



SCHOOLING ISSUES DIGEST

Student Motivation and Engagement

About The Digests

The Australian Government Department of Education, Science and Training (DEST) is publishing a series of brief reports titled 'Schooling Issues Digests' which summarise existing research material on selected topics relevant to schooling in Australia. The purpose of these digests is to provide status reports on the results of recent international and national research on selected topics, in a non-technical, easy to read format, which brings together and demystifies complicated research and statistical data.

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OVERVIEW OF THIS DIGEST

Introduction

Why do we want students to be engaged in learning? Current goals for learning go beyond the basics and disciplinary knowledge to include the strategies, capacities, qualities, characteristics and values needed for successful living in the modern world. Engagement in learning is both an end in itself and a means to an end.

Evidence of the influence of engagement on learning and achievement is well established.

Definitions

Motivation is about *energy* and *direction*, the reasons for behaviour, why we do what we do. Engagement describes *energy in action*, the connection between person and activity. Three forms of engagement are distinguished: behavioural, emotional and cognitive. A range of indicators of engagement has been used in the literature, such as school attendance, enjoyment of school, sense of connectedness, participation in school activities, student, school and classroom learning goals, self-efficacy for learning, expectation of success, attentiveness, and learning practices (eg., time spent reading, interest in and valuing of reading, reading diversity, reading strategies).

Engagement and achievement

Engagement is investigated as an important outcome of schooling and also as a predictor of achievement. Engagement, defined at a broad level as a sense of school belonging, has a weak relationship to achievement, though it does influence whether students remain at school. Engagement, defined more specifically as attitudes to and interest in a particular learning domain (eg. reading) or self-efficacy in a domain (eg. mathematics), is a strong predictor of achievement in the respective domains. Longitudinal studies can identify the precursors of achievement, such as attentiveness. Classroom and school-based studies indicate that students' motivational goals influence their learning strategies which, in turn, influence achievement.

Background and individual characteristics

Engagement is influenced by such factors as socio-economic status, parental education and occupational status, ethnicity, student age and gender. The school has no direct control over these factors, but can adapt its approaches to the needs of its particular students.

School factors influencing engagement

Through their control over the range of factors operating in their context, schools can make a difference to student engagement.

The task matters

Students will engage with tasks they find:

- interesting,
- challenging, and
- important.

The context matters

In the classroom, key factors are:

- teacher-student relationships,
- pedagogy, and
- classroom climate: norms of behaviour, peer group, decision-making, achievement goals, expectations of success.

At the school level, key factors are:

- school leadership,
- teacher learning,
- the school culture,
- parent involvement, and
- organizing schools for learning.

INTRODUCTION

If they are to live happy and productive lives in the complex world of the twenty-first century, students need to achieve a wide range of schooling outcomes. In addition to basic literacy and numeracy skills and disciplinary knowledge, they also need strategies, capacities, qualities, characteristics and values that are developed and learnt through the operation of the whole school curriculum, sometimes referred to as the 'meta-curriculum'.

Depth of understanding rather than superficial knowledge of 'facts' leads to the ability to interrelate ideas, to transfer knowledge to new situations, to grasp significant concepts, and to see how knowledge develops through using different methodologies. Because real-world problems are trans-disciplinary in nature, students need to be able to think across discipline boundaries. There is international¹, national^{2 3}, and school level⁴ support for this view of schooling outcomes.

Three sets of outcomes are identifiable from the *National Goals for Schooling in the Twenty-First Century*⁵:

- skills, strategies and capacities: Using a sound knowledge base, to be able to think analytically, critically and creatively; to solve problems, make decisions, ask questions; to make sense of the interrelationships between things; to know how to learn; to communicate, work in teams, and relate to others,

- qualities and dispositions: To develop certain personal qualities and dispositions such as a sense of well-being, self-esteem, motivation to do well, empathy, resilience, adaptability; acceptance of responsibility for one's own actions; the attributes of the good thinker/learner, including independence of mind, curiosity, perseverance, reflectiveness, self-regulation, and
- attitudes and values: Attitudes and values underlie these learning outcomes: valuing a just, open, egalitarian, culturally diverse and cohesive society; a positive, healthy lifestyle; as individual and citizen, contributing to community and environment.

