

2013

DIT Teaching Fellowship Reports 2012-2013

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DIT Teaching Fellowship Reports 2012–2013

College of Arts and Tourism
College of Business
College of Engineering and Built Environment
College of Sciences and Health

**Supporting the strategic themes of
Diversity, Modularisation and eLearning**

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Foreword

This publication provides a collation of reports of research conducted as part of the 2012–2013 DIT Teaching Fellowship scheme. The DIT Annual Teaching Fellowships were established in 2009 as part of Cycle II of the HEA's Strategic Innovation Funded Enhancement of Learning (EoL) strand of the Dublin Region Higher Education Alliance (DRHEA).

The aim of the DIT Teaching Fellowships is to support key college based educational research projects linked to the wider Institute Teaching, Learning and Assessment Strategy themes. (See Appendix A for the Fellowship Projects 2012/13.) The title of "Teaching Fellow" is awarded to an individual or a team, nominated by the college and who would undertake a research project to support the enhancement of learning and/or curriculum development at a programme, school or college level over a one academic year period. It is intended that evidence gathered from the studies will be utilised to inform relevant policy, practice or similar institutional research activities into the future. (See Appendix B for Teaching Fellowships Evaluation and Feedback.)

The establishment of Teaching Fellowships has been a very successful venture for the DIT and the projects are now financially supported by the DIT. However, this would not have been possible without the generous support provided through the HEA Strategic Innovation Funded EoL strand of the DRHEA to establish the initiative. This funding has enabled the successful completion of 35 Fellowship projects over the last four years with the resultant research outputs helping to inform both policy and practice across the Institute. This level of success is, in part, due to the enthusiasm and dedication of all the award recipients and the DIT staff who have supported the Fellowship projects throughout each academic year. I would also like to thank the College Heads of Learning Development and/or local Awards Contacts, my Learning, Teaching and Technology Centre colleagues and, in particular Dr Claire McAvinia who has been responsible for supporting the Fellows over the last year and collating this report publication.

Dr Jen Harvey, Head of the DIT Learning, Teaching and Technology Centre

Summary Overview of 2012-2013 Projects

College of Applied Arts and Tourism

Anne-Marie O'Farrell and Lorraine O'Connell: **Conservatory of Music and Drama**



Composers in the Community

Within the ever-changing contexts of music and music education, composers are increasingly required to be an artistic voice for the communities in which they live and work. This is particularly pertinent with the recent establishment of Music Generation which emphasises the need for composers to have a dimension of "outreach" to their work and the ability to work in community-based projects. Yet much teaching of composing at third level, while developing a high level of musical craftsmanship, often fails to promote the connection between those skills and the contexts in which many of these composers will find themselves in the future. The aim of this project is to enhance the learning experience of third level students by giving them the opportunity to apply, adapt and transfer their musical knowledge and skills through leading composition workshops in a primary school, and writing music suitable for performance by school groups.

College of Business

Joe Dennehy: **School of Marketing**



An Experiential Learning Approach: Implementing a group-based research project as the main learning vehicle in a first year Microeconomics module

There is now a fairly widespread understanding of the key role of a student's experience of the first year of a third level course in determining levels of retention, developing necessary skills to take full advantage of subsequent years of an academic programme and eventually emerging as a graduate with enhanced employment possibilities, which in turn will contribute significantly to the welfare of society, both economically and otherwise. The development of higher order skills such as analysis, evaluation, etc. is clearly essential in achieving those objectives.

Experience to date suggests that many of those skills can be acquired on a peer-to-peer basis through the interactions that take place within a student team in tackling common projects. It is also arguably the case that the acquisition of such skills is more likely the more realistic and applied is the project in question. This research project will attempt to evaluate the validity of that view and determine whether it may be possible to establish generic guidelines that would allow for the roll-out of a suitable model across a range of programmes within the College of Business.

College of Engineering and the Built Environment

Colm O'Kane: **School of Manufacturing and Design Engineering**



Stakeholder Involvement for Programme Development

In the current Higher Educational landscape in Ireland, it is crucial for universities and institutes to identify an individual identity or ethos for each of its programmes and act effectively to both foster this identity in its current students and promote it to prospective students. Almost every programme in DIT's College of Engineering and the Built Environment is in competition with similar programmes in other institutes or universities and differentiation of DIT's offering is an important goal. This project proposes the development of a framework for identification of guiding principles for individual undergraduate programmes across the College.



Enhancing Graduate Attributes: a preliminary research study

The *National Strategy for Higher Education to 2030* poses the question “What are the right skills for the graduates of 2015 and of 2030 and what mix of skills should we pursue as learning outcomes of higher education?” The answer that is put forth calls for increased attention to be paid to core skills such as communication skills and team working skills. It is the intention of this research to focus on these key graduate attributes and take the first steps towards developing a generic module which can be used Institute wide to enhance communications in the field of presentations and group work, conflict resolution and negotiation skills. The benefits of this project will be threefold. Firstly, the student will gain skills in critical areas deemed to be essential for both the workplace and their personal development as individuals in society. Secondly, DIT will be at the forefront of student care and development from a holistic point of view where the lifelong learning skills of the student are firmly grounded in real world activities. Finally, employers will gain from having a more rounded employee who can contribute positively to workplace activities. It has been shown through international research that graduate attributes are an essential part of a person’s career and self-development. It not only benefits the individual but also impacts positively on the individual’s role in society.

Peter Kenny: School of Mechanical & Transport Engineering



Improving Basic Electrical Principles in Motor Apprenticeship Education

Many motor trade apprentice students enter the later years of their studies ill prepared for the level of the material encountered. This is due to several factors including the level and knowledge of basic electricity and electrical/electronic principles. It is critical that motor students have a full grasp of these core subjects. The main aim of the project is to develop a diagnostic test to measure the level of preparedness of these students and to force students to revise and master the basics from their earlier years. A series of practical, hands-on exercises will also be developed to help the students to improve their core skills in order to better reflect changes and advances in modern motor vehicle technology.

College of Sciences and Health

Julie Dunne and Sinead Ryan: School of Food Science and Environmental Health



Work placement blogs to harness diverse learning experiences, provide timely assessment and feedback, and foster a community of practice

Students on work placement will have very different experiences from each other. However, they are generally not connected to their peers, but working with professionals under the guidance of a college tutor. Therefore during placement they are not formally supported by peers and cannot learn from the diverse range of activities their peers will experience. The aim of this project is to improve, build and expand on a successful and previously unfunded initiative in the School of Food Science and Environmental Health to enhance the student experience while on work placement by introducing blog assessment.

The overall objectives aim to:

- Overcome the weaknesses identified in the HC Pharmacy Technician work placement to develop an improved model.
- Expand the usage of blogs for several placement assessments across degree programmes in the school.
- Evaluate the revised model.

The main benefits of blog assessment:

- They encourage reflection on performance and the development of a community of practice, which together are important steps towards lifelong learning.
- Are a novel means to provide appropriate and timely feedback.
- Utilise Webcourses technology to provide an effective web-based learning environment to support self-directed independent learning and foster a community of practice for work placement students.

College of Applied Arts and Tourism

1 Composers in the community

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Abstract

Today's ever-changing contexts of music and music education demand that composers are increasingly required to be an artistic voice for the communities in which they live and work. Yet much teaching of composing in third-level institutions in Ireland, while developing a high level of musical craftsmanship, often fails to promote the vital connection between those skills and the social and civic contexts in which many composers work. The aim of this project was to enhance the learning experience of students in the Conservatory of Music and Drama by giving them the opportunity to apply, adapt and transfer their musical knowledge and skills through leading composition workshops in a primary school, and composing works appropriate for junior performance groups.

Working within a qualitative research paradigm and with a focus on reflective practice, data collection included questionnaires, semi-structured interviews and reflective journals. The projected outcomes included the development of the composers' critical reflection on the nature and social responsibility of their creative work and a growing awareness of the importance of composition processes in the emerging artistry of children. The study also has wider implications for curriculum development in the Conservatory of Music and Drama, for primary teachers' professional development, and the development of resources for teaching.

Keywords: *community groups, composing, practice-based learning, transferable skills*

Real art is one of the most powerful forces in the rise of mankind, and he who renders it accessible to as many people as possible is a benefactor of humanity (Kodály, 1954: 199)

Introduction

Composition at third level

Within the ever-changing contemporary contexts of music and music education, composers are increasingly required to be an artistic voice for the communities in which they live and work. Many music graduates will find themselves taking up positions as music specialists in schools or as composers-in-residence within community arts projects or as musicians within such initiatives as the recently established Music Generation¹ programme, all of which emphasise the need for composers to have a dimension of "outreach" to their work. This requires the ability to devise participatory workshops inclusive of all ages and musical abilities, to facilitate participants to communicate through music composition and to compose repertoire at an appropriate level for a given group. Yet much teaching of composing at third level, while developing a high level of musical craftsmanship, often fails to promote the connection between composition skills and the employment contexts in which many of these composers will find themselves. At Dublin Institute of Technology (DIT) Conservatory of Music and Drama students develop expertise in applied and stylistic composition, while composing exclusively with the professional performer in mind. Generally students have the freedom to choose the instrumental resources for which they compose. Opportunities to hear the results of their work, if any are available, are limited. In addition, in some cases students are reluctant to undertake further studies in composition as a result of their experiences of hearing new music that is based solely on conceptual explorations of sound at the cost of good principles of musical communication which advocate a balance between expectation and surprise (Mitchell 1976).

The research question

Reflecting on our students' limited preparation for life as a professional composer within today's society led us pose the following question:

- How can we enhance the learning experience of third-level composition students so that they would acquire the core skills and competences that would equip them for work in diverse contexts, including community-based projects?

This question aligns with the aims of DIT's *Teaching, Learning and Assessment Strategy*. We needed to provide our students with practical first-hand experience through which they could creatively adapt their musical proficiency and develop the necessary leadership skills to facilitate composing workshops and also to write appropriate music for specific and diverse music groups within a given community. With this in mind the answer was to find a community in which our students could work both as workshop leaders and as composers for a variety of ensembles.

We are fortunate to have a musically active and forward-thinking primary school adjacent to the Conservatory of Music and Drama and so in collaboration with the school a two-strand project was developed. It was hoped that such collaboration would be mutually beneficial as there are challenges in teaching composition in the primary school.

¹ Arising from Music Network's 2003 report, *A National System of Local Music Education Services: Report of a Feasibility Study*, and funded by U2 and the Irelands Fund, Music Generation was established in 2010 in order to develop a national framework for music education in Ireland. To date Music Generation has established nine Music Education Partnerships: Carlow, Cork City, Laoise, Limerick City, Louth, Mayo, Offaly/Westmeath, Sligo and Wicklow.

Composition in the primary school

Music is an integral element of primary school curriculum encompassing three strands: listening and responding, performing, and composing (National Council for Curriculum and Assessment 1999).² The value of composing in music learning has long been advocated in music education literature (see, for example, Schafer 1975; Swanwick 1979, 1988; Paynter 1982, 1997; Mills 2005; Burnard 2006). It gives children the opportunity to be artists, to be makers and creators of music and not just consumers of art (Small 1977). Through engaging in composition children explore various soundscapes, engage in decision-making and problem-solving, while selecting, ordering and structuring sound, and while communicating their music through performance. Due to the child-centred nature of education in Irish primary schools the classroom teacher is expected to teach all subjects. However, research has shown that many teachers do not feel fully equipped to teach music, with composition in particular being the most neglected of the strands (Irish National Teachers Organisation (INTO) 2009). Limited access to instrumental education in Ireland further hinders the advancement of musical activity in the classroom (INTO 2009).

Outline of Project

Strand 1

Strand 1 comprised four one-hour composition workshops with two separate classes, one 4th class and one 5th class, each led by two third level students under our guidance as project leaders.³ These workshops took place between February and March 2013 and culminated in a performance of the pupils' composed music. A profile of the classes is illustrated below:

	4 th class (9-10 years)	5 th class (10-11 years)
Number of pupils	25	25
Girls/boys	12/13	15/10
Number of nationalities	11	4
Number of pupils receiving instrumental tuition	4	7
Number of pupils in school choir	8	7

Table 1.1: Profile of classes in Primary School

As already noted, third level students develop expertise in composition, or what Shulman (1986, 1987) refers to as "subject matter knowledge". However, in order to lead composition workshops they also need to develop "pedagogical knowledge" and "pedagogical content knowledge"⁴ which includes skills in the areas of lesson planning, pedagogical strategies, communication, classroom management, group work, familiarity with teaching resources, and the ability to be flexible, to think on one's feet (or what Schön (1987) describes as "thinking-in-action"), and to respond positively to participants' creative endeavours. In order to develop these skills, we met the students before the project began and introduced them to a variety of teaching strategies, methods for managing larger groups and organizing group work, and teaching resources. We encouraged the students to also suggest materials or activities that might be incorporated. In addition, as the project is grounded in reflective practice, we suggested guidelines for reflection and asked the students to keep a reflective journal. We met with the students after each session to reflect on what happened during the workshop and to plan the next one.

Before commencing the workshops both classroom teachers completed a questionnaire through which we gained insight into their thoughts on the teaching of composition and ascertained the needs of the class. At the end of Strand 1 we carried out a semi-structured interview with both teachers in which they spoke of their experiences of the project, their observations of its impact on the pupils, and their reflections on its potential impact on their own thinking about the teaching of composition.

The group compositions created by the children of both classes explored an impressive range of musical dimensions including: rhythmic dialogue, polyrhythms, an arrhythmic soundscape of texture, and a graphic score (Appendix C).⁵ In addition, the 4th class children incorporated an Adagio movement by Mozart with glass harmonica accompaniment made by the children.⁶

2 Through these strands pupils are introduced to musical elements: pulse, duration, pitch, tempo, timbre, texture, dynamics, structure and style.

3 Throughout the remainder of this report we will use the term "students" when referring to our third-level students while we will use the term "pupils" when referring to the primary school children.

4 In offering a framework for understanding the concept of "knowledge for teaching" Shulman identifies a number of different types of knowledge that effective teachers possess. These include "subject matter knowledge", that is knowledge of the subject (in this case expertise in composition), "pedagogical knowledge", the knowledge of principles and strategies of classroom organization and classroom management, and "pedagogical content knowledge" which is a blend of content and pedagogy and is concerned with organising and sequencing the presentation of material in order to make it comprehensible to others.

5 The graphic score was based on a Vocalise by Peter Hunt as published in his *Voiceworks*. The template used by the children during the workshops is found in Appendix C.

6 The glass harmonica comprised a number of drinking glasses filled with water to different heights in order to produce different pitched notes. The rim of the glass is rubbed with a wet finger. Mozart had written Adagio in C K. 356 for glass harmonica.

