Geoff Masters considers some of the reasons why we should move beyond a grade-by-grade assembly-line model of schooling, not least to improve learning.

Against the grade

In search of continuity in schooling and learning

TRADITIONALLY, the curriculum of schools has been delivered in annual 'packages.' Fifth grade students have been taught the fifth grade curriculum; sixth grade students have been taught the sixth grade curriculum: it remains a common approach to curriculum delivery in many schools in which the best indicator of where a student is up to in his or her learning is usually the student's year level or age.

Within this general approach, many schools make special provisions for students at the extremes, with acceleration and enrichment programs for gifted and talented students and remedial interventions for students in need of special support. Some students also are taught in multi-age classrooms. But the majority of students are taught and expected to learn the content of the curriculum for their current grade.

It's an approach built on the belief that students of the same age, and hence grade, are more or less equally ready to be taught the curriculum for that grade. This belief is reflected in the grouping of students into 'mixed-ability' classes in which all students are exposed to the same grade-level material. Although teachers of mixed-ability classes sometimes tailor learning experiences to individuals, it's common for all students in a class to be assigned the same classroom activities: 'Observations in some (UK) secondary schools showed that, whilst teachers claimed to be providing differentiated experiences for pupils in mixed-ability classes, this was no more than pupils working individually on the same worksheets at their own pace.' (Harlen, 1997)
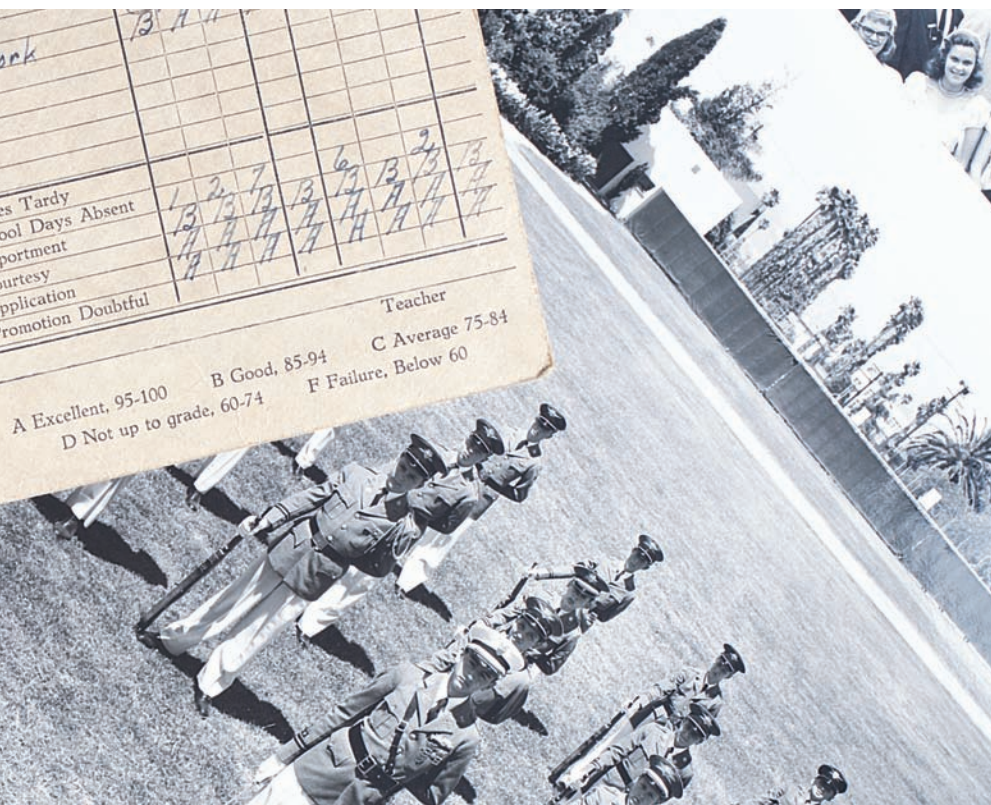
When children commence school they are usually at different levels of development and readiness and schools are not always well equipped to identify and cater to these individual differences in readiness, tending instead to present all children in their first year of school with the curriculum prescribed for that grade.

A good place to observe this grade-based approach in action is in the first year of secondary school where students are commonly grouped into mixed-ability classes and presented with essentially the same curriculum. Often, this practice is justified on the grounds that, because students come from a range of feeder primary schools, teachers lack good information about students' starting levels of achievement. By teaching the same content to all students, teachers have a year to 'sort out' what individual students know and can do. Teachers recognise that, within any given class, students will require different amounts of time and support to complete the same work, and they assign additional activities to students who complete class work quickly.

