

**Enhancing the Effectiveness of Tertiary
Teaching and Learning through
Assessment:
A Review of the Literature**

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The purpose of this literature review is to contextualise the study of effective and innovative assessment practices. The review is in three main sections. Firstly, there is an overview of the global and local policy contexts for tertiary education. The second section provides an overview of relevant national and international research. The third section presents assessment functions, principles and current themes that reflect convergent thinking and practice within education. The rationale for using the case study method in the research process will be outlined later in the Methodology section of the final report. A later review will attend to dissemination issues. .

It is usually the case that what is measured is what counts in any system or organization, although what is measured may simply be what is easiest to quantify and assess rather than what really matters in some instances. That often tends to be as true in education as in other sectors of the economy and society. Although assessment has featured in most if not all educational systems in some manner, and there is much current literature in the primary and secondary areas, there has been somewhat less devoted to assessment in the tertiary sector. Notable exceptions were the Constable report (1988) in the UK and Boyer's report in the USA (1990). Others also noted rigidities in traditional assessments and in specific areas such as Sedlacek (1983) on diversity and SATs in the US and in management (Boyatzis, 1982; Bigelow, 1991).

Global and local policy contexts

Governments are accountable for the use of public funds and accountability can be made more transparent and practically demonstrated by use of measurement data on achievement outcomes for money spent. In line with that general view, as Gibbs (1993) notes, the focus of teachers, quality assurance bodies and institutions has been on 'assessment as measurement' rather than on assessment to enhance learning. Over the last two decades, there has been a move both internationally and in New Zealand to improve quality in the secondary and tertiary education sectors through a focus on learning outcomes and their assessment. According to Robson (1994) these moves were driven by a desire for the post-compulsory sector to contribute more to economic efficiency and for there to be increased accountability for the use of public funds.

In New Zealand, the standards-based trend took the form of the National Qualifications Framework (NQF), which was established to improve quality in the secondary and tertiary education sectors through a focus on learning outcomes and their assessment. The parent body, the New Zealand Qualifications Authority (NZQA), was established as a result of the Learning for Life (Implementation Unit, 1989a, 1989b) policy documents, which sought a seamless transition from school into post-compulsory education and training. The NQF was shaped by the need to provide information about what learners could do that would be credible to employers and policy makers as well as the learners themselves. Like other Western countries, there was a broad competence-based approach to the framework. The building blocks of the Framework became unit standards or sets of learning outcomes. Unit standards were to be determined by National Standards Bodies set up by NZQA or by Industry Training Organisations (ITOs).

Arguably, the biggest impact of the NQF in employment-related education has been the shift to competency-based assessment and a much greater focus within programmes on assessment practices. For many teachers, however, incorporating and assessing unit standards has now become the dominant factor in course design and delivery. It may be argued, though, that such a restricted economic and educational perspective does not adequately reflect the needs of current educational provision or of the future global system requirements. Thus, to maximise the potential learning and knowledge gains for both students, employers and ultimately for the well-being of this country, as outlined in the Tertiary Education Strategy (Ministry of Education, 2006), the approach to learning and teaching has to be sharpened and reframed so as to better align with the local and global imperatives.

More recently, education policy documents have focused on sharpening and reframing standards-based education. For example, the question ‘What is Good Assessment?’ is answered by NZQA (2005) in their guide to the principles of assessment. The guide has many features in common with other policy and practical or procedural documents from other places. There is, however, evidence of a more general philosophical consensus about what constitutes features of best practice to be demonstrated in tertiary education programmes and evaluated for quality assurance purposes within academic research and practice. Another example is the Ministry of

Education 2005 discussion document, *Key competencies in tertiary education—developing a New Zealand framework*, which outlines key competencies for a sustainable NZ future. This internal shared frame of reference matches other such frameworks in modern states. The policy documents state that it is necessary to ensure that learning and assessment are contextualized appropriately and realistically (p.14), with key social skills of interaction acquired in the context of learning specialist vocational or professional skills. Assessment processes should not be onerous (p.15) and in the NZ context should be standards-based and designed to enhance teaching (p.15). The Tertiary Education Strategy document for 2007-2012, outlining priorities for 2008-2010, reinforces the framework with its focus on outcomes and relevance (to industry and community), as well as participation (Ministry of Education, 2006).