Strand 2

During Strand 2 third-level students composed repertoire for performance by ensembles within the school, culminating in a workshop in which they assisted in rehearsal and direction. The aim was to familiarise our students with the challenges faced by children as they develop their musical skills and working within limited compositional contexts, such as, the children's vocal ranges, their breathing technique and their ability to read music. The reality of school life and its schedules provided useful insight into unavoidable restrictions encountered by composers. For example, working with non-specialist choirs in limited rehearsal time was a useful reminder to the student composers of the parameters within which they could conceive their creative ideas. Most importantly, the aim was for the students to develop the skills to communicate effectively with children, making an interpretative connection with them, and assisting the direction in their rehearsals. They were also required to make revisions to their compositions based on their findings in the reflective process. Furthermore, the music written for the ensembles will now remain in the young performers' repertoire.

Findings

Although this project was focused primarily on the third level students we had hoped that it would also be beneficial to the participating primary teachers and their pupils. In this section we outline the impact of the project from the perspective of these three groups. Data have been generated from:

- Students' reflective journals
- Notes from weekly review meetings with students
- Project leaders' reflective journals
- Transcripts of interviews with classroom teachers

Impact on third level students

All students involved in both strands reported that it was an invaluable experience for them as workshop leaders and as composers. Over the course of the project we as project leaders and the classroom noticed that the students grew in confidence and skill in facilitating composition workshops. As the weeks progressed we were able to step back and allow the students to take more responsibility in running the workshops. The students became more aware of the skills, effective teaching strategies and good pedagogical practice required in such contexts as exemplified in the following quotations:

It is important that children are confident in their performance and I feel the way to achieve this is to do just a couple of ideas (i.e. not too many) and to rehearse these well. (Ciara)

As a facilitator I must be enthusiastic and find the way to bring enthusiasm to the kids [...]. It is essential to gain their full attention [...]. Indeed, the new task might be challenging, watch out that the task isn't too difficult, and if so, introduce the parts gradually. (Jamie)

While the students recognised the importance of reflecting-in-action and reflecting-on-action, we found that in their written reflections the students gave a "descriptive reflection" rather than a more analytical "dialogic" or "critical" one (Moon 2004). They tended to evaluate the content of each workshop but found it more difficult to reflect on and comment on their individual roles, the skills and knowledge they gained through practice, and what they learned about themselves as workshop leaders and as musicians. Interestingly, however, they were able to engage in such a process orally during the meetings.

In outlining the rationale for this project, it was noted that third level students generally receive little opportunity to see the practical application of compositional choices. However, in both strands, they found themselves having to address issues of layout, ease of performance, timbral results and optimum use of available performers. For example, in preparing the performances from Strand 1, the students had to decide on the optimal layout of players and instruments, including the use of glasses for the glass harmonica.

Making such decisions links directly with the students' academic work. For example, students would have learned that Bartók also encountered such decisions when composing his Music for Strings, Percussion and Celesta (Lindlar 1984). The use of the Vocalise resource provided the possibility of using an example of "crab canon" and "table canon", which are encountered by the students in the music of Bach and Webern.⁷

It was also very worthwhile for the third level students to discover the level of musical complexity in which the children could operate comfortably, sometimes dismantling the perceived notion of linear progression in the development of a child's musical ability. For example, the children dealt easily with a polyrhythm of eight against nine, something which is perceived to be difficult within the teaching of music (Hindemith 1949).

Impact on primary school pupils

The research provided evidence that the project made a significant impact on the children involved. Both teachers commented on the pupils' excitement for and their enjoyment of the project. The workshops can be seen to have contributed to the development of the children's musical and creative skills as reported by one of the third level students: "I was very encouraged by the fact that the children were becoming very aware of the sounds they were creating".

7 J.S.Bach, *A Musical Offering*, BWV 1079 (Kassel: Bärenreiter, 1981) and Webern, *Symphonie Op. 21* (Vienna: Universal, 1929)

The children's sense of ownership of their work brought them immense personal satisfaction. The 4th class teacher reported that the children liked the fact that it was they who decided what went into the graphic score. She went on to quote one of the pupils who stated: "This was our work, it wasn't something someone gave us to play". The 5th class teacher reported:

[...] what was really important and what [the pupils] said was that their ideas were used [...] you were doing something and then James came up with something and it was added in and he was really chuffed that his bit had been added in. The fact that they could all see and hear the things that they had created come together, I thought that was great.

Contained in the children's sense of ownership was the desire to communicate as composers and performers, as evidenced in their endeavour to ensure that the performance was successful. The 4th class teacher affirmed this saying: "The children wanted the performance to go well".

The inclusive nature of the workshops was paramount. The process of composition was not bound by lack of linguistic or musical literacy, or by lack of musical experience. All were included, resulting in feedback from the 5th class teacher that even children normally disenchanted with music were fully involved. Therefore they also developed the capacity to work as a group and to appreciate one another's contributions to the whole.

When the third level students composed for the school's ensembles, this stimulated the children's interest in the process of composition: they were curious to know about the point of ignition for a composer when they begin to compose a new work. They enjoyed having the composer present at rehearsals and the resulting discussion about the content of the pieces.

Impact on teachers

The project became a form of professional development for the teachers concerned. The teachers commented on the fact that they have been introduced to new resources. As noted earlier, composition is the strand which is most neglected in school. The 5th class teacher reported that she was now incorporating composition more regularly into her music programme. She feels better equipped to use classroom instruments, and is no longer inhibited by fear of chaos that might ensue. The teachers have also gained further insight into the children they teach. The 4th class teacher remarked that through the workshops, she saw another side to her pupils, noticing that children normally disinclined to volunteer were now taking leadership roles.

A further impact was the strengthening of cross-curricular links between subjects. Listening to an Austrian folk song, the children had learnt, connected to discussions about landscape and the origins of yodelling, the home country of Mozart and then to the glass harmonica for which he composed. The connection between volume and pitch was drawn when we made our own glass harmonica and used it in the class performance.

Evaluation and Conclusions

Earlier we referred to the DIT *Learning, Teaching and Assessment Strategy* and we believe that the benefits gained by the students who participated in this project can be aligned to a number of areas within this strategy.

- Students have engaged in practice-based learning in which they have had to meet professional standards and have had to respond to the needs of the community in which they have worked (composition workshops and composing for specific ensembles).
- They have developed "key skills and competencies" which are applicable to a wide range of local interest groups, from those attending day-care centres, to youth groups and diverse community settings.
- The participating students have become more flexible in their thinking, have gained wider experience, have engaged in reflective practice and therefore have gained greater employability skills. However, students need further support and guidance in the skills of reflective practice.

The primary school also believes that the project has been a valuable one and has asked for it to be repeated next year. As noted in the findings above, observing the workshops has been a form of professional development for the classroom teachers.

Recommendations to DIT

- Such a project should be included in the curriculum for third level composition students. It could be extended beyond the primary school to include other outreach projects, both those that are already within DIT's remit (for example, Ballymun music project) and other community groups including youth groups and day-care centres. Ultimately such a dimension could attract students to the Conservatory in the future.
- Given the challenges in teaching music and composition in the primary school, DIT could develop Continuing Professional Development courses for primary teachers, which could also be extended to include second level music teachers.
- Strategies for "dialogic" and "critical reflective practice" should be embedded in as many modules as possible.

Proposed future work

As noted previously, there is the potential to develop this project beyond the boundaries of the local primary school. There is also the potential to develop teaching resources for composition to be used in school. Such resources should be designed in order to engage all pupils regardless of previous musical experience and help teachers develop cross-curricular links between subjects.

Concluding words

We have outlined how the project will benefit DIT students' employability and career prospects. Ultimately in education, our aim is to enhance a person's humanity, and by engaging in such a venture the scope for creativity is increased. The third level students, by being given the opportunity to share their talents with children, have, in the words of Kodály become "benefactors of humanity".

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College of Business

2 An experiential learning approach: implementing a group-based research project as the main learning vehicle in a first year Microeconomics module

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Abstract

The overall purpose of this Teaching Fellowship project is to determine whether a current bolt-on continuous assessment research project can be developed further to become the main learning vehicle in a first year Microeconomics module. The main research objectives are:

- Can a group-based research project become the main learning vehicle in a first year Microeconomics module?
- Can such a project provide the generic skills relevant to a modern society?
- Can such a project be facilitated by a wiki?

There are two main sections to the extensive range of literature reviewed. One is that which considers the wide range of official reports, at national and international level, that have made a strong case for transformation of the higher education sector with the view to developing graduates possessing a wide range of generic skills such as critical thinking, problem solving and team working. The other is the extensive body of literature covering Cognitive, Constructivist and Social Constructivist pedagogic theories, which include within them approaches such as experiential learning, which focus on the development of these types of skills. This Teaching Fellowship project is conceived as a multi-stage exercise. The current Microeconomics research project involves groups of four students analysing the Irish housing market from 1994 onward.

Based on this analysis students have compiled substantial written reports (average 7,000–9,000 words) and gone on to create and deliver live presentations. Close examination of these research reports and the Reflective Diaries of individual students reveals that the research project is effective in developing many of the generic skills previously noted. The next stage of the process, based on the literature reviewed and the examination of the research project material, is to establish the modified research project as the main vehicle of the Microeconomics module in the first semester of the academic year 2013–2014 and test its effectiveness in developing further the required generic skills.

Key words: experiential learning, generic skills, group work, peer review

Background

Since 2008 I have been developing a group-based research project as a significant continuous assessment element of a first year module in Microeconomics, in a general business course in DIT. Up to the present the research project has functioned as follows. Content in the module is delivered in a more or less standard lecture format. When sufficient core material has been covered, the c.160 students in the class are divided into groups of four and provided with a detailed brief based on their task of analysing the crisis in the Irish housing market from 1994 to the present. Equipped with an understanding of the main drivers of the market for houses, i.e. demand and supply and the key relevant variables, price, income, interest rates, costs etc., the groups then research a wide range of sources, a task increasingly carried out online. A substantial written report, averaging 7,000–9,000 words, and a physical presentation are then completed. The research project, up to now, has counted for 30% of the overall mark for the module, with 10% going to a weekly online self-assessment exercise, and the remaining 60% going to a written exam.

The overall purpose of the Teaching Fellowship project is to determine whether this bolt-on continuous assessment project can become the main learning vehicle for the module. The Fellowship project is being developed as a multi-stage process whereby the current stage will facilitate the implementation of the modified research project which will be put in place and tested in the first semester of the academic year 2013–2014.

The main research objectives are :

- Can a group-based research project become the main learning vehicle in a first year Microeconomics module?
- Can such a project provide the generic skills relevant to a modern society?
- Can such a project be facilitated by a wiki?

Theoretical framework

Globalisation, deregulation, the information-technology revolution and the associated expansion of trade, capital flows and global supply chains are widely recognised as key drivers of fundamental change in the global economy since the early 1980s, which in turn have brought about widening income gaps between the more and the less well educated, between and within countries (Beddoes 2012). Ireland, one of the most open economies in the world, relying heavily on exports produced by hi-tech foreign multinationals, lays great stress on its Higher Education (HE) sector in order to provide the appropriate highly trained manpower and remain internationally competitive (Forfás 2012). At the level of the individual, the widening income gap creates a strong incentive to participate in HE, especially due to the Great Recession. As Tremblay, Lalancette and Roseveare (2012) record in a report commissioned by the Organisation for Economic Co-operation and Development (OECD), participation in higher education had soared by 25 percentage points, from 37% in 1995 to 62% in 2010. It is notable that the growth is accompanied by a high rate of attrition, calculated at 31% in a range of OECD countries.

These trends have led to an increase in nominal funding of HE in many OECD countries over the period. However the increased participation rates have resulted in a lower expenditure per student (Sanyal and Martin 2006). As a result Higher Education Institutions (HEIs) increasingly struggle to do more with less. Not surprisingly, greater accountability has become a key issue for many countries (Johnstone 2004; Sanyal and Martin 2006). Since the 1990s, the state, as provider of a large part of the funds for HE, has tended to exert a greater influence on the missions and systems of HEIs, relative to academic authority, which is derived from the possession of the professional knowledge required (Sanyal and Martin 2006). Sharply decreased tax revenues and widening budget deficits clearly accelerated this pressure in Ireland in recent years.

In this context, many reports on the HE sector have been prepared by individual countries and international institutions such as the OECD and the European Commission (EC). In general, whilst noting the social dimensions to education, these reports tend to lay most focus on the role of education in supporting economic objectives. An EC report entitled *New Skills for New Jobs: Action Now*, notes that young people often feel unprepared for the world of work and argues that the “missing link, in part, lies in a set of desirable skills such as the ability to work quickly, analyse and organise complex information, take responsibility, handle crisis, manage risk and take decisive action” (EC 2010: 27). It goes on to argue that the acquisition of such skills requires more “innovative approaches, such as, learning-by-doing or project-based learning” (ibid.).

These views tend to be echoed in reports at the national level. For example, in the Irish case, the National Strategy for Higher Education report by the DES (2011) makes the following recommendation, amongst many other similar ones: “Undergraduate and postgraduate education should explicitly address the generic skills required for effective engagement in society and in the workplace” (p.62). In line with this general approach, the DIT *Teaching, Learning and Assessment Strategy 2011–2014* (2011) indicates as a strategic priority the “development of key skills and competencies”.

Some commentators, such as Professor Tom Dunne, have decried this economy-oriented approach to education and the increasing intrusion of “neo-liberalism” and “managerialism” into HE (Dunne 2013). However, a fascinating paper by Riel Miller (2008), an economist and futurist who later became Head of Foresight in UNESCO, examines the historic relationship between the educational system and the dominant economic paradigm. He shows the close link between the approach to schooling in the traditional education system, eloquently deconstructed by Ken Robinson (2006), and the industrial model of the economy. Looking to the future, the thrust of his predictions would appear to be that an increasingly knowledge-based economy is likely to require levels of learning that would be constrained by the traditional model associated with the industrial economy.

However academics may feel about the intrusion of “neo-liberalism” and “managerialism”, it may be that as a result of a changing economic paradigm a consequent paradigm shift could also be underway in HE that might offer an arguably more meaningful experience for educators as well as learners. The traditional education system described by Riel Miller and Ken Robinson is associated with the still-influential approach of Behaviourism, informed by the work of Watson, Skinner, Tyler and others (see Kolb 1984; Carlile and Jordan 2005). However, the needs of a knowledge-based society, which awards primacy to generic skills, such as critical thinking and problem solving, arguably require a very different approach. The pedagogical approach that is more likely to be effective is not new but it may be the case that, historically, its time has come.

Cognitivism, Constructivism and Social Constructivism bring new perspectives to pedagogy that recognise a more central position for the learner in her own learning. Piaget and Ausebel (Cakir 2008: 194) identified the importance of the preexisting schema that learners bring to the experience of education and the degree to which their learning results from interaction with their environment. Vygotsky (1978) took this further in developing his now well-known zone of proximal development (ZPD) model, in which he identified “the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (p.86), thus opening educators’ minds to the possibilities of peer and group learning.