What about the first year of primary school? When children commence school they are usually at different levels of development and readiness and schools are not always well equipped to identify and cater to these individual differences in readiness, tending instead to present all children in their first year of school with the curriculum prescribed for that grade.

When a school curriculum is packaged into grades, each teacher's task is to deliver the curriculum appropriate to the grade levels they are teaching. The challenge for students is to learn and demonstrate mastery of the intended curriculum outcomes for that grade, and the role of assessment is to establish the extent to which the intended outcomes for the grade have been achieved. A feature of this traditional approach is that each new school year marks a fresh start in a child's learning. Each year, students advance with their age peers to new grades and new teachers, with new books and new materials. The successes and failures of the previous school year are largely forgotten as students and teachers turn their attention to the curriculum for the next grade.

Because each new school year commences with a 'clean slate,' and because it's assumed that students are more or less equally ready for the curriculum of their

new grade, little information is passed across the boundaries between the years of schooling. The knowledge accumulated by teachers about individuals' understandings, interests, motivations and learning styles, and documentary evidence in the form of schoolwork from the previous year usually fail to make the transition from one grade to the next. As Marshak notes about practice in the United States: 'In elementary schools, children move from one teacher to the next every year. Every year we trash a year's worth of relationships built between children and their teacher, and we throw away all the knowledge the teacher has gained about what each child needs and can do. Each year, we tell every child and teacher to start over again.' (Marshak, 2003: 229)

The sharp discontinuities students experience as they move from one school year to the next, one teacher to the next, and one grade-based curriculum to the next, are consistent with a picture of schooling as a series of steps (see Figure 1). Indeed, the word 'grade' originates in the Latin word 'gradus' for 'step.' In such a picture, school achievement relates to one grade at a time. In Figure 1, the more able students in a grade demonstrate higher levels of mastery of the curriculum for that grade and may perform as well as some students in the grade ahead of them. Less able students demonstrate relatively low levels of mastery of the curriculum for the grade and may perform at a level similar to some students in the prior grade. Darling-Hammond (2004: 1054) refers to this as 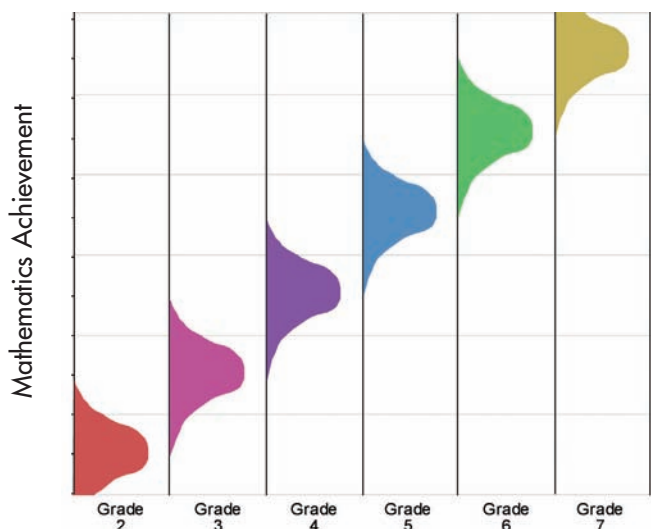the 'factory assembly-line model of schooling' developed during the early years of the Twentieth Century: 'The assumption was that a sequenced set of procedures would be implemented as a child moved along the conveyor belt from first to twelfth grade.'

The decision to teach more or less the same curriculum to all students in a grade and to treat all students entering a grade as though they are more or less equally ready for the curriculum of that grade largely obviates the need to establish individual levels of readiness or prior achievement. In the absence of good information from primary schools about students' levels of, say, mathematics achievement upon entering high school, an obvious solution would be to administer a battery of mathematics tests to all incoming students. These tests could include diagnostic assessments to identify individuals' misunderstandings and difficulties. But when all students are to be taught the same curriculum in mixed-ability classes, most schools consider such testing unnecessary.