Engagement in learning is both an end in itself and a means to an end. For the above outcomes to be achieved students need to engage actively with schooling. Such engagement will lead to higher quality educational achievements, and these in turn will prepare the way for a dynamic process of engagement, learning and achievement throughout life.

MOTIVATION AND ENGAGEMENT: WHAT DO WE MEAN?

Motivation is about *energy* and *direction*, the reasons for behaviour, why we do what we do. It concerns the psychological processes behind student behaviour in learning situations. Motivation involves:

- value components such as intentions, plans, goals, interests and purposes,
- expectancy of success components such as confidence in your capacity to do what is necessary in order to succeed (self efficacy), and the belief that the results of your learning are under your own control and are due to what you do rather than to luck or other external factors (control and attribution beliefs), and
- affective components such as feelings of self-worth and achievement anxiety.

In different ways these concepts build on theories of basic drives and needs, intrinsic and extrinsic rewards.

Engagement describes *energy in action*, the connection between person and activity. The words 'disengaged', 'disaffected' and 'alienated' denote lack of connection, while 'engaged', 'involved', and 'committed' denote positive connection. Motivation is often inferred from students' engagement in learning activities. As engagement is more directly about behaviour, it is more likely to be affected by what happens in relationships with teachers and peers, and by school experiences.

Motivation and engagement are often treated as if they are the same concepts, but it is important to discriminate between them. Students can be motivated but disengaged; this is a major challenge for schools and something that needs to be well understood. For example, in a recent large Victorian study, primary and secondary students (years 5 to 9) recorded high, positive scores on a scale concerning their own motivation to learn, but indicated that they found only a low level of interest in their classroom work⁶. In such a situation, students are unlikely to direct maximum motivational energy into their unstimulating school work. This points to the importance of the school factors that affect student engagement.



Forms of engagement

Engagement in a particular activity may be measured and used as an indicator of engagement at other levels. For example, engagement measured as participation in extra-curricular activities has been used as an indicator of students' identification with schooling. Classification of learning behaviours and responses into different forms of engagement provides a framework for synthesis of the research literature. For example, a major review of over 160 studies distinguished behavioural, emotional and cognitive engagement⁷.

Behavioural engagement:

- positive conduct, rule following, adhering to norms,
- involvement in learning tasks, effort, persistence, attention, class participation, and
- participation in school-related activities.

Emotional engagement:

- affective reactions in the classroom: interest, boredom, happiness, anxiety, and
- affective reactions to the school and/or teacher, identification with the school.

Cognitive engagement:

- investment in learning, learning goals, intrinsic motivation, and
- self-regulation, being strategic.

Use of these terms and distinctions varies between researchers. For example, Fredricks *et al.*⁸ list interest as a form of emotional engagement, but in the Programme for International Student Assessment (PISA) reports⁹, which provide an international perspective on motivation and engagement, interest is referred to as motivation, while cognitive engagement concepts of self-regulation and being strategic are referred to

as control strategies. Forms of engagement are often interdependent. For example, students with positive attitudes to learning (emotional engagement) are more likely to adopt effective learning strategies (cognitive engagement).

Contrasts in engagement

Sometimes students report being so involved in a learning activity that they lose all sense of time. They become totally engrossed; the activity is all important. This state has been described as 'flow', an optimal state of intrinsic motivation¹⁰. It has been proposed that flow begins when a person takes on a task that offers a challenge just outside a student's effective range of skills. By virtue of engaging with the activity, the student's skills are enhanced.

A form of disengagement that is important for educators to understand is 'learned helplessness'¹¹. Students who experience repeated failure may come to believe that nothing they can do will alter the situation. They attribute their failure to fixed, personal inadequacies (such as low ability) and so expect their actions will be futile in the future, just as they have been in the past. Effort is seen as useless. Caught in this situation, students may simply give up. Negative feelings about learning, low self-esteem, avoidance of challenge and lack of effort accompany their declining performance.