John Dewey (1897) had previously written of the importance of learning by doing. His work, and that of Piaget and Kurt Lewin were brought together in the Experiential Learning Model (ELM) of David Kolb (1984). Kolb’s work has since become highly influential in the movement towards learner-centred education. As depicted in Figure 2.1, it lays emphasis on the importance of prior knowledge, engagement with concrete experience, reflection on that experience, and re-engagement with the concrete experience in a never-ending circle of continuous learning (Kolb 1984).

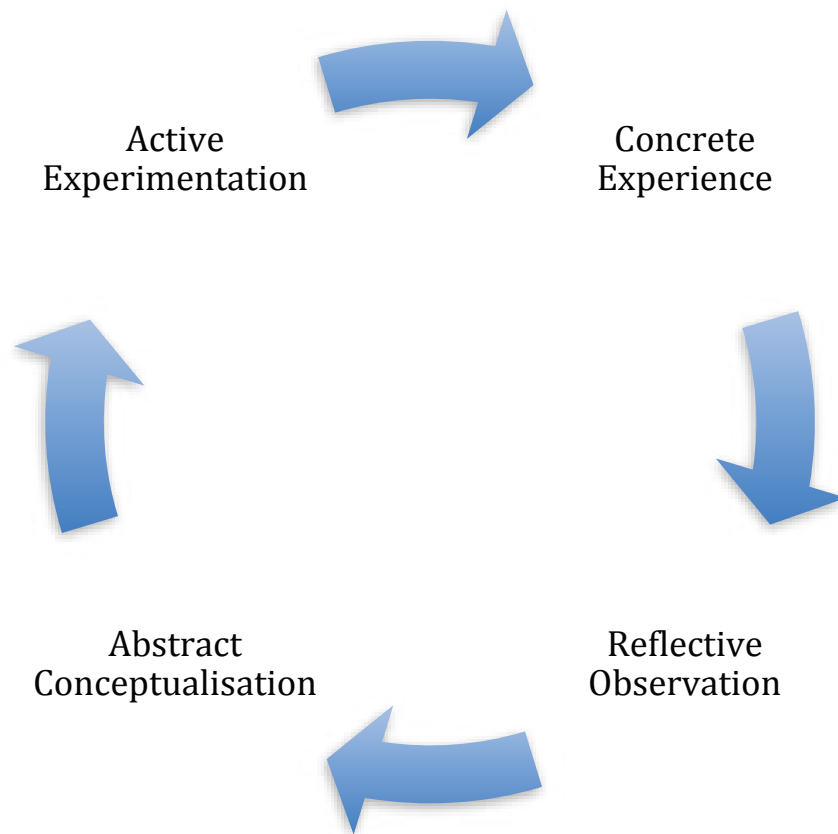


Figure 2.1: Kolb's Learning Cycle. Adapted from Kolb (1984: 33).

Outline of Project

Kolb's (1984) concept essentially describes the manner in which the research project currently functions in the Microeconomics module. However, primarily as a result of the insights gained during the Teaching Fellowship study, the approach will be more explicitly implemented when the next stage of re-positioning the research project as the main learning vehicle is put in place. The weighting of marks will reflect this change. Delivery of content will be carried out on a "flipped classroom" basis, the two one hour "lecture" slots being used to deal with issues arising, on an ongoing basis. Based on extensive examination of the literature dealing with group work and the use of wikis, the first two weeks will be devoted entirely to students creating a wiki focused solely on issues relating to the use of group work and wikis, using Wikipedia as one resource and an exemplar. The literature reveals that many studies utilising wikis have produced sub-optimal results because the presumption that "digital natives" will effortlessly adapt to the use of wikis in education has proved unreliable. Neither do wikis immediately dispose of all the well-recognised problems of group work (Elgort, Smith and Toland 2008; Cole 2009; Hughes 2011). The intention is to raise and clarify all these issues at an early stage and fully equip the participants for the main research project. Then, as a result of a peer review exercise, the students themselves will select the 3–5 best wikis to use as exemplars in the main part of the research project. Apart from these innovations the structure of the research project will essentially remain as above.

However, there will be very significant differences in the process. The two week mini project will, we hope, bring about a dynamic environment, resulting in high levels of engagement from the beginning. From the start of the main research project the groups will be meeting regularly in class time and interacting with the instructor. Rather than being presented with the content without a context, they will be acquiring it in response to their need to understand issues arising from their research. The instructor will be in a position to monitor and respond to issues arising. The groups will also be required to collaborate online from the beginning, facilitated by use of a wiki. This will serve the multiple purposes of encouraging increased collaboration, monitoring individual input, and the acquisition of an important skill. A key underlying motivation in these changes is to bring about greater engagement in the module from the beginning, thus increasing the levels of deep learning and reducing the likelihood of attrition.

Evaluation, Conclusions and Further Research

Based on ongoing feedback from participating students I have come to believe that the research project not only greatly furthers the students' understanding of Microeconomics but also has facilitated the development of a significant range of generic skills that I now know would tend to match up quite closely to the generic skills identified in much of the literature I have reviewed for this Teaching Fellowship study.

In the National Study on graduate competences (NAIRTL 2009) nearly 2,700 survey responses were gathered from the HE sector and employers with the purpose of ranking a comprehensive range of generic competences on levels of importance.

The highest rankings were given to:

- the ability to apply knowledge in a practical situation
- interpersonal and interaction skills
- the ability to work as part of a team.

A wide range of associated competences, such as the ability to identify, pose and solve problems, oral and written communications skills, ability to self-organise and time-manage were also highly ranked. A close examination of completed research projects was carried out for the purposes of this study. Also, each student is typically requested to complete a one page Reflective Summary, focusing on their individual experience of the process. These were not specifically compiled for this study and will therefore not be presented as primary data. However, they are useful to provide general insights and were closely examined for that purpose.

From an examination of this material, it can be reasonably concluded that a number of generic skills had been acquired or further developed through the process including the skills of:

- working within a team
- working independently on specific elements
- creating knowledge on a collaborative basis
- Information/library search online and offline
- critically analysing research sources
- extracting key points from research sources
- using key points to construct well-written report
- high-quality live presentation of results live
- working collaboratively online
- managing own time effectively.

Examination of the individual Reflective Diaries indicated a level of apprehension in many cases prior to engaging in group work. Also, there were reports of finding the group work experience stressful. However, it was also often cited as enjoyable, and, sometimes, both simultaneously. In some cases contrasts were noted between the experience of working alone on assignments in other modules and the group experience. Preferences in these cases tended to be mixed, generally tending to favour group work. In many cases acquisition of one or more of the skills listed above was specifically noted.

A number of general themes emerged on close reading of the Reflective Diaries. A strong one was the importance of good communications, using the entire range of available media. Facebook was widely used. Similarly, the importance and difficulty of arranging regular meetings was stressed. It was clear that those who made an early start and committed to the project had an overall better experience. Also, it was clear that engagement with the research project brought about a greater sense of engagement with the module. Two other strong themes were the importance of fairness in allocating work within the groups and the need for all members to "pull their weight". In some cases non-performing individuals were identified.

Learning from each other and especially from those who had already done economics was frequently emphasised. A striking feature was the friendships that had been generated or intensified through the process. Overall, even where prior apprehension or stress during the process was indicated, there was widespread explicit recognition that the capacity to work in groups was an essential competence that would be necessary in the academic space and, later, in the work space, and it was welcomed on that basis. It is hoped that a quantitative survey of participants' attitudes to group work will become available for analysis for the web-based version of this report. Examination of the above material has influenced the design of the next stage of the overall project which will investigate the effectiveness of the modified research project in its role as the main learning vehicle of the Microeconomics module.

Recommendations to DIT

More definitive recommendations will be possible when the next stage of the research is completed. However, it is possible at this stage to make the overall observation that many reports, on top of the ones referenced above, as well as research projects by DIT colleagues, have convincingly made the case that the learning outcomes from the experiential learning approach, which is already embedded in the Microeconomics module, correlate strongly with the skill set that has been identified as critical to the success of the individual graduate and the country as a whole, on a social as well as economic basis. Given that, it seems sensible to recommend an institution-wide research programme that would examine the feasibility of presenting all first year students with the opportunity of developing their learning within such a pedagogic paradigm.

Proposed future work

The research project on the Irish housing market from 1994 will be implemented as the main learning vehicle of the Microeconomics module for 2013-2014 and researched further.

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College of Engineering and the Built Environment

3 Stakeholder involvement for programme development

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Abstract

In the current Higher Educational landscape in Ireland, it is crucial for universities and institutes to identify an individual identity or ethos for each of their programmes and to act effectively to both foster this identity in its current students and promote it to prospective students. Almost every programme in DIT’s College of Engineering and Built Environment (CEBE) is in competition with similar programmes in other institutes or universities and differentiation of DIT’s offering is an important goal. This report describes the development of a framework for the identification of guiding principles for individual undergraduate programmes across the College. In addition, a pilot study was performed on a specific programme in the CEBE, the Product Design Level 8 programme, for which the initial phases of this framework were implemented and draft mission and vision statements were generated. The process of generating these statements was described and generic recommendations were made for the implementation of this process on other programmes..

Key words: *ethos, mission statements, multidisciplinary, programme development, stakeholders*

Project Outline

Background and Overview

The Higher Education Strategy Group presented a report in 2011 that states that more emphasis should be placed on the development of students’ generic skills within Higher Education, “especially those required for the workplace and for active citizenship” (p. 58). Leathwood and Phillips (2000) identified the drive in the Higher Education sector for quality assurance, accountability for outcomes and capability of graduates. Combined, these observations suggest that a holistic approach to formulating a philosophy for individual programmes is required in the College of Engineering and Built Environment and indeed within DIT in general. This project proposed the development of a framework for identification of guiding principles for individual undergraduate programmes across the College.

The primary aim of the project was to generate a structure to harness feedback from the various stakeholders of an undergraduate programme to formulate a philosophy for the programme’s future development. These stakeholders would include staff, graduates and representatives of various organisations in the field, both in industry and academia. The first task in the project was to identify a method of capturing the ethos of a programme in a manner which can be accessible to all stakeholders, from prospective and current students, to staff, to graduates and external parties.

Mission and Vision

I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the Moon and returning him safely to Earth

(John Fitzgerald Kennedy, 25th May 1961, cited in Gilruth, 1975; ch. 2.1)

The statement above is widely credited with giving focus and meaning to the US space programme and paving the way for the efforts which culminated in Apollo 11 commander Neil Armstrong stepping off the Lunar Module’s ladder and onto the Moon’s surface on 20 July 1969. It is considered an excellent example of an effective mission statement.

In the corporate world, the aims and objectives of companies or individual business units are commonly communicated using the mission statement. Mission statements have also, however, been employed in academia (University of Central Florida 2005; Virginia Tech 2013) and in not-for profit ventures (Hofstrand 2009). Furthermore, Searight and Searight (2011) stress the importance of individual undergraduates developing their own mission statements.

A good mission statement aims to define a task clearly and concisely and inspire subsequent efforts. Radtke (1998) asserts that an effective mission statement should address three questions:

- What are the opportunities or needs that we seek to address? (purpose of the programme)
- What are we doing to address these needs? (activities of the programme)
- What principles or beliefs guide this work? (values the programme should instil in staff / students)

Perkins (2008) observes that a mission statement should perform a number of tasks. It should send a message clearly and concisely, inspire, drive transformation, differentiate one's market position, pull the organisation into the future, enable trade-offs (establish priorities) and guide daily behaviour. Jenkinson (2012) in his online post to UK SEO Agency offers a useful distinction between mission statements, which define "what's wrong with the world and how you intend to fix it" and vision statements which define "how the world looks after you've fixed it".

It was determined that the key output of this project would be vision and mission statements for the programme in question, generated by a combination of internal and external stakeholders. Lloyd-Jones et al. (1998) demonstrate the potential that exists to use multidisciplinary groups to plan curricula in an educational environment. The stakeholders to be consulted in the development of these are shown in Figure 3.1.

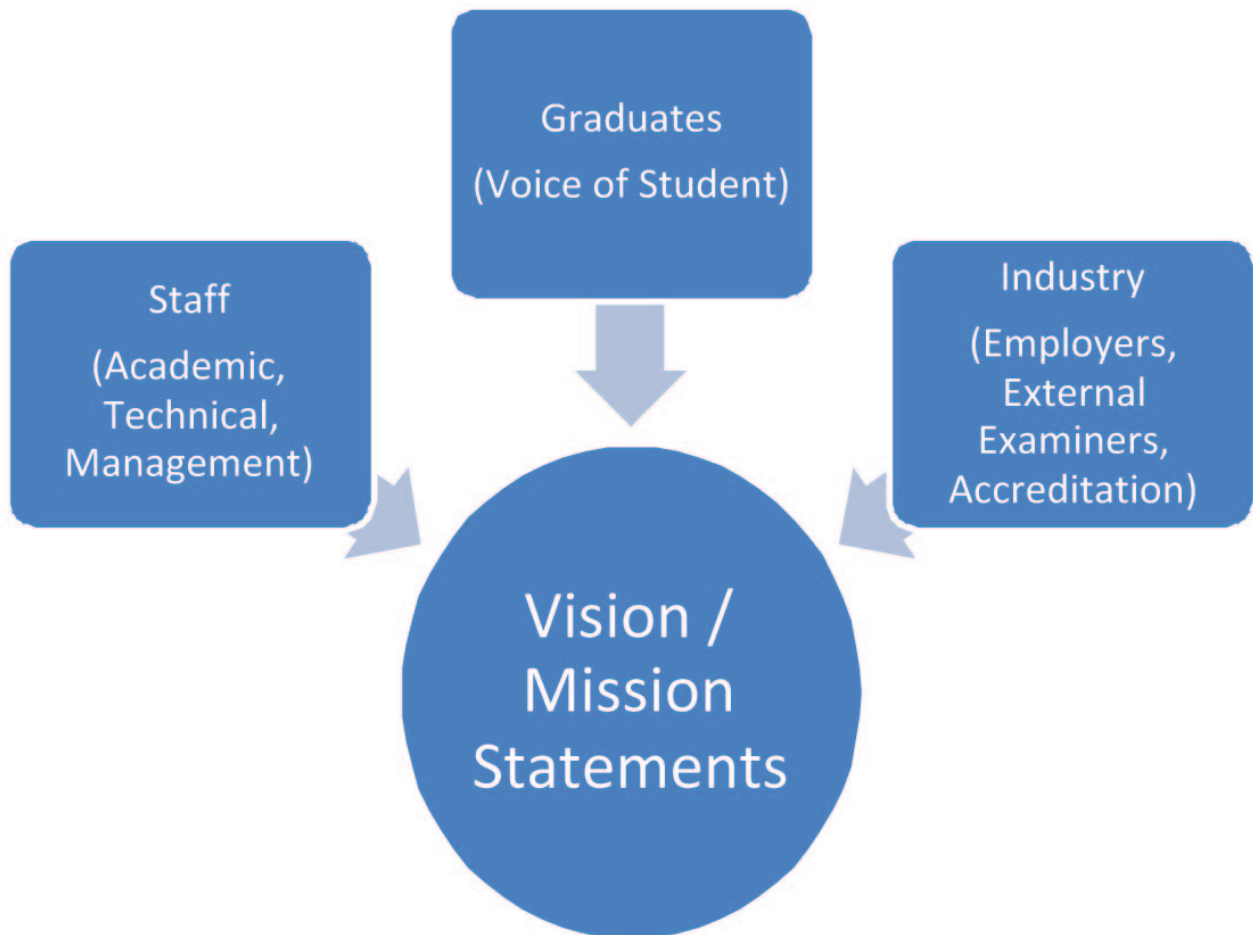


Figure 3.1: Stakeholders in programme development

Proposed Structure for Programme Development

An overall structure for stakeholder-centred programme development was developed (see Figure 3.2). This structure consists of the development of draft mission and vision statements on the basis of staff inputs, followed by evaluation of these statements by the various external stakeholders. The reasoning behind the order of these phases is that initial staff consultation can, at reasonably low cost, yield draft statements which act as a starting point for consultation with external stakeholders. Reasonably recent but not new graduates were chosen for focus groups. New graduates may not have experienced a suitably wide range of design scenarios in their post-graduation experience. For graduates who graduated some years ago, their views of the DIT programme may be out-dated by changes which have taken place since they graduated. In the case of the Product Design programme, this threshold was taken to be four years, as significant changes to the programme have taken place in the intervening period. When considering a longer-established programme, which is not changing to the same extent from year to year (for example Mechanical Engineering), it may be possible to expand this time period.

