RESHAPING ASSESSMENT PRACTICES IN BUILT ENVIRONMENT UNDERGRADUATE PROGRAMMES: WHAT HEADS OF DEPARTMENT REPORT

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In Higher Education (HE) assessment practices and processes have been the subject of wide ranging transformation over the last 15 years. Debate about the current state of assessment often refers to unease as to its suitability for the 21st century and the need for it to be fit for purpose. Reference has been made to practices in disarray, where assessment has become a site of conflict for many involved in undergraduate education. It is argued that an in-built lack of clarity in the methods of assessment used to convey judgement on performance is an underlying factor. Assessment in the discipline of the Built Environment (BE) is required to fulfil a multiplicity of purposes and play many different and often conflicting roles. The provision and embedding of opportunities for assessment to aid learners through more formative ways has been highlighted as failing students currently. In the context of BE undergraduate programmes this paper discusses the need for such a research project in the context of the changing HE educational environment. A mixed methodology approach to the research and sign posting to improvements in the quality of student learning in BE undergraduate programmes that may take place through the assessment process are proposed. This paper reports on the study so far, where seminal literature is explored in order to identify, inform and shape the assessment practice of academics. The results of phase one of the research are presented with an in-depth analysis of the findings of the second phase of this research. Analysis of the emerging views and preferences of Heads of Department is offered which will help inform the next stages of this work in progress. This ongoing research anticipates developing a model for the formative assessment of BE undergraduates where the enhancement of student learning will underpin the evaluative process.

Keywords: built environment, formative assessment, mixed methods.

INTRODUCTION

This paper focuses on some of the wide-ranging changes that have taken place in HE assessment practices. Assessment in HE today is a qualitative function which, for summative purposes, is changed to a quantitative outcome. It is a function which directs student learning and guides teaching. Assessment requirements have been shown to have a significant influence on students' learning (e.g., Laurillard 1984; Thomas and Bain 1984, Boud 1988, Scouller 1999; Samuelowicz and Bain 2002). How assessment is viewed and used by students is critical to their learning.

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THE IMPACT OF ASSESSMENT ON STUDENT LEARNING

Assessment practices in HE have recently been undergoing wide-ranging changes. 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 BE has been receiving attention in this regard and the validity and effectiveness of traditional modes of assessment have begun to receive consideration.

Assessment in HE is a very complex business 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. (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; 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, 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.

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. Assessment is most effective when it is closely aligned to the learning outcomes. 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 (1995) also identifies a need to move from seeing particular assessments in isolation towards recognizing them as linked to the other kinds of assessment used, the proximity, frequency and also 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 programme 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 and is confirmed by Black and Wiliam (1998).

Assessment for learning, more commonly understood as formative assessment, is defined by Black and Wiliam (1998, p.22) 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 simple terms, assessment may be defined as such activities that measure student learning. 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 award of a degree or diploma (summative).

Today, students are more focused and they approach assessment with a better understanding of what is involved. Bloxham and Boyd (2007: 19) 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 Frameworks of Qualifications in Ireland, a greater, more explicit emphasis and attention is being paid to learning outcomes and competencies. A student-centred 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 often true, where the learner looks at what has to be learned in terms of what needs to be done to pass and get a good grade. What students focus on is hugely influenced by the assessment methods used to measure the learning experienced (Ramsden, 1992).

Table 1: Gibbs and Simpson's (2004) 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.

Therefore, the importance of taking cognisance of assessment *for* learning and assessment *of* learning has relevance for lecturers in the design of their assessment strategies. Assessment of learning 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. However, assessment *for* learning, on the other hand, acknowledges that assessment should occur 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 process. It can, most importantly, also be used by the learner to enhance learning and achievement. Gibbs and Simpson (2004) have developed a model that promotes eleven conditions under which assessment supports learning, as outlined in Table 1. Seven of the eleven conditions refer to feedback.