MEASUREMENT OF ENGAGEMENT

In the research literature cited in this document, the following types of measure have been used:

- scales within questionnaires measuring self-perceptions,
- stimulated recall of learning experiences,
- interview responses,
- rating scales used by teachers and others, and
- behavioural measures, such as time spent on a particular activity; types of activity selected; persistence in the face of difficulty; intensity of attention and time-on-task; school attendance; and completion of schooling.

The measurement instruments used depend on the aims of the investigation.

Large-scale international studies are concerned with identifying the general patterns of engagement and achievement relationships across national and international populations. Self-rating questionnaires are the most efficient and economical way to measure engagement, defined in terms of variables such as interest, self-efficacy, reading strategies, and expectations of success. These can be supported by ratings from teachers, parents, or other observers.

Specific types of engagement lend themselves to different forms of measurement. Although behavioural engagement can be measured by questionnaire, more objective indicators can also be used. Attentiveness, for example, can be measured by an external observer; participation in school-related activities might be quantified from school records. Emotional engagement and cognitive engagement are more likely to be assessed by questionnaire, usually of the self-report type.

When the aim of the research is to identify how specific engagement variables influence learning and achievement, more intensive measurement techniques are required. Some of these complexities are being identified with the aid of specially designed multimedia software that allows the researcher to track students' active choices while performing a learning task. For example, the strong gender association with engagement in reading has been identified as one that works through the arousal of interest. When boys are given texts to read and the topic (text-title) triggers their interest, they make active choices to continue reading and, providing the content of the text lives up to the title, report positive experiences of their reading¹².

ENGAGEMENT AND ACHIEVEMENT

Evidence about the relationship of engagement to achievement comes from large-scale surveys, both cross-sectional and longitudinal, as well as from classroom and school-based studies.

Large-scale studies - cross-sectional

The most recent large-scale evidence comes from PISA, international studies of fifteen-year-olds. Engagement is defined in two different ways in these studies.

As outcome

PISA 2000 defined engagement behaviourally as participation (attendance and punctuality) and affectively as a sense of belonging (feeling accepted at school). From this broad perspective, engagement is seen as a disposition towards learning and functioning within the school that is an important outcome of schooling in its own right, given its influence on completion of schooling and on post-school learning. Willms¹³ reported the incidence of disaffection, the relationship of achievement to this broad concept of engagement, and factors associated with engagement.



- One in four students had a low sense of belonging; one in five students had very low participation. While there was a similar incidence across countries, there was significant variation between schools within countries.
- Predicting school reading literacy achievement levels from school-average engagement

scores was more reliable than prediction for individual students. At the individual level, a sense of belonging was not significantly related to reading literacy skills; participation was only weakly related to reading literacy skills. At the school level, correlations were stronger - on average about 0.50 for student engagement and performance in reading, mathematics and science.

- Schools with high average socio-economic status, good student-teacher relationships, and high expectations for student success had more engaged students.

Findings from the Longitudinal Surveys of Australian Youth¹⁴ present a similar picture.

As predictor of achievement

The major achievement domain investigated in PISA 2000 was reading literacy. In PISA 2003¹⁵ the major domain was mathematics literacy. The differences in findings for these two domains illustrate the complexity of the relationships between engagement and achievement. In PISA 2000 engagement was defined in terms of attitudes to and interest in reading. The following findings were reported¹⁶.

- The overall correlation between engagement in reading and literacy scores was 0.38. Australia was one of the 12 PISA countries where this correlation was greater than 0.40. The effect of engagement on literacy was larger than effects for gender and socio-educational status.
- Girls reported higher engagement with reading than boys.
- School factors such as socio-economic background of students, teacher support, positive disciplinary climate and teacher morale were positively associated with literacy achievement.

It is not surprising that engagement measured in this way was a stronger predictor of achievement than engagement measured at a broad, generic level (belonging and participation), since the former measures actual involvement in specific learning.

In PISA 2003, several measures relating to motivation and engagement were included: interest and enjoyment of mathematics, mathematics self-efficacy, mathematics anxiety, and mathematics self-concept.

- Mathematics self-efficacy and mathematics self-concept were found to be the strongest predictors of mathematics literacy. Students who are confident they can manage a range of general mathematical tasks (self-efficacy), and students who believe they are good at maths and able to learn it quickly (self-concept), had higher mathematics literacy.
- Male students across all the participating countries had higher mathematics self-efficacy and mathematics self-concept scores than females.
- When studied as separate variables, interest and enjoyment of maths showed a smaller positive relationship, and maths anxiety a smaller negative relationship, with mathematics literacy.