Converging research

Compulsory education sector

In early 2000, in the schools sector, assessment for learning became a focus of the Ministry of Education through its National Assessment Strategy. *Assess to Learn* (AtoL) placed value on formative assessment, which is descriptive in nature: “Fundamental to AtoL is formative assessment – constructive comment from teachers which enables students to improve their learning and educational outcomes by identifying specifically what they need to do more or less of” (Feltham, 2004, p.1). This approach is based on the principle that by enabling students to look beyond a grade and understand what they need to do to improve their learning is becoming increasingly embraced by secondary schools. The professional development programme associated with this strategy was delivered to a large number of primary and secondary schools. It also informed schools how to make best use of the other assessment tools such as the New Zealand Curriculum Exemplars and Assessment Tools for Teaching and Learning (AsTTle)

Nationally, the Te Kete Ipurangi (TKI) website lists a wide range of research and resources which support the idea of assessment for learning in primary and secondary schooling. This includes an introduction to formative assessment and assessment resources and strategies that aim to improve student learning. The site includes a

number of papers on research on the development of national exemplars and case studies, which describe ways of improving students learning in a range of primary and secondary school subjects.

The site also includes a number of articles from visiting assessment experts, such as Shirley Clark (Enriching feedback in the primary curriculum: oral and written feedback from teachers and children) and Anne Davies from the UK, both of whom visited NZ to share their knowledge with teachers about practical ways to improve student learning with the use of formative assessment in the compulsory schooling sector.

An online workshop provides teachers with an update on formative assessment practices for secondary schools. It states that:

Research indicates that improving learning through assessment depends on five deceptively simple key factors: the provision of effective feedback to the students; the active involvement of students in their own learning; adjusting teaching to take account of the results of assessment; a recognition of the profound influence assessment has on the motivation and self esteem of the students, both of which are crucial influences in learning; the need for students to be able to assess themselves and understand how to improve learning. (Assessment Reform Group, 1999, p.5) /

Tertiary Education Sector - International

While there is a dearth of research about assessment in the tertiary education sector in NZ, this is not the case internationally where various bodies are all focussed on assessment for learning in the tertiary sector. These include the Qualifications and Curriculum Authority in the UK, the Australian Council for Educational Research, the Assessment Reform Group, the Birmingham LEA, the LEARN project from Bristol University (Guidance for schools on assessment for learning), the Department for Education and Skills in the UK, the Association for Achievement and Improvement through Assessment, the King's College London Assessment for Learning Group, and Scotland's Assessment is for Learning programme.

The Assessment Reform Group in the UK played a key role in bringing research evidence about assessment for learning to the attention of the professional and academic education community. First, through the commissioned work of Black and Wiliam, (1998a and 1998b), a set of research-based principles of assessment for learning to guide classroom practice was developed. Their work provided strong evidence from an extensive literature review that formative assessment, properly implemented, is a powerful means to improve student learning. Subsequently a growing body of research has focussed on the key features of assessment that promote learning and sought to investigate the relationship. The key references here are Angelo and Cross (1993), Biggs (2003), Carless (2002), Crooks (1988), Elton (2004), Gibbs (1995), Gibbs and Simpson (2003), Knight (2001), Loacker (2003), Sadler (1989, 1998), and Zepke (2003).

Altogether, the overseas findings of research in tertiary assessment suggest that:

- The learning of students is very much driven by the assessments they undertake.
- New thinking in teaching and learning shows that the potential learning gains of formative assessment are highly significant.
- Good assessment practices create positive washback, i.e. the desired learning outcomes.
- Assessment has been identified internationally as an area in which tertiary educators need further professional development. (Hong Kong Institute of Education)

Recently, researchers and educators from the UK, US, Canada, Hong Kong, China, Malaysia, Singapore, Taiwan, UAE the Netherlands, Switzerland, Australia and New Zealand participated in the first International Conference on Enhancing Teaching and Learning through Assessment (Hong Kong Polytechnic University, 13-15 June 2005). The conference arose from an educational project aiming to “enhance the quality of teaching and learning through designing and implementing effective assessment practices and the effective use of assessment results” (see <http://www.polyu.edu.hk/assessment/>). Conference streams focused on issues such as: *assessment in the workplace, authentic assessment, peer and self-assessment, impact*

of assessment on teaching and learning, and *online assessment*. A number of the participants at the conference were members of the Learning Oriented Assessment Project which is based at the Hong Kong Institute of Education but involves inter-institutional collaboration among several Hong Kong tertiary institutions. Its aims are to highlight the role of assessment as a source of student learning; and to develop, promote and disseminate good practices in learning-oriented assessment. Both of these 3-year projects involve case study research to develop and trial innovative learning-oriented assessment practices and disseminate and promote effective assessment practices.

