A Powerful Learning Environment

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Introduction
This paper will suggest that given current knowledge of the ways students learn, we need to review the purposes of assessment. The principle of ‘active learning’ must be accompanied by an appropriate, aligned assessment regime, otherwise all efforts to enhance final learning outcomes will fail.

Two Cultures of Assessment
Though different writers use slightly different terminology, all generally agree that assessment has three purposes (inter alia, Brown et al. (1997), Yorke (1998), Black (1998)). Firstly, assessment is designed to support and thus enhance learning. Secondly, it provides certification for progress or transfer and thirdly it is a form of accountability (quality assurance) to stakeholders.

For the student, it is the second of these that is crucial; for funding agencies, government, taxpayers and so on, it is the third. In both cases it could be argued that assessment of education is taking place. The student wants to know that, however organised, the successful passing of examinations (in whatever form) will lead either to entry into the next stage of education or into an appropriate job. The external stakeholder is also judging education; put at it crudest that judgement is based on a ‘value for money’ argument, though what ‘value’ means in this context is highly contestable.

The worry is that the assessment of education has become so pervasive in a world of competitive league tables, that assessment for education is increasingly crowded out, with the result that summative tests dominate formative ones; courses are sub divided into units, each of which require assessment in high stakes contexts that threaten a synoptic appreciation of subject knowledge, and so on. It would seem that in these two cultures of assessment there is only one winner.

Yet if we take a step back and examine how learning takes place, we can quickly see that assessment for education can also provide an assessment of education. As Palomba and Banta (1999) have shown, better assessment provides better information for all stakeholders whether they be staff, students, administrators or taxpayers. They quote Colorado State University, which has involved employers in the assessment process, and Eastern New Mexico University where every fine arts student has his or her portfolio or audition assessed each semester in front of a panel that includes staff, students, community representatives and other professional staff from outside the fine arts department. Such an eclectic engagement is crucial for a better understanding of what and why we assess and is needed to demonstrate to stakeholders, especially policy makers, that education, as in most walks of life, has moved on.

Yet for the ‘two cultures’ to move together there must be a shift in attitudes. What Hesse (1989, quoted in Wilson and Scalise, 2003) described as a ‘pass the buck’ approach, which is that failure is the student’s fault (not intelligent enough/didn’t study hard enough etc.) must be replaced by a recognition that learning requires a partnership between the teacher and the taught. For that to happen we must recognise changing views on the way people learn.

Constructivism
In contrast to the notion of a student’s brain being a ‘void’ into which knowledge is ‘poured’ (leading to the rote learning, through instruction, of ‘facts’ to be recalled in a final examination), the fundamental idea of constructivism is that the learner has to make sense of the data being supplied in his or her own way. Within this simple statement there is a great deal of controversy (see Light & Cox, 2001) but there is general agreement over its basic tenets. One of these is that within a teaching situation, instead of supplying ‘facts’ – a
slippery term in itself – the teacher’s role is to provide what is called the ‘scaffolding’ for learning. That is to say, the support upon which learning rests, rather than the learning itself.

The objective of constructivism is, as its name suggests, to help the student construct his or her own meaning for the information presented. The teacher can assist the process (provide the scaffold), but in the end the student has to ‘own’ the data and be comfortable with it. Self evidently, the only way the student can achieve this is by being an ‘active’ participant in the learning process.

Instinctively we learn actively, all the time. We watch our parents, our peers, even our employers and we acquire knowledge from them, but we process the information in our own terms and in our own ways, mediated by our personal experiences elsewhere. As we grow older we increasingly make an informed use of heuristics (rules of thumb), intuition and pattern recognition, but then, as experts, we go a stage further and discover short-cuts (Drefus, 1986).

The idea of constructivism builds on Schon’s earlier notion of the ‘reflective practitioner’ (1983). The reflective practitioner or professional is someone who can step outside himself and observe his own actions in a given situation, evaluate them and consider ways in which they might be improved. Although such reflection is largely an instinctive or intuitive trait, becoming a reflective practitioner requires teaching. The role of the teacher, once reflection becomes embedded, is much more that of mentor, ‘critical friend’ or coach. The mentor’s role is to challenge the trainee, to ensure that evaluation is properly and comprehensively carried out and then to provide suitable challenging and stimulating ‘real-life situations and contexts’ to anchor the learning (Direick and Dochy, 2001). This new environment recognises that for deep learning (i.e. that which is embedded and long-lasting) to occur, the learner has to make his own sense of the data, the situation and the context and take ownership of all the inputs. These can then be processed and returned as actions when new, similar contexts and situations are faced. Such a style of teaching and learning sits in complete contrast to the instructional approach, where knowledge is ‘owned’ by the teacher and is ‘handed out’ in what the teacher considers to be an appropriate amount in an appropriate package at an appropriate time.

It must be emphasised again that this new learning environment does not remove the teacher/mentor’s role, although it certainly changes it. Similarly, the assessment regime must also change, because if the teaching and learning environment changes, then, to be valid, the assessment regime associated with it must alter as well. Encouraging learners to self-discover (in a ‘safe’ environment, that is one where mistakes are accepted), to develop new strategies for new situations and so on, require an assessment regime that provides constructive feed-back (or, more properly feed-forward, since reflections on past performances are of little value unless they alter behaviour in the future). Such a regime cannot be predicated on pass/fail notions, nor can it occur only at the end of a course, which implies a shift away from summative towards formative assessment, or more simply, from testing to (true) assessment.

