

Accepted version of Boud, D., Hawke, G. and Falchikov, N. (2008). Changing pedagogy: vocational learning and assessment. In Murphy, P. and McCormick, R. (Eds.). *Knowledge and practice: representations and identities*. London: Sage, 125-137.

Changing Pedagogy: vocational learning and assessment

David Boud, Geof Hawke and Nancy Falchikov ¹

Introduction

In this paper we will introduce some new ideas about assessment practice in vocational education and training (VET) that link with other new ideas about pedagogy in the contemporary VET environment.

The paper briefly outlines the assessment practices that have informed VET in Australia and how these have been evolving before it explores the ways in which a changing environment for VET is creating pressures for a re-conceptualisation of assessment as a key component of pedagogy.

We then outline ways of thinking about the various functions that assessment plays within teaching and learning that suggest the shape of a new approach to assessment we call ‘sustainable assessment’. The ideas of sustainable assessment are then illustrated by a practical example.

Assessment in Australian VET pre 1990

Prior to the significant reforms of VET in Australia that began in the early 1990s, assessment in Australian VET was largely taken for granted as a second-order issue. The dominant thinking about VET as a curriculum-driven system implied that assessment was a simple matter of ‘testing the curriculum’. However, it also had a character that differentiated it strongly from assessment in both secondary schooling and higher education: it was essentially criterion-referenced assessment and not norm-referenced.

This difference was rooted in VET’s emphasis on preparation for the workplace and the implicit standards that defined the criteria as those of the workplace itself and drawn from the experience and expertise of the teaching workforce.

The new emphasis on assessment

In the 1990s, however, a significant change in the basic structures and purposes of VET in Australia was implemented.

As in the many other places where a substantial reform of vocational education and training has been undertaken, Australian VET saw a shift away from a syllabus-driven assessment model to one based upon specification of outcomes. Assessment in such systems occurs according to explicitly defined standards. The exact nature of these varies, as does the terminology used, but all share a view that assessment, and the

¹ This article was prepared for this collection and based mainly on Boud, D. & Hawke, G. (2003) *Changing pedagogy: vocational learning and assessment*. OVAL Research Working Paper 03-17. Sydney, The Australian Centre for Organisational, Vocational and Adult Learning, University of Technology, Sydney supplemented with some material from Boud, D. & Falchikov, N. (2006) *Aligning assessment with long-term learning*, *Assessment and Evaluation in Higher Education*, 31(4), 399-413.

learning that precedes it, should have tangible outcomes. A number of consequences flow from this: curriculum takes on a lesser, and assessment a larger, role and learners are judged in terms of what they can do, often in realistic settings, rather than what they know. How outcomes are formulated and understood by assessors and learners becomes a dominant focus, but the result has been a reawakening of interest in assessment.

Moreover, the number of people formally engaged in assessment has grown. A key plank of the reform process was the establishment of 'workplace assessor' standards that were the minimum requirements for those who wished to provide assessments that would count towards nationally-recognised qualifications. Thus a significant number of trainers and supervisors in workplaces have become assessors within the formal VET system. Moreover, this minimum standard has also become the normal requirement, even for teachers in Technical and Further Education Institutes.

More recently, this development has been taken a step forward with the introduction of training packages and the requirements of 'evidence-based assessment' in which the emphasis is upon the accumulation of evidence that is, subsequently, judged against pre-determined standards. This has brought the role of assessment and the assessor clearly to the fore as it is assessment, with or without any associated teaching, which is the basis upon which qualifications are issued. In response to this shift in emphasis, a number of 'assessment-only' providers are now operating. These bodies issue qualifications based only on their assessment of an individual's skills and knowledge against the standards.

There have been critiques of these moves including, for example:

- a concern that learning processes and the role of teachers has been marginalised;
- ☐ too much specification fragments learning and knowledge;
- ☐ narrowly behavioural outcomes encourage minimalist responses by learners;
- ☐ insufficient attention is given to adapting programmes to varying educational capacities especially with regard to literacy.

These critiques have been accepted to a greater or lesser extent and most systems have made some accommodations that have rarely been met with an enthusiastic response.

The changing context of VET

These changes derived from many causes and it is not pertinent to detail them all here. However, some of the changes are especially significant and we briefly outline them here.