FIGURE 1.
Grades pictured as 'steps' in achievement

Grouping students by age-grade rather than ability or achievement in a particular subject reflects widespread concerns about the possible negative consequences of 'streaming.' With the exception of gifted or talented students and those in need of remedial assistance, it's common to teach students in mixed-ability classes until at least the early years of secondary school, a practice supported by research showing that lower-achieving students perform better in mixed-ability classes, and that streaming can result in reduced self-confidence as a learner. (See, for example, Marsh, 1991)

Grouping students by age-grade, however, raises some important questions. Is a student meeting age-grade expectations. How is the student performing in relation to age-grade norms? How much of the curriculum for the grade has a student mastered? What is the 'standard' expected for the grade, and how do you know when a student has achieved it?

Grade-based performance standards – or 'benchmarks' – specify the level of performance expected or desired of students in a particular grade. The question in relation to each student is whether or not they have met the standard – a yes-or-no decision. Teachers and schools can then be held accountable for ensuring that all students meet the standard for their grade. The percentage of students meeting the standard can be computed – for a class, a school, or an entire education system – and monitored over time. Targets for improvement in this percentage can then be set. Under the US No Child Left Behind legislation, for example, schools are required to demonstrate 'adequate yearly progress' in improving this percentage over time, for all students in a grade as well as for nominated subgroups of students. (See LaTrice-Hill, 2002) As Ravitch (1995) notes, grade-based perform-ance standards have parallels with quality standards in industry which specify an acceptable level of quality or performance. Standards in school are seen as a way of improving achievement by clearly defining what is to be taught and what level of performance is expected at each grade.

In the US, 'standards-based' school reform strategies have included the speci-fication of performance standards for each year of school; the introduction of tests to establish whether or not these standards have been met; and the use of test results to make decisions about promotion from one grade to the next, teacher competence, and school effectiveness. In recent years, education bureaucracies have made increasing use of standards to monitor and report on the performances of students and schools and to hold teachers and schools accountable. Public reports of progress are couched in terms of the percentage of students meeting the expected standard for their age-grade. For example, in the United Kingdom in 2004: 'At age eleven, a record seventy-seven per cent of pupils achieved the expected level in English, an increase of two percentage points from 2003 (up twelve percentage points compared to 1998), and seventy-four per cent of pupils achieved the expected level in Mathematics, a one percentage point increase from 2003 (up fifteen percentage points from six years ago).' (Miliband, 2004)

VARIABILITY WITHIN GRADES

Treating all students of the same age-grade as though they are more or less equally ready to be taught the curriculum for that grade is inconsistent with what is known about students' levels of achievement and development within grades. For example, the National School English Literacy Survey (Masters and Forster, 1997) revealed substantial variation in Australian children's reading levels within the same year of school. Distributions of reading achievement in Year Three and Year Five (Figure 2) show wide variation at each year level and significant overlap across these two years of school. Many Year Five students read at levels below the average Year Three student; many Year Three students read at levels above the average Year Five student. The national literacy survey concluded that the top ten per cent of readers in Year Five are at least five years ahead of the bottom ten per cent of readers in that grade.

Since reading is crucial to most other learning areas in primary schools, it's likely that similar within-grade variability exists in other school subjects. In her research in the UK, Harlen (1997) concluded that by the end of primary school the range in children's mathematics achievements was equivalent to seven years of schooling. In one of the largest and most thorough studies of mathematics growth across the years of school, researchers at the US Northwest Evaluation Association observed significant overlap in students' achievement levels from one grade to the next (Figure 3), findings that are similar to those of Rowe and Hill. (1996) Both studies show achievement levels becoming more dispersed as students move from

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one grade to the next, with high-achieving students continuing to make strong progress and low-achieving students falling further behind. Another observation in studies of this kind is that students often make minimal progress, or go backwards, at the major disjunction between primary and secondary school.

Figures 2 and 3 provide a very different picture of how progress occurs in schools from the picture provided by Figure 1. When you're deciding an appropriate curriculum for a student according to age-grade, it's little wonder that lower-achieving students fall far behind as they move from one grade to the next.

CONDITIONS FOR LEARNING

Research is providing a view of learning as a continuous, ongoing process that occurs throughout the lifespan. At any given age, individuals are likely to be at different stages in their learning and development, and to be progressing at different rates, but research suggests that all learners are capable of making further progress given appropriate learning conditions, challenge and support. New learning opportunities are likely to be most effective if they take account of the learner's present knowledge, skills and understandings; if they tap into the learner's interests and motivations; are consistent with what's known about the learner's preferred styles of learning; and if learning opportunities are provided in a supportive social context. (Bransford, Brown and Cocking, 2000) Think in terms of teaching, and it's clear that teaching is likely to be most effective 'when teachers pay attention to the knowledge and beliefs that learners bring to the learning task, use this knowledge as a starting point for new instruction, and monitor students' changing conceptions as instruction proceeds.' (Bransford, Brown and Cocking, 2000: 11) Effective pedagogy, in other words, monitors where individuals are in their learning and makes use of this knowledge to decide on starting points for further teaching and learning. This view of effective pedagogy is very different from one that sees teaching primarily as a process of delivering the same grade-based curriculum to all students in engaging and interesting ways.