The present study's rationale for focusing on the learning aspects of assessment was based on the recent research findings noted above, particularly the potential gains of well-focused formative assessment and the recognised need of tertiary educators for further professional development in the area of assessment.

The discussion in the review now moves to a consideration of how the shared understanding is seen in New Zealand's tertiary sector governance and practice.

Ownership - Assessment from the teachers' and students' perspectives

The assessment process provides an excellent opportunity for ongoing professional development for teachers. Systems need to ensure that tutors with experience undertake assessment and that assessment practice is supported by ongoing professional development (NZCER, 2006). Black and Wiliam (1998b) note that

the changes in classroom practice that are needed are central rather than marginal, and have to be incorporated by each teacher into his or her practice in his or her own way. That is to say, reform in this dimension will inevitably take a long time, and need continuing support from both practitioners and researchers. (p. 62)

In a review of future-focused research on teaching and learning, Codd et al., (2002) examined large scale research initiatives from outside of New Zealand. They found that while many policy frameworks and research projects seek to change pedagogical practice in order to improve learning, the changes must be shaped and owned by teachers for significant change to occur. Thus, there is a need for a more general

review, such as the present study, for New Zealand, which will take account of the issues raised above with respect to both the summative and formative facets of innovative and effective assessment for learning.

McDowell's UK-based research (2004) for the tertiary teachers' professional development national body, the Institute for Learning and Teaching, reviewed some aspects of innovative assessment from the student perspective. Hildebrand's (2005) research in Australia similarly reviewed students' experiences of innovative assessment. Both studied responses from within a specific university and in Hildebrand's case within a specific teacher education course. McDowell's study considered key aspects to be purposes of assessment, motivation, approaches to learning (such as deep and shallow learning), feedback, accuracy, openness, clarity, and authenticity, blends of intrinsic and extrinsic motivation, organisation of the assessment and its feasibility. Hildebrand looked at similar areas in terms of validity, reliability and purposes of assessment methods, as well as the communication and understanding of the assessment by staff and students.

The studies reflect the trend towards focusing on assessment *for* learning, which is also evident in New Zealand in both the tertiary and the primary/secondary education sectors. For example, assessment is specifically included in the *Tertiary Education Priorities 2005-07*, section 1.3 Promoting Effective Teaching, which includes the following comment: "Research tells us that effectively utilising feedback received from students' assessments can also enhance performance" (p.10). The use of formative assessment and the synergistic and dynamic symbiosis and alignment of that with the summative outcomes assessed is a key feature in current thinking (Harlen and James, 1996; Black and William, 1998a, 1998b; Boston, 2002; Carless, 2002, 2003; Knight, 2002).

Recent work by Gijbels and Dochy (2006) provides support for McDowell's concern with perceptions, approaches and dispositions of students towards learning and assessment. They indicate that students' dispositions towards study (as well as to perceived workload) tend to mediate their responses to forms of assessment and perceived purposes of that assessment (ibid., p.407). Further, they noted that experience with formative assessments needs to be carefully managed in terms of

staff and student workload, with purposes clarified and well-communicated, or it can simply reinforce an instrumental tendency towards surface learning in students (ibid, p.406). Hildebrand's (2005) research implemented an attempt to reduce student and staff workload, assessment coherence and also highlighted the need for clear communication of purposes and staff support. Nevertheless, there are still issues concerning the roles and power relationships between teacher and student that remain unresolved.

Tertiary Education Sector – New Zealand

An important piece of recent research in the NZ tertiary sector is the report, *Exploring assessment in foundation learning settings*, prepared by NZCER (2006), which focuses on assessment in 12 case studies. The research examines what is required to enhance the assessment capability of tertiary education providers of learning in literacy, numeracy and language. It concludes that there is a need to develop a greater understanding of the role of formative assessment in supporting learning and designing assessments that support learners and their learning.