THE BUILT ENVIRONMENT

While not the main focus of this paper it is necessary to consider and conceptualize the field of Built Environment (BE). Human society has found it necessary to categorize the different forms of knowledge since well back to the times of Aristotle and Plato in an attempt to make the world more intelligible. Those associated with the Built Environment 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 (2007) refers to the general conception of the Built Environment as one of a 'development process' and he argues that it does not exist theoretically. Ratcliffe (2007), on the other hand, proffers that while the Built Environment 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 (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. The UK Research Assessment Exercise sub-panel refers 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 a Higher Education 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 the purpose of 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 Built Environment programmes offered in Higher Education on the island of Ireland. In all the main providers of BE education at undergraduate level, the above areas are offered.

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 thought of the researcher. What does this journey entail? Where to start? What philosophical stance should one take? 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 main 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:

> *'Is built environment education currently using the most appropriate assessment strategies/methods to improve the quality of students' learning?'*

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. Saunders *et al.* Research Onion model (2003) provides an appropriate approach within which to frame this research inquiry, an adaptation of which is outlined in Figure 1. A

pragmatic approach, one that is not faithful to any one system of philosophy or reality, is the preferred epistemological position of the researcher. The pragmatic researcher focuses on the 'what' and 'how' of the research enquiry (Creswell 2003). Early pragmatists "rejected the scientific notion that social inquiry was able to access the 'truth' about the real world solely by virtue of a single scientific method" (Mertens 2005: 26). While pragmatism is seen as the paradigm that provides the underlying philosophical framework for mixed-methods research (Tashakkori and Teddlie 2003, Somekh and Lewin 2005) some mixed-methods researchers align themselves philosophically with the transformative paradigm (Mertens 2005). However, it may be argued that mixed methods could be used with any paradigm. The pragmatic paradigm places "the research problem" as central and applies all necessary approaches to understanding the problem (Creswell 2003). With the research question 'central', data collection and analysis methods are chosen as those most likely to provide insights into the question with no philosophical devotion to any alternative paradigm.
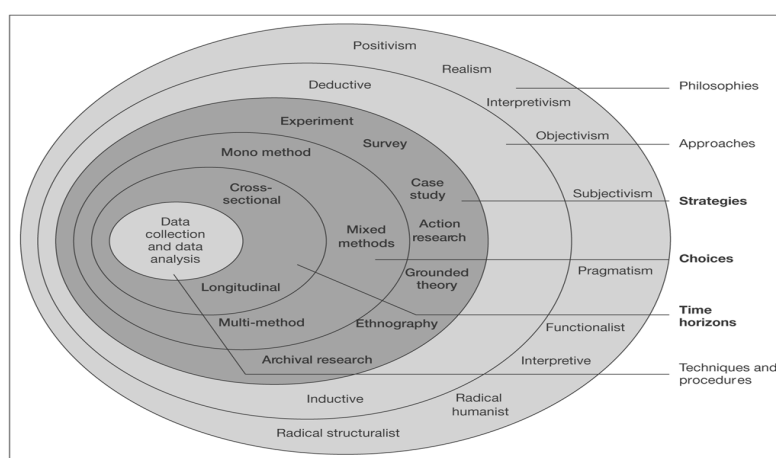

Figure 1: Adaptation of Saunders et al Research Onion (2003)

The purpose of mixed methods research is not to replace either qualitative or quantitative research, but rather to extract the strengths and diminish the weaknesses in both approaches within a single enquiry (Johnson and Onwuegbuzie 2004). Advocates of mixed method research contend that the researcher needs to evaluate the most appropriate methodological approach to answer the specific research question (Mertens 2005; Morse 2003). Indeed, care must be taken to clearly elucidate the rationale for using a mixed methods design, rather than a singularly qualitative or quantitative approach, as the use of mixed methods is not inherently good practice (Shepard *et al.* 2002; Tashakkori and Teddlie 2003).

