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THE DEVELOPMENT AND BENEFITS OF A WORK PLACEMENT MODULE IN BUILT ENVIRONMENT RELATED DEGREE PROGRAMS

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Abstract

Work Placement learning has become a regular feature on many of the construction related courses being delivered in third level institutions both here in Ireland and throughout the world. This paper examines how a work placement module is delivered to a group of construction students on a construction management undergraduate degree course, and details changes that could be implemented to allow a greater learning experience for the students. On the surface it has been relatively successful but its true pedagogy value has not yet been assessed. This paper will assess the true value of the placement and recommend any changes to the current programme if necessary. The importance of this mode of learning cannot be overstated, Cunningham, Davies and Bennett (2004)[1] feel that "learning is part of being human and people learn all the time at work" (Cunningham, Davies and Bennett, 2004, p.16) which establishes the important link between work and learning. This is reinforced by Boud and Garrick (1999)[2] who advise that "learning at work has become one of the most exciting areas of development in the dual fields of management and education" (Boud and Garrick, 1999, p.1). Boud and Garrick (1999) also examine the importance of workplace learning and find that the pools of knowledge acquired in initial education are no longer sufficient for the new work order. They advise that what is required by future employers surround abilities to apply that knowledge and expertise to use in unfamiliar circumstances, and point to demands for flexibility, communication skills, teamwork and qualities of that nature. The idea of the workplace being an effective site of learning is strongly supported by Hager (1999)[3] who also contends that students are supportive of this method. Illeris (2002)[4] suggests that any learning theory that has received a certain amount of recognition and dissemination must have something to contribute to the whole. Using research methods such as: workshops utilising semi structured interviews, short questionnaires, reinforced by documentary research, this paper will highlight problems within this type of module, and potential recommendations going forward. Toohey (1999)[5] contends that a work placement component may contain logistical difficulties that may arise. Such difficulties may surround sourcing of work placements, what will happen if sufficient placements cannot be organised, who will be responsible for liaison between the employer and the educational institution, what form that liaison will take and how frequent that contact is expected to be (Toohey, 1999). giving an insight into the new challenges arising from this economic scenario. This study, while focusing on a specific course in Dublin Institute of Technology, will provide conclusions which will be of benefit to students, lecturers, employers, and to third level institutions throughout Ireland who offer similar construction related courses. The economic state of the Irish construction industry features as an important backdrop to this study, and it must be recognised that the industry's economic performance is ever changing and this must be taken into account when evaluating conclusions reached.

Keywords: Work Placement, Construction Management, Quantity Surveying, Industrial Experience

1 INTRODUCTION

In defining workplace learning, Boud and Garrick (1999)[2] observed the workplace learning as being associated with two quite different purposes:

...The first is the development of the enterprise through contributing to production, effectiveness and innovation; the second is the development of individuals through contributing to knowledge, skills and the capacity to further their own learning both as employees and citizens.

(Boud and Garrick, 1999, p. 6)

Work Placement learning has become a common method of delivering sections of programmes to students. Symes and McIntyre (2000)[6] indicate that in several countries including Australia and the UK, work based learning degrees are being established in which learning occurs primarily in the workplace. This paper examines how the work placement is delivered to a group of construction students and details changes that could be implemented to allow a greater learning experience for the student. Work Placement has been in place for 3 years in the programme being examined. On the surface it has been relatively successful but its true pedagogy value has not yet been assessed. This paper will assess the true value of the placement and recommend any changes to the current programme if necessary. The author's experience of Work Placement is very positive as part of his undergraduate degree involved Work Placement. The Work Placement was the driver in the author being enthused to complete his degree and to work with the organisation he had completed his placement with on graduation.

The course that the work placement relates to is a four year honours degree in Construction Management. The placement takes place in the first semester of the third year of the programme. At this point the students have achieved a substantial degree of learning that will allow them to enter the workplace with a good knowledge of the Construction Industry. It should however be noted that the experience and the work environment that the students enter can differ greatly. This can be a problem in assessment of the module.

Work placement gives the students an opportunity to enter the industry prior to graduation. Gomez et al. (2004)[7] suggests that students who opt for work placement are better placed to enter the employment market on graduation. The running of the work placement in the Construction Management Degree is of great benefit over other similar degrees in Ireland. It is also illustrated by Mendez (2008)[8] that placement can have an improvement in academic performance on the students return to college. This is also backed up by the researcher's experience that has firsthand experience of students going out on placement and then meeting them on their return to college. A change in attitude to their qualifications and a new found maturity is very obvious.

