the IT department built an online writing lab. Students access it through their personal Web page and upload their paper into the system. Reviewers download the draft and review it. When the reviewer uploads the reviewed version, the system automatically e-mails the student about its availability. The system tracks the papers throughout the process.

Turnaround time averages about 26 hours. Currently the center employs 89 reviewers who process 14,000 papers a month. The center uses a novel approach to help defray the \$100,000 monthly expense: it employs professors from the University of Capetown in South Africa to review papers. Many have master's or doctoral degrees, but their monthly incomes average only \$600 U.S. The center trains the professors and supplies writing manuals about the American writing style. Mary Alexander, director of institutional and academic services, is enthusiastic about their work. "They have beautiful writing skills and a thorough understanding of grammar," she said. "Their teaching experience enables them to give instructional feedback to students. Their work has raised the writing standard throughout the university." The nine-hour time difference speeds the reviewing process; the South African professors review the papers while U.S.-based students sleep.

While center staff members assign the papers manually, the system's back end tracks the papers' progress. The university stores before and after versions of each paper. The center monitors the reviewers' feedback for appropriate comments.

"The reviewers' guidance enables the students to polish the daylights out of their papers," stated Alexander. "Faculty members can concentrate on the content. Since most faculty members are hired for their content

knowledge, they are thrilled about the students' improved writing skills."

While many deemed the online learning lab a success, Alexander strove to improve performance further. "The University of Phoenix's size requires automation," she explained. "It is a necessity. I had to find a better way to process papers through the lab." She queried software companies to custom-build a solution, with unsatisfying results.

Then Alexander noticed that one reviewer consistently reviewed papers very thoroughly and quickly. She learned that he is an experienced English teacher and had programmed macros in Microsoft Word to help him review papers for common grammatical errors. The university bought his system and created an automated system that is scheduled for deployment in June 2003. The center's staff programmed into the system more than 350 grammar rules that students typically break. The system scans one page per second for basic grammar and punctuation mistakes, and inserts comments automatically. The reviewer approves or rejects the inserted comments. The automated appraisal will enable reviewers to concentrate on higher-level concerns—essay development, for example—instead of basic grammar.

Alexander believes the online writing lab is instructional. The reviewers explain but never fix an error. Most students use it for their initial assignments to improve their writing skills. Faculty members who require their students to use the online lab report that the difference in quality between their students' first and last papers in a course is amazing.

University of Phoenix's Lessons Learned

The University of Phoenix's unique student base and curriculum differ from those of the typical higher education institution.

Yet many of its lessons learned stem from effective practices that any institution can apply. Faculty members and staff also identified two opportunities for improvement.

Institutional Lessons

Know thyself and thy student. "The overarching lesson for any institution is to understand what your mission is, what your target population is, and frame your strategies and actions accordingly," stated Palmer Noone. "Our university mission is student learning; our target population is working adults. Our activities revolve around these facts."

Don't forget the personal touch. As the University of Phoenix adds thousands of students to its enrollment, the institution does not forget the individual student. Its university culture stresses the importance of student satisfaction, using both electronic and personal resources to meet their needs. Each student tests the university's performance every four to six weeks when he must register for his next course.

Standardization is important. In a large organization such as the University of Phoenix, standardized procedures enable smooth operations. For example, academic counselors follow a standard program to contact students at different points throughout the program. Standard procedures and practices enable managers to track activities and ensure a consistent level of service throughout the entire operation.

Online Distance-Learning Lessons

Use technology appropriately. The University of Phoenix has always emphasized easy course access over multimedia content. The institution offered its online courses initially on a simple conferencing system that emphasized text-based collaboration. When the Internet gained popularity, the

university resisted the temptation to load its program with multimedia-rich content. "Our definition of content has always included the content of the facilitator," explained Swenson. "We have stayed with a text-based collaboration format with a heavy emphasis on the faculty member." As a result, the university's programs are still accessible to the mainstream dial-up computer user, fostering continued student enrollment growth.

Where the University of Phoenix has made significant investments is in the back end, building a state-of-the-art technical infrastructure to handle its growing processing and communications needs. "The expense to operate a high-volume and scalable environment is not trivial," commented Palmer Noone. When this back-end infrastructure is combined with its relatively low-tech front end, the university can serve its growing enrollment with minimal technical growing pains.

Online distance learning is not a cost-saving strategy. "Two lessons we learned early about online distance learning are: first, it is not less expensive; second, it is not easier," stated Swenson. "It requires a commitment to create an infrastructure to facilitate faculty–student and student–student interaction. It requires addressing the online students as a unique population in terms of services. An institution can't use the same structure to serve both online students and on-campus students." Swenson cited the inability of online students to pay tuition online at some institutions. An institution should create a service environment to mirror the learning environment, he noted.