Table 2: Concepts and codes arising from the first phase of the research enquiry

Concepts	Open Codes
Purpose of assessment	Examination, coursework, regulations, assessment criteria, policies and procedures, summative assessment, formative assessment, holistic assessment, compliance,
Learning and teaching	Student Centred Learning,Teaching methods, improve student learning, innovative practice, scaffolding, reflective learners, modularization, semesterization, constructive alignment, student centred learning, independent learning, over assessment, modules, active learning
Academic	Changing practice, learning outcomes approach, traditionalists, coursework, staff development, teaching awards, innovation, course board, service teaching.
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,
Institutional procedures	Exam procedures, General Assessment Regulations, Feedback, Assessment Strategy, continuous assessment

The key element of mixed methods research is that researchers 'should carefully create designs that effectively answer their research questions' (Johnson and Onwuegbuzie 2004). It is important that rather than being constrained by a series of pre-specified research designs, researchers are creative in their approach to developing their study design (Johnson and Onwuegbuzie 2004).

The first phase of the research process

A review of the programme documentation in four of the institutions has identified that there are varying levels of detailing and referencing of the assessment strategies in both programme documentation and in the distinct module descriptors. An overall analysis would suggest that programme documentation makes reference to assessment but it is more implicit and no real link is made between formative and summative. There is more of an emphasis on the assessment processes and the rules and regulations around assessment rather any reference to a conceptual contextual position with regard to the alignment of learning.

From the analysis of the programme documents it would be fair to say that the in the main the approach to assessment is more about meeting the validity and measurement requirements and little attention is paid to the educational stance and how the students' learning is linked to assessment. The terminology used throughout reflects the approach, where terms like 'assessment criteria and standards' clearly allude to the measurement model.

The second phase of the research process

In the second phase of the research, carried out in late 2008 through to early 2009, semi–structured interviews were conducted with eight senior academics in management positions from Schools in the University/Institutes of Technology sector around the island of Ireland with the findings from this phase of the research was presented to the Association of Researcher in Construction Management conference in 2009 (Scott and Fortune, 2009).

The third phase of the research process

In the third phase of the research semi–structured interviews were conducted with 21 heads of Department/ Progamme Managers in management positions between Feb 2009 and Feb 2010 from Schools in the University/Institutes of Technology sector around Ireland. They followed the same format as the semi-structured interviews from phase two and involved similar type interviews with 21 Programme managers/ Heads of Departments (see appendix I). The interviews lasted up to one hour and were taped and transcribed with all interviewees agreeing to be recorded. From the analysis the emerging themes and concepts are identified in the Table 1 below from this first phase of the research.

Like the interviews with senior academics from phase two, one emerging concept that is very much identifiable among the Heads of Department/Programme Managers interviewed is the difference in philosophical position with respect to assessment and how they view the assessment of student learning. The analysis of the data reflects differing positions as evidenced by the quotes below:

> *'As long as they (the students) learn, it doesn't matter how they learn…*
> *assessment has an important role to play in this'* (Interviewee E)

> *'I personally do not have any difficulty with students talking to one another and*
> *sharing their knowledge'* (Interviewee B)

> *'I suppose I am conscious that we are building on the tradition of formative assessment which has always been the centre of studio, and the function of feedback within that process is very important'*   (Interviewee C)

> *'It would be a combination of both, and in terms of feedback, we give feedback to students as quickly as possible within days in terms of part of the studio programme,* (Interviewee J)

It would appear that there is a polarized position among those interviewed, ranging from those who agree with providing opportunities for students to learn where formative assessment plays a key role to those who require assessment to 'measure student learning'. For example the requirements of Professional Bodies is a factor that impacts on the design of assessment in the programmes run in a number of institutions as evidenced by the response of one Head of Department.

> *'if they (the programmes) are not validated and if our courses are not then accredited, then our graduates cannot progress in their careers'* (Interviewee D)

On the other end of the continuum there exists the position where assessment would be a combination of both formative and summative and feedback if provided as quickly as possible as referred to by interviewee J.

Tradition and academic discipline influence the attitude towards the approach to assessment, while the type of educational organization too has a distinct impact. There appears to be more perceived autonomy in the University sector than in the Institutes of Technology sector. In some fields within the University sector there appears to be complete autonomy where Departments are left to their own devices to employ and monitor academic standards, as evidenced. The other extreme is in evidence where the example from one Head working in the Institute of Technology sector remarked:

> *'Students attendance at class is essential for them to learn and we closely monitor their attendance and if necessary we will take the necessary action if there is poor attendance'* (Interviewee F)

One concern expressed by a number of Heads/Programme Managers is where students are taking modules that are delivered, assessed and monitored by academics from other Departments across their Colleges. Where this exists there is a genuine concern as to the educational experience gained by students and the maintaining of standards within the programme. As one interviewee indicated *'we are at the mercy of their grading criteria and what the students experience'*.