Work Placement also has great benefits to the employers. The employer is given an ideal opportunity to look for permanent staff, in effect a six or twelve month interview. The placements provide potentially useful links between academia and industry leading perhaps to effective long-term relationships employers to help provide and reinforce a learning culture within organisations.

2 CONTEXT AND RATIONALE.

There was an unprecedented demand for professional construction services from the mid 1990's to 2006, mainly due to a rapidly expanding construction sector. The third level education sector responded to this demand by increasing the number, capacity and variety of construction courses throughout the state. Course choice for students was directed by a number of factors: most importantly accreditation by professional societies, however other factors such as modes of delivery, location and work placement also play a major part. Many commentators acknowledge that employers have a preference for students with previous work experience over those devoid of that

experience.(Bennett, Eagle, Mousley and Ali-Choudhury 2008)[9]. The radical change in the economic fortunes of the construction industry from 2006 onwards sets the backdrop for challenging times facing third level institutions dealing with work placement in this sector.

This paper will place an emphasis on innovative solutions regarding work placement. When ministers of education met in Leuven in April 2009 to review progress on the Bologna process, they defined a series of high level objectives for the decade ahead from 2010 to 2020. One of these objectives centered around employability through work placements embedded in study programmes. The current economic climate in Ireland will make this objective a challenging prospect with record levels of unemployment showing little sign of abatement. Traditional work placement modules may not prove flexible enough for employers in this climate where many of their other employees are being made redundant. Indeed resentment may present itself where students are employed to fulfill roles recently vacated due to redundancy. There is nothing new about having work placement modules within undergraduate courses, however the current state of our economy is in unknown territory, and our modules and policies must adapt to deal with work placement within this context.

The author's professional backgrounds are in the Construction Industry, and no other sector has experienced such a monumental collapse. Our particular interest in work placement centres around our lecturing commitments in Construction Economics and Construction Management, in DIT. It is coincidental that this debate is being conducted while industrial output in this sector is in a state of meltdown. With this environment in mind, the challenge posed is to formulate a module which will reflect the current state of industry. This paper will attempt to apply new research in this area to assess a work placement module for our students, incorporating the flexibilities necessary to accommodate the turbulent economic realities of today's construction industry. Our colleagues in industry will be consulted to examine the traditional work placement and its feasibility in the current climate. There may also be ethical implications for students employed in roles, where redundancies have been imposed within those companies.

Within the construction industry, the education of practitioners has always had strong links to industry. However there has been an ongoing debate within many programme committees on whether a work placement requirement should be mandatory within their courses. This topic has been an area of hot debate among lecturers, with views polarized on the merits of such a module.

The main opposition relating to work placement modules are based on the following points:

- The collapse of the construction industry will make it extremely difficult to find willing participant companies.
- Students on work placements are in many cases left with menial tasks which don't add to their learning experience.

Those in favour of work placement make the following points:

- External Examiners are generally supportive of these modules.
- Industry has stressed that students who have completed these modules are generally more employable.
- Students are generally in favour of work placement.

Although there is some opposition to continuing with work placement modules in these stringent times, the points in its favour are convincing, however they must be reinforced with relevant up to date research. If we are truly committed to fully implementing Bologna directives, the enhancement and re-evaluation of this type of module is inevitable. The challenge lies in the composition of that module.

3 MODULE STRUCTURE

The overall aim of the module is to provide the student with industry experience and to develop the skills, knowledge and competence required to perform as professionals in management roles in the construction industry. The students start their work placement in September and are expected to work until mid January.

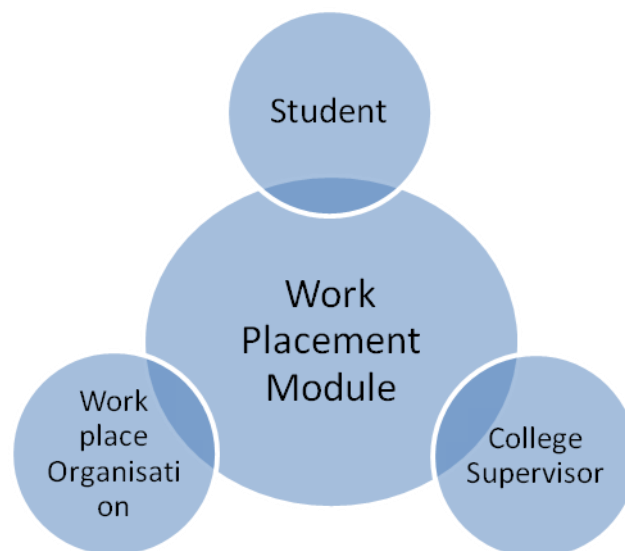
The module is a 30 ECDS credit module and accounts for 50% of the year 3 programme. Each student is assigned a supervisor who is the direct contact between the college and the organisation the student is employed with. On successful completion of this module, the student will be able to:

Show a strong understanding of how construction industry operates;

Analyse and evaluate worked based problems;

Justify actions taken on decisions made during work placement;

Demonstrate an ability to meet deadlines set for monthly reports, visits, and presentations.



