

How a centrally managed focus on aligning curriculum, assessment and reporting can exert positive influences on teacher practice

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Abstract

The Queensland Curriculum Assessment and Reporting (QCAR) Framework project is designed to align curriculum with assessment for student learning and the way student learning is reported. The objective is to improve the quality of learning for students in Queensland, Australia by supporting the development of teachers' assessment capabilities. Assessment within the QCAR Framework represents an interrelationship between principles of coherent high-quality assessment systems that are instantiated through centrally-devised common assessment tasks, and the everyday practice of teachers. Pivotal to influencing everyday practice is the online Assessment Bank that provides teachers with a repository of high-quality, current and exemplary assessment items and resources. The common assessment tasks challenge the learner to demonstrate their knowledge and understanding in meaningful contexts, and provide teachers with rich information about student learning. Assessment within the QCAR Framework values the professional judgment of teachers and demonstrates how assessment that measures not just what students know but how students work with knowing, assists teachers in improving learning.

Introduction

One of the conference themes is "The Role of Assessment in Improving Teacher Quality". This paper provides information about a specific assessment system currently under development in Queensland. The paper identifies features of a quality assessment *model*, and describes the structures and procedures of the assessment *system*. Factors that shape the contexts in which the assessment system operates are explored, and a general model of a quality assessment system is provided.

Within Queensland, and internationally, an increasing body of research confirms the central role of assessment in improving learning (Cormack, Johnson, Peters et al., 1998:17; Weeden, Winter, & Broadfoot, 2002; Black et al., 2002). Parents and students develop an understanding of what is valued in education by virtue of what is assessed and how it is assessed (Wiggins, G, 1992). While it is acknowledged that clearly articulated values and beliefs, comprehensive curriculum plans and assessment frameworks are important to help clarify our thinking and identify strategies for improving students' learning outcomes, it is ultimately what and how teachers choose to assess that communicates to students:

- what to pay attention to
- what learning to value
- who has control of judging quality
- the relative importance of learning facts and applying knowledge
- their role in the classroom.

Participating in the assessment itself can be a powerful episode of learning for both teachers and students. It can have a profound influence on the

motivation and self-esteem of students. How students are assessed, and the judgments that are made about what they can and cannot do can have a deep effect on their sense of self-esteem and on their expectations for success and failure (Harlen & Deakin Crick, 2003). Through this powerful influence, assessment acts to motivate or discourage students from further learning. It serves to guide students as they plan their learning strategies, and can encourage or discourage students to develop as independent learners. The challenge for teachers as well as systemic assessment regimes is to design assessments that can cater for the diverse needs of students. Our most able learners must be given opportunities to display their excellence. An assessment which requires only modest effort calls for no intellectual risk, necessitates little to no persistence, and demands that such students develop few academic coping skills. At the same time, learners who require additional support, for whatever reason, need to be able to demonstrate their level of achievement in ways that allow success as well as support the development of academic coping skills.

The majority of teachers are familiar with the traditional model of teaching and learning in which the curriculum is seen as a distinct body of information that can be transmitted to the learner. Assessment in this traditional model consists of checking whether the information has been received and absorbed.

Education in the 21st century calls for a re-evaluation of how teachers teach and how students learn, to better prepare students for life in the future (Delandshere, 2002). There is a growing demand in an increasingly complex world for students to be futures oriented and to be effective thinkers (Black & William, 2003). Educating for the future is a recent trend in educational discourse, as educators and social commentators attempt to predict the knowledge and skills needed for rapid social, economic and technological changes in society (Assessment Reform Group, 1999). There is general agreement that this modern context requires a different approach to assessment.

Assessment in Queensland—a snapshot

Queensland, population 4.1 million, is a large, diverse state on the east coast of Australia (population 21 million). Approximately 76% of primary school students (Years 1–7, ages 6–12) and 64 percent of secondary school students (Years 8–12) attend state-funded (government) schools; the remaining students attend private independent or denominational schools. Education within Queensland supports a diverse range of schools and communities.

Queensland has a long history of school-based assessment in the senior years. The senior secondary system (Years 11 and 12) has externally moderated school-based assessment and standardised cross-curricular testing. Stringent quality assurance processes accompany curriculum and assessment, working across state and non-state school sectors to provide high-stakes results.