Changing dynamics of the workplace

There has been considerable focus on the changing nature of work and the implications of these for VET (Marginson 2000, Buchanan, et al 2001). Of the various factors they describe, the following have significant ramifications for the thesis developed in this paper:

- ☐ increasing labour mobility;
- ☐ increasingly broad job classifications;

- increasing frequency of multiple, parallel employment (through casualisation, contracted employment, etc.);
- increasing emphasis on the worker as ‘free-agent’, responsible for his or her own ‘career progression’.

All of these create a situation in which workers are required to take a much greater share of the responsibility for their own development and for being ‘employable’. They are key features of an employment context in which the knowledge base that the worker requires changes frequently and the competitive nature of the labour market creates an increasingly individualised demand for new learning opportunities, as workers seek to find niche employment markets in which to barter their skills.

Changing needs in VET

These changes in workplace employment arrangements and the consequent changes in the expectations of workers who wish to be, and maintain, their ‘employability’ have important implications for a changing approach to VET.

The growth of knowledge-intensive learning

Firstly, knowledge is becoming an increasingly important and tradeable commodity. For many learners this means that their ‘portfolio of skills and knowledge’ becomes the fundamental asset they deploy in seeking to gain and maintain employment. Moreover, as we explore below, this is no longer a static ‘package’ but must be constantly updated to reflect new and emerging needs. Learners, then, must be constantly reassessing their skills and knowledge and identifying how and when to modify them.

The hollowing out of the middle

Secondly, there is now growing evidence that two, simultaneous forces are operating that are restructuring the labour force as a whole. The first derives from the growing knowledge focus of many areas of employment. This is providing an upwards force that is pushing many occupational roles that were once thought of as ‘middle-level’ to acquire a greater knowledge focus and, especially, to require greatly expanded analytic and conceptual skills than previously was the case.

At the same time, other forces in the economy are exerting downwards forces that are resulting in the deskilling of many occupational sectors and, in particular, reducing the need for analytic and conceptual skills that were previously required. For many workers affected by this phenomenon, there is pressure to re-skill into the emerging high-skill occupations in order to ensure that they are able to maintain upward occupational mobility.

Revitalised interest in lifelong learning

One of the main features of a lifelong learning agenda, as applied to vocational education and training, is an emphasis on equipping learners for what they require for a lifetime of learning. This has been characterised in a number of different ways: for example key competencies, transferable skills, and learning-how-to-learn. All emphasise providing learners with the prerequisites to enable them to learn when confronted by situations not previously encountered. However, the outcomes-oriented approach has been applied in ways that privilege immediately measured short-term, at the expense of longer-term, learning outcomes needed to equip learners for a world of changing practice. The highly desirable emphasis on recognising what learners can

do, rather than what they might think, has inadvertently created an environment that tends to deskill learners in coping with new challenges.

Some occupational groups involved in standards specification have been more open to generic learning outcomes than others. Practices in Australia, for example, range from benign neglect and optimistic assumptions that it will somehow get picked up along the way, to incorporation of explicit competencies to be pursued in standards frameworks at each level of achievement. Generally, however, the focus on occupationally driven formulation of outcomes has tended to emphasise immediately useful competencies as distinct from those that might enable further learning at a later stage.

One of the issues typically overlooked in the development of standards, but implicit in the notion of learning-how-to-learn is that of being an assessor of learning. An emphasis is frequently placed on learning and what is to be learned, but there is a common neglect of the ability to determine what has been learned and plan accordingly. Sometimes the ability to self-assess is now mentioned, but it is by no means common. This neglect in the lifelong learning literature parallels the similar neglect of assessment in the learning literature that occurred before an increasing number of studies demonstrated that assessment profoundly affects learning.

The central and inescapable process in an outcomes-based framework is the assessment of outcomes. The effect of assessing for immediate competence is to focus learners' attention on the present task and how they might address it, i.e. to satisfy assessors. The locus of control is separated from them. Learners necessarily want to complete the assessment task in ways that will meet the needs of the assessor rather than focusing on how they make their own judgments about what constitutes satisfactory performance. In formal VET programmes students typically do not have the opportunity to see how the process of assessment actually works. They do not see the processes of identifying appropriate standards and the criteria to be associated with each. They do not have experience of noticing features of their own work and making judgments with respect to standards and criteria. Indeed, the assessment tasks do not encourage them to do so. This would not be a problem if participants were not expected to engage in any further learning, but this is certainly not currently the case. While any given assessment activity may be terminal in the present qualification, it is an expectation that learners learn and assess throughout their lives.

