

# **An Investigation of Assessment Practices In Built Environment Education – the Views of Senior Academics**

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Assessment practices in Higher Education (HE) have been undergoing wide-ranging changes, particularly in the last ten years and this has been particularly evident in a number of disciplines. These changes are in response to a variety of stimuli including a move towards greater accountability, new developments in the use of learning technology and concerns about what graduates need to know, to understand and to be able to do following successful participation in a program of study. The discipline of the Built Environment (BE) has been receiving attention in this regard and the validity and effectiveness of traditional modes of assessment have begun to receive considerable attention. Formative assessment and the use of feedback mechanisms have begun to be recognized as a driving force for enhancing student learning. This paper addresses the context of BE undergraduate programs and discusses the need for a research project in the context of the changing HE educational environment. The aim of such a research project is to help improve the quality of student learning in BE undergraduate programs. Seminal literature is explored in order to identify, inform and shape the assessment practices of academics. A research design is articulated for the research which uses a qualitative approach to conduct the preliminary study. The results of the initial research set out the views and preferences of senior academics and help inform the next stages of this work in progress. The ongoing work anticipates development of a model for the formative assessment of Built Environment undergraduates for the enhancement of student learning.

**Keywords:** built environment, education, formative assessment, undergraduate.

## **Introduction**

“What the student does is actually more important in determining what is learned than what the teacher does” (Shuell, 1986)

In HE, as we move from a teacher-centered to a student-centered learning (SCL) approach, a higher degree of importance has been attributed to outcomes assessment as evidence of performance of what students know, understand, and can do as a result of their educational experiences (Lea et al, 2003). In parallel with the shift to a SCL environment, assessment methods also have changed and developed. It has become fashionable and appropriate to talk about constructivism in relation to higher education learning, teaching and assessment. Constructivist learning theory relates to the way in which individuals learn to make sense of the world through the development of learning constructs or mental representations of knowledge. The concept of constructivism has its roots in classical antiquity, going back to the ancient works of Socrates. While there is evidence of a move to conceptualize learning through a constructivist lens, how we assess learning in this context has been relatively under developed (Laurillard, 2002).

## **The Changing Landscape of Higher Education**

The drivers of change in HE are numerous and the pressures for that change are occurring globally. Higher education in Ireland has not been ignored on this front. The massification of HE has forced Universities to become more diverse, more global and much more competitive (Woolridge, 2005). Changes have been brought about in

quality assurance arrangements, the National Framework of Qualifications has been introduced and, at institutional level, there has been a response to consider learning, teaching and assessment that places the learner at the center of the process. For example, the Dublin Institute of Technology has a strategic imperative to put in place a multi-level learner-centered learning environment through the roll out of a modular structure. A new learning environment is encouraged by the National Qualifications Authority of Ireland (NQAI) requirement that all awards should be defined by learning outcomes, the achievement of which would be confirmed through the use of appropriate assessment strategies.

## **The Impact of Assessment on Student Learning**

Assessment practices in HE have been undergoing wide-ranging changes over the last number of years and this has been particularly evident in a number of disciplines. These changes are in response to stimuli including a move towards greater accountability, new developments in the use of learning technology and concerns about what graduates need to know, to understand and to be able to do following graduation. The discipline of the Built Environment has been receiving attention in this regard and the validity and effectiveness of traditional modes of assessment have begun to receive wider consideration.

Assessment in HE is a very complex matter and as assessment is something that is experienced by almost all involved in HE it is important that an assessment system is recognizable and understood by all. There are many reasons to assess students and Brown et al (Brown et al, 1996) discuss ten. Five of these refer to traditional summative assessment and the need for evidence and the classification of learning. The other five focus on formative assessment through guidance for improvement; providing opportunity for students to rectify mistakes to diagnose faults; motivation and providing variety in assessment method; and providing direction to the learning process. This might imply that equal importance is placed on both formative and summative assessment, but this is not the case. An investigation of the assessment practices in undergraduate programmes in Built Environment indicates that while the 'tide is starting to turn' there is still an over reliance on the traditional summative examination at the end of a module or unit of learning.