- On the index of instrumental motivation (e.g., belief that mathematics will be useful for getting a job), Australian students scored higher than the OECD average and male students scored higher than female students.

Large-scale studies - longitudinal

Evidence concerning the effect of engagement on achievement from PISA analyses is limited by the cross-sectional nature of those data and needs to be supplemented with findings from longitudinal studies that can identify the precursors of achievement. A large-scale study in Victorian Catholic Schools reported that teacher ratings of students' *attentiveness* to reading activities in Grade 1 significantly predicted Grade 5 reading achievement¹⁷. Similar results were reported in the Victorian Quality Schools Project¹⁸ where students from five grade levels (K, 2, 4, 7 and 9) were followed over three years. Attentiveness in the classroom was the "most consistent and salient factor" in relation to student achievement; this finding applied for both primary and secondary students. Attentiveness has, in turn, been linked to temperament¹⁹.

Classroom and school based studies

A large body of research has considered the influence of engagement on achievement by identifying significant relationships between motivational variables, such as achievement goals, and specific aspects of performance. Covington's review²⁰ of a wide range of research studies concluded that students' patterns of motivation and engagement are generally reflected in the strategies they use for learning and these in turn influence achievement. Broadly speaking, students who aim to understand and master tasks use elaboration strategies (e.g., relating new learning to past learning) and achieve well, while students aiming to impress others with good results favour more superficial memorization strategies (e.g., rote learning) and achieve less well.

Examples of these studies show that this relationship between learning goals, learning strategies and achievement holds at both primary and secondary age levels. Meece and Holt's²¹ findings were for grade 5 and 6 U.S. students, both boys and girls; they demonstrated relationships between goal profiles, active and superficial learning strategies, and science achievement. Ainley²² reported similar findings with a sample of Australian female secondary students. Relationships between achievement goal profiles and exam preparation strategies for Year 11 students were significantly predictive of performance in their final school assessment a year later.

A number of classroom experimental studies have also shown that changing the achievement goal structure of the classroom can influence students' learning strategies and their achievement.



SCHOOL FACTORS INFLUENCING ENGAGEMENT

The task matters

Students will engage with tasks they find interesting, challenging and important. This claim is supported by a large body of research and practice, but there is wide variation in students' perceptions of what is interesting, challenging and important.

Through students' eyes a task is:

- interesting when it catches attention, when it presents something not completely predictable, or not fully known, something more to find out, to be explored or to discover,
- challenging when there is a goal or end to work towards, to achieve, and reasonable confidence of being successful, and

- important when it offers something, or leads to something of value. It may be something of immediate value; it may offer access to a more long-term goal and long-term satisfaction.

Through students' eyes a task is considered boring when:

- there is nothing about it that attracts; it is too familiar or too easy,
- there is a good chance of being a failure; *'I know I don't have the skills, or the ability; I know I won't make it.'*,
- there is no connection with any immediate or long term goals. The task is not valued. *'There is nothing I can see that I want to get out of it.'*, and/or
- too much effort is required; *'Maybe I have the skills but it is not worth the effort.'*

Students are a heterogeneous group and there is no one solution that fits all students. When interest, challenge and importance are described as properties of a task this means that most students perceive them in this way. For many tasks this cannot be assumed. Tailored solutions are required to match the abilities, needs, and interests of specific groups of students. Tailoring is best done by motivated and competent teachers working within supportive school communities. Some recent Australian initiatives show how this is happening.