Currently, Years 1–10 students sit school-devised assessments based upon an outcomes-based key learning area (KLA) curriculum. The KLA curriculum is organised into eight areas based on composite fields of knowledge, each with its own content and context. In the KLA syllabus documents, outcomes are expressed in terms of what students are expected to know and be able to do within a composite of specific fields of knowledge at certain developmental stages called levels.

To date, the KLA syllabuses have been relatively silent on the body of evidence required for assessment. Until recently, the focus of systemic assessment has largely been on external testing, based on a national literacy and numeracy testing program of standardised tests in Years 3, 5 and 7, with results reported against national benchmarks. The introduction of a Year 2 Diagnostic Net, although focussing on literacy and numeracy, has expanded the model of systemic assessment within schools by providing students and schools with feedback that informs future learning, as well as creating mechanisms for promoting consistency in the way teachers make judgments about student work.

The New Basics Research Project (Education Queensland, 2000) contributed to the development of an assessment policy for Years 1 to 10 in Queensland. New Basics assessment is organised around a series of Rich Tasks; the design of the Rich Tasks is based on the principles of *Productive Pedagogies* (Education Queensland, 2001; Lingard, Hayes, & Mills, 2003) which embrace many of the characteristics of authentic performance assessment identified in assessment literature.

In the five years from early 1999 to April 2004, there was a significant transformation in the curriculum, assessment and reporting policy of the Queensland Government and the Department of Education. The insistence on a centrally-designed specification of content rather than learning outcomes, the apparent dissatisfaction with the “level” structure of the syllabuses, the preference for a return to the age-graded (year-level) structure of past years, and the perception that a standards-driven curriculum would be greatly valued by the education community and the community at large, found expression in the policy document *Queensland Curriculum, Assessment and Reporting Framework* (QSA, 2005).

Components of the QCAR Framework

The Queensland Curriculum, Assessment and Reporting Framework is part of Phase 2 of the Queensland Government’s Smart State Strategy. It is an element of a phased development and introduction and hence is not a trial. The development of the QCAR Framework is being led by the Queensland Studies Authority (QSA) in consultation with the Department of Education, Training and the Arts (DETA), Education Queensland (EQ), the Queensland Catholic Education Commission (QCEC), and Independent Schools Queensland (ISQ). It is a cross-sectoral consultative project that requires consideration of local contexts and acknowledges the significant work already undertaken in some jurisdictions.

The basic premise of the QCAR Framework is that, in order to improve effective classroom practice, priority should be given to enhancing the assessment capability of teachers. The work of the Project combines centrally-devised assessments with classroom-based assessment to meet the goal of enhancing the assessment capability of teachers.

The QCAR Framework consists of five components: Essential Learnings, Standards, Assessment Bank, Queensland Comparable Assessment Tasks (QCATs), and Reporting.

Essential Learnings are clear statements of what should be taught in Queensland schools. They describe the key concepts, facts, procedures and processes that young students in Queensland should learn in order to participate effectively in contemporary social, civic and economic life and engage with other cultures. The QCAR Framework specifies at key junctures—by the end of Years 3, 5, 7 and 9—what students should have the opportunity to learn.

The position adopted for QCAR Essential Learnings is based on social constructivism and social cognitive learning theory to reflect and support the theoretical underpinning of the Years 1 to 10 key learning area syllabuses. The model and design for QCAR assessment instruments reflect this position in emphasising that assessment should:

- be designed to foster higher-order thinking, persistence, construction of meaning and deep understanding
- contribute to learning and be integrated with the teaching and learning process
- assess “big ideas” in curriculum by focusing on broad clusters of concepts, processes and capabilities identified, in this case, by the QCAR Framework
- foster application of concepts and principles, inquiry and problem solving in the real world, even if the assessment events are not always situated in real-life settings.

Standards describe the expected qualities of student work and provide a basis for judging how well students have demonstrated what they know and understand and can do. Teacher judgment using standards requires teachers to match evidence in student work against descriptors written for the purpose of explicitly describing performance across a range of evidence.

The **Assessment Bank** provides online resources to support teachers in their everyday assessment practices. The Bank contains assessment items that are linked to the Essential Learnings and Standards, and are accompanied by administration guidelines, *Guide to making judgments* and *Sample student responses*.

The **Queensland Comparable Assessment Tasks (QCATs)** in Years 4, 6 and 9 are centrally-developed performance-based assessment instruments designed to support student learning, and provide low-stakes data. The QCAT assessments are experienced under common conditions, have some common parameters for all students, e.g. recommended times to do the assessment,

and are marked by teachers using a common, centrally-devised *Guide to making judgments*.