Among the report's recommendations to enhance assessment expertise, are the following:

- supporting professional conversations between tutors involved in designing and using assessment tools would enable the sharing and critique of current practice and possibly the dissemination of models of good practice/exemplars'(p. xvi).
- developing a bank of assessment tools and possibly exemplars and stories of good practice along with training to cover both the use of the tools and their appropriate modification to new settings, would be helpful for tertiary educators (ibid.).

This important piece of recent research is particularly noteworthy because, despite the interest in standards-based assessment and assessment for learning at policy level in New Zealand, there is surprisingly little research on assessment practices in the

tertiary education sector. In particular, there is a significant gap in assessment research for Maori and Pasifika learners.

In New Zealand, attention has also been given to clarifying the functions of assessment in the tertiary sector. In recent policy documents, such as the *Tertiary Education Priorities 2005-07*, the trend towards focusing on assessment for learning is noticeable. The report specifically notes that “effectively utilising feedback received from students’ assessments can also enhance performance” (p.10), assisting in the promotion of effective teaching.

Further, The Teaching Matters Forum is a government-appointed body drawn from across the tertiary sector. In its report and recommendations for a the establishment of a National Centre for Tertiary Teaching Excellence (July 2005) it identified activities that could be enhanced and supported by the Centre which will have the most leverage on tertiary teaching excellence. Amongst these was, “*enhancing methodologies and practice in assessment of learners and learning outcomes, taking into account the needs of diverse learners*” (p. 26). Included in the recommended projects that the Centre could support is ‘resourcing collaboration among sector participants to identify and define good practice approaches to learner assessment mechanisms and processes...’ (p. 38).

Nationally and internationally, the research literature reinforces the importance of assessment for learning, acknowledges the role of formative assessment of learning and reports the need for on-going professional development for teachers in order to sharpen and reframe assessment *for* learning and to translate this into practice.

The review now turns to the third section, which presents assessment functions, principles and reaffirms the current themes, many of which are evident in the recent research outlined.

Functions of assessment

In the wider context of assessment practices across all other parts of the tertiary sector there is also considerable convergence as to what constitutes ‘ideal’ assessment, Black

(1997), in a commentary on an extensive review, describes three key functions of assessment as:

- direct assistance to learning, wherein assessment information is used, by both teacher and pupils, to modify their work in order to make it more effective;
- the certification of individual students; and
- public accountability of institutions and teachers.

The first function is broadly formative assessment and seen as a major opportunity to enhance classroom learning. The second and third functions are broadly summative. Black's opinion is that narrow external testing can have detrimental effects on teaching. He argues that this is because learning then follows testing in focusing on aspects that are easy to test, thus lowering the cognitive level of classroom work; pupils often have to work at too great a pace for effective learning when external testing dominates; and creative, innovative methods and topical content are harder to include in classroom practice. These trends consequently tend to de-motivate many pupils, whilst rewarding pupils who work in the narrowly constrained ways that test success requires. The result is that external testing can dominate classroom work and so distort teaching that the conditions for good formative assessment do not exist. Black also notes that most of the investment in assessment and testing, whether in practical operations or in research and development, has been devoted to the certification and accountability functions, to the neglect of the formative function.

This research raised people's attention to assessment *for* learning rather than assessment *of* learning. It was thought that utilising assessment practices which assess *for* learning is one of the most effective interventions we can make to improve teaching and learning. As explained by Gibbs and Simpson (2003), "There is more leverage to improve teaching though changing aspects of assessment than there is in changing anything else and, at the same time, teachers know less about how students respond to assessment than anything else."

In a report prepared by NZCER for the Ministry of Education as part of the Learning for Living initiative, the main functions of assessment were described as being:

- Assessment for accountability and reporting – standardised and summative, undertaken for certification purposes, noting that students are not involved in the assessment process beyond demonstrating their learning in the manner required.
- Assessment for teaching and learning - where the students are involved in collecting evidence of their learning but this evidence is then interpreted by expert others.
- Assessment for lifelong learning - defined as assessment that supports students' self-awareness of their own learning processes and that includes formative assessment (including self and peer assessment). In this the students are centrally involved in decision making about all aspects of their leaning and assessment, including the judgements made about their progress.