In real settings outcomes are rarely specified in explicit terms. What is required of the learner is embedded in a vocational practice or a particular context. Before learning can even commence there is a need to identify what counts as good work from a complex set of surroundings and to develop ways of applying such an understanding to one's own work. Learners need to learn how to establish their own standards and how to judge whether they are meeting them. They will never learn this if standards are always provided and learners do not have practice in determining appropriate standards for themselves.

Acceptance of this argument does not of course imply that a framework of standards and levels is inappropriate. It does imply, however, that awareness of assessment thinking and practice must be incorporated into any programme that is part of an articulated set of qualifications. Consideration must be given to the lifelong learning agenda and to how learners move beyond the immediate requirements of any vocational task.

Our basic argument is that whatever else we do in any course in VET, we also provide the basis for individuals to learn throughout their lives. We prepare them to be high-level learners engaged in challenging forms of work and required to solve problems and confront issues that we cannot presently imagine. We must address the challenge of how we can help learners deal with problems we have not met ourselves.

If we want to pursue the goal of equipping lifelong learners, we must take a view on what this implies, examine our current practices to see if we are doing this well, and, if not, develop ways of changing our practice to meet the challenge. Above all we must focus on assessment practices, not just those that involve formal assessment activities, but all those elements of a programme that require learners to form judgements about their own learning. This takes us far beyond the normal assessment agenda.

In the process we will suggest that we need to think about assessment differently. We will need to establish a new goal for assessment, that is, assessment for lifelong learning, and a new set of practices in our programmes, practices we refer to as sustainable assessment (Boud 2000).

The need for a new approach to VET assessment

Conventionally, it is accepted that there are two main reasons for assessment: for certification purposes and for the purpose of aiding learning. The first has typically been associated with summative assessment, that is assessment for making judgements after a period of learning, and the second with formative assessment, that is, assessment that directly contributes to the everyday processes of learning. This conceptual distinction is often blurred in practice when intermediate assessment tasks provide both feedback to learners on their learning and record grades that contribute to certification. Experience has taught us that we cannot partition out different assessment purposes to different activities.

While the two purposes of assessment — certification and to aid learning — are necessary features of assessment, we argue that it is now necessary to add a third: assessment to promote lifelong learning. Like the first two purposes there is also some overlap, especially with assessment to aid learning. We need a new distinction, we believe, because formative assessment is too often interpreted as assessment to aid immediate learning, for the here-and-now, not as a contribution towards development of skills for lifelong assessment.

The starting point of this paper is that vocational education and training has made an irreversible shift towards accountability in terms of learner outcomes and that for the foreseeable future, while there will be some practical limitations, it will be standards-based. This being so, a huge weight of responsibility is placed on those doing the specification, review and re-articulation of outcomes, since everything else flows from these. The activities of learners, teachers and assessors are necessarily oriented around a particular agenda.

Our concern is not with the principles of an outcomes-oriented approach, but with how conventional interpretation and implementation has produced, or more precisely has exacerbated, negative effects that operate against a lifelong learning agenda.

We suggest that much of our current assessment practice inhibits the development of lifelong assessment skills. That it, also, may not be good at fostering learning for immediate purposes simply compounds the problem. So, how do existing practices

deskill learners and distort learning? If we asked this question fifteen years ago and looked at the research then we could have made the following list:

- Learners are assessed on those matters on which it is easy to assess them and this leads to an overemphasis on memory and lower-level skills.

Assessment encourages learners to focus on those topics that are assessed at the expense of those which are not.

The nature of assessment tasks influences the approaches to learning which learners adopt, often to promote surface approaches to learning.

Learners who perform well on examinations can retain fundamental misconceptions about key concepts in the subjects they have passed.

(Boud 1990)

While, sadly, many of these may still be valid today, we must look more closely at what assessment practice often does now to undermine learners' capacity to judge themselves and thus constrain the lifelong learning agenda. A new list to supplement the old might include the following:

Learners are encouraged to look to others (their assessors) to make judgements and don't develop their own ability to judge their own learning outcomes.

- Learners look to other learners to judge their standing rather than to appropriate standards.

Assessment tasks often emphasise problem solution rather than problem formulation.

Unrealistic and decontextualised settings are used to assess learning.

- Learner involvement in assessment is omitted and thus key stages in judging learning are rendered invisible, for example, establishing appropriate criteria for completion of tasks.

Courses often imply that all collaboration is cheating and thus de-emphasise learners working cooperatively.

Learners normally do not have the opportunity to see how the process of assessment actually works. It is something they experience as a procedure to which they submit rather than something they own.