Close links between parties involved in work placement

4 MODULE ASSESSMENT

The module assessment is through both summative and formative. The formative process includes the keeping of a daily diary and completing a monthly report that is submitted to their supervisors. Students are expected to reflect on their learning in their monthly reports and to examine the areas of learning they wish to achieve in the month ahead. The formative assessment also includes a site visit that is completed by the student's supervisor. This allows the employer to give their comments on the learning of the students. The summative assessment is completed through a final report and presentation. This final report is a reflection on the learning achieved through the work placement and is presented in report form and through an oral presentation. This allows students to give peer feedback to their fellow students and allows them to achieve valuable learning from their peers.

The monthly and final reports are a records of the students learning and ensure that the student achieves the learning outcomes set out in the module descriptor. Lester and Costley (2009)[10] have clearly set out the importance of implementing a clear method of assessing the module. They emphasised the need to understand that the work place has a different structure to the college environment and students need a clear structure to ensure the success of any work placement. This will involve a tutorial session with all the students involved in the work placement. This session will deal with the expectation of both employers and the college of the student during the work placement programme. It will also set out hand in dates, marking schemes for the different elements of the module and how communication will be implemented during the module.



4.1 Assessment Process involved in Placement

Eraut & Hirsh (2007)[11] suggests that the most effective and valuable learning for people in work is often that which occurs through the medium of work or is prompted in response to specific workplace issues, as opposed to formal training or off-job programmes.

5 WORK PLACEMENT BENEFITS

“Every day, we are confronted with problems and challenges which we addressed by drawing on our experience and by using this experience to find ways of learning what to do in new circumstances”

Bould and Millar (2000)[12]

From a very early age much of our learning is through experience and by repeating what our peers do. For many this is one of the most effective ways of learning. Work Experience as part of a Degree programme allows this method of learning to be replicated. The work placement module allows the students develop skills that are critical to the workplace. Carre et. al, (2000)[13] have found that many graduates lacked many of these skills. These skills are associated with management of information, communication skills and management of others. In the writing of the work placement module these skills have been closely examined. The module is run under the school of Construction, this allows an examination of how the trades are delivered to the students and have found that the practical experience that they receive is invaluable to them in the development of their skills.

The experience of students will differ and the extents at which they meet the learning outcomes will also differ. However it can be seen from research completed by Carre et. al(2000)[13] that generic skills can be improved with ‘on the job’ experience, particularly about learning how they should behave in their own organisation. In the placing of any student it was essential that care was taken to ensure that prior to any student was placed that the role was deemed appropriate to the level expected from the student. Once the student is aware of what is expected from both their college supervisor and their employer they can set themselves targets and deliver the learning objectives over the period of the placement.

Symes and McIntyre(2000)[6] have examined some of the benefits of workplace learning to both the third level Institute and to the client or employer. They have suggested that in order for a third level academic institute to flourish into the future they need to “be more relevant and to customise their courses to suit the needs of clients and stakeholders. The development of this module and other modules on the degree course is dependent upon feedback from employers. The work placement module allows the Institute to set up formal communication with these employers to examine key skills required by graduates in the workplace. This will allow the Institute develop to the need of the industries to which it serves.

From our initial discussion with industry much of the feedback has been with regard to certain skills that students did not acquire as quickly as they would like. This feedback was confirmed research that Symes and McIntyre (2000)[6] completed showing that the following skills were essential qualities students needed to acquire.

The ability to analyse workplace experience

The ability to learn from others

The ability to act without all the facts available

The ability to choose among multiple courses of action

The ability to learn about organizational culture

The ability to use a wide range of resources and activities as learning opportunities

The ability to understand the completing and varied interests in the shaping of one’s work or professional identity

McIntyre and Symes (2000) clearly advocate the preparation of students towards these skills. While developing this module and identifying these skills it was agreed amongst all module leaders that these skills would be incorporated into the module assignment. They also became a major part of the professional studies module. This is a module completed by the students in second year of their degree programme.