Disengaged students are at risk of becoming early school leavers. In order to motivate and engage 'at risk' students some South Australian schools identified activities that were about relevant life skills and work opportunities. Students perceived them as important activities, engaged with them and the process of 'dropping out' was interrupted, delayed and sometimes even reversed. Two brief sketches²³:

- A polymer processing course at Murray Bridge High School became a challenging activity. Students were surprised by what they achieved: *"I have surprised myself in what I have been able to do as at the beginning of the course I did not think that I would be able to put together a research presentation, it takes a bit of learning."* (David, Year 11)
- Parafield Gardens High School's Crime Prevention Curriculum Website developed in conjunction with the local council's Crime Prevention officer. For participants this was an interesting challenging and important activity: *"At first I thought I would get involved in the project and that it was something I could do to get out of being at school but then it turned out to be something that I actually liked doing... The work we were doing didn't seem like lessons even though we were learning some really important stuff?"* (Alea, Year 9)

The application of ICT to instructional design has opened new opportunities for providing students with active, flexible and highly individualized learning experiences. These new learning environments are often intrinsically motivating and can engage students after the initial novelty reaction has worn off. However, it is important to recognize that the technology of itself is not sufficient; the character of the task matters. The most successful ICT applications are those where students engage not only with the learning tool (software and/or hardware) but also with the types of learning activity that ICT makes possible²⁴. Online resources in the form of internet projects are widely available in science and technology areas but these are not the only domains exploiting the potential of ICT. State education department websites have links to good examples of these resources and are encouraging their use.

Students investigate a topic locally and through the internet are connected with databases providing access to information to build a global perspective. Where the task is appropriately designed, the use of the internet can help make that task interesting, challenging and important:

- **Interesting:** students work with things they can access easily in their immediate home, school and community environment, and then connect to broader national or international databases.
- **Challenging:** a wide range of students can engage with and have their knowledge and skills extended, exploring meaning, analyzing, evaluating and formulating answers to interesting and important questions.
- **Important:** social connections are established across national and international locations while dealing with problems and questions connected to their own living.

Tasks matter – but they don't stand on their own. They are part of a planned, cohesive approach to curriculum, pedagogy and assessment. This is elaborated in the next section of this Digest.

The context matters

Rarely is engagement simply a matter of the task itself. Within the context of the school there are many factors that influence student engagement. The school is not only able to control these factors, but has the responsibility to do so.

Two broad, interdependent dimensions of schooling have significant impact on student engagement in learning: the culture of relationships and the culture of learning, both in the classroom and at school level²⁵. Evidence comes not only from traditional research but also from listening to students. Students are acute observers of their teachers, of what goes on in the classroom, of their own reactions, and of what helps or hinders their learning.

In the classroom

Teachers are central to girls' and boys' engagement in learning, their influence being "powerful and pervasive ... the most constant factor in determining the quality of school life for students"²⁶. Teachers' influence operates through their relationships with students, their approaches to learning and teaching (pedagogy), and the classroom environments they create.

Teacher-student relationships

Students say they respond positively when classes are taught by teachers who:

- enjoy teaching students as well as the subject,
- respect students and don't put them down,
- involve them in making decisions,
- care about them,
- listen to them and don't shout at them,
- are fair, approachable and supportive,
- know them as individuals and speak to them individually,
- have fun with them,
- explain things clearly,
- respond to requests for help, and
- don't give up on them.

Teacher responsiveness has been found to have a significant effect on Australian primary and secondary students' attitude to school (emotional engagement), attentiveness (behavioural and cognitive engagement) and, through these, on achievement²⁷.



International research provides further evidence that students' perception of teacher support and involvement contributes significantly to increased student effort, attentiveness, interest and completion of class work, increased happiness and interest, and decreased anxiety and anger in class, increased self-regulation of learning and decreased disruptive behaviour, and decreased dropping out, especially for socially disadvantaged and academically at-risk students.

Pedagogy

The traditional passive transmission mode of teaching that still dominates much classroom activity is not favoured by students. Students report that school work is interesting and engaging when it is:

- active and experiential in nature,
- varied rather than repetitive,
- meaningful and linked to life outside school,
- challenging, providing opportunity for sustained thinking and exploration, without being too difficult,
- individualized, recognizing that students differ from one another in needs, capacities and perspectives,
- designed to involve them in making decisions about the planning, implementing, reporting and assessing of work, allowing some autonomy and control, and

when it involves talking and working with other students.

Students' views accord well with current understanding of how people learn. Learning is an active process. Meaning is generated from interactions with others and from exploration of things and ideas. Information is filtered and interpreted, and thus meaning is constructed. The outcome is conceptual change, deeper understanding which can be manipulated, combined and applied in a range of situations. This approach fosters skills, attitudes, values, strategies, knowledge, capacities and qualities, that are important for life-long learning.