Research of the kind summarised by Bransford, Brown and Cocking (2000) suggests that school learning is enhanced when teachers become active investigators of student learning. Highly effective teaching depends on an understanding of individual learners, including their current knowledge and beliefs, misconceptions, incomplete understandings and naïve mental models. Teaching of this kind is sometimes referred to as 'learner-centred.' If teachers are to function in this way, they must have a deep understanding not only of the subject matter they are teaching, but also of the ways in which students typically learn that subject matter. They require, in other words, extensive pedagogical content knowledge. (Shulman, 1987; Ingvarson, 1998) The evidence is that learning is most effective when students are presented with 'just manageable difficulties' – activities that are challenging enough to maintain engagement, but no so difficult as to lead to discouragement. And because students in the same grade can be at very different stages in their learning, it's unlikely that the same classroom activities will provide effective learning challenges for all students. Learning opportunities are likely to be most effective when they are 'personalised.'

FIGURE 2.

Distributions of reading achievement in Grade 3 and Grade 5(source: Masters and Forster, 1997)
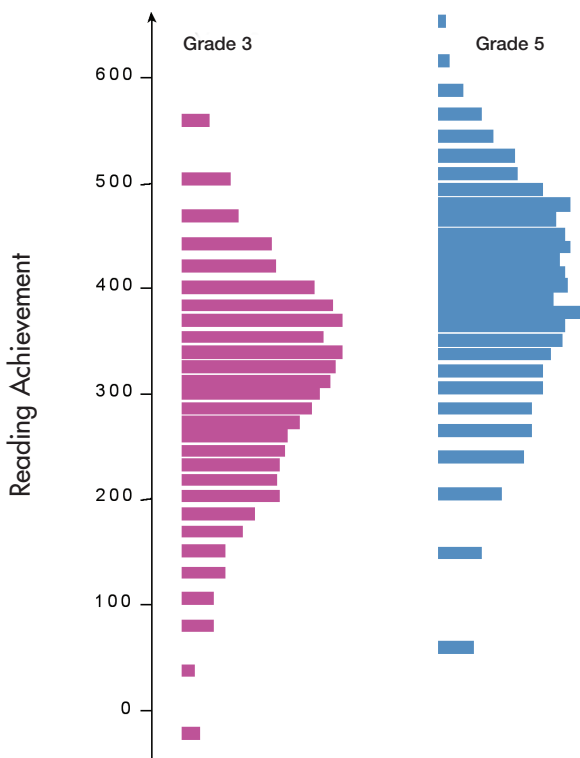
CLASSROOM STRUCTURES

Understanding that students within the same grade differ widely in their levels of development and school achievement and that learning is enhanced when it's 'personalised' raises an interesting question: how can schools best provide classroom activities appropriate to individuals' current levels of attainment? One answer is to group students into classes on the basis of ability or achievement in a particular subject. Research in UK secondary schools (Hallam, 2001) shows this to be the preferred solution for many mathematics, science and languages teachers who believe that mixed-ability classes are unsuitable for their subject areas. Sixty per cent of UK secondary students (Hallam, 2001) also express a preference to be taught in classes with students at a similar level of achievement. There's also evidence, however, that streaming can leave some students, particularly students in lower streams, feeling stigmatised and demotivated. In her review of research into the effects of streaming and mixed-ability grouping, Harlen (1997) concludes: 'Research shows that, for many pupils, ability grouping reduces both their motivation and the quality of the education they receive. On the other hand, mixed-ability teaching that denies the differences between high- and low-ability pupils is not the answer.'

Harlen's view is that, at least for some school subjects, research supports grouping students with similar levels of achievement for within-class teaching and learning.