The seminal research material on formative assessment and the use of feedback mechanisms indicates that these methodologies have begun to be recognized as a driving force for enhancing student learning. This has yet to have a complete impact at programme or module level in many undergraduate BE programmes. Research literature informs us that assessment is most effective when it is closely aligned to the learning outcomes. Cross (Cross, 1996) refers to assessment and feedback as providing one of three conditions for learner success. It is generally acknowledged that a student's approach to learning and the quality of learning achieved will be influenced by the way in which this learning is to be assessed (e.g. Gibbs, 1999; Entwistle and Ramsden, 1983). In addition, adopting a holistic approach to curriculum design that seeks to constructively align assessments with the learning outcomes, and teaching and learning methods that create a seamlessly inter-related curriculum (Biggs, 1999) are important if a diversity of desired learning outcomes is to be achieved (e.g. Gibbs, 1999). Boud (Boud, 1995) also identifies a need to move from seeing particular assessments in isolation towards recognizing them as linked to the other kinds of assessments used, the proximity, frequency and the context of their usage. Furthermore, bunching of similar types of assessment at certain key points, perhaps at the middle and end of programmes, is likely to result in students' adoption of a surface approach and the attainment of a limited number of lower-level learning outcomes (Scouller, 1996). In other words, cross-program strategic planning of appropriate assessments is fundamental if the intention is for students to attain higher-level learning outcomes such as problem solving and critical thinking (Biggs, 1999; Gibbs, 1999). The critical importance of formative assessment (assessment that contributes to the student's learning through the provision of feedback about performance, (Yorke, 2003)) should not be underestimated by lecturers and is confirmed by the review work of Black and Wiliam (Black and Wiliam, 1998).

Assessment for learning, more commonly understood as formative assessment, is defined by Black and Wiliam (Black and Wiliam, 1998) as "all those activities undertaken by teachers and/or by their students, which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged". In very simple terms, assessment may be defined as such activities that measure student learning. Boud (Boud, 1990) posited that assessment has two purposes; firstly that of improving the quality of learning where learners engage in

activities and are given feedback that will direct them to effectiveness in their learning (commonly referred to as formative feedback). The second concerns that of the accreditation of knowledge or performance, which occurs generally for the award of a degree or diploma (commonly referred to as summative assessment).

Nowadays, students are more focused and they approach assessment with a better understanding of what is involved. Bloxham and Boyd (Bloxham and Boyd, 2007) refer to students as “being cue-conscious concentrating on passing an assessment”. We now hear academics speak in terms of formative and summative assessment, however we have a long way to go before assessment and feedback become central to learning and, in turn, to the student experience. With the importance of life-long learning beginning to permeate thorough HE, along with the impact of the National Framework of Qualifications in Ireland, a greater, more explicit emphasis and attention are being paid to learning outcomes and competencies. A student-centered learning framework puts the learner at the centre of the learning process, in which assessment plays an important part. It is widely accepted that assessment has a direct impact on students’ learning (Askham, 1997; Black and Wiliam, 1998; Stiggins, 2002). We are all familiar with the term that *assessment drives learning*; this is true in many instances, where the learner looks at what has to be learned in terms of what he or she needs to do to pass the assessment and get a good grade. Research indicates that what students focus on during the course of their studies is hugely influenced by the assessment methods employed to measure the learning experienced (Ramsden, 1992).