The methodology chosen for contacting external experts was interviews, whether in person or by telephone. Time and logistical pressures were thought to rule out the running of a group workshop with these individuals, and it was also felt that more candid feedback on graduates may be forthcoming in a one-on-one setting.

The final stage of the process is to feed back the modified mission and vision statements to the staff group, and to work with this group to develop action items which will facilitate the programme in aligning itself more appropriately to the statements.

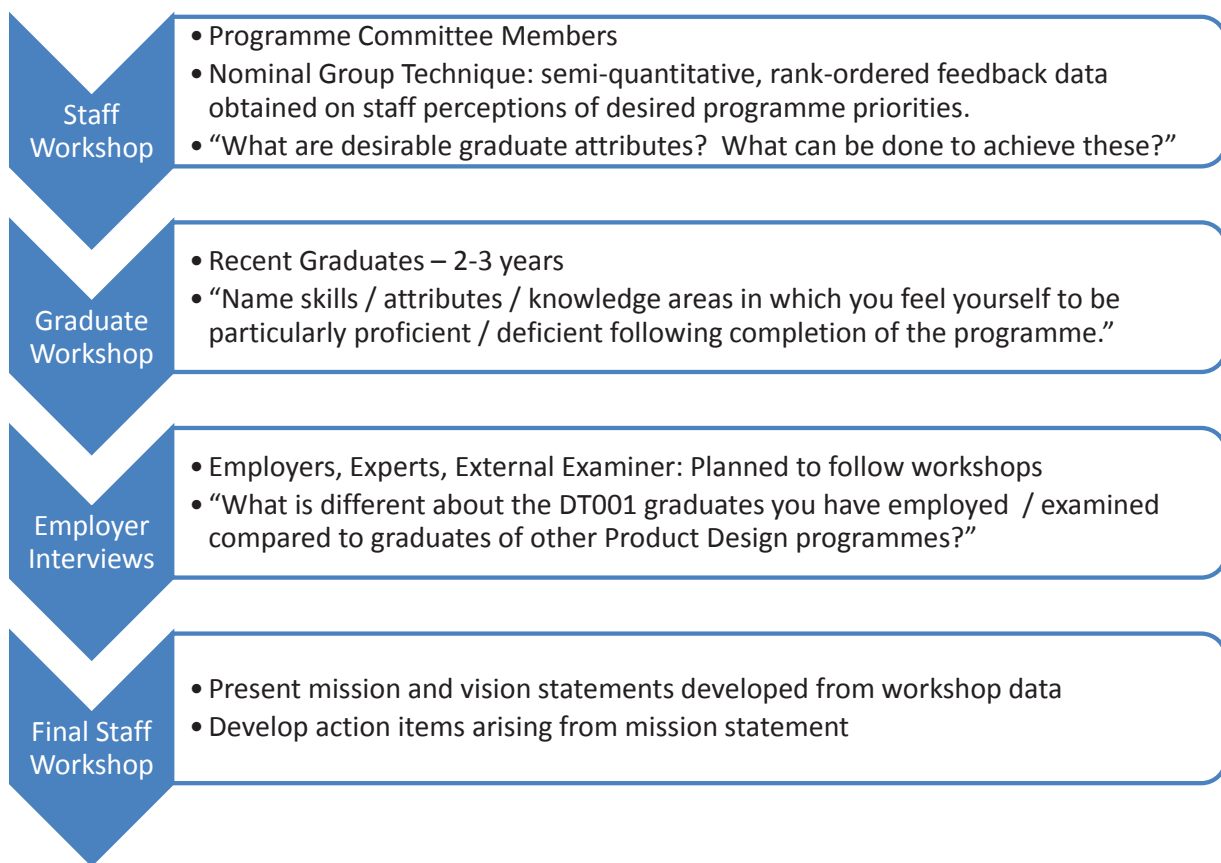


Figure 3.2: Proposed programme development structure

Pilot Study

DT001 Product Design programme

The programme chosen to act as a pilot study in applying the initial phases of this framework was the Product Design programme in DIT. It is an appropriate choice for several reasons. Much attention has been given recently, both in DIT and in the HE sector in general, to the importance of undergraduate engineering programmes producing graduates who are comfortable operating at a high level in innovative organisations, working in a wide range of environments and in crossdisciplinary teams. DIT’s Product Design programme is an example of this type of multidisciplinary programme. Since its inception in 2005, it has been extremely successful, with students winning national and international awards, and graduates moving on to successful careers in a variety of roles and sectors. Initially, this was the only Irish programme to address the intersection of Design Engineering and Industrial Design in this way. In the intervening time, however, several competing programmes have emerged in other institutes and universities. In a recent examination board meeting, an external examiner on the programme raised the issue of the programme’s unique identity and the need to establish, foster and focus upon this, both in terms of student recruitment and also as a guiding principle for the programme’s future development. Differentiation of the DIT offering has thus become a key aim for the programme.

Staff Workshop - Vision and mission statement generation

In this pilot study, the staff consultation phase was completed and draft mission and vision statements were generated (Figure 3.3). The Nominal Group Technique (NGT) was employed for the staff workshop. NGT is a weighted ranking method which enables a group to generate and prioritize a large number of issues within a structure that gives everyone an equal voice. It has been found to be useful in situations where individual ideas need to be elicited and ranked, but where group consensus is required. In this situation, using NGT neutralizes the domination of the loudest person, or the person with the most authority over the decision-making process. It has been used previously for curriculum evaluation (Dobbie et al. 2004). The NGT process consists of seven distinct steps:

1. Presentation of evaluation questions to the group
2. Silent idea generation phase
3. Round-robin feedback phase
4. Discussion/item clarification
5. Voting & ranking phase
6. Group data gathering
7. Suggestions for action items arising from the strengths / weaknesses

Part 1: Vision and mission statement

Participants were asked to write five desirable attributes of a product design graduate. They were given five broad themes for their contributions: technical, creative, business, social and miscellaneous. The first three of these reflect the three broad subject areas covered in the programme, the last two reflect generic graduate attributes which could be applied to other programmes (see Figure 3.4). In the next stage of the analysis, the attributes defined by the participants were gathered under common headings. This resulted in 21 overall headings of graduate attributes. The participants were then asked to give points ranking from 5 to 1 to what they felt were the most important of the vision statement items. These points were added for each item, giving a ranking of the various attributes (see Table 3.1).

Part 2: Action items

Participants were then asked to choose one vision or mission statement item from each of the five themes. For these items, they were required to state how the programme currently addresses this graduate attribute, and make a suggestion as to how the programme could address it in future. This resulted in 63 suggestions for action items addressing 19 of the 21 vision items.



Figure 3.3: Staff workshop participants

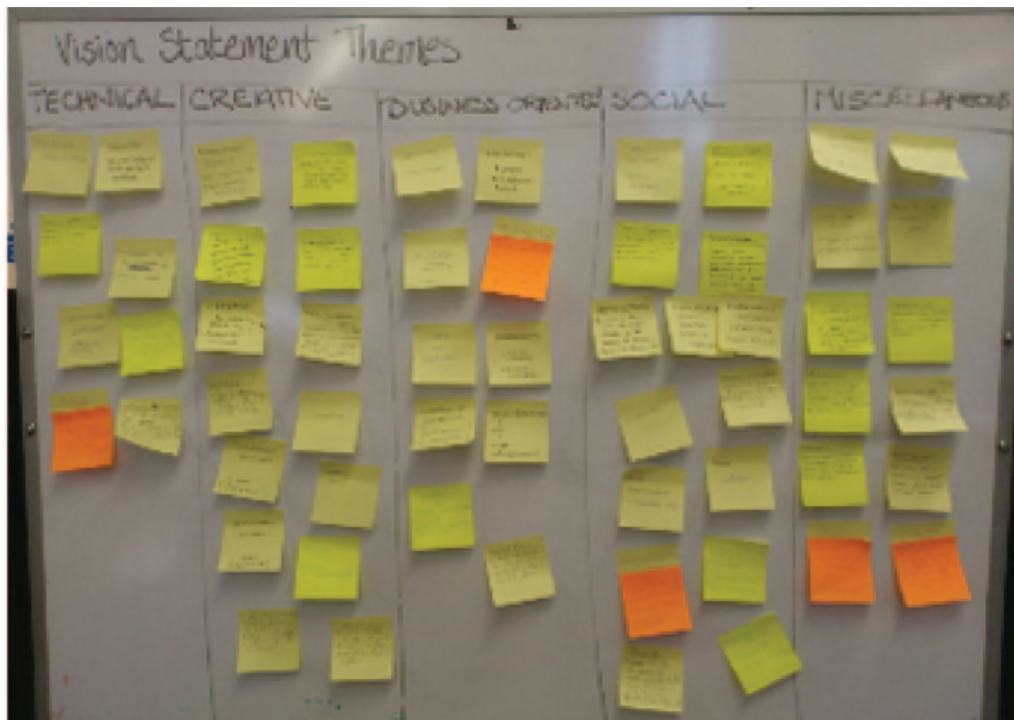


Figure 3.4: Contributions to vision statement themes

Results

Ranked attributes

Rank	Theme	Attribute	Importance
1	Technical	Technical knowledge	37
2	Creative	Imaginative and creative	34
3	Technical	Practical skills	14
4	Technical	Integrated approach	11
5	Miscellaneous	Motivated and visionary	9
6	Miscellaneous	Presentation skills	8
7	Creative	Problem solving	7
8	Miscellaneous	Logical	7
9	Miscellaneous	External experience	7
10	Creative	Look at big picture	6
11	Creative	Resourceful	5
12	Social	Flexible	5
13	Miscellaneous	Communication skills	5
14	Business	Entrepreneurial	4
15	Social	Team player	4
16	Business	Current and relevant knowledge	3
17	Business	Commercial nous	3
18	Business	Business plan drafting	2
19	Social	Interested and reflective	2
20	Social	Ethically aware and responsible	2
21	Social	Research ability	2

Table 3.1: Graduate attributes ranked by importance

Figure 3.5 shows the vision and mission statements generated for the DT001 Product Design programme. Text items which are drawn directly from the list of mission and vision items generated in the workshop are shown in bold.

DT001 B.Sc. Product Design

Vision Statement

Product design is a process which aims to create improved solutions to old, new and predicted problems. The development of successful products requires designers who can firstly work to understand an identified problem, and can then **imagine, develop and communicate** many diverse solutions before selecting one which is most appropriate. Designers also build prototypes in order to **test, evaluate and improve** their designs. Effective product design involves the **integration of creative design thinking, technical skills and engineering knowledge, appropriate business practices and ethical and social considerations.**

Mission Statement

The DIT Product Design programme uses an **integrated approach** to teach mechanical, electronic, manufacturing and materials **engineering principles, creative thinking practices and entrepreneurial skills.** This **multidisciplinary** education fosters the development of **motivated, visionary** graduates who can apply **problem solving techniques** in a wide range of fields. The programme provides students with the **contemporary academic knowledge and relevant practical skills** that are needed to become leaders in the field of product design.

Strategies

- The programme is centred in **three separate Colleges** within DIT: the College of Engineering and Built Environment, the College of Applied Arts and Tourism, and the College of Business. This means that students divide their time between design studios, lecture theatres, computer and prototyping laboratories and meeting rooms. This rich environment produces **resourceful, flexible** graduates who understand the importance of products having **value to the user and society** as well as being **appropriate from materials, production and business standpoints.**
- From the outset of the programme, students are given open-ended briefs. These projects drive the development of their **critical thinking** skills, their ability to **look at the big picture** and their use of **logical** work processes to produce **creative solutions.**
- **Team** projects which focus on design for the community ensure that **ethical awareness** is engendered in the student, and that the programme produces **engaged and reflective** designers.
- Projects in which students are required to formulate **business plans** alongside developing their product ensure that **commercial considerations** remain a key factor in their **design thinking.**
- Regular design critiques and presentation sessions ensure that student's verbal and written **communication skills** are of the highest order.

Figure 3.5: Product Design vision and mission statements

Discussion and Recommendations

The structure described in this report aims to suggest a more integrated approach to the development of undergraduate engineering programmes. It is anticipated that identifying and developing each individual programme's guiding principles (in the form of mission and vision statements) and aligning these to pedagogical best practice and instant feedback from industry will greatly improve the student experience and equip graduates of the College to progress seamlessly from academia to the industry environment. Through staff and students being aware of the key attributes to be attained by graduates of the programme, a holistic approach to engineering pedagogy will be promoted, one in which the long-term aims of the student are emphasised alongside the teaching of individual modules.

The core recommendation from this project is to encourage programmes in the College of Engineering and Built Environment to identify, foster and promote their own unique identity for the purposes of graduate employability, student and staff morale and student recruitment. The results will be a core philosophy or ethos which will be used to guide both the pedagogical development of the programme and also efforts to promote the programme to prospective students.

On this last point, a key issue which has been raised in the College's student recruitment efforts is the perceived lack of clarity in the marketing of existing programmes to prospective students. A by-product of this project will be the identification of the specific attributes to be promoted in recruitment efforts. A proposal would be to survey first year students on what encouraged them to choose the DIT programme over other options and to compare these results to the outcomes of the graduate/employer surveys to assess recent CAO applicants' perception of the programme.

Conclusion and Future Work

Future work on the Product Design pilot study includes the execution of the subsequent steps described in the suggested structure to evaluate the draft statements. The second step in the structure, focus groups of graduates, is largely complete but due to space constraints will not be described here. When the pilot study process is completed, the aim is to generate documentation of the framework (questionnaires, focus group methodologies, etc.) so that this approach may be replicated in programmes across the College. For any individual programme, once the initial categories and stakeholder groups have been identified, a similar process would be pursued. While the Product Design programme will be the first implementation of this programme, the framework developed will be equally applicable to a wide range of other programmes within the College, from Architecture to Electronic Engineering, which have similar aims and operate in a similar environment.

