

# Towards a More Scholarly Approach to Assessment Practice in Construction Management Programs

Lloyd M. Scott MA

Dublin Institute of Technology  
Ireland

Christopher J. Fortune PhD

University of Salford  
UK

The approach to assessment practices in Higher Education (HE) has been undergoing wide-ranging changes for a number of years and is particularly evident in certain disciplines. These changes are in response to a variety of policy decisions from the introduction of student-centered learning approaches to the accommodation of diverse types of learners and the rationalization of current resources. This paper focuses on construction management education at undergraduate level throughout Ireland where as part of a wider study of the Built Environment the perceptions, views and values of all stakeholders are sought with respect to assessment. This mixed methods study, employing both quantitative and qualitative data, explores and analyses the program documentation of six HE institutions offering construction management programs along with the institutional policies pertaining to assessment. The results and analysis of six semi-structured interviews conducted with program managers in those institutions are presented. A comparison of the findings from both the analyses of the program documentation and the interviews is offered and reflects on the developmental approach needed to address formative assessment so as to enhance student learning. This ongoing work anticipates developing a conceptual model for assessment for Built Environment undergraduates' education with particular reference to construction management where the enhancement of student learning is developed.

**Key Words:** construction management, education, formative assessment, learning, mixed methods.

## Introduction

'Conventional assessment procedures are unable to do justice to the most important outcomes of any educational process worth the name.' (Raven, 1991, p.1)

All around us the traditional understanding, principles and assumptions of higher education (HE) are being questioned. This is as a result of economic developments, changes in public attitudes, government policies or new knowledge insights. No one knows what the global HE landscape will look like in ten or fifteen years time. Any strategic review of HE needs to ask some fundamental questions about the nature of education, methods of learning, teaching and assessment, the scope and nature of research, and the role of universities and colleges in society and in the economy. Raven's quote above is, therefore, as relevant today as it was back in 1991. In the context of learning, teaching and assessment, HE has begun to debate on the standards needed to focus on how high-quality learning can be achieved. Assessment policy and practice, while addressing multiple purposes, must form part of that discourse. However, any discourse needs to reflect on the position of assessment as a means of enhancing student learning. Built Environment (BE) and in particular construction management (CM) educators need to reflect on this and draw on the developments and best practice already established from other disciplines. This will require a more focused emphasis on assessment for learning rather than assessment of learning. Knight (2002) analyzed and reviewed the assessment process in UK HE and concluded that the summative assessment processes are 'in disarray' (p. 275). Confronting such disarray requires a holistic review and reappraisal of curricula and, in particular, the role of assessment in HE learning. It is often the case that when assessment is considered in the literature, or amongst our colleagues, the focus is on marking. This is arguably because the role of assessment is seen primarily as an instrument of measurement rather than as a means of promoting and supporting learning. However, the importance of assessment in student learning is well established and a review of the assessment literature for HE offers extensive information with regards to the principles of and best practice guidelines for assessment *of* and *for* learning. Despite the shift in academic position in the conception of teaching and learning in HE, that same shift in conception with regard to assessment and in particular the more formative approach to assessment has been much

slower to emerge (Nicol, 2006) The following quotes reflect where assessment has come from and where it currently stands:

‘Assessment defines what students regard as important, how they spend their time and how they come to see themselves as students and then as graduates...If you want to change student learning then change the methods of assessment’ (Brown, et al.,1997, p.7).

‘The types of assessment we currently use do not promote conceptual understanding and do not encourage a deep approach to learning...Our means of assessing them seems to do little to encourage them to adopt anything other than a strategic or mechanical approach to their studies.’ (Newstead, 2002, p.3).

‘Institutional managers and academic teaching staff need to contribute to a scholarship of assessment’ (Rust, 2007, p.230).

An intense focus on marking and the measurement of learning as the principle assessment strategy has led to a reduced emphasis on the other equally important aspects of assessment that underpin the success of assessment as a vehicle for learning. This type of approach to assessment does little to address the qualitative function of assessment and the need for assessment for learning. Consequently, there is a need to emphasize the role of assessment in developing learning where a scholarly approach to assessment is adopted by academics involved in undergraduate education.