The report notes that while programmes need to address all three functions, the balance between them will differ depending on the nature and intent of the programme. Those that lead to the award of formal credentials may place more emphasis on accountability processes. This highlights potential issues to be noted, as indicated by Marr et al, “There are tensions for providers when balancing the needs of students against the requirements of institutions and funding bodies who might be seeking proof of learner progress in formats that are not so useful for ongoing learning” (Marr, Helme and Tout, 2003).

Assessment principles

There is broad agreement among practitioners and academics in the OECD, USA, Australia and New Zealand about what constitutes effective assessment. Statements in these regions and countries include many commonly-agreed principles to which educators should adhere when designing effective assessment (Black, 1997).

Research has been undertaken to try to generate some broad overview of principles applied in practice in certain sectors. For example, *Exploring assessment for foundation learning* (NZCER, 2006), focuses on assessment in 12 foundation learning

settings and begins with the development of six broad principles of good assessment practices in foundation learning settings, used as a framework for examining assessment practices in this area of tertiary provision. In the USA, seven key ‘principles and indicators’ of assessment were developed by the National Center for Fair and Open Testing, which is a coalition of 65 organisations. These principles and indicators are similar to the NZCER foundation learning principles. In the UK, Baume and Baume (2007) similarly propose seven broad assessment principles. They note the purposes of assessment as facilitating student learning and development, promoting faculty and staff growth and improving the quality of academic and non-academic student support programmes, services and facilities.

These converging principles may be further unpacked as follows:

Validity

Validity includes several aspects such as face validity (Does it look right? Will it measure what it’s supposed to?), and consequential validity (Do the outcomes look right? Does the assessment show democratic or ‘meritocratic’ values?). The assessment should be appropriate to the type and level of learning being assessed and as such should cover the higher as well as lower order learning relevant to the topics or skills involved at that level. It needs to pay attention to the needs and interests of the learning and to the process of learning (NZCER, 2006). This principle is important for the development of students’ deep learning, especially at tertiary study levels. Valid assessment is credible to all relevant stakeholders (NZCER, 2006). Standards being assessed should be inclusive, based on community participation and consultation, clear and communicated regularly to students, teachers and the broader community.

Reliability

Reliability of assessment means that in similar circumstances and contexts, the outcomes from the assessment will produce similar results and thus candidates will not be disadvantaged due to the environment. So, for example, sometimes quite subtle qualitative features of multiply-interacting dimensions of learning are what need to be assessed as in say counselling or mediation courses. This aspect and difficulty may be

compounded in a learning community, which exists mainly, or only in an online environment and has been challenged by some such as Baume (2007).

There should be consistency of application, communication and/or translation of the assessment models used, so that the candidates and assessors are able to extract reliable information and learning. For instance, this is important in the use of hybrid models of assessment based upon a mix of competency-based and achievement-based assessments in programmes. To maintain reliability, assessment should operate under an active system of internal and external moderation and periodic review. That is, there is some feedback to assessors and other stakeholders such as candidates, employers, community and any relevant professional bodies.

Ethical and Fair

All assessments should be fair and equitable to the diverse communities of learners involved. Suitable assessment processes and outcomes should be explicit and clearly explained to candidates so that potential outcomes are not diluted or debased and fairness to all is assured. Thus, linguistic, cultural and other features must be accounted for and resources equalised as far as possible to ensure fair and equitable treatment and outcomes.

Assessment should be transparent and open so as to ensure both fairness and accountability to all stakeholders and communities or cultures represented in society. There are transparent assessment goals and clarity of purpose (NZCER, 2006). Baume and Baume (2007) state that assessment should use well-defined expectations of relevant outcomes and criteria, employing multiple measures.

Manageability

All assessment must be manageable for both teachers and students (Gijbels and Dochy, 2006; Hildebrand, 2005).

The net outcome of the above principles and assessment systems should be a well-written graduate profile summarising the knowledge and skills that students will exit with from the relevant programme or course. Such a profile is only possible where there is a clear and collectively agreed rationale for assessment within the programme

or course with related agreement with the assessment ‘model’ or ‘system’ that is to be used. The latter then entails that there should be a well written course descriptor, especially learning outcomes, within which are located well defined assessment items/tasks including the number of items, any weighting given and related marking schedules. The unofficial philosophical ‘concordat’ around assessment might mean little if paradigms and models of best practice were not also reflective of the consensus on key principles and features of best practice.