One teaching approach that supports engagement is 'authentic pedagogy'. This approach has been associated with higher levels of all three forms of engagement for primary, middle and high school students, the effect increasing with grade level²⁸. Newmann and associates²⁹ use this term to designate an approach to teaching and learning based on two broad characteristics:

- teaching for conceptual understanding, cognitive complexity or high intellectual quality, and
- connectedness to the world beyond the classroom.

Education Queensland's 'Productive Pedagogies' has used the concept of authentic pedagogy, adding two further characteristics, supportive classroom environment and recognition of difference. The Queensland School Reform Longitudinal Study³⁰ has reported a positive association between the use of productive, authentic pedagogy (when aligned with productive, authentic assessment) and engagement, self-regulation and achievement.



Classroom climate

Learning is also a process of social collaboration. Teachers and their students together create the learning environment. The importance of a positive climate in the classroom is stressed in the literature. A supportive friendly, safe classroom, that emphasizes positive emotions and interactions, contributes to students' social-emotional well-being, resilience, productive coping strategies and engagement in learning³¹.

Teacher communication about classroom norms and procedures that is clear and consistent is associated with greater attentiveness, more time on task and less disruptive behaviour. Students who know what their teachers expect of them in terms of work and social behaviour in class, and the consequences of not meeting those expectations, are more likely to be behaviourally engaged. Year 3 to 5 students in the U.S. who had positive perceptions of teacher expectations, for example, were found to be more effortful and persistent in learning³².

Peer group norms and values are important constituents of the classroom environment. Studies in this area focus on the level of peer group engagement, peer acceptance and rejection, and the effectiveness of peer interaction in learning. Typical findings are that:

- Belonging to a high engagement peer group tends to increase behavioural engagement at the individual level. In the same way, a peer group that rejects learning as being 'uncool' has a negative impact on individual members' engagement.
- Girls are more likely than boys to have peer groups supportive of school learning.
- Peer acceptance in childhood and adolescence is associated with emotional and behavioural engagement in school, while peer rejection is associated with lower interest, less participation in learning and early school leaving.
- Discussion of ideas, evaluation of work, and other forms of peer interaction during learning, have been shown to increase cognitive engagement.

Teachers have a clear role in establishing the mode of peer interaction in the classroom. For example, when teachers encourage and develop mutual respect among students, students feel more capable of and more involved in regulating their own learning.

Classroom decision-making that offers students choices and a share in decisions about curriculum, tasks and assessment is positively related to attitudes to school (emotional engagement) in years 5 to 9. The association was found to be stronger for boys than girls at each year level. A study of year 7-12 boys concluded that providing boys with choices and some input into learning tasks resulted in greater engagement³³.

Classroom achievement goals, promoted by teachers either consciously or unconsciously, influence student engagement. When classrooms promote mastery goals, students are more likely to adopt mastery or deep-learning goals, that is, student engagement increases. Students seek more challenging tasks, are more persistent, make greater effort, focus on understanding, use better learning strategies, and achieve better outcomes. In contrast, when classrooms emphasize performance or ego-enhancement goals (eg, looking smart, gaining approval or recognition, outperforming others, or avoiding looking incompetent), motivation and engagement decrease, and there is an increase in superficial learning and maladaptive learning behaviours, such as cheating, work avoidance and self-sabotaging behaviours.

Expectations of success enhance engagement. A student's belief that success in school is possible is one of the most important motivational factors related to student achievement. Students who anticipate and achieve success based on their own efforts put more time, energy and commitment into school work, choose more challenging tasks, and associate more positive feelings (happiness, pride, self-esteem) with their school work. In contrast, repeated failure experiences, particularly when students attribute these to lack of ability rather than effort or strategy, diminish students' perceptions of self-worth and encourage avoidance of learning.

At the school level

What goes on in the classroom constitutes the strongest influence on student motivation and engagement that schools can control. However, school level influences shape what can be achieved in the classroom by maximising the quality of student-teacher interaction or by placing constraints on it.