Therefore, the importance of taking cognizance of the purpose of assessment has relevance for lecturers in the design of their assessment strategies. Assessment of learning (summative) is where assessment for accountability purposes is paramount. Its function is to determine a student's level of performance on a specific task or at the conclusion of a unit of teaching and learning. The information gained from this kind of assessment is often used in reporting and is purely of a summative nature. Assessment *for* learning, on the other hand, acknowledges that assessment can be embedded as a regular part of teaching and learning and that the information gained from assessment activities can be used to shape the teaching and learning processes. It can, most importantly, also be used by the learner to enhance learning and achievement. Gibbs and Simpson (Gibbs and Simpson, 2004) have developed a model that promotes eleven conditions under which assessment supports learning, as outlined in table 1 below. Seven of the eleven conditions refer to feedback.

Table 1

***Gibbs and Simpson (2004) promoting 11 conditions under which assessment supports learning***

1. Sufficient assessed tasks are provided for students to capture study time
2. These tasks are engaged with by students, orienting them to allocate appropriate amounts of time and effort to the most important aspects of the course
3. Tackling the assessed task engages the students in productive learning activity of an appropriate kind
4. Assessment communicates clear and high expectations
5. Sufficient feedback is provided, both often and in enough detail
6. The feedback focuses on students’ performance, on their learning and on actions under the students’ control, rather than on the students themselves and on their characteristics
7. The feedback is timely in that it is received by students while it still matters to them and in time for them to pay attention to further learning or receive further assistance
8. Feedback is appropriate to the purpose of the assignment and to its criteria for Success
9. Feedback is appropriate, in relation to students’ understanding of what they are supposed to be doing
10. Feedback is received and attended to
11. Feedback is acted upon by the student.

## Defining the Built Environment

While not the main focus of this paper it is necessary to consider and conceptualize the field of BE. Human society has found it necessary to categorize the different forms of knowledge beginning in the times of Aristotle and Plato in

an attempt to make the world more intelligible. Those associated with the BE are no different in this regard. It has begun to emerge as a distinct discipline in the more recent past. However, in that discourse it has been identified as problematic. Boyd (Boyd, 2007) refers to the general conception of the BE as one of a 'development process' and he argues that it does not exist theoretically. Ratcliffe (Ratcliffe, 2007), on the other hand, proffers that while the BE is both vague and elusive it is a generic phrase of distinction and pertinence and is best portrayed and understood 'as a set of processes' rather than one single entity. This set of processes includes the planning process, design process, construction process, regulatory process, financial process, transportation process and information process. Griffiths (Griffiths, 2004) describes it as a range 'of practice-orientated subjects concerned with the design, development and management of buildings, spaces and places'.

In HE the field of BE has begun to make significant headway as a recognized discipline where schools of Built Environment have been set up and begun to flourish. The UK Research Assessment Exercise (RAE) sub-panel makes reference to the field as encompassing 'architecture, building science and engineering, construction and landscape urbanism' (HEFCE, 2005). While school and department configuration is often a matter of the culture of the particular HE institution, reference to BE by the RAE is acknowledgement of the existence of this discipline. In the Irish HE context, while considered very much at a developmental stage, the field of BE has begun to be recognized and embedded as a distinct discipline. Again, schools and faculty have emerged in the organization structure of Higher Education institutions across the country. For any research project some boundaries should be established, hence for this research the BE refers to the disciplines of architecture, architectural technology, construction management and construction economics. These disciplines will be the focus of the research as they are the most representative group in terms of BE programmes offered in HE institutions on the island of Ireland.

## **Rationale for Research Design**

Human beings have always shown an interest and concern to come to terms with their environment and to try to make sense and understand the nature of the phenomena to their senses (Cohen et al, 2001). At the commencement of any research project many questions occupy the thoughts of the researcher. What does this journey entail? Where to start? What philosophical stance should be taken? What research methods should be employed to effectively achieve the goal(s) of the research? All research needs to be subjected to careful methodological assessment and reflection while theory provides the discourse and a vocabulary to describe what we think. In this regard, the principal aim of the research is to help to improve the quality of student learning in BE undergraduate education. The central research question, therefore, can be summarized as:

Are assessment practices currently in use in BE education maximizing their potential to improve the quality of students' learning?