Current themes

Katz (2005) suggests that there is scope for some amendment to these principles in view of socio-technical changes in current and future generations of learners. Basically, in the areas of authenticity, relevance and equity for the digital age, there is a proposal that the application and manipulation of multi-function digital devices and web-based software are increasingly seen as core skills. The scope for amendment includes a range of themes, which are increasingly embedded within current lists of principles. These are closely linked with new directions in education, which in turn are led by changing policy contexts. The key themes are outlined below.

Authentic assessment

Authentic assessment is a basic principle in all areas. All assessment must be of the candidates’ own work or contribution to any collective form of assessment where individual grades or marks are given. In addition, the definition of authentic also refers to the outcomes. That is, they are realistic and authentic learning for life and work rather than, say, rote learning in abstraction. Further, that such learning assessment has consequential validity in terms of the learning outcomes of the course or programme. Assessment is authentic, closely aligned with learning experiences and often actual work or life contexts (NZCER, 2006; Baume and Baume, 2007).

A prominent theme relating to assessment is that of ‘authentic’ assessment models as opposed to ‘traditional’ assessment models. Key features of authentic assessment include the learner’s demonstration of an ability to apply knowledge and skills in a meaningful way (Mueller, 1993; Stiggins 1987) using tasks that are the same or

similar to those encountered in the real world of the particular profession or field of knowledge concerned (Wiggins, 1993; van Merriënboer, 1997).

Mueller (1993) explains that in a traditional assessment model ‘the curriculum drives assessment’ whereas in an authentic assessment model ‘the assessment drives the curriculum’. Simply stated, in a traditional assessment model the first step is to decide upon a body of knowledge and skills, which becomes the curriculum that is taught to the students. The next step is to develop the assessments and use these to test the students and find out whether they have gained that body of knowledge and skills. In an authentic assessment model, on the other hand, the first step is to develop meaningful tasks incorporating real world challenges. The next step is to develop a curriculum, which will assist the students to perform the tasks thereby demonstrating their mastery of essential knowledge and skills. This process has been described as ‘planning backwards’ (McDonald, 1992). It is perhaps worth noting that stage 1 of this process might be criticized as an exercise in ‘blind empiricism’ unless informed by a method of establishing authentic meaningfulness in relation to the task. There are many possible means by which such meaningfulness might be established such as, for example, by consensus of ‘expert’ opinion, negotiation and discussion in class. Naturally this is subject to constraints according to the nature of any external awarding and/or professional bodies involved.

Van Merriënboer (1977) suggests that authentic assessment requires that students integrate knowledge, skills and attributes as professionals do, thereby implying that the tasks they undertake are congruent with those in the workplace (McCulloch, 2005). This might be seen as begging some questions about which students are concerned and where they are doing their learning? For instance, are they learning in the workplace or in a classroom? For professionals, the learning is from within, a situated perspective on the world based on experience and practice. ‘Learning from within’ is redolent with much internalised or socialised frames of reference and tacit individual, as well as collective knowledge (Cook and Brown, 2002).

Gulikers, et al. (2004), provide an overview of different researchers’ views of authenticity, which include authentic assessment as a synonym for performance assessment (Hart, 1994; Torrance, 1995), while others argue that authentic assessment

puts particular emphasis on the realistic value of the task and the context (Herrington and Herrington, 1998), or the match between the task and the conditions under which the performance would usually occur (Reeves and Okey, 1996). These distinctions show that whereas every authentic assessment is performance assessment, not every performance assessment is authentic assessment (Meyer, 1992). The definition of authentic assessment used by Gulikers et al. is “an assessment requiring students to demonstrate the same (kind of) competencies, or combinations of knowledge, skills and attitudes, that they need to apply in the criterion situation in professional life” (2004). The level of authenticity of an assessment is thus defined by its “degree of resemblance to the criterion situation” (ibid.).