School leadership is a critical factor. A meta-analytic review of 40 studies from a range of countries demonstrated that principals have indirect influence on student engagement and achievement³⁴ and this operates through their capacity to enable teachers to work effectively with students. For example, principals and their leadership teams influence:

- the quality of teacher professional learning,
- the nature of the school culture,
- the extent of parent involvement, and
- the way the school is organized for learning.

Each of these areas affects student engagement and learning.

Teacher professional learning makes it possible to improve the skills of the entire staff in regard to pedagogy, classroom environment and relationships with students. The kind of professional learning that succeeds in changing classroom practices requires whole-school planning, support and pressure. School leaders are the ones who can help make this possible.

The concepts of 'learning community' and 'learning organisation' have been invoked to describe schools in which teachers and leaders can be seen as lifelong learners in action, working together on the basis of shared beliefs about learning and in a climate of trust to improve their professional practices; communicating openly and sharing difficulties, uncertainties and strategies; having influence on and ownership of their work and related decision-making; interest in trying out new approaches and taking collective responsibility for student learning.

Principals play a key role in establishing such cultures which are professionally stimulating for teachers; they increase teachers' sense of efficacy – their belief they have the capacity to make a difference to student learning – and thus raise teacher expectations. They have a positive effect on teacher engagement, learning and pedagogy; as teacher engagement increases, so too does student engagement³⁵. There is an upward spiral of engagement for both teachers and students.

The school culture, from a student viewpoint, concerns the values and goals of the school, particularly those relating to learning, and the ways in which these are reflected in students' daily experiences of relationships, school policies and policy implementation. School culture has a pervasive influence, both directly and indirectly, on students. The features of the classroom that enhance engagement have parallels at the school level. Students in schools that *"demonstrate clarity of purpose, equity, and personal support, provide frequent occasions for all students to experience educational success, and integrate all these features into a climate of caring"* are most likely to develop the affective, cognitive and behavioural connections that constitute a sense of belonging and identification with the school and its values³⁶. Connectedness to school is a highly significant factor in protecting at-risk adolescents³⁷.



One specific aspect of school culture affecting students' engagement is the safety and orderliness of the school environment. Bullying, intimidation, sexual and racial harassment, social exclusion, teasing and rumour-spreading are behaviours that create fear, anger, and resentment, as well as reducing connectedness to school and engagement in learning. It is hard to learn and be positive when you are scared. The general conclusion of research is that teachers, leaders, students and parents all need to be involved, with systemic support, in the development of a consistent, safe school culture.

Parent involvement typically increases student engagement and achievement and is often promoted as an important feature of school culture. Parental discussion of education with children and their involvement in schools contributes significantly to student engagement at primary and secondary levels, although to a lesser degree than authentic pedagogy and other class and school factors. A positive parent-student relationship contributes significantly to student engagement, especially emotional engagement. It also predicts student focus on mastery rather than performance goals.

Organizing schools for learning

The structures and processes that constitute school organization can have both direct and indirect effects on student motivation and engagement. School leaders have the opportunity to develop organizational features that enhance engagement and improve achievement of desired learning outcomes. Important features of learning-focused schools that enhance student motivation and engagement:

- school curriculum that is broad, including practical and vocational studies at the secondary level, offering choice and flexibility for individuals, designed with

student input, having content connected to the world outside the school, and encouragement for in-depth, meaningful learning rather than shallow, superficial coverage³⁸;

- assessment through authentic tasks during the learning process, focused on improving the in-depth rather than superficial learning of all students; teacher feedback that is immediate and descriptive rather than judgemental; active student involvement in self-assessment, enabling them to learn to manage and improve their own learning³⁹;
- flexible, less fragmented and more effective arrangements of learning time, that allow for sustained involvement in challenging, meaningful learning tasks undertaken in varied locations⁴⁰;
- teacher-class arrangements that allow teachers to develop better individual knowledge and understanding of students and closer relationships, including small interdisciplinary teacher teams being responsible for each group of students and/or teachers following the students through two or more years of school⁴¹.

