

Professional Development and Team Integration

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1. SUMMARY

Within the United Kingdom construction industry there have been three recent important reports: Latham (1994) and Egan (1998 & 2002). All three of these reports have identified the need for 'professional development and integrated team working'.

Higher educational institutions have, to date, not mastered how to truly attain integrated team working on undergraduate course provision. This paper explores an approach taken at Sheffield Hallam University in curriculum development and delivery. The format utilised for incorporating different professionals is validated by external examiners, employers and student feedback. Further developmental work is currently being undertaken to include a wider range of professions and this is discussed.

The motivational aspects of this form of curriculum design and delivery for both staff and students forms part of the paper. The main output of the paper is a generic framework that can be adopted or adapted by other higher educational institutions in a drive for integrated course delivery. Thus the key issues of Latham (1994) and Egan (1998 & 2002) can be addressed.

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1. LEARNING OUTCOMES APPROACH

Professional Institutions recognise the value of having graduates who have attained the Common Learning Outcomes. However, higher educational establishments are charged with the implementational process, but validation of their processes is the domain of the professional bodies.

Industrial customers are the potential employers of graduates who are the product of higher education. They have a direct interest in there being available a 'suitable workforce' with which they can efficiently, effectively and professionally operate their organisations. As such, graduates are required who can fulfil specific vocational competencies.

Once customer demands are recognised they are then required, for the purposes of higher education, to be interpreted into coherent 'learning outcomes'. For this to be tenable the nature of the term 'learning outcomes' must be appreciated. A 'learning outcome' is defined as being something that students can do now that they could not previously do (Ecclestone, 1995). Thus learning outcomes can be regarded as changes within a person as a result of a learning experience. For the purpose of using learning outcomes within higher education, assessment must be both possible and appropriate. The desired learning outcomes of higher education courses must therefore not only be representative of customer demand, they must also be clearly stated and assessable. In describing learning outcomes, four different approaches to specification were explored in an investigative project into learning outcomes of higher education. The four approaches were based on:

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|--------------------------|---|--|
| <i>Objectives</i> | - | the stated intention of the course |
| <i>Subject knowledge</i> | - | the knowledge content commonly identified in syllabuses or course documentation |
| <i>Discipline</i> | - | the notion of a discipline as a culture and value system to which the graduate is admitted. |
| <i>Competence</i> | - | what a graduate can do as a result of the degree programme, including the narrower notion of occupational competence. (Otter 1992) |

In recognising that the desired learning outcomes are the interpretations of customer demand and that they require to be both clearly stated and assessable, it can be appreciated that they

are the engine that enables the continual driving forward of higher education towards the Common Learning Outcomes framework.

In acceptance of this a central aspect of a research project at Sheffield Hallam University is concerned with the learning outcomes of students. The learning outcomes methodology is seen to provide the instrument for placing the customer at the centre of organisational activities and for enabling an identification of specific customer requirements. This approach is viewed as empowering the host organisation with the means to gauge its service provision through the monitoring of learning outcomes attainment. The learning outcomes approach provides a focus for both higher educational provision and customer activity.

Egan (2002) opines the importance of educating construction staff with all bodies addressing the issue of professional development for graduates into management roles. The attainment of this key aspect of Egan (2002) is very much dependent upon the deployment of a learning outcomes approach.

The incorporation of learning outcomes into the delivery of the curriculum requires planning. Brown and Atkins (1996, pp. 35) purport

“The essential skill of effective lecturing is preparation not presentation. Obviously presentation is important but without a clear, coherent lecture structure a presentation may have a short-lived effect.”

The planning activity not only incorporates the material to be taught but also impacts upon the teaching approach to be adopted by the staff who will in turn be influenced by the learning outcomes. This issue is corroborated by Cox (1994, pp. 27) who wrote *“teaching methods/learning activities should be matched to the objectives of the course.”*

At Sheffield Hallam University the above valid points have been noted and incorporated within a ‘Module Guide Learning Outcomes Framework’. All curricula are written for modules with specific reference to the appropriate learning outcomes.

The first phase in the production of Module Guides is to determine the required learning outcomes of the student upon completion of the module. This allows further consideration to be given to the methods of teaching. It also provides for the identification of the most suitable assessment strategies to be employed. Therefore there is a link between outcomes, delivery and assessment.