In attempting to address the aim of the research several research questions are posed:

- How are academics in BE education currently assessing learning?
- To what extent do academics align their assessment practices to educational theory?
- Are the institutional procedures around assessment in conflict with the embedding of a student-focused assessment strategy?
- What are students' experiences and perceptions of assessment?
- What are students' experiences of formative assessment and feedback?
- To what extent do the existing assessment methods encourage a deep approach to learning?
- Do students get an opportunity to reflect on their learning?
- What model can be developed that will enhance the experiences of students with respect to assessment?
- How will the improvements brought about by this new model be measured?

A research framework gives the theoretical background to a research project and most researchers take time to 'struggle' and come to terms with the theoretical aspects of the task. In (Saunders et al, 2003), the Research Onion model provides an appropriate framework from within which to structure this research inquiry. The overall research strategy for the research project is a mixed method approach, adopted in an attempt to provide a qualitative and

quantitative understanding of the perspectives of academics in the BE to assessment practices at each level. Mixed methods research involves the integration of quantitative and qualitative approaches to impact on the generation of new knowledge (Creswell, 2008). The most appropriate mixed methods guidelines are adopted in line with twenty-first century methodological approaches in this phase of the study. The analysis of data from each of the interview phases, along with data gathered from the survey of academics will influence the emergent theoretical model.

### *The First Phase of the Research Process*

In the first phase of the research, semi-structured interviews were conducted with eight Senior Academics in management positions between September and November 2008 from Schools in the University/Institutes of Technology sector around the island of Ireland. The interviews lasted up to one hour and were taped and transcribed with each interviewee agreeing to be recorded. Following the transcription of the interviews the qualitative analysis software system NVivo8 was used to code the emerging concepts. From the analysis of this first phase of the research the emerging themes and concepts are identified in the table 2 below.

Table 2

#### *Concepts and codes arising from the first phase of the research enquiry*

<b>Concepts</b>	<b>Coding</b>
Purpose of assessment	Examination, coursework, regulations, assessment criteria, policies and procedures, summative assessment, formative assessment, holistic assessment, compliance,
Learning and teaching	Teaching methods, improve student learning, innovative practice, scaffolding, reflective learners, modularization, semesterization, constructive alignment, student-centered learning, independent learning, over-assessment, modules, active learning
Academic	Changing practice, learning outcomes approach, traditionalists, coursework, staff development, innovation, course board,
Summative assessment	Examination, coursework, portfolio, measurement, variety, practical tests, peer assessment
Formative assessment	Importance of formative assessment, student involvement, peer assessment, feedback, continuous assessment, portfolio, flexibility,

On analysis, one emerging concept that is very much identifiable among the Senior Academics interviewed is the difference in philosophical position within the four disciplines with respect to assessment and how each viewed the assessment of student learning. The analysis of the data reflects differing positions as evidenced by the quotes below:

*'The academic staff of the School working with the students are not looking at just the final product as presented but are looking at the process by which the final product was arrived at'* Interviewee A

*'From a management perspective .... I see it being engaged a lot with the compliance with National Framework of Qualifications and adopting changes in relation to learning outcomes process'* Interviewee B

*'This is because we have always proportioned our assessment into end of year exams and coursework'* Interviewee C

Tradition and academic discipline influence the attitude towards the approach to assessment, while the type of educational organization too has a distinct impact.

The importance of assessment in the educational process was alluded to by all as well as an understanding that formative assessment has an important part to play in this. However, the mechanism by which this is achieved differed between each Senior Academic. There is a disparity of understanding in the purposes of assessment, particularly as there is a move towards a more student-centered learning environment. This is evidence by the approach taken in the different institutions with respect to the design of the assessment strategies at module and

program level. There are elements of re-formulating positions based on the learning outcomes paradigm in which we find ourselves. For example, interviewee B stated:

*'what we haven't done is link assessment methodologies to module learning outcomes'*

This further emphasizes the traditional approach adopted in many programs and the reliance on the measurement assessment strategy as opposed to a more holistic strategy.