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4 Enhancing graduate attributes: A preliminary research study

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Abstract

The objective of this Teaching Fellowship research project was to establish whether graduate attributes should form part of student education within programmes offered by the Dublin Institute of Technology. This study was conducted during one semester and concentrated on one aspect of graduate attributes which were interview skills. Two videos were scripted, shot and edited that focused on interviews from the perspective of both the interviewer and the interviewee. These videos were showcased with lecturers whose feedback indicated that some improvements were required. Following those improvements the videos were shown to two student groups for feedback. The videos successfully provoked an awareness of the requirements in both situations and were well received. It is recommended that further research be carried out on developing materials and resources that focus on enhancing graduate attributes. These resources could be integrated into a dedicated module and embedded within programmes.

Key words: *graduate attributes, interview skills*

Introduction

The *National Strategy for Higher Education to 2030*, commonly referred to as the Hunt Report, asks the question “what are the right skills for the graduates of 2015 and of 2030 and what mix of skills should we pursue as learning outcomes of higher education?” (Higher Education Strategy Group 2011: 35). The answer that is proposed calls for increased attention to be paid to core skills such as communications and team working skills (*ibid.*). International research also highlights the importance of communication skills for graduates, and indeed this is ranked first in a list of graduate attributes in a survey of 350 graduate employers in a recent Australian survey (Graduate Careers Australia 2013). Communications skills were also ranked third in research that sought to determine what were the most important skills new employers look for in new hires (Hart 2006). Thus, communications skills are a key part of the skills set of graduates.

Further, it has been pointed out that if graduates “understand what employers are looking for and work to develop the skills and attributes they value, graduates will have an edge on the competition” (CBI 2009: 6). Being aware that employers desire such skills should provide students with the impetus to develop these attributes.

The purpose of this research was to produce reusable resources that could be embedded within a communications module and used institute-wide. This could potentially lead to the development of a generic module that would be aimed at enhancing graduate attributes. After much discussion it was agreed that interview skills would be the focus of this research.

Interview skills are one of the key factors in gaining employment. It is common practice for an interviewee to be advised on the importance of non-verbal presentation as well as verbal presentation (Bolles 2008). Such non-verbal cues include the dress code and the sitting position. Indeed, in a meta-analysis on research carried out regarding interview assessments Barrick, Shaffer and DeGrassi (2009) found positive correlations between non-verbal behaviours and interviewer evaluations. This would appear to be common sense. Yet, some research would appear to be contradictory. Tsai, Huang and Yu (2012) found that non-verbal behaviour had no effect on interviewer evaluations. However, the authors themselves indicate that the different research designs may have contributed to the difference between their research and that of Barrick, Shaffer and DeGrassi (2009) and further suggest that Barrick et al. may not have been able to control for other applicant behaviour and, as a result, the findings may be closer than on first inspection.

Given the proliferation of social media and networks this research set out to produce a series of videos focusing on interview skills. It was expected that the videos produced could utilise social media in a positive way to disseminate the research to the target student cohort and thus maximise its impact and benefits.

Research Outline

The project plan had specific dates and deadlines that were put in place in order to produce a finished product by the end of the academic year. As such there were distinct phases throughout.

Phase 1: production

This phase involved the development and writing of a series of videos related to interviewing skills. The authors scripted two distinct videos. One video would demonstrate a well-prepared candidate and an ill-prepared interviewer (Video 1). The second video would demonstrate an ill-prepared candidate and a well-prepared interviewer (Video 2). The authors used personal digital video recorders

and shot the footage in the home of one of the authors. This footage was then edited through free movie editing software to produce the two separate videos.

It is important to note that the research was not trying to put together videos that could be held up as perfect examples of how to do an interview. Given the different requirements of employers it was felt that this would be too restrictive. Rather, the research set out to produce videos that would provoke debate and discussion among participants and students. Such discussions, it was hoped, would lead to a more enriching and participative experience for the students and staff alike. To help achieve this it was decided to incorporate a certain comedic element. This took the form of exaggeration that would perhaps not be typical of an interviewer or an interviewee.

Phase 2: staff workshops

Once the videos were edited a lunchtime workshop was run with lecturing staff. This workshop took place in a lecture room and used a large screen, digital projector and speakers. Before the videos were shown a briefing note was read. (Please see Appendix D.1 for the text.) After each video was shown, short questionnaire sheets were given out (see Appendix D.2). Discussions then took place where specific questions were put to the group (see Appendix D.3).

Results and Discussion

Feedback survey

During the staff workshops both videos were showcased. After each video was screened, a short two-question survey was given out (see Appendix D). This was carried out immediately after the videos finished before any discussions took place. It was important to capture the participant's initial reactions. After the questionnaires were gathered, a short focus group discussion took place with one of the authors leading the discussion and the second author acting as recorder. Ten participants took part in the workshops and for each questionnaire ten sheets were returned. To begin, the results from Video 1 Prepared Candidate will be discussed.

Question 1.

Question	Agree		Don't know		Disagree
	5	4	3	2	1
This video is a good idea.	80%		10%		10%

Table 4.1: Question 1 results

The overall consensus was that the video was a good idea with eight out of ten agreeing while one indicated disagreement and one also indicating a "Don't know". There was a comment box beneath each question and generally the responses were positive. Examples included "It will keep the students interested", "multimedia always works well in the class room". The participant that indicated "Don't know" wrote that "lecturers are expected to entertain rather than teach, I am not sure we should be doing this kind of thing". Interestingly the participant that disagreed wrote "this is not part of our job".

Question 2.

Question	Agree		Don't know		Disagree
	5	4	3	2	1
I would use such a video with my students.	40%		10%		50%

Table 4.2: Question 2 results

Four out of the ten participants indicated they would use such a video with their students. Comments included the following "I have thought of doing stuff like this myself but never got around to it" and "a selection of these videos would be perfect for my module". Despite the majority indicating in Question 1 that the video was a good idea it was surprising that so many of the participants would not actually use the video (50%). However, the comments section provided some elaboration which went some way to explaining the response rate. Comments from participants who would not use such a video included the following "I do not have time on my module" and "I do not use media like this" and perhaps most telling "students would expect me to have videos for every class". The participant who indicated indecisiveness wrote "I am not sure of the learning this would generate, I tend to be slightly sceptical of this kind of thing anyway".

Focus group discussion

This discussion took place after the questionnaires had been collected. The questions were put to the group by one of the authors while the other acted as scribe and recorder taking written notes. The first question put to the group was "What was good about the video?" An overwhelming reaction was the comedic element. The group identified the funny elements as a key point in keeping their attention.

The group was then asked "What was not so good about the video?" Once again there was an immediate overwhelming response that the videos were too long. Each video lasted approximately six minutes and the general agreement was that this may not hold the interest of students who "are raised on YouTube clips of 90 seconds" (participant 2). Following close behind this point was the quality of the video. Being shot on a home camera meant that the quality suffered and the audio was distinctly poor as radio microphones were not used in the production.

Lastly the group were asked "What would you do to improve the video?" Not surprisingly the quality of the picture and the audio were highlighted as well as the length of the video. The lead researcher prompted the group regarding the comedic element. There was a worry that too much comedy might be seen as too slapstick and devalue the aim of the video. The group disagreed with this point.

Phase 3: re-shoot

Given the overwhelming criticism of the quality of the videos it was decided to try improving the product. To this end, Roy Moore of the Telematic Facility in DIT was contacted and he agreed to become our technical advisor to help improve the quality of the videos. Roy has a mini-studio with high-grade equipment and an expert knowledge of what is involved in shooting, editing and finishing high quality video films. Over the course of several weeks the video scripts were edited and re-shot under Roy's supervision with the use of radio microphones and professional editing techniques. The end result was two streamlined high quality videos which were shorter in duration and vastly improved in sound quality. The next step in the research was to run student workshops in order to obtain feedback.

Student workshops

Ten students were recruited to take part in the student workshops. In order to ensure objectivity the students were from a course with which neither author had any contact. The ten students were split into two groups and shown either Video 1 or Video 2.

Video 1 group

The students were given a pre-video worksheet which asked "You are required to carry out an interview. Please list the factors to be considered in carrying out the interview." Five minutes were allotted for this task. The sheets were then collected and the video was shown. When the video was finished the students were given another blank worksheet and asked to fill it out once more to allow for additional comments.

Pre-video responses listed items such as dress code, eye contact, preparation in terms of the questions to be asked, to look and be professional.

Post-video responses listed items such as the importance of a handshake in making a good impression, being organised for the interview, being professional in terms of phone etiquette, information for interviewee in terms of signage, job specific questions, and professional conclusion to the interview.

Video 2 group

The second group of students were also given a pre-video worksheet which asked "You have been called for an interview. Please list the factors to be considered in attending the interview." Five minutes were allotted for this task. The sheets were then collected and the video was shown. When the video was finished the students were given another blank worksheet and asked to fill it out once more to allow for additional comments.

Pre-video responses from students included the following:

- The importance of dressing appropriately
- Carry out some background research on the company
- Bring references
- What I have to offer the company
- Stay positive, smile but don't grin.

Post video results included the following:

- Always switch off mobile phones
- Give a good handshake
- Correct posture during interview
- Have prepared questions
- Projection oneself positively
- Have a good attitude.

Conclusions

It is clear that the videos were very useful as a talking point and a means of discussion among the participants. Several items were brought to light that the students deemed to be helpful both in the preparation for being an interviewee and being an interviewer. The majority of lecturers also believed this to be a useful tool. It was clear that the videos must be of a good quality to use in the classroom.

Recommendations

1. Develop further material dedicated to specific themes relevant to graduate attributes. Such themes could include presentation skills, team working, problem solving and leadership skills.
2. Develop a full module focusing on enhancing graduate attributes and offer this as an elective module worth 5 ECTS. This module could become embedded within programmes leading to a focus on such generic skills being an integral part of any graduate's core competencies.

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We would like to express our thanks to the staff and students who took part in this research project. We would like to especially thank Mr Roy Moore of the Telematic Facility in DIT Aungier Street for his support in producing the videos. Finally, we wish to thank the staff of the DIT Learning, Teaching and Technology Centre for their support and advice during this project.

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5 Improving basic electrical principles in motor apprentice education

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Abstract

The objective of this project was to develop a set of both theoretical and practical electrical exercises/assessments in the form of a diagnostic test to assist motor apprentices with their course work as well as helping to improve their core skills of basic electricity and electronics during attendance of their ten week, Phase 6 motor apprenticeship off-the-job training course at the Dublin Institute of Technology.

The diagnostic test was conducted in two stages, one at the beginning of the ten week training course and the second one towards the end of the ten week course. Data obtained from the diagnostic test provided useful information regarding strengths and weaknesses in this subject area.

Key words: *assessment, electricity and electronics, motor apprentices*

Introduction

Many motor trade apprentice students enter the later years of their studies ill prepared for the level of material encountered. This is due to several factors including the level and knowledge of basic electricity and electrical/electronic principles. A lot of basic material in these areas has been covered during earlier years of their training, but by the time students reach the final year of their apprenticeship (Phase 6) it is not safe to assume that they have a full grasp of the basics required (Monks 2010).

Enormous advances in electronic technology throughout the 1980s and 1990s have brought about many changes in the status of automobile electricity and electronics. Changes are driven by safety as well as environmental reasons. Electronic control plays a major part in the operation of the modern internal combustion engine with regards to efficiency of operation as well as emission control. Electronics have also been integrated into vehicle steering and braking systems for safety reasons.

Apart from the above mentioned, both hybrid as well as full electric vehicles are now commonplace in today's society. Due to the requirement to study vehicle technology throughout an apprenticeship, as well as electrical/electronic systems playing a paramount role in the operation of all vehicle systems, both the standard and level of electricity and electronics increases as a motor apprentice progresses through their apprenticeship (Taylor and Freeman 2011). It is therefore critical that these students have a full grasp of this subject both during and, more importantly, towards the end of their apprenticeship.

The main benefit of this project is to help improve the core skills of motor apprentices in order to reflect modern changes and advancements in modern motor vehicle technology.

Project Outline

The test is divided into two stages. Stage one takes place at the beginning of the ten week off-the-job training period and each student during this time first completes a set of theory based electrical/electronic exercises. Immediately after this each student then proceeds and builds each actual circuit/exercise that have been designed by myself to match as closely as possible the motor apprenticeship syllabus, which the students are required to study on a training board, and from this take various measurements on the live circuits that match those of each theory exercise (see Figure 5.1 below).

Stage two takes place towards the latter end of the ten week course and replicates the activities undertaken in stage one. The intermediate period between both testing periods gives students time to revise/master their core electrical/electronic basics, as well as allowing me to monitor their progress (Carr, Bowe and Ní Fhloinn 2010).

Although the students were made aware of the test, it was not communicated to them the importance of the test as no test marks gained can be included as part of their actual end of training course/assessment marks. Also any testing periods were carried out at random without any prior test notification in order to observe student performance in such circumstances.