Constructive alignment

The term ‘constructive alignment’ originated from the work of John Biggs at the University of Hong Kong (Biggs, 1996). Deriving from the theory of social constructivism, the term ‘constructive’ focuses on the idea that learners actively construct meanings through social interactions with others. This idea stands in opposition to the notion of teachers as transmitters of meaning and learners as recipients of meaning. The term ‘alignment’ refers to the linking or aligning of the learning activities and assessment tasks with the Intended Learning Outcomes (ILOs) of a course. There is no prescription as to how the ILOs are derived and the way that ILOs are constructed may vary (Baume and Baume, 2007). For example, the ILOs may be ‘a given’ set constructed by external ‘experts’ or professionals to meet institutional or accreditation requirements. Alternatively, ILOs might be negotiated or re-negotiated in class. The ILOs should be authentic. Constructive alignment provides a specific method of implanting Outcomes Based Teaching and Learning, and has become the framework for much quality assurance work in the UK and in Hong Kong.

There are three major steps in implementing constructive alignment:

1. describe intended outcomes in terms of what the students are supposed to be able to perform after teaching, and that incorporate the standards or criteria that students are to attain;
2. engage students in learning activities that are likely to bring about the intended outcomes;

3. judge if and how well students' performances meet the criteria. (City University of Hong Kong).

Thus, constructive alignment is extremely difficult to achieve and virtually impossible to get right first time through so-called rational top down course design. The teacher must be a reflective practitioner who constantly modifies course design and delivery, constantly trying to work closer to the 'ideal' but elusive constructive alignment. That process can involve emergent learning outcomes and consequently the institutional system must allow for frequent modification of course descriptions. The process therefore presumes this is achievable within the educational institution. Frequent modification is an encouragement of openness as a means of gaining greater clarity in the design of the curriculum, and transparency in the links between learning and assessment. By definition, a truly constructively aligned curriculum facilitates deep learning as the activities are designed for that purpose. This should improve the quality of learning and graduates who emerge from within that system and increase their propensity to carry on lifelong learning.

Baume and Baume (2007) have recently asserted that alignment implies that reliability of assessment is less relevant than validity and authenticity. They recognise the issues and constraints that are also implicit in such an approach but challenges the nature of current assessment measures and their statistical variability in outcomes to do more than assess rote learning of facts. Thus, he contends that assessment for learning means that the outcomes are validly aligned but may not be compatible with consistency and reliability in statistical terms. The latter two terms are more properly associated with allegedly 'objective' measurement items and fail to give a true or relevant account of the qualitative aspects of learning. Such an approach has clear issues for the policy and practice as outlined in the strategy documents. For instance, in reference to equity and inclusivity, it might be argued that a 'strong' version of that argument would result in greater 'subjectivity' and variability. Alternatively, the argument might focus on assessors and their need to develop and exhibit, or be trained to express, greater conformity of opinions and alignment of perspectives on outcome features being assessed. Thus, in the absence of a centrally determined curriculum, some attention is called for in the type of training and staff development for assessors across a diverse tertiary sector.

Formative assessment

Black and Wiliam (1998b) present a convincing argument for formative assessment as a means to improve teaching and learning and the associated literature referred to above. An examination of formative assessment reflects on the many interactions between curriculum, assessment and pedagogy, and highlights the central role of the teacher and the learner. Any change towards classroom implementation of formative assessment is seen to be complex, involving interaction between curriculum, assessment and pedagogy (Gibbs, 2003; Baume and Baume, 2007).

Clearly, students' involvement can make it more feasible for teachers to carry through a programme of formative assessment. However, this involvement also changes both the role of the pupil as learner and the nature of the relationship between teacher and pupil, making the latter shoulder more of the responsibility for their own learning. Thus, improved formative assessment can lead to changes, which are of greater significance; changes that should be a powerful help with pupils' personal development and which should also be part of any programme to help them to be more effective learners.

Research undertaken by Rawlins (2005) suggests that the transparency and clarity of assessment criteria within standards-based assessment provides the potential for quality formative assessment. Quality feedback from assessment tasks is a key feature in formative assessment. Feedback needs to focus on specific details about how to improve and must be in a form accessible to the learner. Students must also be ready to receive and use the information to influence their own learning. His small-scale study found that there was scope for increasing students' awareness of the nature and intent of formative assessment and for students' formative practices to be strengthened but that schools must balance responsibilities for helping students to pass with helping students to learn how to learn.