Many schools are now experimenting with more flexible arrangements than traditional streamed and mixed-ability classes. These arrangements usually include some whole-class teaching alongside individual learning plans for students, within-class grouping for particular school subjects, multi-age classes, and cross-age tutoring. Attempts also are being made to provide learning opportunities that are 'personalised' to the needs of individual students. However, to date, these efforts appear to be directed more at ensuring increased flexibility and choice in individual learning pathways than in ensuring that school learning activities are appropriate to an individual's current level of development and achievement.

STANDARDS-BASED REFORMS

Over recent decades a number of observations have been made about the impact of grade-based performance standards on teaching and learning in schools. Standards-based reforms have been credited with significant improvements in student achievement in parts of the US and UK. Examples include the well-known standards-based reforms in Texas. By law, the Texas Assessment of Academic Skills (TAAS) establishes and reports the percentage of students in each grade meeting the 'level of performance considered to be satisfactory' for that grade in reading, writing and mathematics. In the late 1990s, TAAS results suggested significant progress in increasing student achievement and in reducing school dropouts. Doubts have been raised, however, about the validity of the Texas improvements. Haney (2000) noted that increases in the percentage of students meeting the Grade Ten performance standard were attributable in part to decisions to require Grade Nine students who did not meet the Grade Nine standard to repeat that grade. By the late 1990s, the number of students repeating Grade Nine had grown to the point where thirty per cent of students with African or Hispanic ancestry in Texas were being required to repeat

FIGURE 3.
Distributions of mathematics achievement in Grades 2 to 7 (source: Hauser, 2003; based on 263,300 students)
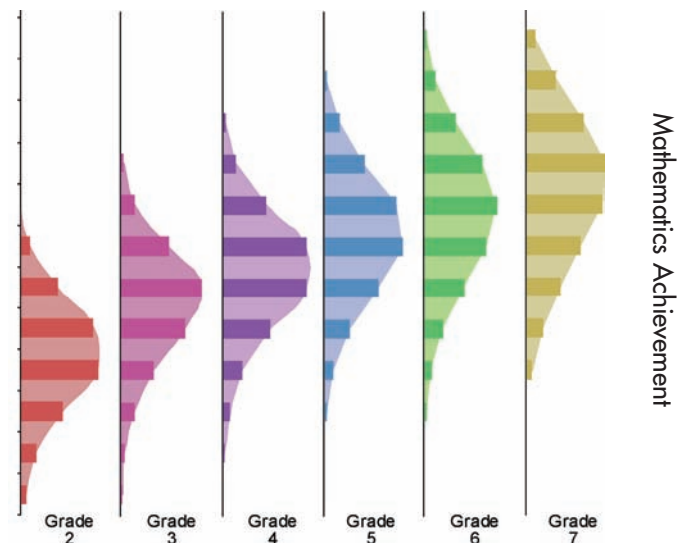
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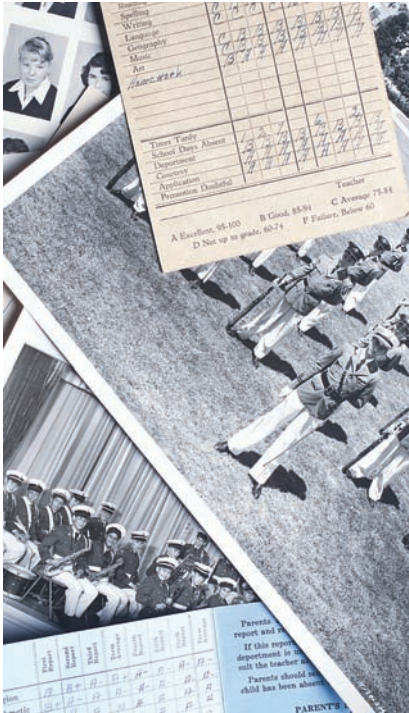
that grade – despite substantial research evidence (such as Roderick et al., 1999) that grade repetition does not improve learning outcomes and increases student dropout rates. The number of students being excluded from testing because they were in 'special education' also doubled between 1994 and 1998, further increasing the percentage of students meeting the Grade Ten standard.

Haney's observation highlights a problem in using cross-sectional data to evaluate educational effectiveness: the performances being compared are for different cohorts of students. To the extent that students in a particular grade differ from one year to the next, for example in their starting levels of achievement, it's difficult to use the performances of those different groups to infer changes in educational effectiveness. The most direct measures of improvement in education are longitudinal: measuring individual growth over time.