Reporting guidelines and advice will be provided to schools and school sectors to inform twice-yearly reports, and on reporting student achievement on the QCATs to students, parents and carers.

Defining assessment

The QCAR Framework defines assessment as “the purposeful, systematic and ongoing collection of information as evidence about student learning” (Years 1 to 10 key learning area syllabuses). Under the QCAR Framework, no one form of assessment is set up as being better than another in all circumstances and for all purposes. No single type of assessment can yield all the information needed for all users and uses. Further, different types of assessment methods are better suited to gathering information about different types of student achievement or for different purposes. Appropriate teaching and learning decisions depend on the accuracy and comprehensiveness of assessment.

The QSA identifies the following features of effective assessment. It should:

- focus on students’ demonstrations of learning
- be comprehensive
- be valid and reliable
- take account of individual learners
- be an integral part of the learning and teaching process
- provide opportunities for students to take responsibility for their own learning and for monitoring their own progress
- reflect equity principles.

The QCAR Framework values classroom assessment practices. The Framework aims to support teaching and assessment processes by:

- aligning curriculum, assessment and reporting
- providing practical models through the Assessment Bank and the QCATs of what principles of effective assessment look like in practice.

Alignment involves integration of the curriculum with standards and assessment. This takes assessment beyond the realm of being solely an episode for collecting information, or a strategy to monitor student progress towards achieving learning objectives. Instead, this alignment actually helps students achieve the learning objectives through explicit identification of their strengths as well as what is needed to support improvement.

A commonly held view in international literature (see, for example, Weeden, Winter, & Broadfoot, 2002) is that assessment, by continually providing both feedback and feed forward, should be an integral part of learning. Current research (UNESCO, 2004; Black & William, 1998) acknowledges that assessment can be used haphazardly at all levels of teaching and learning. In

many instances, teachers seldom feed back into the learning process in a systematic way the information available from either in-school or system-wide tests and assessments (Ramaprasad, 1983; Wiggins 1998). The QCAR Framework seeks to incorporate assessment systematically into teaching strategies and practices to improve student learning by building teachers' assessment capabilities, and equipping them with high-quality assessment tools for collecting evidence of student achievement.

The QCAR assessment components

Improving the assessment capability of Queensland teachers is underpinned by three transparent approaches:

1. An online Assessment Bank for use by teachers in Years 1 to 9.
2. The centrally-devised QCATs designed to provide comparable statements of student achievement in aspects of the Essential Learnings in English, Mathematics and Science, and one other area, at Years 4, 6 and 9.
3. A common standards framework for Years 1 to 9, including a 5-point scale for reporting student achievement of Essential Learnings.

Queensland Assessment Bank

The Queensland Assessment Bank is an online dynamic collection of a range of quality, rigorous assessment items and resources for Years 1 to 9 which are linked to the Essential Learnings and Standards. All assessment items are published as a complete package that comprises guidelines for administration, a *Guide to making judgments*, and an indicative response or annotated samples of student responses. This approach reflects and models the alignment premise and how it may be achieved through specification and use of the Standards. Standards are used for making judgments on evidence provided by students. Standards serve as a reference point for the quality of response expected, and may be used to scaffold individualised learning and teaching for each student.

All Queensland teachers may access the online assessment bank; they may use and adapt any of its items, or even design new assessments using the banked items as models. Teachers may use the assessment items for in-class assessments, or may opt to use the range of student work samples as reference points for clarifying what standards look like in actual student work.

The *Sample student responses* serve to help teachers and students understand what the expected standard of achievement might look like in student work, as well as the kind of work students might be expected to do. The examples will illustrate the nature and complexity of activities appropriate for students at the relevant year level. The Assessment Bank assists the development of a common understanding of standards. This understanding will develop over time as teachers use the resources as a basis for discussions about standards and evidence and thus come to hold a common view about how those standards will look in student work.

QSA recognises that the value of a quality assessment bank lies in its capacity to influence. The Queensland Assessment Bank has at its centre the

promotion of children's learning as a primary focus for teachers, schools and systems. The commonly held view (Weeden, Winter, & Broadfoot, 2002) that assessment needs to be incorporated systematically into teaching strategies and practices is demonstrated through the assessment bank. Assessment items show how the teaching and learning process can be informed by assessments that articulate smoothly from a sequence of structured teaching and learning activities and are an integral and on-going part of teaching and learning.