Lest it be thought that these concerns about the negative influence of assessment practices apply only to traditional approaches, such as the test or the examination, there are new assessment traps. Strategies which have an immediate positive effect on learning now (for example, providing learners with criteria for assessment), may have unintended longer-term consequences which have yet to be identified. We have only to look at the growing use of learning outcomes and specification of standards. While in general this may be a desirable trend, it does have the unintended consequence of portraying to learners the idea that the specification of standards and outcomes is something which is a given, and that learning only proceeds following such a specification by others.

Learners need to learn how to establish their own standards and how to judge whether they are meeting them. They will never learn this if standards are always provided and they do not have practice in determining appropriate standards for themselves.

Sustainable assessment - a new practice in assessment

When we look at any particular assessment activity we need to ask ourselves the fundamental question: does it equip learners to be more effective in judging their own learning? This goes beyond the normal formative assessment question: does any particular assessment activity provide adequate feedback to learners on their performance? This distinction is vital and is often overlooked. Equipping learners to be lifelong assessors involves more than giving them detailed comments on their work. Sometimes rich feedback is not what is required for this purpose.

An idea we are developing is that of sustainable assessment. Sustainable assessment is defined as ‘assessment that meets the needs of the present without compromising the ability of students to meet their own future learning needs’ (Boud 2000: 151). This need is emphasised by the concerns outlined above. Assessment is not just about measurement at a point in time; it is about influencing learning practices and about communicating priorities. It is through assessment that we communicate to learners what we regard as most important. It is also through assessment that learners perceive what they must do to be successful. They cannot escape from it if they want to be qualified.

Lifelong learning requires learners to be lifelong assessors of their learning. Without this, they cannot plan their own learning and identify when it is complete. There is a need to make preparation for lifelong learning such an intrinsic and necessary feature of VET practice that assessment in all contexts incorporates it as a key feature. If the priority communicated by a given assessment task is local and immediate, with no sense of future implication, it is inadequate.

The notion of sustainable assessment acts as a practical device to help us gain a grip on an issue not normally articulated in assessment talk. It focuses on learning, but it also reminds us to consider future implications and consequences. The goal is to progressively replace assessment practices that are not sustainable, that is, those practices that do not have long term positive consequences for learning, with those that have such an influence.

While it is one thing to acknowledge the importance of assessment for lifelong learning and the need for sustainable assessment to be established, it is a major undertaking to identify what is required for practice. When we bring thinking and research about learning into the assessment arena conceptual resources are, however, available to help us begin to sketch what might be required.

This initial investigation has led to the identification a set of features of tasks that can help promote capacity for lifelong learning. These tasks focus on what have traditionally been regarded as learning activities as well as those considered part of formal assessment activities.

While we are still developing this idea, we believe that some features of tasks promoting capacity for lifelong learning are:

- engages with standards and criteria and problem analysis;
- emphasises importance of context;
- involves working in association with others;
- involves authentic representations and productions;
- promotes transparency of knowledge;

- fosters reflexivity;
- builds learner agency and constructs active learners;
- considers risk and confidence of judgement;
- promotes seeking appropriate feedback;
- requires portrayal of outcomes for different purposes.

Some of these are elaborated below.

Engages with standards and criteria and problem analysis

- provides practice in discernment to identify critical aspects of problems and issues and the knowledge required to address them
- involves finding appropriate assistance to scaffold understanding from existing knowledge base
- gives learners practice in identifying, developing and engaging with criteria and standards

Emphasises importance of context

- locates issues in a context that must be taken into account
- identifies aspects of context that must be considered
- decides on what aspects of work require feedback from others
- recognises solutions vary according to context

Involves working in association with others

- participates in giving and receiving feedback
- utilises practitioners and other parties external to the educational institution
- involves engagement with communities of practice and ways in which their knowledge is represented
- involves working collaboratively with others (not necessarily involving group assessment) including parties external to the educational institution
- identifies and uses communities of practice to assist in developing criteria for good work and peer feedback
- tasks directly reflect forms of activity in professional practice commensurate with level of skill possessed (i.e. high level of authenticity)

Promotes transparency of knowledge

- invites analysis of task structure and purpose
- fosters consideration of the epistemology of learning embedded in tasks
- tasks draw attention to how they are constructed and seeks to make this transparent

Fosters reflexivity

- fosters linking of new knowledge to what is already known
- not all information required for solution of problems is given
- prompts self-monitoring and judging progression towards goals (testing new knowledge)