All for one and one for all. In many online distance programs, students work together in online group activities and discussions, but the University of Phoenix cohort model fosters personal bonds as a small group of students moves through the program

together. Peer pressure becomes an important motivator to complete assignments. "Your fellow online students are going to push you. You can't be a slacker, sit in the back of the room, turn in your paper, and go about your life," said one student. "They force you to participate with them and pull your own weight." In some cases, the class becomes a social as well as an educational experience, culminating with a face-to-face meeting at graduation. This team approach also helps students professionally by teaching them how to work in group settings and to compromise and negotiate with team members on projects.

Structure provides focus. The University of Phoenix's online access gives students the flexibility to complete coursework at their convenience. Just as important is the consistent and closed-end structured curriculum. "You can have education anytime, anyplace, but not at any pace," explained Palmer Noone. "The structure forces the students to prioritize their lives a little bit." Every course has a defined beginning and end, and the activities in between are very structured, which enables the students to schedule their personal and family commitments around the rhythm of the course and to set goals for course and program completion. The consistency creates a dependable expectation about each course, enabling students to focus more on course content and assignments as they get accustomed to the environment.

Service is king. In the world of online distance education, competitors are a mouse click away. "It is easy for a student to compare and change schools," Palmer Noone said. "It does not require them to pack a single bag." It is imperative to keep students satisfied.

Be literal in course design. Course design must be very clear and easy to understand, and it must be easy to map out the integra-

tion of the course components. An online student cannot instantly raise his hand in class to request clarification or discuss how an assignment relates to a reading. “You can never be too literal, especially in an asynchronous situation,” stated one instructor. “I think our online experience helped us to understand the importance of designing rEsource to present all course components in an integrated fashion.”

Opportunities for Improvement

Create more electronic administrative tools. Class administration is very time-consuming; faculty members estimate that administrative tasks consume more than 30 percent of their teaching time. Electronic tools—electronic grade books, automatic feedback reports, and electronic participation tracking—would streamline the process. Faculty members consider student participation tracking, now done manually, to be particularly troublesome. While it is an important task, since the university withdraws students who are absent excessively, faculty members suggest the system could track attendance automatically when the student logs on to the class.

Technical training for new students. Lack of competence and confidence in technical skills are two roadblocks that many new students face; this is especially true with undergraduate students. A one-week training course could teach students technical basics such as cutting and pasting text or posting entries in a threaded discussion, as well as online communication protocols. It could establish a base level of technical skills across the student population. It also could familiarize students with the university’s online environment and provide positive reinforcement before the first class. This may eliminate some of the handholding

that many faculty members report when teaching an introductory class.

The Future of E-Learning at the University of Phoenix

As student enrollment continues to grow, the university’s efforts and experiences with its online program suggest a closer integration of online and on-campus services.

Leveraging the Best of Both Worlds

University of Phoenix students can hop back and forth between online and on-campus courses, but most tend to stick to one program format. Over time, the university wants to use the best of both programs to benefit the entire institution.

From a technology perspective, the University of Phoenix regards its online students as the beta test for the rest of the university, because online students are earlier technology adopters. Over time, Swenson wants to leverage the university’s online technology and tools to serve its on-campus contingent. Currently, the university replicates its on-campus student services structures in 50 locations; it wants to deliver the same services online to its on-campus students. “Currently, we have two parallel structures to serve the traditional and online students,” Swenson said. “I foresee that in the future the online structure will become the structure to serve on-campus students also.”

The University of Phoenix has integrated online and on-campus curriculums already. When the institution used separate curriculums for each program, the courses tended to diverge over time. The integrated approach eliminated this problem while facilitating course curriculum updates. It also demonstrated the interchangeability of the online and on-campus programs.

Taking the next step in program integration, the institution is now experimenting with a third program model called FlexNet, a hybrid program that combines face-to-face and online interaction. With FlexNet, the students attend the first and last class of each course in a classroom and log on to online sessions in between. Students move through the program in learning groups.

Scaling Resources to Maintain Efficiency

As its online student enrollment grows, the University of Phoenix considers the impact on the institution. It is creating more electronic tools to streamline processes and provide more services to students online. For example, the university is enhancing its faculty scheduling system and plans to introduce a paperless financial aid process. The university is exploring how to scale faculty resources further to increase online class size to 11 to 15 students (from a current

average of 10) without diminishing learning outcomes.

The University of Phoenix's personal and structured approach to online education works for its adult students. "Online distance learning sounds very dry to the general public," said Brian Mueller. "They think it is class on a computer. We have learned that in fact it is very relational. Students communicate with people throughout the course. Through their discussions they develop the necessary vocabulary, attitudes, and concepts to work effectively." When a student finishes an accounting program, for example, he understands not only debits and credits but also the behavior and attitude attendant to being an accountant. He is now better prepared to succeed professionally.

Endnotes

1. University of Phoenix Fact Book (2003), p. 1.
2. rSource is a service mark of the University of Phoenix.