Administrators may use the assessment bank to provide training to teachers, to hold discussions about standards and assessment, or to facilitate sessions with parents, teachers and various school committees using the exemplars as a basis for discussion about curriculum expectations.

The Queensland Assessment Bank is dynamic, regularly refined and updated with new information, and the tools continually adapted to teachers' and learners' needs. Teachers will be the primary source of ongoing expansion of the assessment bank.

Queensland Comparable Assessment Tasks (QCATs)

The expectations of the QCATs expressed in the Queensland Curriculum, Assessment and Reporting Framework (QSA, 2005) and the QCAR Framework Technical Paper (QSA, 2006) are as follows:

The common statewide assessment tasks will involve authentic and complex tasks that allow students to demonstrate their breadth and depth of understanding of the essential learnings. Students will complete these tasks under common conditions such as using the same kinds of equipment, working alone or in groups, or having a choice of written or oral presentations. As much as possible, the common assessment tasks will avoid the flavour of point-in-time tests. The intention is to allow students to demonstrate their best work (Queensland Curriculum, Assessment and Reporting Framework, QSA, 2005:9).

QCATs are intended to provide teachers, students, parents and the wider community with information about student learning, to support student learning by providing teachers with performance-based data, and to build assessment capacity in teachers by providing models of quality, performance-based assessments. Information derived from the assessments can be used to improve school learning programs and direct individual learning for students.

Specifically, the purpose of QCATs is to:

- provide schools with a common assessment model to support, and improve over time, consistency of teacher judgments of student achievement
- model quality assessment to enhance the assessment capability of the Years 1 to 9 teaching workforce, and to promote effective school-based assessment practice (with a focus on the *Essential Learnings* and *Standards*)

- provide parent/carers with reliable information on how well their child is achieving in the Queensland common assessment of *Essential Learnings*
- provide feedback to students.

Each QCAT is a centrally-developed, standards-referenced, authentic, performance task designed to provide evidence of what students know and can do in relation to achievement in targeted Essential Learnings for English, Mathematics and Science at Years 4, 6 and 9. Five grades are used for reporting on achievement.

Sample student responses, together with the *Guide to making judgments*, clarify the curriculum expectations and task-specific assessable elements. For each assessable element, five typical samples are provided of student responses collected during field trials. Annotations beside each response explain how it matches the task-specific descriptor. Together the *Sample student responses* and the *Guide to making judgments* support teachers and students in the following ways:

- clarify the curriculum expectations for learning at each of the 5 grades A to E
- clarify the task-specific descriptors (The relationship between the task-specific descriptors, the sample student responses and the annotations must be obvious and strong.)
- show the connections between what students were expected to know and do (the curriculum expectations) and how their responses should be judged using the descriptors derived from the Standards in the Essential Learnings
- contribute to increasing the likelihood of students communicating confidently about their achievement with teachers and parents, and asking relevant questions about their own progress
- provide evidence based discussions to assist students to gain a better understanding of how they can critique their own responses and achievements and identify the qualities needed to progress their learning
- provide a basis for conversations among teachers, students and parents about the quality of student work
- facilitate communication with students and parents regarding curriculum expectations and related standards.

The emergence of authentic performance-based assessment and the direct assessment of complex performance is guiding many of the current efforts to transform assessment. Such attempts are frequently referred to as “authentic” assessment because they involve the performance of tasks that are valued in their own right.

Performance-based assessments are frequently called ‘authentic’ assessment because they engage students in ‘real

world' tasks rather than multiple choice exercises, and evaluate them according to criteria that are important for actual performance in that field (Darling-Hammond, Anness, & Falk, 1995:10).

One of the promises of performance-based assessments is that they will place greater emphasis on problem solving, critical thinking, reasoning and metacognition in contrast to assessment by multiple-choice measures that are more commonly used by teachers to test factual knowledge. In moving away from more traditional types of assessment, the complexity of authentic performance-based assessment is seen as a way of engaging students in assessment 'of and for' learning. Cormack et al., 1998 make the point that

a defining marker of authentic assessment is that the link between the curriculum and assessment is explicit so that the process tests what is taught and leads back to better informed teaching and learning (Cormack, Johnson, Peters et al., 1998:17).