Builds learner agency and constructs active learners

- involves learners in creating assessment tasks
- assumes learners construct their own knowledge in the light of what works in the world around them
- focuses on producing rather than reproducing knowledge (fosters systematic inquiry)
- provides opportunities for learners to appropriate assessment activities to their own ends

Considers risk and confidence of judgement

- provides scope for taking initiative (e.g. always taking the safe option is not encouraged)
- elements of task are not fully determined
- confidence in outcomes is built and sought (e.g. tasks encourage students to be confident of what they know and don't know)

Promotes seeking appropriate feedback

- involves seeking and utilising feedback
- feedback used from a variety of sources (e.g. from teacher, peer, and practitioner)
- grades and marks subordinated to qualitative feedback

Requires portrayal of outcomes for different purposes

- identifiably leave students better equipped to complete future tasks
- involves portraying achievements to others (e.g. portfolio or patchwork text construction)

The item 'identifies and uses communities of practice to assist in developing criteria for good work and peer feedback' (part of 'Involves working in association with others') provides a good illustration of what a sustainable assessment activity might involve. In vocational practice learners have to identify what counts as good work and often this requires appreciation of who are the appropriate groups that influences standards and what are the criteria they use. In highly regulated occupations there may be some codification of this knowledge, but in many it is the informal communities of practice that influence what counts as appropriate. Learners need to understand this and be able to access knowledge that exists in such communities so one assessment activity in a programme of study might involve practice in accessing such knowledge and applying it to one's own work.

Some of you who may know Boud's earlier work may be thinking that we are making an argument to support the idea of student self-assessment (Boud 1995). While it is true that self-assessment is part of what we are considering here, it is far from all of it. To focus merely on self-assessment is to ignore the wider changes that are necessary. It is not just a matter of adding self-assessment to the learning and assessment repertoire, but of rethinking learning and assessment from a new point of view and examining the consequences for practice.

In the same way that assessment to promote lifelong learning cannot be reduced to learner self-assessment, neither can it be collapsed into formative assessment. It is a separate purpose. It simultaneously involves both more and less. There are features that involve more than is commonly included in assessment for learning — the development of frameworks for approaching a range of tasks — and some features of formative assessment may be less significant for longer-term goals. For example, some categories and styles of feedback from teachers may encourage an over-dependency on being 'corrected'.

Some potentially useful sources of ideas are as follows. Some of these are explicitly concerned with assessment practice, but others are more generally about learning and judgement.

Formative assessment (for example, Black and Wiliam, 1998) — ideas about types and sources of feedback.

Discernment of variation (for example, Bowden and Marton) — about the importance of learners noticing key features of concepts being learned.

□ Generative ideas of learning (for example, Osbourne & Wittrock, Jonasson) — about the need for testing learning through resort to evidence.

Situated learning and communities of practice (Lave & Wenger, 1991) — for the significance of knowledge being located in local practice.

Identity and learners and construction of tasks as learning (for example, Boud and Solomon) — for the notion that learners need to identify as such and construct their activities to render learning visible.

□ Risk; risk society (for example, Beck) — for risk management and that confidence in judgement is often as important as correct knowledge.

Judgement and decision-making (for example, Tversky and Kahnemann) — for the idea that judgements can be easily compromised by surrounding circumstances.

□ Apprentices in judgement (Sadler) — for recognition that judgement does not come fully formed and staging is needed to develop expertise.

Scaffolding of knowledge (Vygotsky and the neo-Vygotskians) — to focus on the importance of learners finding ways of scaffolding for themselves from what they do know to what they don't know.

Social construction of assessments (Kvale) — for drawing attention to the fact that assessments actually construct socially valued knowledge.

Many of the assessment activities being considered are not new, but as they are placed in a new framework they take on a new character. Of course, it is not just assessment practices that will need to be modified, but learning outcomes and teaching and learning practices as well (Shepard, 2000). And this is the challenge. It has been convenient to maintain a separation between teaching/learning activities and assessment activities and many of our institutional practices reinforce this distinction. If the new agenda involves problematising this boundary, which we believe it does, then we will need to question many of our normal processes, not least of which are quality assurance procedures.

This is a substantial agenda. However, there are many issues we need to face and explore.

Linking assessment to pedagogy

Current assessment practice has characteristics that undermine the ability of learners to equip themselves for a lifetime of continuing learning that is a necessary feature of most contemporary work. A new link needs therefore to be formed between assessment and lifelong learning. This takes the form of sustainable assessment in which preparation for future learning and assessment are incorporated into assessment practices at all levels.