East points out that the distinction that is so often made between formative and summative assessment may be false in that summative assessment can also promote

learning. On the latter issue of the false dichotomy between summative and formative assessment, he is supported by Shavelson et al. (2002), although they recognise a number of related issues and concerns as indicated below. There is also no practical or theoretical reason, according to East, why formative assessment cannot be included in the formal grading of student performance. He also describes the differences between formative and summative assessment as follows. Formative assessment is frequently seen as having a valuable role in promoting the acquisition of skills and knowledge. Formative assessment usually takes place throughout a course of learning and is not usually included in the final grade. Summative assessment, on the other hand, is not usually seen as having any particular value as a learning experience. Its main role is to grade student performance and it usually occurs at the end of the course of learning.

The differences between formative and summative assessment, as described in Shavelson et al. (2002), is that formative assessment focuses on improvement of student learning. It is the learning that results from assessment that is of utmost importance. Such learning takes place over a period of time in an environment that requires collaboration and assistance from the teacher and other students. The results of formative assessment are provided directly and immediately to the students and to the teacher while they are engaged in learning. Suitable learning tasks can be informal, occurring spontaneously as the need arises, or formal, involving deliberate planning ahead of time. Formal tasks might consist of direct questioning from the teacher to find out a student's level of knowledge or they might be tasks that are embedded in the curriculum serving to guide the teaching and learning. The purpose of formative assessment tasks is to identify gaps between the desired performance and the student's current level of performance. The teacher is then able to find ways to close those gaps. Issues relating to the validity and reliability of formative assessment tasks are settled over a period of time in that multiple repetitions of the tasks and feedback lead incrementally to successful learning.

Summative assessment, on the other hand, is linked with accountability. In the case of criterion-referenced assessment, summative results certify competence in relation to specified standards. Such accountability demands standardisation. Summative assessment seeks to provide a 'snapshot' of a student's achievement at one point in time, for which issues of validity and reliability are of paramount importance. The

items assessed need to be representative of the domain defined by the standards and the results must be consistent from one marker to the next and from one script to the next. The kind of assessment task that is suitable for providing a 'snapshot' is typically a formal task such as an essay or similar, that must be produced on or by a fixed date. Students typically complete summative tasks unaided in an environment that engenders competition. The summative assessment is completed when the outcomes have been interpreted. The results of summative assessment are usually received after a period of time. As Shavelson et al. note

While the dichotomy of formative and summative assessment seems perfectly unexceptional, it appears to have had one serious consequence. Significant tensions are created when the same assessments are required to serve multiple functions, and few believe that a single system can function adequately to serve both functions. (Shavelson et al., 2002, p. 8)

The functions and principles of assessment in tertiary education are sharpened and reframed in the context of the global knowledge economy and the educational policy documents. These documents are urging improved outcomes from education, in order to achieve a stronger local knowledge economy. Assessment is increasingly highlighted as the most important factor in reaching improved outcomes for students and ultimately the country. The current literature on assessment captures these broader trends through the noted themes of authentic assessment, constructive alignment and formative assessment.

Concluding comments

The purpose of our research is to contribute to a greater understanding of how tertiary education providers might enhance the effectiveness of teaching and learning through assessment.

Our review of current literature on effective and innovative assessment practices both nationally and internationally highlights a convergence around an interest in assessment for learning rather than assessment of learning; improving rather than proving learning.

While it is recognised that assessment must serve a number of functions including accountability, and certification, over the last decade there is a growing focus on the learning function of assessment that pays attention to the needs and interests of the learner and the process of learning.

In this review of research we have noted that there is an ongoing concern that assessment practices are valid, reliable, ethical and fair and manageable, but this is coupled with value being placed on assessment for learning. When unpacked, this concept includes ideas about constructive alignment and the use of formative and authentic assessment.

There is recognition of the many interactions between curriculum, pedagogy and assessment and the desire to align these to improve learning and assessment.

In vocational education we also note the use of authentic assessment in which the learners are asked to apply their knowledge and skills in a meaningful way, congruent with practices and tasks in the workforce. Use of feedback, self and peer assessment and the active involvement of the learner in assessment have also been examined.

We have noted the gaps in the literature in tertiary education in New Zealand. There is little documenting the assessment principles in action in the tertiary sector and there is a dearth of research looking at assessment for Maori and Pacifica learners in tertiary education.

This initial review of the literature will inform our selection and development of case studies and our interpretation of them.

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