This reflects one of the key goals of the QCAR Framework which aims to help teachers to integrate the elements of curriculum and assessment to promote improved student outcomes. As such, the use of authentic performance-based assessment is one tool through which the alignment of these elements can be enhanced.

The common attributes of authentic performance-based assessments are

- the use of open-ended tasks
- a focus on higher order or complex skills
- the employment of context sensitive strategies
- the frequent use of complex problems requiring several types of performance and significant student time (Glaser & Baxter 2000).

Authentic assessment accesses the "doing" mode. Proponents (Glatthorn, 1999; Baron & Boshee, 1995) of standards-referenced assessment use terms such as "authentic" or "alternative" assessment to distinguish it from the multiple-choice format of most large-scale standardised tests (Baxter and Glaser, (1997), Glaser & Baxter (2000), and Bass, Magone & Glaser (2002)). While some authors see no place for multiple-choice and selected response (true-false) formats in the classroom, others argue that performance assessment is another tool to help construct a comprehensive picture of student learning, and that ways should be explored to combine selected-response and performance assessment to measure student achievement (Baron & Boshee, 1995). Through the assessment bank and the QCATs, the QCAR assessment model promotes the notion that teachers should access multiple formats of assessment to gain comprehensive and reliable information about what students know and can do.

It is Wiggins (1998), however, who promotes performance-based assessment that is:

- authentic—address realistic problems

- credible—valid and reliable
- user friendly—feasible, appropriate, enticing and engaging (Wiggins, 1998:139).

Matters (2006) also suggests that, in order for assessment to be more effective, consideration be given to:

- rigour (in assessment systems and assessment instruments)
- accountability
- credibility
- authenticity.

These four factors are no more than another way of talking about reliability and validity in all their guises. Our energy should primarily go into designing effective assessments and critiquing, at both design and item level, instruments developed and administered by others (Matters, 2006:29).

Construction and transformation of procedural and conceptual knowledge, higher order thinking and critical dimensions occupy a prominent place in the Essential Learnings and call for assessments that produce evidence of these complex constructs. The QCATs are based directly on the curriculum expectations of the targeted Essential Learnings which encompass the two dimensions of *Ways of working with Knowing and understanding*. QCATs involve problem representations and explanations that reflect a deep understanding of the concepts being studied, generation of goal-directed strategies toward problem solving, and frequent, flexible monitoring. The assessment tasks give students the opportunity to demonstrate not only how well they had learned to use the required knowledge and skills in one context but how they could use the knowledge and skills in another context.

The QCAT development, refinement and administration cycle involves:

- Determination and analysis of the domain and constructs to be assessed in a particular year, including issuing timely notification to schools. Key questions posed in this phase include: “What behaviours or performances should reveal the construct?” “What tasks or situations should elicit those behaviours?” The nature of the construct guides the selection or construction of the assessment (Messick, in Linn 1989).
- Determination of the nature of the assessment, including number of products, time and timing, mode and medium.
- Conceptualisation of assessment(s) and interrelationship between parts/products.
- Development of assessment, evaluation and refinements through an iterative process including field trialling, panelling, intent matching and classification.
- Development of administration guidelines and marking guides.

- Assessments implemented by classroom teachers.
- Assessments graded by class teachers.
- Schools submit to the Queensland Studies Authority samples of student responses to the QCATs, representative of the five grades.
Note: the data collected is classified as 'low stakes data', i.e. the information is not intended for inclusion in school annual reports and cannot be used to compare performance between schools or schooling sectors.
- Random sampling by Queensland Studies Authority of the representative samples of graded student responses.
- Evaluation of the QCATs and publication of a retrospective report available to schools and systems.

The overarching argument for system-wide assessment is based on the principles of equity and accountability; these are recognised in the literature as the principal characteristics of a high-quality assessment system (Cronbach, 1988; Gipps & Murphy, 1994; Baker et al., 1991)).

The equity mandate dictates the need to ensure that all students have the opportunity to acquire and develop the skills and knowledge required for the “knowledge economy”; the accountability mandate dictates that governments (both state and federal) ensure that this objective is achieved (Cizek, 2001). Underpinning these principles is the belief in the capacity of large-scale external assessment to improve standards of teaching and, hence, student achievement.