6 RESEARCH METHODS

From a review of the most pertinent methods of data collection and due to the accessibility to the construction industry, the most practical data collection methods are a short questionnaire and documentary research. A short workshop will be completed prior to filling in questionnaire with the students. This workshop will allow the researcher to explain what the aim of the research is. The workshop will also allow discussions to take place; this will allow the researcher to answer any questions the students may have and also allows the students to share their experiences. Triangulation will be adopted for this research. "Triangulation is the use of two or more research methods to investigate the same thing".(Fellows, 1997)[14] This allows results from one method to be validated by the results of another. The access to the construction industry is very important when carrying out each one of these methods especially for the interviews and the questionnaires. The data collection methodology selected has given a valid source of data that has provided accurate results.

The use of the workshop and the questionnaire were major techniques used for collecting factual information as well as opinions. The workshop allows probing into areas that cannot be expanded upon in the questionnaire. The workshop discussion takes the form of an unstructured interview. Unstructured interviews are very general and can be limited in the results produced. There is no set wording and it can be difficult to analyse the results. This allowed the experiences to be compared and to examine how students working in different environments can achieve the same learning outcomes. The workshop was a discussion based with little or no prompting from the researcher. The researcher used 'open' and 'closed ended' questioning, but the questions were not asked in a specific order and no schedule was used. It was felt that this method would encourage students to open up, it also allowed students to compare their experiences. The workshop commenced with a general discussion on the experience of the students involved in work placement and then led into questioning into more specific areas. These areas included;

Student learning from work based learning

Student experience in a work environment

Improvements that could be made to the experience

Has it given practical experience of construction in the real world?

Has it improved job opportunities on graduation?

Has it give you increased confidence and maturity?

Has the experience developed teamwork and interpersonal skills?

Has it made you more aware of current developments in industrial and commercial environments?

Is the knowledge you gained being applied directly to the final stages of your course.

Has anyone on placement with a construction company got an offer of employment for the future?

Changes you would like to see from the employer

In consideration of the merits associated with the use of the qualitative and quantitative research methods discussed above and the exploratory and subjective nature of the present research, the workshop with students who were on placement was selected as the main data-gathering techniques.

A comparative review of the documentary research work on the role of work placement in Higher Education and the benefits to the pedagogy of the student will complement the findings from the workshop. This triangular approach, whilst helping to reinforce the likely validity of the research findings, will help reduce the bias inevitably introduced by the use of a solitary research technique.

This allowed the experiences to be compared and to examine how students working in different environments can achieve the same learning outcomes.

The second source of research used will be semi-structured interviews to employers of the work placement students. The students who took part of the workshop were asked if their employers would take part in the structured interview. A semi structured interview is more formal than the unstructured as there are a number of specific topics around which the interview will be based on. "This form of interview uses 'open' and 'closed' ended questions but the questions are not asked in a particular order."(Naoum, 2007)[15] In structured interviews, questions are presented in the same order and with the same wording to all interviewees. Interview data allow for the researcher to interact with the researched. They were selected from the following groups

- Large Contractors (turnover over €50 million)
- Medium sized contractors (turnover between €10 million and €50 million)
- Small sized contractors (turnover under €10 million)
- Project Management Consultants

The information was analysed from all notes and the questionnaire completed from the class group. Two people from the role of the engineer and two people from the role of management were selected to take part in semi structured interviews. It was important that the number of people from management was equal to that from the engineering aspect as it became clear that the respondents from management came from a number of levels of management. The semi structured interviews were discussion based with little or no prompting from the researcher. The interviewer used 'open' and 'closed ended' questioning, but the questions were not asked in a specific order and no schedule was used.

From the semi-structures interviews with the employers one area of concern was brought up again and again. The employer felt that they were not fully aware of the level and experience of the student on arrival into the workplace. Many employers had the students working out on site and didn't give the student much opportunity to use their information technology within their organisation. Through the semi structured interview the employers were very surprised that the student had covered certain skills in their academic studies.

One area that employers felt was beneficial was the creation of the link between their organisation and the DIT. The employers felt that this link allowed them to improve the CPD (Continuous Professional Development) within their organisation. One of the great benefits from this to the DIT is the availability of sites for site visits for students from other years and other programmes.

The third interesting benefit that came from the semi structured interview was the employer's strong belief that students should keep in contact with their employer during the final stages of their studies. This contact should include consulting their colleagues in the completion of their projects and most importantly their dissertation.