### **The changing landscape of Higher Education**

The drivers of change in HE are numerous and the pressures for that change are impacting globally. During the past 50 years HE has expanded and diversified and the demands and expectations being placed on Institutions in HE are now formidable, with changes in the student body and increased pressure from government on costs, procedures and results. As part of this research topic it is apt to reflect on the ideals of HE, on the purposes of learners investing commitment, time, emotion and money in attending HE and on the role of academics in providing the necessary and appropriate experiences and learning space. The role of assessment in this experience is significant from both a measurement and enhancement position. Aligned to this is the question of what students should learn and be assessed on whilst in pursuit of an undergraduate degree. While this is not the main focus of the research enquiry it is important to attempt to highlight and discuss the tensions between education for self versus education for society and the economy. Barnett proffers that the university has come to be ‘*a set of universal aspirations, principally turning on the sense of the institution that embodies and promotes a life of reason*’ (2003:1). It has been argued by many that the ideal of the university has emerged from a focus on rationality. Or perhaps it is solely aimed at producing graduates who can advance society through a focus on developing the economy. With the increased reach of HE, along with a more generally agreed interconnectedness with society, a brighter spotlight on the activities of HE may be enjoyed should we strive towards Barnett’s vision of the university:

‘...the university of the twenty first century turns out to be a particular kind of discursive space, a generous space that provides for the development of various kinds of human being and for their mutual engagement. ...at the same time, takes forward, as positive ideologies, the virtuous implicit in the ideals of the university’  
(2003:175)

Over the past few years there has been considerable emphasis on the concept of ‘*student engagement*’. The core business of universities is, or should be, creating the best learning environment for students. In a context of mass HE, increasing diversity of the student population, globalization and the new marketing of education, and increased competition between the providers of HE, it is difficult to define ‘the best learning environment possible for all students’. It is also becoming more challenging to articulate the purpose of university education with so many different agendas to satisfy, as discussed earlier. There are students entering HE with non-traditional qualifications, including different life experiences to the ‘traditional’ school leaver and higher numbers of students who are the first in a family to enter HE. In meeting the needs of those learners we need to provide a diversity of authentic assessment practices that allows them to engage in meaningful learning.

## Assessment and student learning

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. It is vitally important that with a program there is a common understanding and conception around the role of learning, teaching and assessment with respect to the norms and values of that given program within an institutional context. There are many reasons to assess students and Brown *et al* (1997) offer a model of 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 and diagnose faults; motivation; 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 overview analysis of the assessment practices in undergraduate programs in BE in Ireland 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.

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 very simple terms, assessment may be defined as those 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 the award of a degree or diploma (commonly referred to as summative assessment).

Today, students are more focused and they approach assessment with a better understanding of what is involved. Bloxham and Boyd (2007, p.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 come 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. It is widely accepted that assessment has a direct impact on students’ learning (Askham, 1997; 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).

The importance of taking cognizance of assessment *for* learning and assessment *of* learning has relevance for lecturers in the design of their assessment strategies. However, assessment *for* learning 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 below. Seven of the eleven conditions refer to feedback. Building on the model developed by Gibbs and Simpson and adapting it to fit both Built Environment and more particularly construction management is the goal of this research.

The work of Nicol and MacFarlane-Dick (2006) in the Re-Engineering Assessment Project, where the driving force behind the project was to re-think the definition of assessment while also addressing the faculty/student relationship in assessment, has the potential to provide those associated with student learning with a conceptual framework that uses assessment for learning as its platform.

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.

### **The aims and purpose for the research**

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). 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 CM undergraduate education. The purpose of the research reported is to investigate institutional and program documentation for CM programs identified on the island of Ireland and compare whether the conceptions and views of CM program managers is aligned with the seminal literature in the area of assessment practices. A mixed-methods approach was adopted in two phases, beginning with an investigation of institutional and program documentation for the chosen institutions which was analyzed quantitatively. Subsequently, semi-structured interviews with CM program managers were conducted and analyzed qualitatively (Creswell, 2009). The two sequential phases are connected with the quantitative findings from the review of documentation informing the data collection and qualitative analysis in the interview phase with CM program managers (Creswell, 2009).

### **The quantitative analysis of program and institutional documentation**

Documents were reviewed and analyzed for the six participant institutions with respect to policy and procedures on assessment, program assessment strategies, regulations and cultural specific aspects along with the types of assessment used at program level. A focus of the analysis concentrated on the reference to formative assessment policy or practice. Tables 2 and 3 make reference to the breakdown by the relevant sections.

Table 2 refers to the analysis of the institutional policy and procedures and those documents reviewed typically focused on the procedural elements and the requirements under the Quality Assurance policies and procedures in each institution. In the case of three of the IOT sector those policies were linked to an overall governing authority while in the case of the other three the policies were very much institutional. One of the IOT sector made reference to assessment for learning and the importance of this forming part of the learning experience for the students.