Other researchers have observed the impact grade-based performance standards can have on classroom teaching. When students, teachers and schools are judged on the basis of success or failure in meeting a single performance standard, teachers focus their attention on students just below the standard, often at the expense of students who have already met the standard and other students who have little hope of achieving it during that year: 'When the goal is to get the greatest number of students to meet the standard in a year, schools quite sensibly direct efforts at those performing just below the cut point. The model does not evaluate the progress of students who have already met the standard. Schools and districts earn no credit for improving skills of the lowest performing students or for getting gifted students to work to their capacity.' (McCall, Kingsbury and Olson, 2004: 20)

Inevitably, a single grade-based performance standard is irrelevant for a large percentage of students in a grade. If the performance standard is low, it's irrelevant for the large number of students who have already achieved it. For example, because the Australian Year Five reading benchmark is achieved by most children when they are in Year Three, and many children in or before Year Two, it provides little or no useful information about the reading progress of most Year Five children. On the other hand, if a performance standard is high, more than likely it will be unachievable for many low-achieving students. A mid-range standard may have little practical relevance for students at either extreme.

ACHIEVING CONTINUITY

Continuity is an essential feature of human learning. Most learning occurs in an incremental way over time. Although there may be times of important insights when phenomena are suddenly viewed in an entirely new light, most learning occurs in small advances as learners develop better understandings, deeper knowledge and higher levels of skill as a continuous process. In contrast, students' school experiences usually are characterised by discontinuities: learning is partitioned into school years, school terms, topics and units of study. At a finer level, curricula may be divided into learning 'outcomes,' 'objectives' or 'competencies.' And these sub-divisions of the school curriculum are often taught and assessed relatively independently of each other. In Australia it's been observed that children who move from one education system to another can experience transitional difficulties resulting from differences in school curricula and school starting ages. In the aggregate, however, these difficulties are likely to be relatively minor when compared with the learning setbacks students experience due to changes in teachers, schools and grade levels, and transitions from one phase of schooling to the next. Many schools are addressing the challenge of providing greater continuity to student learning.

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A focus on deep learning

Deep understandings, advanced skills, and extensive knowledge of subject matter develop only as a result of long periods of learning and experience. Learning of this kind requires continuity as new learning builds on to and extends prior learning. Deep understandings of key concepts, underlying principles and big ideas in a subject must be developed across the years of school. To the extent that teaching is focused on deep, lasting, meaningful learning, students are likely to experience greater continuity of learning over time.

Shared maps of learning

Continuity in learning is facilitated by a shared understanding of the progress of learning in a school subject across the years of school. An explicit 'map' of learning that is more general than, and applies across, classrooms, teachers, schools and even school systems provides a picture of what it means to make progress. A map of this kind describes and illustrates the nature of progress within an area of learning or development, illustrating for teachers, students and parents the typical path of learning or development and providing a frame of reference for monitoring individual progress over an extended period of time. (Masters and Forster, 1996a, 1996b) If it's to be useful in practice, a map of learning must be constructed from empirical observations of how learning typically advances. It must incorporate research-based pedagogical content knowledge and be accompanied by information about the kinds of difficulties and misconceptions commonly found among learners at various stages in their learning. Because it's empirically based, a map of learning is not simply a sequenced teaching plan or curriculum framework. Examples include the developmental continua of the First Steps program. (Annandale et al., 2003)

Teachers who use developmental continua or progress maps in their classrooms understand that not all students progress through an area of learning in exactly the same way or at the same rate. Students have different interests, motivations and learning styles, and these differences influence what and how they learn. But teachers also understand that, in most areas of school learning, there are common paths of development, making it possible to talk about one student being at a 'more advanced' stage in their learning than another, and allowing levels of student achievement to be compared and monitored over time.

Assessment for learning

When learning is viewed as an ongoing process that transcends particular teachers, classrooms and grades, the main purpose of assessment is to establish where in their learning or development individuals are at a particular time. What point have they reached? What knowledge, skills and understandings do they demonstrate? What might be done next to support their further learning and development? This view of assessment is very different from approaches in which the main purpose is to establish whether or not students have learned enough to 'pass.' The distinction I'm drawing is between assessments *of* learning and assessments *for* learning. Such assessments have diagnostic value and provide signposts for teaching strategies to enhance student learning.

Once a student's current level of achievement has been established, other related questions can be asked. How much progress has the student made since some previous occasion? How is she performing in relation to other students of the same age-grade? Has she met the performance standard for her grade? But when learning is viewed as an ongoing, school-long process, the initial and primary

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purpose of assessment is to estimate an individual's current level of progress on a continuum of learning. And because assessments of this kind serve as starting points for further learning, it's essential that assessment information is passed from one grade to the next, from one teacher to the next, and from one school to the next.