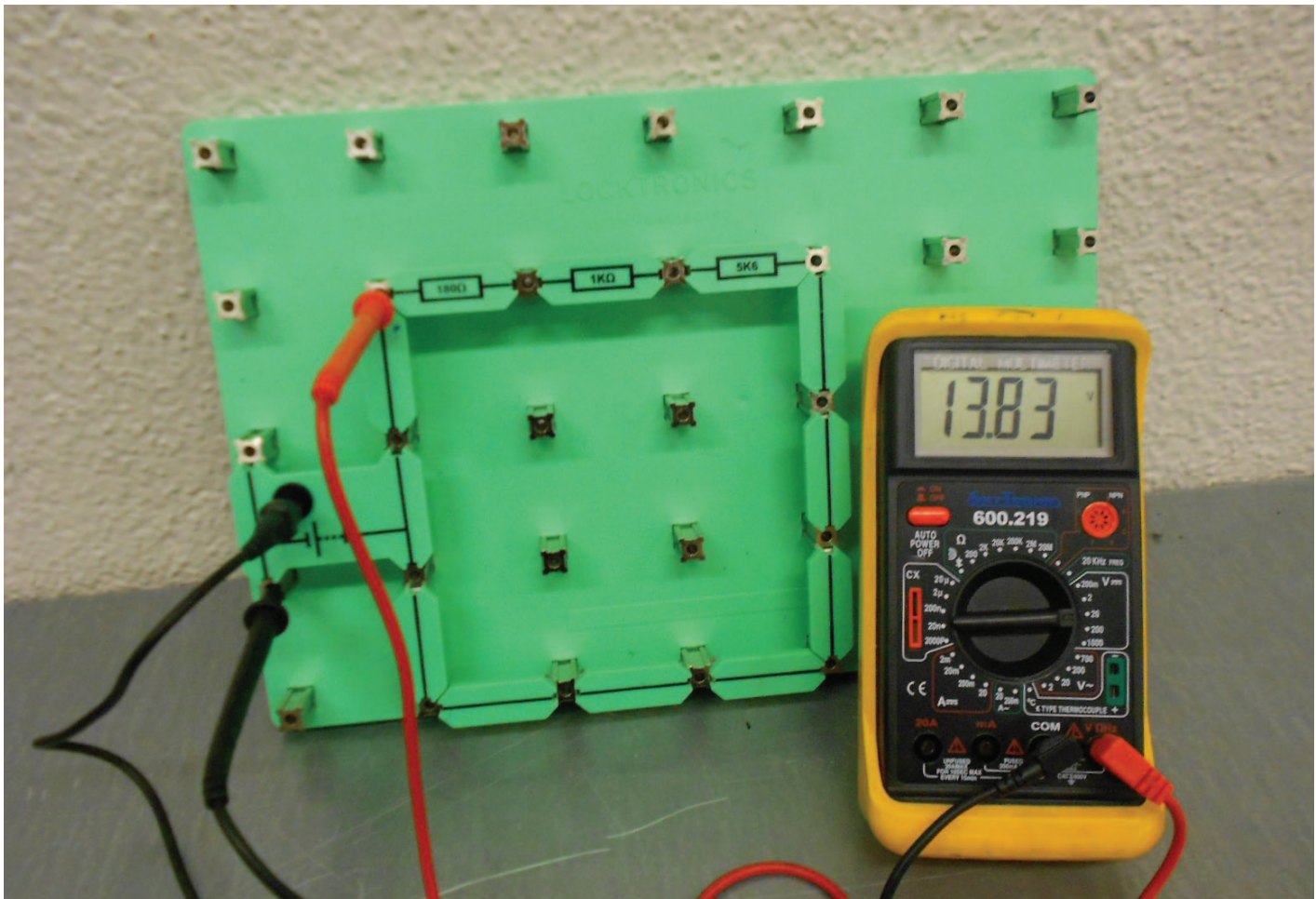


Figure 5.1: Live circuit being tested

Test description

The diagnostic test has been developed in order to help improve core electricity and electronic skills in final year motor apprentice students at the Dublin Institute of Technology (Sheridan 2012). The test consists of both theoretical and practical elements constructed by myself and sub-divided into four separate sub sections/circuits, different sections/circuits have different amounts of questions set at different levels that are designed to challenge students in different ways just as if they were diagnosing an actual electrical/electronic fault on an actual vehicle. The structure of the test is outlined in Table 5.1 below.

Test	Topic	Number of questions
Test 1	Resistors circuits	10
Test 2	Potentiometer circuit	5
Test 3	Transistor circuit	5
Test 4	Relay circuit	30

Table 5.1: Test topics and numbers of questions

As can be seen from Table 5.1 test sections on potentiometer and transistors have five questions each. In modern vehicles these circuits are normally integrated into much larger circuits and for this reason the level of actual testing is limited (Carr, Shiels and Ní Fhloinn 2008).

Thirty questions were allocated to the relay circuit as this circuit in various different forms is present in all modern motor vehicles and it is probably the one circuit that is most troublesome and therefore requires the most attention from an educational/training point of view.

The resistors circuits topic consists of ten questions. Resistors are a fundamental part of any electrical/electronic circuit in the sense that their purpose is to control levels/amounts of electricity in the many circuits in which they are located. For this, reason ten questions, and not five as for potentiometer and transistor topics, were adequate here. Apprentice motor students would have studied this material during their previous off-the-job training at Phase 2 and Phase 4. At Phase 6 level many lecturers assume that students have a full grasp of this subject, but in some cases this is not so. A selection of sample resistors questions from the diagnostic test are shown in Figure 5.2 below.

Measure and record below the resistance of each of the three resistors.

R1 value _____

R2 value _____

R3 value _____

Figure 5.2: Sample resistors questions

The theoretical aspect of the diagnostic test features a simple diagram containing all relevant components and test points associated with that particular circuit, as illustrated in Figure 5.3. As can be seen in Figure 5.4 there is a corresponding exercise sheet which asks the test participant to determine the expected electrical value at a certain test point in that circuit. Each student must therefore be able to read the circuit diagram before attempting to answer the questions, this being another core skill that must be mastered.

After successfully completing each theory test the student then proceeds to build the actual live circuit by using as a guide the simple diagram associated with that circuit. This provides the student with an additional challenge. In order to test the live circuit correctly and obtain the correct results, the circuit must first be constructed correctly.

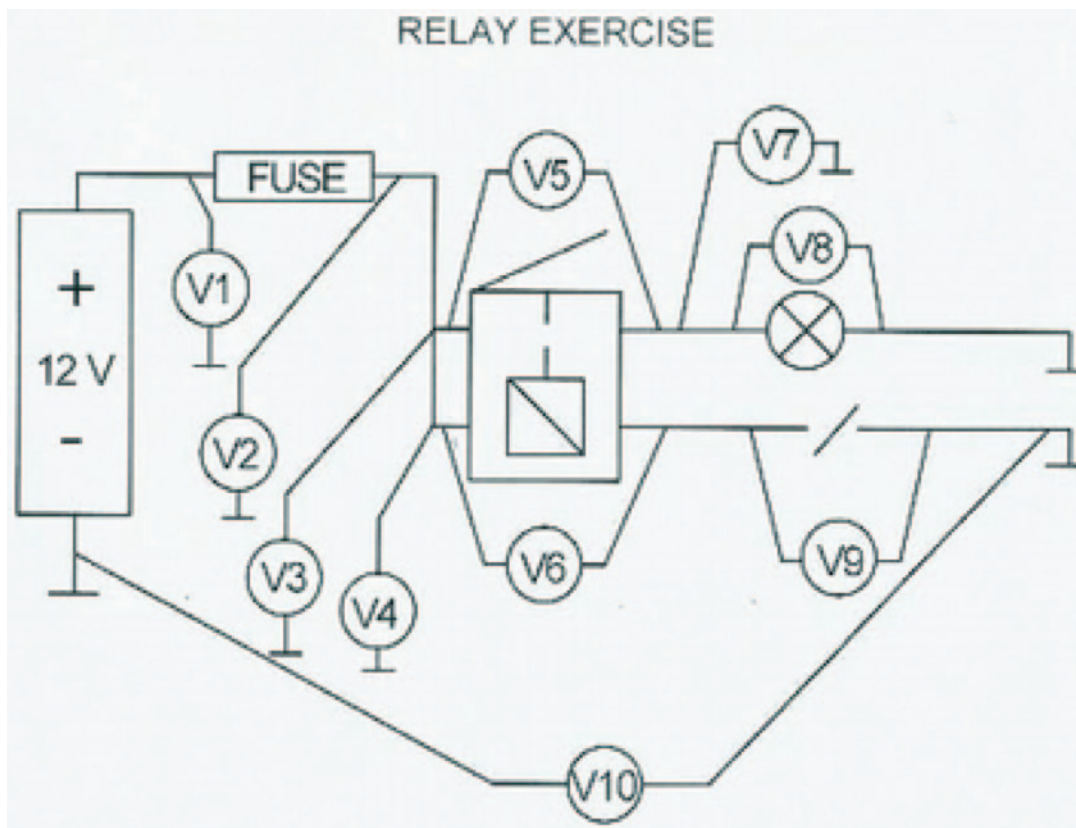


Figure 5.3: Relay exercise

Determine the expected voltage at all voltmeter positions in the diagram when the switch is open as well as closed.

Switch Open		Switch Closed	
V1		V1	
V2		V2	
V3		V3	
V4		V4	
V5		V5	
V6		V6	
V7		V7	
V8		V8	
V9		V9	
V10		V10	

Determine the expected voltage at the selected voltmeter positions in the diagram when the fuse is blown.

V1	
V2	
V10	

Determine the expected voltage at the selected voltmeter positions in the diagram with the switch open if the bulb has blown.

V5	
V8	
V9	

Determine the expected voltage at the selected voltmeter positions in the diagram with the switch closed if the bulb has blown.

V5	
V6	
V7	
V8	

Figure 5.4: Copy of relay exercise test sheet

If the circuit is constructed correctly then there should be no problem in carrying out any testing and obtaining the correct results. Some students find this aspect of the diagnostic test easier to complete as it involves a degree of trial and error and forces them into a unique situation where they are required to use their practical industrial based skills in a classroom/educational environment in order to overcome a problem. In this way the diagnostic test manages to integrate both industry and classroom learning.

As mentioned above the diagnostic test is split in two equal parts, theory and practice. In order to monitor student progress through the course and to allow and encourage students to master their electrical/electronic basics the diagnostic test was also repeated towards the end of their course.

Overall Test Results

The overall test results for stage one are shown in Table 5.2. The table gives the topic and the number of questions associated with each topic; the results are displayed as a percentage of the number of students who correctly answered questions in that particular topic. In addition to this the theory test results in all topics for both stages one and two as a percentage of students who got questions correct in that particular topic are displayed below in Figure 5.5. Figure 5.6 displays the practical test results in all topics for both stages one and two as a percentage of students who got questions correct in that particular topic.

Topic	No. of questions	% Theory test	% Practical test
Resistors circuits	10	30%	99%
Potentiometer circuit	5	53%	77%
Transistor circuit	5	65%	93%
Relay circuit	30	72%	84%

Table 5.2: Overall test results for stage one

The overall test results for stage two are shown in Table 5.3 below. The table gives the topic, the number of questions associated with each topic and the results are displayed as a percentage of the number of students who got questions in that particular topic correct.

Topic	No. of questions	% Theory test	% Practical test
Resistors circuits	10	76%	89%
Potentiometer circuit	5	58%	80%
Transistor circuit	5	75%	92%
Relay circuit	30	79%	87%

Table 5.3: Overall test results for stage two

Stage two took place six weeks after stage one. It may be observed from comparing Table 5.2 and Table 5.3 that there was a considerable improvement in the resistors exercise topic; initially a 30% pass rate, then a jump to a 76% pass rate in this area. In all three other test topics only a slight improvement occurred.

Comparing stages one and two, it can be seen that the practical results improved only slightly in the topics of potentiometer and relay circuits, whereas results for resistors and transistor circuits fell slightly. This may be due to the fact that the students were not given any prior notification of the practical test. This was done in order to measure their performance when placed in an unknown/surprised situation.

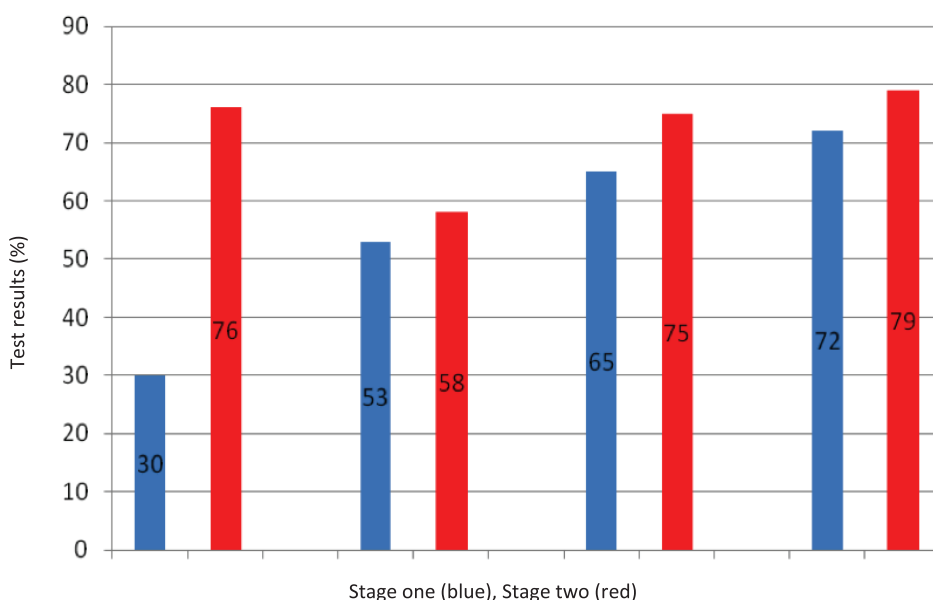


Figure 5.5: Theory results from both stages

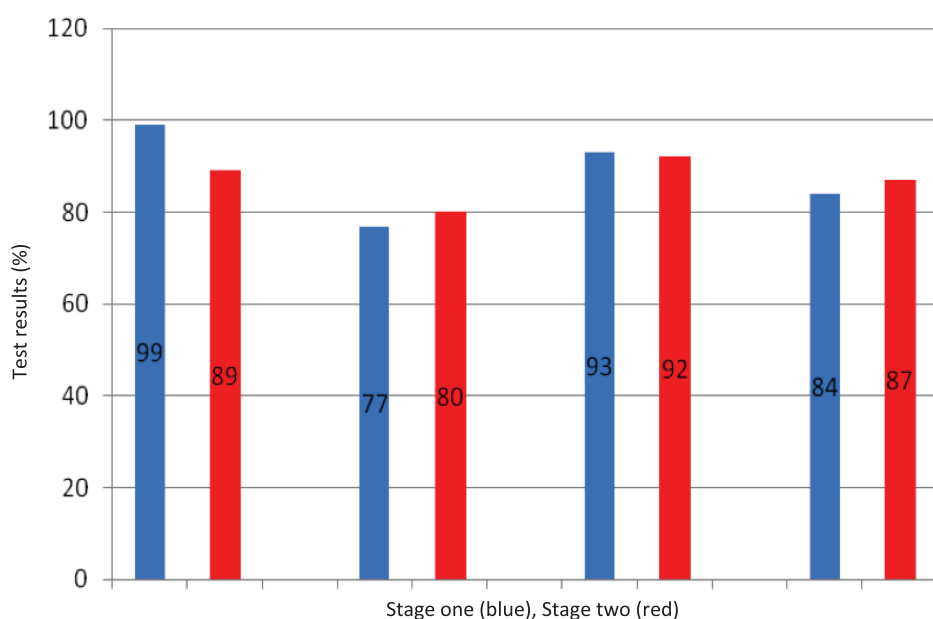


Figure 5.6: Practical results for both stages

Individual Student Test Results

Table 5.4 below shows the test results for each individual student as a percentage of questions answered correctly for combined test topics at each test stage. As can be seen in the table the lowest percentage score recorded was 39%. This was by student 5 and it occurred the second time that this student sat the theory test. This was a marked decrease in this student's theory result as a score of 54% was obtained the first time student 5 sat the theory test. The same student performed much better at the practical element of the diagnostic test. First time round 86% was achieved, increasing to 92% on the second attempt.

The best student improved their test results as they progressed through the course. Beginning with a score of 76% in the theory test at stage one, student 11 obtained a result of 88% the second time the theory test was taken. Student 11 scored 94% rising to 96% in the practical aspect of the diagnostic test.