7 RESEARCH RESULTS

The general feedback from the questionnaire and workshop was very positive, with students commenting very positively of their experience. The feedback from the workshop gave the research real validity and allowed the learning benefits of the module to be developed further. The student feedback also allowed the module to be change if so required.

The first section of the research related to the overall experience of the student and the benefits that the placement brought to their personal skills. The results from this section of the questionnaire were very positive with 90% of the students giving positive feedback to these questions. Most students seem to have positive experience with many of them getting a broader understanding of the construction industry. One student explained how he “really enjoyed my work placement. Before doing my work placement I has never worked on or even been on a construction site. The site/project I worked on was fairly large. It was a great experience and I feel my expectations were achieved”. This was a common response to question 1.

An area that Symes and McIntyre(2000)[6] felt was a great benefit from work place learning was in communications and the increased confidence and maturity. The students agreed that the placement boosted their confidence and maturity. One student felt that “people were relying on me for setting out and quality checks so that boosted my confidence and maturity.” This was common feedback from students with many of them feeling that as their role developed their confidence grew. This was also seen by the responses to question 4 of the questionnaire. In this question students were asked did the placement improve their interpersonal skills. One student felt that working with sub contractors on an ongoing basis improved his communication skills. He felt that these skills were developed throughout the placement.

On completion of the work placement students had three more semesters to complete. The students believed that these semesters were much more relevant to them as they could apply their new experiences to an academic environment. This allowed students to bring their experiences into the classroom and gave confirmation to the student that the studies they were completing was standard practice and to the regulations in place. The students also commented that they were more confident to contribute to class and get involved in classroom discussions.

The next section of the questionnaire related to the future benefits to the student including their experience in final year and their future employment opportunities. The student response to these questions varied somewhat between different students. The true benefit for future employment is difficult to access in the current economic climate as there were very few students being offered positions on graduation. It has however been remarked by many students in the workshop that they felt it was a great benefit to their CV if they are to apply for work abroad. The work placement allows them to have an industrial reference and work experience when applying for a position on graduation. Another interesting part of the feedback that students gave in the questionnaire was in relation to the specialisms within the construction industry. Many students stated that the work placement allowed them to decide what area they would like to work in. One student working in health and safety believed that the work placement gave him an insight into this area and allowed them to choose this for his future career. Another student working with a main contractor concluded that he did not want to work for a main contractor on graduation. The work placement allowed him to conclude this.

8 CONCLUSIONS AND RECOMMENDATIONS

From the perspective of both the student and the employer work placement was beneficial with both parties seeing great merit in the module. It was strongly felt from the employer that the students gained a strong advantage on graduation over other students who had not completed work placement. The placement was a great benefit for the students future learning as student's interest in subject areas was increased greatly.

On completion of the work placement students had three more semesters to complete. The students believed that these semesters were much more relevant to them as they could apply their new experiences to an academic environment. This brought benefits to the student as well as the academic staff. This research has indicated that peer learning needs to be introduced into the final three semesters. This would allow students to bring their experiences into the classroom. In a Construction Management course with a strong practical element in is imperative that the practical experience is used in the learning and teaching. This will be introduced in the construction technology module in the fourth year of the programme.

The third and most interesting recommendation was discovered through the collaboration between the tutors running the module and the employers. Many employers felt that it took them too long to understand the abilities of the students and felt they needed to have a better understanding what the students had covered and what they could expect the students to know and have no difficulty with. This would benefit both the student and the employer and in the longer run would encourage employers to take students on for placement. It is recommended that the tutor meet with the employer prior to the student starting in work placement. This would allow the employer to be fully prepared when the student arrive on day one. This would allow both the student and the employer get the most from the work placement.

Another finding that came from the workshop that will be very beneficial in the current economic climate was the willingness of students to complete the work placement without charge. This will allow employers to give work experience to students without worrying about the cost implications on their business. Although there are some concerns with insurances and exploitation, these will be dealt with through a policy document drawn up by the department.

The paper raises awareness of the key issues involved in work placement and the problems of implementing work placement models in a Construction Management programme. Even without a formal partnering arrangement, it is possible to foster effective co-operation and achieve great with both employers and students. The questionnaire highlighted the key problem areas as well as the opportunities for using work placement to improve the student experience. Work placement can be effectively used on the construction management programme to enable knowledge to be captured and reused in the future. The findings should be of interest to researchers and practitioners as it highlights the issues involved in the implementation in construction education and the key issues to be addressed.

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