From ‘teacher directed’ to ‘competence orientated’
Elschout-Mohr et. al. (2002) have described the shift outlined above as a movement from a ‘teacher directed’ configuration to one that is ‘competence orientated’ (see Figure 1). In between there is one described as ‘Standard orientated’.
In reading the chart it is important to see the link between learning outcomes, teaching and assessment, which has been called ‘constructive alignment’ (Biggs, 1996) or ‘the congruent curriculum’ (Lines, 1999). If the assessment processes and procedures fail to match the other elements, for instance, then assessment ‘backwash’ comes into play (Dochy, 2001). The ‘backwash effect’ is an educational version of Gresham’s Law – that the bad drives out the good. In other words, if the certification actually and ultimately depends on a final, pencil and paper test, then students will abandon any other learning strategy, however noble and effective, and concentrate on the test, for it alone provides the route to their ultimate goal.

In figure 1, ‘Teacher directed’ is what might be described as a ‘conventional’, perhaps even ‘old-fashioned’ configuration. There are apparent efficiencies in this system, in that the teacher and the tests can focus strongly on what are considered to be most important. The problem, however, is that material learnt and tested in this way has a very short half-life indeed – perhaps no longer than it takes for the student to leave the examination hall!

The second, ‘Standard orientation’, describes a movement towards giving the learner more responsibility. Standards are laid down and the teacher or mentor provides coaching to help the student achieve them. It is the student who largely determines what learning strategies he or she will adopt in working towards them. The third configuration, ‘Competence orientation’ is one where students operate in professional environments and mentors work with them as co-learners. In this phase individualised learning is matched by individualised assessment.

Although it is impossible to generalize, it is probable that large parts of higher education have moved or are moving away from the teacher directed configuration and are making progress towards standards orientation. The final shift is the one advocated here, though the challenges that such a change presents should not be underestimated and will require intensive training and support, as well as a wholehearted commitment by all interested parties.

Creating a ‘powerful learning environment’

From the above it is possible to identify certain characteristics of what is called ‘a powerful learning environment’ and the assessment that is associated with it.

Learning, teaching and assessment are integrated and ‘aligned’. This means that careful consideration is given in advance as to what the outcomes of learning will be for successful course completion; the means of delivering appropriate skills and knowledge are put in place and appropriate methods of assessing the specified outcomes are constructed. If any one of these three components is out of alignment, the entire structure fails.
The student is an integral part of the process. This is crucial, since the focus is and must remain, the learning outcomes that the individual should achieve by the end of the course. That does not mean that the student determines those outcomes, or the assessment process by which decisions will be made on whether or not the outcomes have been achieved, but the process of acquiring the required knowledge and skills becomes much more the student’s responsibility, and indeed, in close association with the mentor, the student may help to determine when or whether he or she has achieved them.

Both the outcomes and the process of achieving them are assessed.

The assessment process uses a variety of approaches, including real life scenarios that require decisions to be made. The scenarios should require candidates to take a variety of perspectives and also to take context into account so that the knowledge and skills applied once can be transferred into new perspectives and different contexts. Causal mechanisms should be investigated. As a guide, the interrogative words ‘when?’, ‘where?’ and ‘why?’ should be used rather than ‘what?’

The evidence for success is presented in a portfolio, which implies that a single score ‘success’ or ‘fail’ mark is no longer tenable. Birenbaum (1996) describes this as a shift from quantification to a portrayal. It also implies that the assessment cannot be time constrained (though of course there can be elements that are, depending on the learning outcomes sought).

The process of learning involves tasks that engage the student, are meaningful, challenging and ‘authentic’. An assessment that is authentic is one that closely matches the desired performance and takes place in an authentic context. It should be pointed out that the assessment process is itself dynamic and impacts upon the person being assessed. Research has shown, for instance, that ‘easy’ questions at the start of an examination result in higher overall scores, because early success builds confidence in the candidate’s mind (Goldstein, 1994). Put crudely, this can be translated as ‘success breeding success’. This phenomenon can, unfortunately, also work the other way, with failure on one occasion causing, or contributing to failure in the future.

A reflective diary is maintained by the student and is central to the learning process. The diary or journal may or may not be confidential, but if it is to be used as part of the course assessment, then it must be shared, at least with the mentor.

To summarise the above, a powerful learning environment requires the adoption of a variety of assessment techniques, but with examinations emphasising higher order skills, all to be enclosed within a portfolio. The portfolio should include examination results, a reflective diary, personal observations and so on. The emphasis of the entire assessment ‘package’ is on the engagement of the learner in developing competencies, though straightforward knowledge and skills would not be ignored.

Pie in the Sky or Down to Earth?

It may seem that persuading students to keep a reflective diary and then to construct a portfolio of evidence, which includes failures as well as successes, is unrealistic. Yet students in Art and Design courses have done this for many years, and increasing interest in Personal Development Planning perhaps suggests a sector-wide interest in such an approach. Fortunately, technological changes can also help. The existence of e-portfolios offers the potential for accessible, easy-to-manage documents that can be cross-referenced with ease, far removed from conventional notions of weighty, impenetrable paper versions.

So, perhaps the proposal is not so unrealistic after all. Instead of emphasising the negative aspects, we should instead ask what will happen if we don’t change. Arguably, this will mean a continuation of shallow learning, of education being assessed almost exclusively in ‘value for money’ terms and a sector containing students who don’t enjoy higher education for the intellectual enhancement it provides, but who instead simply see it as a means to an end.

It really is time to move on.
References