Flexible learning arrangements

Many schools are attempting to meet the needs of individual learners by introducing alternatives to more traditional classroom arrangements, using 'individual learning plans,' 'personalised learning' initiatives and 'differentiated teaching.' Each of these strategies adopts a learner-centred approach that requires regular assessments of where individuals are up to in their learning. In some schools, individual learning plans are developed to assist teachers, students and parents or carers to make choices about students' programs of study and to monitor and review individual progress. Individual learning plans are used to set learning and career goals, and to raise the aspirations of students who might not otherwise continue their education or training.

Differentiated teaching provides learning activities and materials tailored to the needs of different groups of students in the same class, recognising that classroom activities appropriate for some students may provide too little challenge for others. The goal is to ensure that all students in a class are presented with learning opportunities appropriate to their interests and current levels of attainment. Differentiated classrooms sometimes involve 'stations' at which students work simultaneously on different tasks, small group activities, and 'tiered' learning tasks that allow students to engage with activities of different complexity and open-endedness.

Other schools attempt to provide greater continuity to students' learning by ensuring that the same teachers remain with students for a number of years. According to Darling-Hammond, there is some international evidence that this strategy leads to improved student achievement: 'Learning arrangements in which students work with the same teachers for more than one year facilitate higher levels of learning. In most high-achieving European and Asian countries, students stay with the same teacher for at least two years, and sometimes three or more.' (Darling-Hammond, 2004: 1079)

MONITORING GROWTH

Attempts to judge and compare the effectiveness of schools are likely to be misleading if they fail to account for differences in students' backgrounds and starting points. For example, because secondary schools draw their intakes from different socioeconomic areas, have different academic reputations, and sometimes have selective entry policies, students entering some schools begin with higher levels of achievement than students entering other schools. For this reason, when comparing the effectiveness of schools it's usual to look not at where students end up – their final year results – but at the difference schools make to students' achievement levels. Do some schools make a bigger difference than others? To answer this 'value added' question it's necessary to look at the 'distance travelled' by students. In the same way, judgements about the success of individual learners need to take into account their starting points and the progress they make over time, and not simply where they end up. Pass or fail decisions against performance standards may not recognise the progress made by students well below or well above the standard for their grade: 'In many classrooms, a student is an "unsuccessful" fifth grader if he falls short of the fifth grade "standard." That the student

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grew more than anyone in the room counts for little if he still lags behind grade-level expectations. Similarly, a child is expected to remain in fifth grade even though she achieved that standard two years ago.' (Tomlinson, 1999: 13)

Education systems that choose to measure and report student growth are confronted with questions about how much growth usually occurs and is reasonable to expect during a school year: 'How much academic growth can we reasonably expect a student to make over the course of a year? Is it reasonable to ask all students in the same grade to grow at the same rate? Can the observed growth of large numbers of students who were in the same grade level and in the same achievement range, help to define reasonable growth?' (Hauser, 2003: 2)

The US Northwest Evaluation Association (NWEA) is addressing these questions through its Growth Research Database. NWEA research, based on large numbers of students across the US, is providing information about the growth that typically occurs in each year of school in mathematics, reading and language usage. This work is introducing the possibility of setting 'standards' and targets for growth that could be used in conjunction with status performance standards, making them an integral part of accountability systems. McCall, Kingsbury and Olson (2004) argue that, in the spirit of consumer choice, schools and school systems have an obligation to report information on student growth.

One of our challenges is to find ways of combining information about student growth with information about the percentage of students reaching grade-level performance standards, and to find ways to do this that are easily understood. A second is to develop improved systems for measuring and monitoring achievement independently of students' current grades, thereby enabling growth to be measured across the years of school. In most education systems, the challenge will be to replace or supplement existing cross-sectional studies of achievement with longitudinal studies that follow the progress of individuals over time.

One way of combining information about growth over time and grade-level performance standards is shown in Figure 4, an example provided by Dr Khoo Siek Toon. In this picture, hypothetical grade-level performance standards are shown increasing from Grade Two to Grade Seven. Also shown are the growth trajectories of three children – A, B and C. Child A performs above the standard for his grade throughout this period of his schooling. Child B is below standard at Grade Two, but improves steadily to be above the grade-level standard by Grade Six. Child C is a low-achieving student who probably should have been identified by Grade Three and given remedial assistance. The average growth trajectory for all students in the school is also shown, and could be compared with the average growth trajectories of other schools.