Student	Stage 1 theory	Stage 1 practical	Stage 2 theory	Stage 2 practical
1	54%	90%	82%	82%
2	74%	84%	74%	84%
3	74%	86%	82%	96%
4	52%	88%	76%	88%
5	54%	86%	39%	92%
6	52%	84%	74%	84%
7	74%	86%	84%	96%
8	74%	88%	58%	92%
9	58%	88%	80%	88%
10	42%	86%	56%	92%
11	76%	94%	88%	96%
12	56%	86%	80%	86%

Table 5.4: Individual student test results

Conclusion

By allowing students to sit the diagnostic test at the start of their period of off-the-job training they quickly understood the task facing them. By making the students aware that they would re-sit the diagnostic test sometime towards the later stage of their course allowed them a period of time at their own discretion to prepare for this second test. However it was pointed out to the students before they sat the test that any marks obtained in the diagnostic test could not be added to marks obtained by them in their official apprenticeship assessments.

Apart from this an improvement in most of the topics covered by the diagnostic test was made apparent after the test was sat the second time with the exception of some of the practical topics at stage two.

In order to improve further core electrical/electronic skills in motor mechanic apprentices the diagnostic test could be made a fully integrated part of their syllabus and in order to motivate students the marks obtained by them could be made part of their overall course results. However the main difficulty with the implementation of a diagnostic test is that FAS the national training authority in Ireland is the primary provider for apprentice education in Ireland at the present time, whereas Institutes of Technology including the Dublin Institute of Technology are classed as secondary providers. However, even in the current model of apprenticeship with no credit allocation for a diagnostic test it can be seen that such a test proved useful to students as is reflected by their test results.

Recommendations to DIT

1. Allocate time in the timetable of all lecturers involved in the teaching of electricity to motor apprentice students in the School of Mechanical and Transport Engineering so that students may sit both theory and practical aspects of the diagnostic test with the aim of improving their understanding of basic electricity and electronics.
2. Integrate the diagnostic test into course work for full time students who are studying the subject matter of automotive electricity/electronics in order to give them a better understating of the subject matter and, as an incentive, award course/assessment marks accordingly.

Proposed Future Work

In order to enter into a motor apprenticeship in Ireland a qualification in electricity/electronics is not essential. However it is critical that motor students have a full grasp of the subject matter both during and towards the end of their training due to the level and complexity of electrical and electronic systems that form part of the modern motor vehicle. Many motor apprentices therefore find the subject matter difficult because they have never studied it before. Also the level and standard of the subject area increases as students progress through their apprenticeship.

I propose that the diagnostic test outlined above focusing on the areas of electricity and electronics should be given to all apprentice motor students at the beginning of their Phase 6 off-the-job training course in DIT during the academic year 2013–2014.

By allowing students to sit the diagnostic test at the start of their period of off-the-job training course they quickly understand the task facing them. The results obtained from the diagnostic test should quickly indicate students that may encounter difficulty with electrical related subjects.

I propose that the same test then be given to the same group of students mid-way through the same course in order to judge progress made through the course and to better identify those who have an extreme difficulty with the subject matter.

It is my intention that any students participating in the diagnostic test during the academic year 2013–2014 will be given prior notice of the test in order to gauge their performance.

For the long term, the syllabus for the trade of motor mechanic is due to be reviewed in late 2013. It is my intention to propose to FAS that the above diagnostic test be included as part of any revision of the current syllabus.

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College of Sciences and Health

6 Work placement blogs to harness diverse learning experiences, provide timely assessment and feedback, and foster a community of learning

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Abstract

Students on work placement will have very different experiences from each other; however they are generally not connected to their peers, but working with professionals under the guidance of a work placement co-ordinator. Therefore during work placement they are not formally supported by peers and cannot learn from the diverse range of activities their peers will experience. The aim of this project is to enhance the student experience while on work placement by introducing a blog assessment. The implementation of online work placement blogs will allow work placement experiences to be shared with the whole class. Feedback mechanisms are discussed, along with assessment strategies which actively promote student interaction with their peers. This ensures that all students have the potential to learn from their own reflections, from each other's experiences, from tutor feedback on peer blogs, from the process of peer review and through broadening the curriculum by connecting the "class room" setting to "real life working environment". Overall this assessment allows more efficient achievement of learning outcomes that all work placement modules share. For example, blogs can help to develop further students' personal and employability skills such as critical thinking and analysis through reflection, writing skills, communication, professionalism, listening, and giving/accepting constructive criticism through the discussions with each other. In addition, all of these important student graduate attributes can be further enhanced and developed through directed discussions with the lecturer using blogs.

Key words: *Blackboard 2.0, blog assessment, feedback, reflective writing, work placement*

Introduction

Work placement modules are an important and compulsory component of the majority of science degree programmes within the School of Food Science and Environmental Health, DIT. This requirement includes a period of planned work experience. The Higher Certificate Pharmacy Technician Studies students are placed in a community or hospital pharmacy. The students of the B.Sc. Nutraceuticals in Health and Nutrition Honours Degree programme are placed in a relevant industry or research establishment. This module exposes the student to the organisation and management of a pharmacy or industrial production/research facility, giving them the opportunity to apply in a community/industrial setting the skills, understanding and concepts studied in the course curriculum, and allowing them to benefit from the skills and expertise of the pharmacy, food or pharmaceutical industry professionals. The majority of students retrospectively refer to the module as one of the most useful modules of their course.

Students on work placement will have very different experiences from each other; however they are generally not connected to their peers, but working with professionals under the guidance of a work placement co-ordinator. Therefore during placement they are not formally supported by peers and cannot learn from the diverse range of activities their peers will experience.

As work placement co-ordinators, some of the main challenges faced are to improve student learning, encourage reflective practice and instil an understanding of the need for continuous professional development. The main objective of this project was to introduce a blog assessment for students following the Higher Certificate Pharmacy Technician and B.Sc. Honours Nutraceuticals in Health and Nutrition courses, in order to encourage reflection on performance and the development of a community of learning, which together are important steps towards lifelong learning. The main benefits of blog assessment include:

- utilising Blackboard 2.0 to provide an effective web-based learning environment to support self-directed independent learning and foster a community of learning for work placement students.
- engaging students in collaborative learning, encouraging deeper analysis and critical thinking (McNamara and Burton 2009).
- uncovering the informal "hidden curriculum" which exists particularly in a learning environment outside the academic institute.
- providing student friendly peer and tutor support while students are isolated from college on placement, thus supporting student retention.
- giving timely tutor feedback and peer review on assessment.
- supporting professional development through reflection on practice (Carlile 2007) and written communication.
- broadening the curriculum through gaining, sharing and discussing external perspectives on core knowledge gained in lectures.

Outline of Project

Preparation of reflective writing and blog assessment workshop

A forum group was carried out to determine what resources and guidance the students needed for the workshop to prepare them for their reflective writing blog assessment. Conclusions from this forum group helped in the design of the following resources and tools outlined below which were made available to the students on Blackboard 2.0.

Workshop resources

Student and tutor "Reflective writing package" (instruction handbook) in an interactive annotated format (Articulate Engage) and a simple editable format (Word).

- Student instruction handbook
 - Explanation of what reflective writing is.
 - A series of activities to demonstrate the principles of reflection applied to a work placement experience.
 - Examples of 'good' and 'needs improvement' blogs.
 - Detailed assessment rubric (Table 6.1) informed by best practice and literature in the area including a breakdown of marks awarded for all elements of assessment aiming to support tutors and clarify to students the requirements of blog-type assessments, including how to interact with peers.
 - How to apply an assessment rubric to samples of reflective writing.
 - Examples of suitable vocabulary for reflective writing.
- Instructional videos screen-cast with voiceover (developed using Camtasia Studio 8.0 software).
 - How to post a blog on Blackboard 2.0.
 - How to post a comment on peer blogs.
- Tutor instruction handbook: The same as the student handbook but with tutor support material, for example solutions to the different activities and advise on how to implement them.
- Instructional videos (developed using Camtasia Studio 8.0 software).
 - How to set blog groups up on Blackboard 2.0.
 - What settings to choose for Blog tool on Blackboard 2.0.

Pre- and post-survey evaluations were conducted to assess whether the learning outcomes of the workshop were achieved.

Implementation of online work placement blogs

During work placement students were instructed to post a blog of approximately 400 words for four consecutive weeks on prescribed dates. They were also instructed to comment and respond each week to the blogs of their peers in their blogging group. All students in the class had access to read the complete set of blogs. Tutor feedback was provided to each student after the first blog and comment postings, and utilised the same commenting feature within the discussion forum as students used to comment on each other's blog posting. All students had access to the tutor feedback given to their peers. Feedback focused on encouraging description, reflection, and relating experiences to theory and not on the student's performance in the workplace as described by the blog. Feedback was provided after the first blog postings, and following this, the final three postings were marked using the assessment rubric. In addition, the student's interaction with their group through leaving comments to others students, and replying to comments left on their blog postings were assessed.

A post work placement evaluation using clickers was conducted after students completed their work placement. The outcomes of these results were further discussed in a post work placement focus group. The focus group comprised of one representative student from each blog group, also ensuring gender balance and standard and mature age group.

Criteria	Beginning	Developing	Proficient	Strong	Marks Weighting
Content	Experiences are poorly described or are not relevant to the course of study or profession	Experiences are reasonably well described and somewhat relevant to the course of study, but not related well to theory	Appropriate experiences are chosen and are well described, but not well related to college theory	Appropriate experiences are well described and related back to college theory.	25%
Reflection	No evidence of reflection on performance or personal response to experiences described	No evidence of reflection on performance but some personal response to experiences described	Evidence of reflection on performance and good personal response to experiences described	Evidence of deep reflection on performance and clear personal response to experiences described, together with statement of learning achieved both from the experience and reflection.	25%
Comments	Lack of comments, or comments of a trivial nature with no evidence of empathy with blog group	Comments of a somewhat trivial nature, and showing only slight empathy with the blog group	Comments show interest and empathy with blog group, requesting further information, and comparing to own experience. Replying to peer comments and questions is evident.	Comments show empathy with blog group, requesting further information, making suggestions, and evidence of deep reflection of experience of others, and how this relates to own practice. Replying to peer comments and questions is evident and very meaningful and purposeful.	15%
Frequency	Completely insufficient blog posts.	Sufficient blog posts, but always late.	Sufficient blog posts, rarely late. Comments mostly on time.	Always posts blogs and comments on time.	25%
Style	Poor grammar and spelling, and poor general language usage makes blogs difficult to read or follow. Blog is incorrect length.	Spelling and grammar are good, but little thought out into construction of blog post into a coherent piece. Incorrect length.	Good grammar and spelling, and correct language usage. Blog is correct length.	Good grammar and spelling, excellent language usage, demonstrating style and personal expression. Blog is correct length.	10%

Table 6.1: Rubric for DT425 blog assessment

Evaluation

Outcome from student consultation forum

The students were consulted ahead of their work placement to determine what resources they believed they needed in a pre-placement workshop to prepare them for the blog assessment. The two resources which they determined to be important were:

- Examples of good assessment blogs
- Resources to show them how to use the blogging software

This led to the development of the Reflective Writing Instructional Handbooks and the Camtasia videos.

Outcome from the pre-workshop student survey

The quantitative data obtained through a student survey immediately before the workshop is summarised in Table 6.2.

Pre-workshop evaluation DT425		Overall Agree (%)	Overall Disagree (%)
Do you have an understanding of what reflective writing is		80	20
Do you feel confident to write a reflective blog		50	50
I am able to post a blog using Blackboard 2.0 software		27	73
I am able to post a comment on my peer's blog using Blackboard 2.0 software		27	73
Which of the following resources would be useful to write reflective blogs:			
	Reflective writing examples	96	4
	Assessment rubric	48	52
	Audiovisual 'how to post a blog'	74	26
	Audiovisual 'how to post a comment'	61	39
I believe the reflective writing blogs will....			
	Help me learn about other students work experience	87	13
	Help me to do a better work placement	74	26
	Keep me connected with the class	57	43
	I do not see the purpose of writing reflective blogs	9	91

Table 6.2: Summary of quantitative data from pre-workshop student survey evaluation (N=23)

Outcome from the post-workshop student survey

The quantitative data obtained through a student survey immediately after the workshop is summarised in Table 6.3.

Post-workshop evaluation DT425		Overall agree	Overall disagree
Did you find the assessment rubric helpful		100	0
I have a better understanding of what reflective writing is after the workshop		100	0
Content of reflective writing resources was presented clearly and effectively		100	0
The reflective writing examples are appropriate		100	0
I feel confident to write a reflective blog		100	0
The reflective writing tools from this module would be easily applied to other modules		100	0
From this training I would be able to use these skills in other areas		100	0
Content was presented clearly and effectively		100	0
The audiovisual was helpful		100	0
I was able to post a blog after watching the video		100	0
I would be able to post a blog on a subject related to other modules of the programme		100	0
I was able to post a comment on my peer's blog after watching the video		100	0
I would be able to comment on different blogs not related to this module following these instructions		100	0
From this training I would be able to use these skills in other areas		100	0
Which of the following resources were useful:			
	Reflective writing examples	100	0
	Assessment rubric	96	4
	Audiovisual 'how to post a blog'	90	10
	Audiovisual 'how to post a comment'	76	24
I believe the reflective blogs will....			
	Help me learn about other students work experience	100	0
	Help me to do a better work placement	100	0
	Keep me connected with the class	100	0
	I do not see the purpose of writing reflective blogs	7	93

Table 6.3: Summary of quantitative data from post-workshop student survey evaluation (N=23)

Outcome from the post-work placement student survey

The quantitative data obtained through a Clickers student survey carried out following the blogging assessment is summarised in Table 6.4.

Outcome from the post-work placement focus group (N=8)

The focus group provided clarity on many issues, however the main student recommendations from the focus group were:

- To provide several examples of blogs from both community and hospital pharmacy
- provide examples of blogs which contain instances of reflection on positive experiences, as well as critical incidents and unresolved issues.