Table 2  
*Institutional policy documentation research enquiry*

<b>Institution</b>	<b>Institute policy on Assessment</b>
U1	Traditionally, assessment strategies have been developed at module and program level, relying on the established and developing practices and approaches within the discipline, and the professionalism of academic staff. The judgment of the appropriateness of such strategies at University level through the institution's evaluation and re-validation processes, with adjustments also being made in light of comments from external examiners and students. There is an expectation that a range of assessment methods be used at the appropriate level of the module and program. External Examiner process in place.
U2	This university operates a modular credit continuous assessment system which provides continuous feedback to students on academic performance. External Examiner process in place. Assessment strategy decided at program level.
IOT1	Institute regulations refer to assessment procedures and regulations define assessment 'of' and 'for' learning. The regulations identify program level as the level where decisions should take place. No requirements as to the types of assessment to be used and is based on the institutional model. External Examiner process in place.
IOT2	Documentation and regulations refer to establishing the extent to which the program learning outcomes have been fulfilled and the conditions under which progression can be made. No reference as to the modes of assessment to be used with an overall marks and standards approach. Policies guided by national agency.
IOT3	Documentation and regulations refer to establishing the extent to which the program learning outcomes have been fulfilled and the conditions under which progression can be made. No reference as to the modes of assessment to be used with an overall marks and standards approach. Policies guided by national agency.
IOT4	Documentation and regulations refer to establishing the extent to which the program learning outcomes have been fulfilled and the conditions under which progression can be made. No reference as to the modes of assessment to be used with an overall marks and standards approach. Policies guided by national agency.

U1 and U2 – University level; IOT 1,2,3,4 – Institutes of Technology (IOT) level (IOT 2, 3, 4 are part of the Higher Education and Training Awards Council system)

Reference to the procedures around the external examining process, a process where an external academic and industry professional in the discipline are engaged by the institution to review and evaluate the academic standards annually, was evident in all institutional documentation. This further emphasizes the embedded nature of the 'measurement model' in operation within the HE sector. However, one might argue that there is no representation on the informal aspect of this process, which provides an opportunity for academics from other institutions to share and discuss 'best practice'. While the tacit transfer of practices among academics is a genuine outcome of this process it is not reflected in any of the documentation produced. All institutions made reference to cheating and plagiarism and the regulations surrounding same.

The review of the program documentation uncovered that documents tended to be procedural in nature with the main focus being on the allocation of marks for assessments, number of module credits, progression requirements and the level of awards relative to institutional procedures. Where module descriptors formed part of the program documentation assessment strategies tended to focus on the type of assessment with the allocation of weighting being a normal inclusion. In only one instance was there any reference to assessment for learning and in that case the module details made reference to the opportunity to make a draft submission of assignment where feedback would be provided. Table 3 identifies the assessment type included in program documentation by institution. Continuous assessment refers to an assessment type that contains more than one assessed task/project.

Table 3  
*Types of assessment identified in program documentation*

Institution Type of assessment	U1	U2	IOT1	IOT2	IOT3	IOT4
Written Exam	√	√	√	√	√	√
Coursework	√	√	√	√	√	√
Continuous Assessment			√	√	√	
Portfolio			√			
Practicals/labs	√	√	√	√		√
Dissertation/ Final Project	√	√	√	√	√	√
Presentations	√		√	√		√
Work placement	√		√	√	√	√

### The qualitative interviews

The analyses of the interviews with six CM program managers identified their views and conceptions around assessment. The emerging themes common to the CM program managers are stated in table 4 and include the purposes of assessment, learning and teaching, summative and formative assessment. One clear theme was the importance of assessment in the educational process, and this was alluded to by all. Most particular was the importance given to formative assessment in student learning. However, the mechanism on how this was to be achieved differed between each manager interviewed and this was very much dependant on the particular conceptions on learning, teaching and assessment among the program team.

Table 4  
*Concepts and codes arising from the interview phase with CM program managers*

Concepts	Open Codes
Purposes of assessment	Examination, coursework, regulations, assessment criteria, policies and procedures, summative purpose, formative purpose, holistic assessment, compliance,
Learning and teaching	Teaching methods, improve student learning, innovative practice, modularization, semesterization, student centered learning, independent learning, over assessment, modules, active learning
Summative assessment	Examination, coursework, portfolio, measurement, practical tests, peer assessment
Formative assessment	Importance of formative assessment, student involvement, peer assessment, feedback, continuous assessment, portfolio, flexibility,

The emerging concept that is very much identifiable among the program managers interviewed is the difference in philosophical position with respect to assessment and how they view the assessment of student learning, i.e. the purpose of assessment. It is seen as multi faceted, examination orientated, it is about a holistic approach, it can include both summative and formative assessment processes. The analysis of the data reflects differing positions as evidenced by the quotes below:

*'Assessment is about measuring what the student understands and can do'*

Interviewee B

*'Assessment is about exams'*

Interviewee E

*'If you want students to learn, they have to be assessed and I would see assessment as being more than just an end of term exam'*

Interviewee D

The stated approaches to learning and teaching are very much associated with the philosophy within the institution and program along with the culture of those academics involved. There is evidence from at least two program managers interviewed that modern methods are being used where faculty engage students in meaningful learning and adopt assessment for learning approaches. In those cases the successful approaches adopted were attributed to ongoing professional development in the area of learning, teaching and assessment.