Young children enter school with widely varying levels of readiness and development. They come to school on day one with very different levels of cognitive and language competence, reading ability, and social and psychomotor skills. Schools traditionally have made only limited efforts to identify and cater to these individual differences in development.

Although most children experience similar school curricula in mixed-ability classes during their primary years, their levels of achievement do not appear to become more similar with the passage of time. In fact, the opposite appears to be true: the variability *increases* steadily during their years at school.

Several decades ago it was common in many countries to stream students into different classes according to their general ability or school achievement. This practice has largely been discontinued because of evidence that it lowers expectations of students in lower streams, reduces self-esteem, and locks individuals into
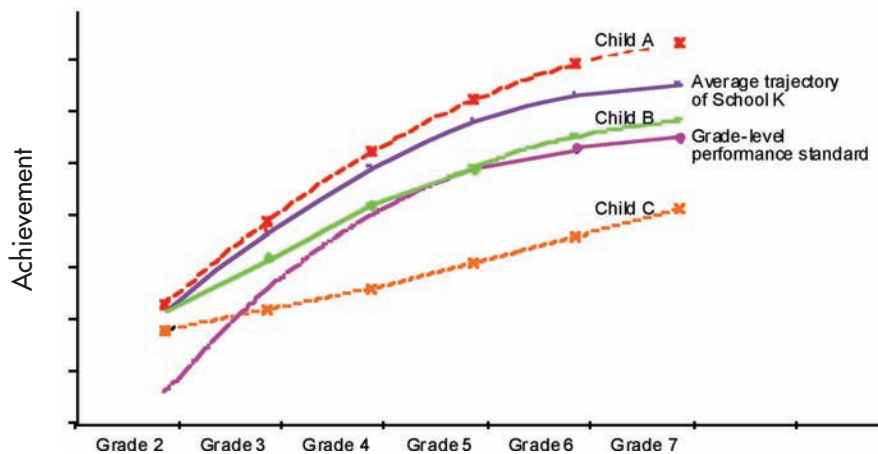
Classroom activities are likely to be most effective in raising achievement levels if they are differentiated, in other words, if teachers recognise the wide variation in children's levels of progress, identify individuals' interests and current levels or attainment, and expect different kinds of learning from different students.

Growth trajectories and grade-level performance standards

For references go to www.acer.edu.au/ professionaleducator/references.htm

particular streams for the duration of their schooling. Schools have considered it more equitable to provide all students in a grade with the same curriculum and to expect all students to achieve essentially the same outcomes, yet the evidence suggests that under this approach lower-achieving students fall further behind as they move from one grade to the next and as the advancing curriculum becomes less and less appropriate to their current level of achievement.

In recent years, grade-based performance standards have been looked to as a policy lever for lifting student achievement levels. The logic is this: if a clear standard of performance is specified for a grade, and if all schools, teachers and students are held accountable for meeting that standard, then achievement levels will rise. In the interests of equity, all students in the same grade are expected to meet the same high standard. In the US, if students fail to meet the standard for their grade, they are often required to go back and repeat that step.

Learning is enhanced when learning opportunities are matched to individuals' current levels of knowledge, skill and understanding, so classroom activities are likely to be most effective in raising achievement levels if they are differentiated, in other words, if teachers recognise the wide variation in children's levels of progress; if they identify individuals' interests and current levels or attainment; and if they expect different kinds of learning from different students. Uniformly high expectations and a common curriculum for all may be less effective, and ultimately more inequitable, than providing differentiated learning and differentiated expectations of individual progress towards the same high performance standards.

These observations also have implications for how educational progress is measured and monitored over time. When evidence about a student's achievement is reduced to a yes-or-no decision concerning a grade-level performance standard, valuable information about that student's learning is lost. When evidence about a school's performance is reduced to the percentage of its students meeting a standard, because there is no recognition of progress made by students who have not yet achieved the standard or of students who achieved the standard before entering the grade, valuable information is lost about how well the school is contributing to the growth of all students.

Improved accountability procedures depend on measures of the progress made by all students in a grade. Measures of growth need not replace information about the percentage of students meeting grade-level expectations. When used together, these two indicators are capable of providing a clearer picture of the contributions teachers, schools and school systems are making to the improvement of learning for all.

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