Evidence in the capacity of assessment to improve learning is supported by a large amount of research made available to educators over the past two decades or so (see, for example, Baker, Freeman, & Clayton, 1991; Baron & Boshee, 1995; Newmann & Associates, 1996; Messick, 1996; Wiggins, G, 1992).

The QCATs are intended to “sort out” the next stage of a student’s learning program, rather than “sort out” a student from all other students.

Given the history of schools as sorting institutions, the notion that assessment and learning are intimately and inextricably intertwined is revolutionary. On the surface of it, the ideas are appealing, but the fit for schools as we know them is uncomfortable and awkward... (Teachers) have always been caught between monitoring learning and categorising students on the basis of their assessments, and teaching students, and they have struggled with these contradictory responsibilities. (Earl, 2003:25).

Effective assessment can no longer primarily play a sorting role. Rather, assessment must help identify the assets of students on which effective educational programs can be built. It must also identify the characteristics that are likely to interfere with the student’s learning, so that the school and teachers in cooperation with the students may help overcome these difficulties. It is important for assessments to describe student demonstrations of learning well enough so that students and teachers know how students are

progressing toward agreed-upon goals. Descriptions of student learning in effective assessments focus on the relationship of knowing to action and inquiry, where students justify their positions through reasoning, evaluating evidence, considering counter-arguments and predicting. These

conceptions of knowing and learning reflect a shift from knowledge (being described as) generalised propositional and symbolic representations internalised by individuals and transferable from context to context (Delandshere, 2002).

Knowledge and understanding is not fixed and definable, separated from an individual's learning. In fact assessment should assist teachers and students understand the learning that has actually taken place. This objective recognises that even if all students have been taught the same thing, they will learn it in different ways and at a different pace.

Recognising individual learning differences acknowledges that there are certain conditions under which assessment can contribute positively to learning. Although these conditions are more easily met in the classroom environment, data generated from large-scale external testing can be used in the formative sense as well (Alderson & Wall, 1993). The core of the educationally beneficial use of assessment data is the quality of the feedback given to students. Direct and active involvement of students in the reflective evaluation of assessment data is essential, as are the provision of feedback beyond a grade or mark, and the use of publicly available explicit criteria and standards.

Certain characteristics are commonly found in high-quality assessment tasks. A compelling argument can be made that authentic performance assessment possesses many of these characteristics, such as authenticity, high construct, content and face validity; and the capacity to engage students. Validity can be threatened by failure to design tasks so that the skills and knowledge assessed are representative of the identified curriculum.

Questions have been asked about the reliability of authentic performance assessment in terms of the classical psychometric criteria of reliability (Baird, Greatorex & Bell, 2004). Reliability, however, can be improved by ensuring that teachers grading responses are provided with clearly articulated guidelines about how to mark appropriately according to nominated assessable elements (the key features in student responses for which evidence of student learning is collected). Protocols guiding administration, including care in giving instructions to students, are other areas that can be monitored to ensure high reliability (Pellegrino, Chudowsky & Glaser, 2001).

The validity of performance assessment depends on the extent to which the selected assessable elements relate to the curriculum (Sadler, 1987, 1989, 1998; Gipps, 1994). From the constructivist viewpoint, it is essential for effective learning that the task be matched to the student's current level of understanding (Gipps, 1994). Standards-based assessment addresses this matter by linking assessable elements and their descriptors directly and explicitly to curriculum (Sadler, 1987; Gipps, 1994). In this system, content standards identify what students should know and be able to do; performance

standards explicate the level of achievement expected for each content standard (Hill, Crevola, & Hopkins, 2000).

In operation, standards-referenced assessment draws upon the professional ability of competent teachers to make sound qualitative judgments of the kind they make constantly in teaching (Sadler, 1987). Sadler (1998) further argues that the assessable elements and the task-specific descriptors have to be made public and explicit, in advance of testing, so that the assessment system becomes:

- more open, and more open to scrutiny
- accessible to both student and teacher, that is, both look at the same thing in the same context
- independent of the performances of other students (norm-referenced assessment).

QCATs provide teachers with an opportunity to think critically about their methods of instruction and of the overall effectiveness of their teaching and learning program. This leads to teachers and principals systematically reviewing their curriculum plans, teaching and learning strategies and assessment procedures, and making needed changes to improve their students' learning.