The importance of assessment in the educational process was alluded to by all, as was the importance of formative assessment. However the mechanism on how this was achieved differed between each program manager where the embedding of formative assessment opportunities was seen as a real challenge. The contrasting positions are demonstrated as follows below:

*'Their assessment is just the measurement of how well you (they) have reached that'* Interviewee F

*'It is a kind of on the go feedback.... It is the use of mobile technology where students can ask questions of the lecturer (faculty) during the lesson by sending a question'* Interviewee D

The impact that modularization and semesterization has had on program development and the learning, teaching and assessment processes was referred to. There was a view expressed that the compartmentalization of units of learning has had negative effects on formative assessment and feedback opportunities. The view also existed that there was insufficient time to provide meaningful feedback to students as the semesters are so short. There was a reluctance to have students involved in assessment design and examples in the use of peer assessment were totally absent. In one instance the program manager clearly stated that students should not be involved in the design of assessment.

### Concluding thoughts

This paper has provided a summary overview of the author's research to date on institutional and CM program documentation in six providers of CM education on the island of Ireland. It has also presented an analysis of the views and perceptions of program managers in these institutions in the context of their assessment practices in undergraduate CM education. Assessment and program documentation and the comments from the CM program managers indicate an emphasis on assessment of learning and in particular on the demonstration of understanding and mastery of skills and competences. Discussion and reference to assessment for learning is hugely lacking at both policy documentation level and in the discussions with program managers. Reflecting on the literature on assessment in HE and linking it to the research study, what is identifiable is that a conceptual framework for assessment would be helpful to academics as they develop their learning, teaching and assessment practices. Drawing on the research and linking it to seminal literature in the area of assessment such a framework should be based on the following key assumptions:

- Assessment both summative and formative should contribute positively to students' learning
- There should be a focus on what is to be learned (learning outcomes) with that learning contextualized towards both the program of study and beyond
- It must develop students' ability to make judgments about what constitutes good work – self regulation
- It should be student centered and place the learner as 'active' in the learning process
- Academics should be informed by 'best practice' in the area of assessment.

### References:

- Askham, P. (1997). An instrumental response to the instrumental student: Assessment for learning, *Studies in Educational Evaluation* 23(4), 299-317.
- Barnett, R. (2003). *Beyond All Reason: Living with Ideology in the University*. Buckingham: Open University Press.
- Black, P. and Wiliam, D. (1998). Assessment and classroom learning in *Assessment in Education*, 5(1), 7-74.
- Bloxham, S., Boyd, P. (2007). *Developing Effective Assessment in Higher Education*, Open University Press.
- Boud, D. (1990). Assessment and the promotion of academic values, *Studies in Higher Education*, 15(1), 101-111.
- Boud, D. (1995). Assessment and Learning: contradictory or complimentary, in Knight, P. (Ed), *Assessment for Learning in Higher Education*, London: Kogan Page.
- Brown S., Race P., & Smith B., (1997). *500 Tips on Assessment* London: Kogan Page
- Cohen, L., Manion, L., and Morrison, K. (2001). *Research Methods in Education* (5<sup>th</sup> Ed.)Routledge /Falmer: London & New York
- Creswell, J. W. (2009). *Educational Research: 3<sup>rd</sup> Edition* New Jersey: Pearson Prentice Hall.

- Gibbs, G. and Simpson, C. (2004). Conditions under which assessment supports student learning. *Learning and Teaching in Higher Education* (1), 3-31
- Knight, P. T. (2002). 'Summative assessment in higher education: practices in disarray', *Studies in Higher Education*, 27(3), 275-286.
- Newstead, S. (2002). 'Examining the examiners: why are we so bad at assessing students?', *Psychology Learning and Teaching*, 2(2), 70-75.
- Nicol, D., Macfarlane-Dick, D. (2006). Formative Assessment and Self Regulated Learning: a model and seven principles of good feedback, *Studies in Higher Education*, 31(2), 199-208
- Nicol, D. (2006). *Increasing success in first year course: assessment re-design, self regulation and learning technologies* at ASCILITE conference, Sydney December 2006
- Ramsden, P. (1992). *Learning to Teach*, London:Routledge.
- Raven, J. (1991). *The tragic illusion: educational testing*. New York: Trillium Press.
- Rust, C. (2007). Towards a Scholarship of Assessment, *Assessment & Evaluation in Higher Education*, 32(2), 229-237.
- Stiggins, S. (2002). Assessment crisis: the absence of assessment for learning *Phi Delta Kappan*, 83(10), 758-765.