Module Guides have sections on

Rationale: this provides the educational, commercial and/or industrial need for and context of a module;

Summary of aims: Aims can include the development of attributes such as interests, desirable attitudes, appreciation, values and commitment as well as knowledge, understanding and

application. They are concise, broad statements against which the success of the module can be evaluated;

Learning outcomes:

These are what you expect the student will be able to demonstrate at the end of the module.

1.1 Teaching and Learning Strategy

This provides the overall strategy for how the learning outcomes are to be achieved and a rationale for the methods to be employed, with their degree of emphasis within the module, e.g. reference to lectures, directed reading, use of learning resources including IT.

Teaching, learning and assessment strategies and methodologies move progressively from tightly structured didactic approaches in the earlier semesters where recall and comprehension form the basis of assessed performance, to a much stronger student centred approach. This requires greater levels of independent learning. Application, analysis, synthesis and evaluation of more complex vocationally related data and processes characterise the final modules of study. Learning processes require that students understand the objectives of the educational process.

1.2 Assessment and Feedback Strategy

The assessment and feedback strategy should describe the approach and indicate the following:

- the balance of formative and summative assessment;
- the quantity and timing of assessment;
- the timing and type of feedback to students;
- where the assessment process is intended to provide a vehicle for learning as well as an assessment of learning.

1.3 Assessment Criteria

The assessment criteria which forms the basis of formal assessment should be listed showing, where appropriate, which criteria are to be used for different components of assessment. Criteria should establish the level of achievement that is required for a student to pass the module and should be directly related to the module learning outcomes.

So far we have established that learning outcomes encapsulated within a structured module guide are a valid methodology for obtaining and assessing what a student can do as a result of the learning process. We may now consider how the above can be utilised to address the issues of professional integration and produce reflective practitioners.

Within the School of Environment and Development at Sheffield Hallam University the two key parts of integration and reflective practitioner have been addressed by developing an

Integrated Project. Integrated Project has been designed to employ an integrative approach by mixing different cohorts including the following courses:

- BSc(Hons) Quantity Surveying
- BSc(Hons) Construction Commercial Management
- BSc(Hons) Construction Building Management
- BSc(Hons) Construction Management

Students undertake the role of external consultant to the managing director of a medium sized construction company. Peer assessment of their performance/contribution is incorporated within the assessment strategy. The advantages to students are that they gain valuable experience of applying taught material to real world problems. This approach addresses one of the main aims of the School's objectives related to professional bodies and that is for us to produce 'Reflective Practitioners'.

A reflective practitioner learns from previous experience in a drive for continual improvement. With specific reference to the attainment of being a 'Reflective Practitioner' greater emphasis is placed on problem-based learning. This is well suited to our integrated project where students are confronted with real world problems requiring multi-disciplinary solutions. This concept is incorporated into the Learning, Teaching and Assessment (LTA) methodology. Further underpinning of the approach adopted is provided by the fact that most of the 'Common Learning Outcomes Framework' established by the Construction Industry Board is addressed. The outcomes are focussed upon 'Communication Skills, Group Dynamics and the attainment of Professional Awareness' (CIC 1999).

Staff advantages included savings in delivery time and the opportunity to bring to life module content such as financial analysis (this advantage is not mutually exclusive from students). Staff were also engaged in some team teaching and this provided the opportunity for staff development and peer observation.

2. DESCRIPTION OF APPROACH TAKEN: INTEGRATED PROJECT MODULE

2.1 Subject Area

The Integrated Project is based on a pre-documented 'case study' and is a final year module. Therefore, in line with Latham (1994) and Egan (1998 & 2002) a truly integrative learning, teaching and assessment strategy was deployed. The content of the module includes:

- financial analysis of construction companies;
- capital investment appraisal;
- corporate strategy and the business environment;
- quality issues.

All of the above are related to the Built Environment and effective teamwork is an important ingredient for the success on any construction project. Within the context of the above, students learn better by the application of module content supported by timely formative and

summative feedback. Thus the LTA strategy reflected these requirements. Students are exposed to ‘real life’ issues of interdisciplinary group working, co-ordinating, peer assessment, communication, written presentations (reports), conducting meetings with senior staff and analysis and evaluation of documentation with recommendations. Finally a formal group presentation is made to the Managing Director and his associate (staff).