Teachers and students reported that feedback on the strengths of their achievement grades, and on the areas in need of improvement, is more helpful if the specific elements of knowledge and skills are identified, and specific suggestions are provided. The *Guide to making judgments* assists positively with identifying specific strengths and weaknesses. This information may then be used to plan the next steps towards learning.

The view that assessment can support teaching and learning has been demonstrated to hold true with large-scale assessment (Pellegrino, Chudowsky, & Glaser, 2001). The QCATs have the capacity to influence decisions that teachers make about what and how to teach. Where QCATs are designed appropriately, teaching and learning will go in the desired direction. This effect of “washback” into the curriculum was demonstrated in feedback from teachers involved in the trialling of the QCATs in Years 6 and 9 Science. The QCATs were explicitly designed to model currently known aspects of good teaching and learning—project-like format, clear outcomes, emphasis on the process of science, and student collaboration. Researchers have demonstrated that such modelling is necessary because some teachers do not know how to teach science in such ways that students can attain the learning targets currently proposed for them (Gong, Venezky, & Mioduser, 1992). The feedback reported that teachers were challenged into reviewing their:

- perception of what science is
- knowledge of science syllabus
- awareness of student knowledge, needs and attitudes
- teaching styles and methods

- professional interaction with colleagues.

Assessment on its own will not contribute to improvement in learning. It must be coupled with an evaluation process. The standards-based *Guide to making judgments* facilitates the process of evaluating a student's performance on an assessment task and provides a mechanism for immediate feedback to the student. The information gathered helps teachers and students determine a student's strengths and weaknesses.

Standards and reporting

Information about student achievement on the QCATs will be provided to students and parents/caregivers as part of the twice-yearly reporting processes evident in schools across Queensland. This information will include a report that will show the student's overall achievement for each assessment task, and provide a brief overview of the assessment tasks and the selection of Essential Learnings.

Teachers are at the heart of educational improvement.

It is teachers who administer and grade the QCATs as well as interpret the results in collaboration with their colleagues.

Much of the literature on performance assessment focuses on the quality of the information that such assessment provides in terms of its reliability and validity. More research on the impact of performance assessment on school and teacher practice is required (Stecher, 1998). The burdens on teachers participating in performance assessment include: teacher professional development, instructional preparation, classroom time, marking time, and time taken to explain assessment to students and parents/caregivers (Koretz, Stecher, Klein et al., 1993; Stecher, 1998). Black and William (1998) comment that teacher resistance to assessment reforms can be attributed in part to the view, held by some teachers and administrators that the task of modifying their classroom practices to integrate high-quality assessment is simply beyond the reasonable scope of their responsibilities and available time. Assessment within the QCAR Framework seeks to address some of these reform issues by providing practical models for teachers, as well as access to quality assessments and associated materials required for implementation.

In terms of curriculum, teaching and learning, feedback from schools and teachers participating in the development of the QCATs can be categorised as follows:

1. Assessment design strategies, such as including assessable elements, were taken up by teachers.
2. Assessment content strategies, such as assessing higher-order cognitive skills, caused teachers to reassess their understanding of curriculum and learning.

3. Logistical strategies, such as providing clear implementation and grading guidelines, drew teachers' attention to important aspects of assessment design.
4. Interpretation strategies, such as providing guidelines to understanding how to use the data in a way that contributes to improving learning.

Concluding remarks

Assessment within the QCAR Framework supports improvement in the quality of learning for students in Queensland by providing teachers with a range of mechanisms enhance their assessment capabilities and engage them in thinking of assessment as a way of collecting evidence about the learning, understanding and evaluating that learning. These mechanisms include:

- providing clear direction about what is important for teachers to teach through the Essential Learnings.
- providing information to teachers about the concepts, facts, procedures and processes that students have acquired in a targeted selection of Essential Learnings through the QCATs.
- helping teachers make informed judgments about student work against commonly applied standards.
- providing resources, (e.g. assessment items, sample student responses guides to making judgments) to help teachers develop a shared understanding of assessment and standards.
- providing teachers with access to a range of quality in-class assessment as models.
- increasing confidence of students, teachers, parents and systems about the grades that appear on student reports by supporting consistency of reporting across the state.

The potential effectiveness of the QCAR Framework model is reflected in this comment from a teacher involved in the trial:

I feel as if I'm a better teacher. I understand what I'm teaching better, and I certainly have come to understand the students I teach more fully. I no longer see my curriculum as a list to be covered and I spend more time thinking about how to help each of my students to achieve.

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