Many of the assessment activities being considered are not new, but when they are placed in a new framework they take on a new character. Of course, it is not just assessment practices that need to be modified, but learning outcomes and teaching and learning practices as well (Shepard, 2000). It has been convenient to maintain a separation between teaching/learning activities and assessment activities and many of our institutional practices reinforce this distinction.

We should not underestimate the difficulty of linking assessment with learning in practice, despite an extensive literature on the subject. Ecclestone's (2002) study, set in the context of GNVQs with progressive assessment practices such as self and peer assessment and learning portfolios, disappointingly showed that 'none of the teachers saw assessment explicitly shaping or affecting learning' (p. 155). We have to reshape our thinking if we are to prepare learners to be lifelong assessors as well as lifelong learners. We need to use the two lenses of assessment and pedagogy in examining our practices and sustainable assessment appears to provide a useful bridge between the uneasy tension that currently exists between them. To achieve this we'll need to reconsider the existing distinction that exists between assessment and pedagogy. Rather, we need to rethink our assessment practices from the perspective of lifelong learning while, at the same time, using that perspective to rethink pedagogy more broadly.

Implications for VET

As we've noted, the changing emphasis being proposed involves significant shifts in both thinking and practice. However, for VET it appears that the greatest changes may be required in the current policy settings and the assumptions on which they're based.

The current policy framework has created a complete separation between assessment and the learning process. However, we argue that assessment alone is incapable of supporting the changes in learning outcomes that a lifelong learning perspective requires. In future work we will explore these issues more thoroughly, but our thinking suggests that there are immediate questions that policy-makers need to consider.² These include:

- How must the standards for judgement that are currently set out in training packages change, if lifelong learning capacity is a core goal?
- Can an assessment-only mode support lifelong learning? Is it inherently a counter-productive approach or is it a problem with our current practice?
- What skills and knowledge must an assessor have to support the approach we propose? Do the revised assessor standards ensure these?

References

Beck

Black, P. & William, D. 1998, Assessment and classroom learning, *Assessment in Education*, vol. 5, no. 1, pp. 7-74.

Boud, D. 1990, Assessment and the promotion of academic values, *Studies in Higher Education*, vol. 15, no. 1, pp. 101-111.

Boud, D. 1995, *Enhancing Learning through Self Assessment*, Kogan Page, London.

Boud, D. 2000, 'Sustainable assessment: rethinking assessment for the learning society', *Studies in Continuing Education*, vol. 22, no. 2, pp. 151-167.

² We have done some of this in the context of higher education (Boud & Falchikov 2007).

Boud, D. and Falchikov, N. (2007). Developing assessment for informing judgement. In Boud, D. & Falchikov, N. (Eds.) (2007). *Rethinking Assessment for Higher Education: Learning for the Longer Term*. London: Routledge.

Boud, D. & Solomon, N. (2003) 'I don't think I am a learner': acts of naming learners at work, *Journal of Workplace Learning*, 15(7-8), 326-331

Bowden and Marton

Buchanan, J., Schofield, K., Briggs, C., Considine, G., Hager, P., Hawke, G., Kitay, J., McIntyre, J., Mounier, A., & Ryan, S. 2001, *Beyond flexibility: Skills and the future of work*. Sydney, NSW Board of Vocational Education and Training.

Ecclestone, K. 2002, *Learning Autonomy in Post-16 Education: The Politics and Practice of Formative Assessment*, RoutledgeFalmer, London.

Kvale, S. (1996) Examinations re-examined: Certification of students or certification of knowledge? In S. Chaiklin & J. Lave (eds) *Understanding Practice: perspectives on activity and context*. Cambridge University Press, Cambridge, England.

Lave, J. & Wenger, E. (1991) *Situated Learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.

Marginson, S. 2000, *The changing nature and organisation of work and the implications for vocational education and training in Australia*, Issues paper, National Centre for Vocational Education Research, Leabrook. South Australia.

Osbourne & Wittrock, Jonasson

Sadler, D. R. (1998) Formative assessment: revisiting the territory, *Assessment in Education*, 5(1), 77-84

Shepard, L. A. 2000, 'The role of assessment in a learning culture', *Educational Researcher*, vol. 29, no. 7, pp. 4-14.

Tversky, A and Kahneman, D. (1981) The Framing of Decisions and the Psychology of Choice. *Science*, vol. 211, no. 4481, p. 453-58.