2.2 Pedagogical Approach

As far as is possible the ‘Case Study’ approach employed simulates industrial practice, with students being required to work in mixed groups of four. After an initial introduction to their fellow students they form their own groups. Students are then talked through the Module Guide, concentrating on LTA strategies and the actual Case Study. They then work through the specific questions, these being in four parts, three of which are written reports and the final one consisting of a presentation. This approach enables students to learn through mixed peer group discussions whilst being supported by tutors. The importance of ‘group maintenance’ is explained to them in some detail.

2.3 Teaching Methods

The ‘Case Study’ incorporates the following learning outcomes:

- development of a critical self awareness within the context of team working;
- demonstrating the ability to develop and employ written and verbal communication and presentation skills;
- ability to define, analyse, evaluate and report on the different management and commercial business functions related to the Built Environment;
- evaluation and reporting on business functions and information relating to technological, business, economic and management topics.

Work submitted should demonstrate original thinking within the context of recognised expertise and existing practices. To achieve this students have to read around the subject area and bring referenced material into their work. This work, supported by a comprehensive discussion, calculations and graphs, where appropriate, must demonstrate analysis and evaluation of the problem domain and provide considered conclusions leading to recommendations for the Managing Director.

Lecturing staff are available for consultation and teaching consist of a composite of lectures and group workshops in which student activity and participation plays a key role. Workshops provided the opportunity for the application of taught material.

2.4 The Project (Case Study)

In designing the ‘Case Study’ staff was concerned to ensure that the module material was delivered within the context of the learning outcomes. Therefore an integrative LTA strategy built around a ‘Case Study’ was developed. The rationale for adopting this approach was that it not only covered the integrative nature of the learning outcomes but it also enabled mixed

group working and the development of a 'reflective practitioner' approach in conjunction with the CIB common learning outcomes.

3. PROJECT EVALUATION

3.1 Mixed Cohort Groups

It was foreseen by the module tutors that getting mixed groups to work together could be a difficult issue but in practice the students did not hesitate in getting together and establishing a working relationship. We believe this was a result of reassurance regarding the peer assessment process. Students were assured that a group would obtain varied marks if the individual contributions merited this action.

3.2 Workload

There was some trepidation by students that the workload for the module was too demanding. However, when it was explained that the whole Case Study would be broken down into four components with each being interlinked, their unease was removed. They appreciated the lecturers' promise to return all assessments incorporating a comprehensive written feedback within one week and a verbal summary/discussion with the students. This promise was kept. The process did enable the incorporation of feedback from one assessment to be noted and, if required, action taken to improve the next assessment.

Due to the overarching objective of concentrating on the 'application' of taught material, students were coached in ensuring they made the material relevant to the 'Case Study' company. 'What does it mean to the Managing Director?' was always the guiding principle.

3.3 Progress

Staff, students and external examiners were pleased with the way the project and assessment process progressed. It was a critical point that tutors supported the innovative LTA strategy. There could have been problems if tutors had not done their very best to ensure the project's success. On many occasions they gave extra surgery time to assist in the development of a 'professional' approach by students. Utilising this approach is what the tutors would call 'added value'. Students not only completed the module and obtained good grades but, because of the extended and close relationships with tutors necessitated by the 'Case Study' they gained an insight into how 'professionals' conduct themselves and communicate at the highest level. For example, students kept records/minutes of meetings with the Managing Director (tutor).

3.4 Student Feedback

Student feedback clearly indicated that they liked the challenges of relating the module content to 'real life' issues. Part-time students were able to bring in their work experiences.

4. CONCLUSIONS

Sufficient time has now elapsed for the attainment of feedback on the learning outcome incorporation process from students, staff, employers, professional bodies and external examiners. The summation of this feedback is that the process has worked very well, students and employers agreeing that the reflective and inter-disciplinary aspects have been addressed and this is validated by student (employee) performance. Staff, through appropriate teaching, learning and assessment strategies, are confident of student attainment. Again this is validated by being able to show that the QAA benchmarks for Building and Surveying are addressed.

Developments are now underway to include a further range of courses to add to the integrative nature of the project.

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