	Agree	Disagree
Software		
Using the Webcourses blog software was easy to use	86	14
I was given sufficient training to be able to use the software	90	10
Personal attitude towards blogging		
I enjoyed writing my blog	62	38
I was anxious about what the other students would think of my first blog	76	24
I was anxious about what the lecturer would think of my first blog	100	0
I was comfortable posting my blogs in beginning	36	64
I was comfortable posting my blogs by the end	86	14
Lecturer feedback		
I found the lecturer feedback comments on my own first blog was useful to help me improve	81	19
I found the lecturer feedback comments on other students blogs was useful to help me improve	73	23
Peer feedback		
I found the students comments on my blogs was useful to help me improve session	54	46
I found reading other students blogs helped me write better blogs report	97	3
Peer learning		
The blog is a useful tool for students to share experiences while on placement	96	4
I read the blogs of students outside my group	76	24
Through the blog I felt connected to my class while out on placement	76	24
As a trainee technician, I learned a lot from other students experiences through the blog	75	25
As a trainee technician, my performance on placement improved reading the other students blogs	43	57
Reflection		
I found reflective writing difficult in the beginning	96	4
I found reflective writing difficult by the end	38	62
I understand why reflecting on performance is important for professionals	89	11
My performance on placement improved through my self-reflection for the blog	50	50
My own performance improved through thinking about and commneting on other students blogs	60	40
Assessment		
I have found using the assessment rubric criteria useful to understand how I will be assessed	82	18
I think the blog should be kept as an assessment method for future years, instead of a placement report	97	3
I often referred to or considered the rubric during the time I was blogging	58	42

Table 6.4: Summary of quantitative data from post-work placement Clickers student evaluation (N=32)

Conclusions and Future Work

Broadly speaking, we are satisfied that the reflective writing workshop was successful in preparing students for their work placement blog assessments. This is evidenced by the generally positive nature of the student evaluations provided in Tables 6.3 and 6.4. Compared to previous years, the quality of writing and the focus on reflection in the blogs has certainly improved. Most notably, the quality and empathy shown in the comments has greatly improved. However, in some cases early instalments of blogs suffered some loss of creativity compared to previous years as many students attempted to mimic the example they were provided with in the workshop. Although this improved as students were inspired from reading peer blogs, we believe this can be addressed earlier though providing several diverse examples of blogs as a resource ahead of blogging. Furthermore, the focus group brought to light a worrying trend that students felt it was important to blog only on critical incidents or issues, leading to an overly negative tone to the blogs. Additionally, from the focus group there is some anecdotal evidence to suggest that occasionally students blogged on plausible issues or problems which did not actually occur in order to have a topic upon which to write a blog. To discourage this, and instead promote more constructive creativity, we intend to develop blogs which reflect on more positive, and perhaps more routine, experiences. We are also piloting the blogs over an eight week period for the B.Sc. Nutraceuticals in Health and Nutrition, to allow more time for reflection and for the blog–comment–feedback cycle. Together with the suggestions mentioned, we will await completion of the project and full evaluation on the B.Sc. Nutraceuticals in Health and Nutrition to decide on the exact nature of our future developments in this project.

Recommendations to DIT

- Where reflective writing is used as part of a “high-stakes” assessment of work placement, the students should be introduced to reflective writing for assessment earlier in their programme of study, for example in a “low-stakes” assessment in an unrelated module.
- It is useful for students to be given an example of a blog on a “critical incident or issue”. However, to avoid an excessively negative tone throughout the peer blogs, students should also be provided with examples of reflection on positive, and more routine, work placement incidents and experiences.
- Provide students with several examples of diverse, high quality blogs to avoid a single blog becoming a “blueprint” or template for blogging, thus reducing creativity in style and originality of topics.
- Ensure that there is diversity of work placements in each blog group, to ensure a range of experiences are shared within each group.
- Consider extending the blog and comment cycle to once every two weeks as opposed to every week to allow more time for reflection between blogs, and for the commenting and feedback process.
- We recognise that the rubric is a very useful tool to provide clarity and transparency of assessment to students. It is important that due consideration is given to the weightings of the various criteria, as this influences the relative importance that students place on each of the criteria. We recommend that writing style is included in the rubric, to avoid students reverting to an informal or overly casual “text-speak” tone of writing in the online environment.
- The recent DIT report on “structured work placements” (Academic Quality Assurance Committee 2013) suggests that work placements should be assessed on a pass/fail basis. This is sensible where the assessor is an external supervisor assessing the core competencies associated with the placement. However, we recommend that other attributes and skills developed during work placement are assessed separately by an internal DIT supervisor and using a graded assessment. This graded assessment can be divorced from the main work placement module and form part of an associated module, for example in professional development or a graduate attributes portfolio.
- We believe an assessment of this nature resonates with several of the recommendations of the recent EU high-level group on Modernisation of Higher Level Education in Europe (European Commission Report 2013), particularly in terms of assessment against clear and agreed learning outcomes, and the exploitation of opportunities presented by the digital era to improve the quality of teaching and learning.

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Teaching Fellowship 2012–2013

Dissemination Outputs

See also <http://www.dit.ie/lttc/projects/institutionalprojects/teachingfellowships/>

Anne-Marie O'Farrell and Lorraine O'Connell: Conservatory of Music and Drama

As part of the DIT Fellowship programme, an overview of the project was provided at the Teaching Fellowships Launch on 1 November 2012 at DIT Mount Street. Updates of work in progress were also given through the LTTC website, at the DIT Annual Showcase of Teaching and Learning Innovations in DIT Mountjoy Square on 16 January 2013, and at a College presentation on 28 February 2013. The project was presented at the Society of Musicologists in Ireland Conference, NUI Maynooth on 22 June 2013, and at the Eighth International Conference on the Arts in Society, Eötvös Loránd University, Budapest, Hungary on 24 June 2013.

Joe Dennehy: School of Marketing

As part of the DIT Fellowship programme, an overview of the project was provided at the Teaching Fellowships Launch on 1 November 2012 at DIT Mount Street. Updates of work in progress were also given through the LTTC website, at the DIT Annual Showcase of Teaching and Learning Innovations in DIT Mountjoy Square on 16 January 2013, and at a College presentation on 18 April 2013.

Colm O'Kane: School of Manufacturing and Design Engineering

As part of the DIT Fellowship programme, an overview of the project was provided at the Teaching Fellowships Launch on 1 November 2012 at DIT Mount Street. Updates of work in progress were also given through the LTTC website, at the DIT Annual Showcase of Teaching and Learning Innovations in DIT Mountjoy Square on 16 January 2013, and at a College presentation on 16 January 2013.

Eric Bates and Peter Hinch: School of Construction

As part of the DIT Fellowship programme, an overview of the project was provided at the Teaching Fellowships Launch on 1 November 2012 at DIT Mount Street. Updates of work in progress were also given through the LTTC website, at the DIT Annual Showcase of Teaching and Learning Innovations in DIT Mountjoy Square on 16 January 2013, and at a College presentation on 30 October 2012.

Peter Kenny: School of Mechanical & Transport Engineering

As part of the DIT Fellowship programme, an overview of the project was provided at the Teaching Fellowships Launch on 1 November 2012 at DIT Mount Street. Updates of work in progress were also given through the LTTC website, at the DIT Annual Showcase of Teaching and Learning Innovations in DIT Mountjoy Square on 16 January 2013.

Julie Dunne and Sinead Ryan: School of Food Science and Environmental Health

As part of the DIT Fellowship programme, an overview of the project was provided at the Teaching Fellowships Launch on 1 November 2012 at DIT Mount Street. Updates of work in progress were also given through the LTTC website, at the DIT Annual Showcase of Teaching and Learning Innovations in DIT Mountjoy Square on 16 January 2013, and at College presentations on 14 March and 4 October 2013. A poster presentation will be made at the LIN 2013 Conference on 17 October 2013.

Appendices

Fellowship Projects 2012/13

Drawing upon and contributing to the findings from the DIT's own data and national and international data and best practice as appropriate

	First Year Curriculum	Assessment	Student Engagement and Retention	Curriculum Development
Modularisation	Projects in this cell would focus on curriculum reform – facilitated by our modular structure – to assist commencing students change their learning strategies to meet the expectations of HE.	Projects in this cell would consider the impact and potential of modularisation on assessment with particular attention to the pedagogical potential of formative assessment as a way to limit the overall summative assessment load.	Projects in this cell would address the way in which the DIT modular structure could be used to redesign delivery of programmes and/or curriculum design in a way that would be responsive to those factors contributing to retention.	Projects in this cell would use the modular structure to design programmes and to use teaching and assessment methods that would encourage student participation and engagement in their learning.
Diversity	Projects in this cell would explore and compare different strategies to support learner engagement within the first year of undergraduate programmes.	Projects in this cell would focus upon the use of "non-traditional" assessments as a way to provide feedback to students on their learning.	Projects in this cell would focus upon the use of strategies to include, engage and retain non-traditional students within existing programmes.	Projects in this cell would develop creative ways to use the DIT modular structure to address the needs of non-traditional students.
E-learning	Projects in this cell would make use of online resources to encourage active learning and information literacy among first year students.	Projects in this cell would leverage technology to support innovative assessment practices.	Projects in this cell would aim to improve student retention through the use of e-learning technologies.	Projects in this cell would focus on the use of e-learning technologies to engage students and motivate them to more active learning.

Appendix B

Teaching Fellowships Evaluation and Feedback

- 1. How did you first become aware that DIT had established College Teaching Fellowships, e.g. did you see them advertised, heard by word of mouth etc.?**
 - Word of mouth: 4
 - By email/advert: 2
- 2. How did you become a Teaching Fellow for your College, e.g. were you nominated to apply, did you submit the application form when you saw the call etc.? Please briefly outline the process below.**
 - Nominated: 0
 - Applied when saw call: 6
- 3. How did you feel this application process worked for you? How might it be improved if there is another call for College Teaching Fellowships next year?**
 - I think the process is good, maybe poster adverts and more information e-mails.
 - I thought the application form was good because it helped me to structure the project in terms of deliverables, objectives etc. Aligning this to the report at the end is useful.
 - In general awareness building by leveraging past holders or alumni of LTTC courses alongside the traditional communications methods.
 - It was fully satisfactory.
 - It worked ok, the form was very straightforward.
 - Worked fine.
- 4. How important was the money in you being able to undertake your fellowship research?**
 - 5 Very important
 - 0 Quite important
 - 0 Not important but it helped
 - 0 Didn't make any difference
 - 0 Don't know
- 4a. Which of the following best describes how you used your Fellowship money?**
 - 3 Buy out of hours
 - 4 Buy equipment/resources for the project etc.
 - 3 Disseminate findings at a conference
 - 1 Other (please specify): A comment was added saying "Money would, or arguably should, not be decisive in a person applying for a Fellowship but it is certainly very useful if it permits the buy-out of hours to facilitate the work involved".
- 5. A Teaching Fellowship launch, the DIT Showcase event and a series of four lunchtime College sessions have been organised as a way to support and promote your Fellowship work within the DIT. Have you attended these sessions?**

Yes: 5 No: 1
- 5a. If yes which ones?**
 - I attended all of them.
 - Launch, BST, Aungier St sessions, showcase.
 - Launch, Showcase and three of four sessions. The other was a time clash.
 - Launch, showcase, and two lunchtime sessions.
 - Showcase and two lunchtime sessions.
- 5b. How useful have these sessions been to you and how might they be improved?**
 - As this is my second fellowship, I found them a bit less useful. But the first fellowship I found them a support to my project through listening to others' ideas, and getting feedback.
 - Launch and College sessions could be publicised more, attendance was quite poor at most of them. Would suggest merging with another annual event to give more "status" to the events, e.g. the talks at the showcase were well received.

- Quite useful in that I became exposed to ways of working which I hadn't previously considered.
- The Fellows themselves should be more active in publicising the event. The one over in Aungier Street was really poor with the Fellow actually saying that he deliberately did not tell people as he did not want them there! Most peculiar. I was disappointed with the turn out in Bolton Street and it turned out to be the best attended. The ones in Cathal Brugha Street and Rathmines were very poorly attended. I wonder are they useful at all? Given that so few folks turn up at them. Would it be better to have the fellows present to College Board or some other forum?
- Very useful. Try to give them a higher profile, including, again, leveraging the LTTC alumni and specifically requesting the Fellows to attend all and publicise their own internally – which modesty may otherwise inhibit.

5c. Have any additional seminars, workshops, presentations been organised in your department as a way to also promote the work?

Yes: 1 No: 5

5d. If yes please outline here:

- I organised workshops with staff as part of the process, not necessarily to promote.

6. Support from the LTTC staff has been made available to help you plan/implement your Fellowship project. What kind of support have you found most useful so far and what kind of additional support would you like for the next stage of your work?

- A structured presentation to a designated LTTC mentor and detailed discussion of plan for work at the very beginning and availability of the mentor for periodic consultation would be very useful.
- Contact with those interested in DIT's connection with the community, i.e. interest groups, young people, etc.
- Guidance on qualitative data gathering and analysis from head of learning development. Similar support for developing work further for publication would be great.
- I have had one-to-one meetings with LTTC staff which helped us to evaluate our project, and also to manage the technology requirements of Blackboard. These were critical supports.
- My colleague and I pretty much managed well throughout the year as we had a clear work plan. We wrote the report up and handed it in on time. I think the next step in support would be to disseminate the paper at a conference.
- Workshop to help with writing the report.

7. Has being a teaching fellow for your College been as you expected?

Yes: 4 No: 2

7a. If no, in what way has it been different?

- I encountered a greater sense of the wider DIT community than I expected to come into contact with.
- No, because I had no clear expectations. However, I believe it would be very beneficial to seek to heighten the Fellowship's profile as a means of elevating the importance of teaching in DIT.

8. External funding currently used to support the Fellowships has now ceased. Do you feel that the DIT should continue to support Fellowships into the future?

Yes: 6 No: 0

9. Any other comments you would like to make about the continuation of the Fellowships, or the Fellowships more generally?

- Don't stop! Keep up the great work. It was a very encouraging experience to be a part of this venture, and to know the DIT was behind it.
- Encourage staff to undertake projects like Fellowships.
- Heightening of the Fellowship profile has the potential to increase the value accorded to teaching across DIT.
- I feel the Fellowship is an important tool to encourage staff to undertake projects in this area. Gives recognition to members of staff who proactively engage with teaching development
- I think the teaching Fellowship is a good "brand" and could be tied in with metrics for teaching excellence or tied into college award, but without funding or another carrot, it may be hard to get outputs/reports.
- The Fellowships are a great scheme that appeals to a certain type of lecturer. I think those who apply will always carry out that kind of work regardless, but the existence of the Fellowship is an incentive.

Appendix C

Composers in the community

Our Composition: _____

Composers: _____

OUR SYMBOLS

Figure C.1: Blank template for pupils' composition

Appendix D

Enhancing Graduate Attributes: a preliminary research study

Eric Bates and Peter Hinch: **School of Construction**

Appendix D.1

Video Feedback Sheet

DIT Teaching Fellowship Project: Enhancing Graduate Attributes.

Good afternoon and I would like to welcome you all here today. We are very grateful that you would take the time to help us in this research. We are both very interested in enhancing graduate attributes and are trying to produce workable videos that would help graduates as they seek employment. We are going to show two videos and we would like your feedback on the videos. The feedback sheets are anonymous so please be as honest as you can be – we value everyone's opinion. If at any time you want to leave and take no further part in this research please feel free to do so.

Thank you

Eric Bates and Peter Hinch

Appendix D.2

Video Feedback Sheet

Please rate your response to the following questions on the following scale of 5 (Agree Strongly) to 1 (Disagree Strongly)

Question	Agree 5	4	Don't know 3	2	Disagree 1
These videos are a good idea.					
<i>Comment</i>					
I would use such videos with my students.					
<i>Comment</i>					

Appendix D.3

Focus group discussion questions

Question 3: what was good about the videos?

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Question 4: what was not so good about the videos?

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Question 5: what would you do to improve the videos?

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