There is evidence of student engagement in active learning tasks as referred to by interviewees 3, 4, and 5. However those tasks are not linked to an overall assessment strategy. Students are required to take a summative examination at the end of a module where they may have demonstrated the achievement of the learning outcomes during the active learning tasks. This is a clear example of 'over-assessment' and a reliance on the traditional summative examination. This position reflects the polarized position across academic institutions in their advancement to the more 'constructively aligned model' advocated by Biggs (Biggs, 1999). This is a common position not just in the BE but across many other disciplines as academics engage in reflecting on and introducing a learning outcomes based approach. One interviewee (4) indicated that academic lecturing staff are unaware that they are 'empowered' to make the appropriate changes to effect learning and hence the more traditional approaches are the preserve. There is still an over reliance on the 'formal summative assessments' or controlled examination i.e. the verification of student attainment.

There is clear tension between the summative and formative assessment processes and the use of this knowledge/information to help teaching and learning. Again, the diverse positions of each school along the continuum are very much in evidence. In some instances there has been full engagement in the alignment of program and module learning outcomes while other schools have only just begun to grapple with this. This has a direct relationship with the approach and configuration of the assessment strategies employed. This is allied to a complete agreement of the need to strengthen the processes of assessment and in particular the formative assessment elements. The down side is that there is no real sense or vision of how this might be achieved. The notion of developing reflective practice through assessment and its contribution to enhancement of student learning and motivation is no more than referred to.

Student involvement in assessment where the academics can benefit from the use of peer assessment on various levels was identified as problematic. The analysis suggests that it happens in a very limited amount of cases. Interviewee 5 indicated that students *'do not perhaps participate as much as they should and that there should be more opportunities to engage the learner more'*. In fact, there appears not to be the realization that the often laborious process of marking student work can be potentially reduced if some of the assessment is carried out by the students. More fundamentally, it can be used to open meaningful dialogue about the work and enhance feedback opportunities. Time constraints and the difficulties associated with peer assessment are cited as the issues associated with engaging students in the assessment. The risks of involving students in their own or colleagues' assessment should not be underestimated. There is intense pressure on the higher education sector to maintain standards. Any change to assessment practice must be able to withstand scrutiny and above all be rigorous and transparent (Race, 2001). There are fears that putting assessment in the hands of the students will make the assessment less reliable. To ensure consistency, measures can be built in, including multiple assessment of the same piece of work by a number of students. Clear definition of marking criteria is another essential element of successful peer assessment. Criteria may be developed with students, but if this is not possible, at the very least they must be made clear prior to students attempting the exercise.

Another emergent theme was the need for inter and intra collegial discussion/ discourse opportunities to discuss not only assessment practices in the Built Environment but also other pertinent pedagogic matters. Ways should be explored of how best practice might be shared and how this might begin to effect change in the discipline. This emerged where interviewees made comment on the need for staff development and training.

## Concluding Thoughts

This paper has provided a summary overview of the author's research to date with the scrutiny of senior academics regarding their views and experiences in the context of assessment practices in undergraduate Built Environment education. As this is work-in-progress, the paper focuses on the methodology employed and a number of key issues emerging from the segment of data analyzed thus far. There is a strong history of assessment in the programs offered in Built Environment undergraduate programmes, particularly the more formal summative assessment. One of the questions to be addressed in the next phase of the process is the extent to which academics are engaging with the most up-to-date and effective assessment processes that will enhance student learning. Interviews with the program managers and a survey of the Built Environment academic community will endeavor to address this. The analysis of the results of the initial research sets out the views and preferences of senior academics and will help inform the next stages. The ongoing work anticipates developing a grounded model for the formative assessment of Built Environment undergraduates for the enhancement of student learning.

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