There is clear tension between the summative assessment and the formative assessment processes and using this knowledge/ information to help teaching and learning, however there is also a tension for Heads of Department/Programme Managers in terms of resource provision. Again, the diverse position of each school along the continuum is very much in evidence. In some instances there has been full engagement in the alignment of programme and module learning outcomes while other schools have only just begun to grapple with this. This one would feel has a direct relationship with their 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 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 under developed and needs to be addressed over time. The embedding of formative assessments structures is crucial to learner success and a comment made by one of those interviewed is appropriately apt.

'I don't think the students learn unless they get feedback'

As with the senior academic analysis, student involvement in assessment where the academics can benefit from the use of peer assessment on various levels was identified as problematic and its use is very limited. There were a few examples offered of where students are afforded an opportunity to contribute to the assessment process. The analysis suggests that it happens in a very limited amount of cases. One interviewee (J) indicated that students do get an opportunity to contribute,

> *'I use peer assessment where ever I can. I also invite them to write end of term exam questions if they wish. Any way I can promote learning, I am willing to do it'*

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 we might share best practice and how this might begin to effect change in the discipline. This theme seems to be a factor considered to be important to both senior academics and Heads of Department/ Programme Managers where interviewees made comment on the need to for staff development and training and where opportunities should be developed to share best practice.

Different challenges were identified by those interviewed however; the one common theme was around the access to resources. Many referred to the aspiration to provide as much as possible in way of resources for assessment; however, the finite amount in terms of the availability was identified as a challenge,

> *'the biggest challenges would be resources that you need to teach in a certain way – that the University has to be committed to providing the resources, and if you do the rewards are obvious'* (Interviewee B)

On the academic side a challenge identified by one Programme Manager, from an academic standpoint, is the provision of timely feedback and their concerns if that was not achieved.

> *'I think, from my own standpoint was – the biggest challenges I have is timely feedback. I don't think the students learn unless they get feedback'*

CONCLUDING THOUGHTS

This paper has provided a summary overview of the author's research to date with the scrutiny of Heads of Department/ Programme Managers regarding their views and experiences in the context of assessment practices in undergraduate Built Environment education. As this is work-in-progress, the paper focused on the methodology employed and a number of key issues emerging from the segment of data analysed thus far. There is a strong history of assessment in the programmes offered in Built Environment undergraduate programmes, particularly the more formal summative assessment.

Assessment is of central importance in HE and the more one researches the field the more there seems a 'lack of commonality' (Taras, 2005) across the disciplines with the Built

Environment. There is a growing interest in the quality of the student learning experience but how to enable change to take place requires a readiness to share the responsibility for the management of an assessment system in a way that allow learning to flourish. We must as Boud (2010) proffers 'build capacity for judgment' and move away from our conservative approaches to assessing our students. A move to developing and implementing appropriate assessment strategies that use the most appropriate means of developing reflective learners is what is required.

Can we assume that assessment exists to improve student learning? If so, it is important that each individual student should see sparking their learning and helping them improve it through the design of assessment for learning should be the goal. Moving on then, how can we justify keeping assessment separate from the student's learning process, something ominous or meaningless laid on from outside or above? Should the teaching and learning process result in a new kind of improved assessment? There are multiple ways to accomplish this. Striking a better balance between assessment 'of' and 'for 'learning is key to enhancing the learning experience of students in the Built Environment. The evidence to date indicates that there is a willingness to effect change in the approach to supporting student learning through sustainable and authentic assessment strategies. The means to achieving this offer some serious challenge! The ongoing work anticipates developing a grounded model for the formative assessment of Built Environment undergraduates for the enhancement of student learning. Assessment should not be fixed!

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