Implementation of these features takes age-appropriate forms. They become increasingly important as students grow older, especially at the secondary level. A common theme is the need for flexibility in the way schools are organized in order to allow schools to respond to the needs of students. Students are alienated by rigidity and restrictiveness in school structures and processes; this characteristic of schools has been associated with early school leaving. Schools that are communal rather than bureaucratic in form produce stronger student engagement and teacher commitment.



ENGAGEMENT IN LEARNING DECLINES WHEN...

Engagement in learning declines when particular forms of behaviour and interaction are experienced by students, engaged in by teachers and parents, or perceived as the prevailing school culture, for example when:

Students

- are experiencing, for example, fear, hunger, homelessness, family problems or illness.
I'm so scared of the bullies, I spend all my time thinking about how to get to the next class without running in to them.'
- feel the need to protect their sense of self-worth against the threat of failure.
I didn't study for the exam. It's better to be yelled at for being lazy than to be called dumb!
- have a very high anxiety level.
I get so worried and up-tight I can't plan or study or ... I can't think straight about anything.'
- believe that success is attributable to ability, that ability is a fixed, non-malleable quality, and effort is futile.
Well, there's really no point in trying, is there? I just haven't got it.'

Teachers

- make public comparisons between students' work.
He's always holding up a piece of their work and saying how much better it is than ours.'
- put students or classes down.
He jokes in a way that makes fun of particular kids. I don't like it; it makes you feel awful.'
- are not engaged in teaching, do not like young people, and/or are burnt out.
You can tell he couldn't care less. He just puts notes on the board and says "Sit down, shut up and do this", and then ignores us. That's why I don't like history.'

- give work to students that is repetitive, unchallenging and unrelated to the real world.

Maths is very repetitive. You keep doing the same work sheet. Well different sheets, but the same kind of thing.'

Schools

- are seen by students to value the highly successful students only and not all students.
They're always talking about the kids that win things or do brilliantly. The rest of us don't matter.'
- make and implement rules, policies and structures that are rigid and inflexible and not adapted to student (especially adolescent) needs.
Petty rules about uniform and behaviour are really there for the youngest kids in the school. Why stay and be treated like this?'
- stress competition and performance-oriented goals.
A lot of them cheat in various ways – there's such a push to get good results here.'

Parents

- Parents place excessive pressure on students to meet their demands for achievement.
They make me study all the time, get me tutoring and keep talking about how much they want me to do well – I just can't take it!'

ISSUES FOR FURTHER INVESTIGATION

Several important issues related to motivation and engagement of students need further investigation.

• Variation among students

Usually research reports present general results for a group of students or schools, rather than the range of individual responses. In the classroom, the teacher needs to know and work with the individual. For example, investigations of gender differences in motivation and engagement report significant differences between girls as a group and boys as a group. Yet the two gender distributions clearly overlap. It would be helpful to have an understanding of the range of individual responses in situations being investigated, in addition to normative responses. More studies identifying different patterns of motivation and engagement between sub-groups within broader samples are needed.

• Learning goals and outcomes

Most research that looks to show the influence of engagement on achievement uses as an index of achievement measures of basic skills, such as literacy and numeracy. Education systems are now indicating the need for the development of more complex thinking and learning capacities, qualities, dispositions, attitudes and values, including social-emotional learning. There is need for investigation of the influence of engagement on the development of these more complex capacities. There is also need for investigation of how a classroom focus on complex capacities affects the level of engagement.

• The challenge of complexity

Particular forms of school and class structure are sometimes advocated as a means of increasing student motivation, engagement and achievement. Examples include single-sex or mixed classes, single-sex or co-educational schools, middle schools, and selective and specialist schools. Research results concerning such issues are equivocal. This is an area particularly ill-served by approaches that do not take into account the multiplicity of factors that operate interactively at any one time within a classroom and school, let alone between classrooms and schools.

• Researching the issue

Much of the research on motivation and engagement has been conducted using student and teacher surveys to measure engagement, classroom context and school culture. An increase in creative, observational and qualitative approaches will enrich the understanding of how complex and varying individuals interact with complex and varying environments, and of the way in which engagement impacts on achievement. This will provide further hypotheses to be explored quantitatively and suggest more diverse measures of engagement. There is also a need for multidimensional, multilevel, longitudinal studies that do justice to the complexity of the real life situation.



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