



# Enhancing learning and teaching in higher education in Northern Ireland

Dr Darren Kelsey (ed)

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To seed an inter-generational and inter-professional 'Excellence in the teaching of Restorative Practices (RP)' base, through investing in early and mid-career University of Ulster staff and tutorial / mentoring staff located in University-Community Partnerships with public and civil organisations in Northern Ireland (University of Ulster)	50
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## Introduction

The Higher Education Academy (HEA) is committed to enhancing the student learning experience, and championing excellent learning and teaching in higher education. While the HEA is a UK-wide organisation, it is set up to support and respond to priorities in the devolved nations. In Northern Ireland, the HEA seeks to deliver services and activities that support the higher education sector and meet institutional priorities and agendas, wider policy, and social and economic drivers and challenges.

In the academic year 2010-11, the HEA offered grants of up to £2,500 to higher education institutions in Northern Ireland for learning and teaching enhancement projects that addressed the following thematic areas:

- assessment and feedback practices;
- developing excellent teaching;
- education for sustainable development and global citizenship;
- employability and entrepreneurship;
- responding to the diverse student profile (international, part-time, mature, work-based learning, etc.);
- student engagement in curriculum design and delivery;
- widening access, retention and progression.

The HEA also offered grants of £500 for higher education institutions in Northern Ireland to host and deliver seminars that explored policies and practice in the following thematic areas:

- assessment and feedback (including giving effective student feedback, getting 'more for less' in assessment and feedback, assessment and flexible learning, academic integrity);
- student engagement and student voice;
- learning for employment (including employability and skills);
- learning in employment (including employer engagement, employee learning, and work-based learning).

This report is a collation of the work carried out by individuals, departments and institutions that participated in the learning and teaching enhancement projects and ran seminars. As the projects and seminars summarised in this report demonstrate, a variety of innovative initiatives are being developed across a range of academic disciplines. The report provides brief overviews of projects and seminars that, in some cases, submitted substantial data and methodological accounts of research. Full reports are available at <http://bit.ly/MW7ooQ>, should you wish to read about any projects in more detail. The HEA hopes that you will find this publication useful for enhancing your learning and teaching practice in your particular context.

# I. Assessment and feedback practices

## Listening to students: case studies of development through engagement with students

### St Mary's University College Belfast (seminar) – Gerry Trainor and Damian Knipe

#### Introduction and overview

In this seminar, staff at St. Mary's University College Belfast presented three case studies of projects carried out and designed to give students a voice, to listen to their feedback and to develop as a result. The case studies ranged in scope from a specialist option in a module to a whole year group. The first case study examined how feedback from fourth-year students in a specialist option on the BEd programme has led to developments in the course; the second investigated how second- and third-year students are shaping what they do on the work placement aspects of the BA Liberal Arts programme; and the third analysed feedback from first-year students across the BEd and BA (Liberal Arts) programmes, obtained through an annual survey, in order to help improve provision. There was also an opportunity for participants to discuss their own experiences in the area of listening to students and to share ideas and good practice.

St. Mary's places a strategic emphasis on providing a top quality educational experience for all its students. We emphasise close staff engagement with students and comprehensive student support services. Our investment in caring for our students is reflected in the exceptional outcomes reported in the National Student Survey. The seminar call included the thematic area of student engagement and student voice, and we were able to identify three members of staff who had recent or ongoing research in this area. The seminar provided an opportunity for the staff to disseminate their research to colleagues both inside and beyond the institution, and to learn from each other's experience and that of the external delegates. It also provided a platform to learn about the HEA work in this area.

#### Seminar findings

The first case study produced new research findings, which were reported during the seminar, and contributed to further developments with the BEd fourth-year specialist option. This report is available at the website of the Standing Conference on Teacher Education North and South (SCoTENS): <http://scotens.org/?cat=340>.

The second case study is currently being written up into a report, which will be used for the purposes of further development of the BA Liberal Arts degree programme in the College.

The third case study produced new research findings that were included in a report to the Board of Governors and the College Management Team. It was used to review policies and practice within the College.

Given the range of the presentations there were no specific outcomes and implications for policy and practice, but some general themes emerged:

- In each of the three cases it was clear that engaging students was worthwhile and that the investment of time and resources was rewarded with new insights into each professional situation and led to improvements in practice and/or policy development.
- For two of the presenters this was the first time they had engaged in this type of research and they found it valuable to the extent that they intend to continue to engage at this level with students in the future. They also learned something about the process and will adapt their methodology in light of their experiences.
- Two of the presenters felt that the focus group was a particularly useful method of gaining students' opinions. Not only did it allow for more detailed responses, but the students felt their input was valued.

- In cases where changes or developments had come about as a result of student engagement it was seen as important to feed this information back to students. Again this showed that their input was important and provided an incentive for future engagement.
- The presenters felt that being able to disseminate their findings to an audience of peers added value to their research. They found it useful to compare and contrast what each had done and to learn from each other and were reassured that each, while working independently, had experienced similar challenges and successes.
- The participants from within the College were more informed of work that was being carried out by peers and could see the benefits of engaging the student voice in their own work.
- The external participants were able to share their own experiences of in some ways similar, but in other ways very different, situations and discuss the relative benefits and drawbacks of the various methods of engagement employed.

### Generation of evidence

The first case study employed the use of a survey instrument in the form of a questionnaire, which was administered to all the students taking the specialist BEd fourth-year option. The students completed the questionnaire anonymously and each questionnaire was scanned using software to read the responses provided by the students, and produced data in the form of an SPSS spreadsheet, which enabled analyses to be made. There were also focus groups carried out with a sample of students, which were recorded using an audio cassette and transcribed for further analysis.

The second case study used a combination of questionnaires and focus groups to gather data relevant to the main themes under investigation in the research. The questionnaires were completed by current students and recent graduates anonymously and the data were coded and analysed using SPSS. Focus groups were also carried out with an opportunity sample of current students and recent graduates and the data generated were transcribed and interpreted to combine with the questionnaire data.

The third case study made use of a detailed questionnaire issued to the entire cohort of first-year students, and it posed questions on the various aspects of being a student in the College. The questionnaires were then coded and keyed into an SPSS spreadsheet for various descriptive statistical analyses to be carried out to produce a series of tables and charts.

### Emerging themes from seminar

The following questions formed the basis for the group discussions:

1. Rationale – When is it useful to engage the student voice? If possible list some instances from your own situation/experience.
2. Methodology – What are the most effective/appropriate methods, e.g. interviews, focus groups, paper-based surveys, online surveys, email, staff-student committees, voting (audience response) systems, etc.? What are the benefits and drawbacks of these methods?
3. Participation – How can students be encouraged to participate? What are the incentives? What are the obstacles to participation?
4. Benefits/risks – What are the benefits of engaging students? What are the risks involved?
5. Resources – What are the resources implications in relation to time, cost, goodwill and human resources?

The delegates were all convinced of the value of engaging the student voice and much of the discussion focused around questions 2, 3 and 5. These are areas that would merit further investigation.

### Links

In drawing up the questions for discussion we found the following Escalate project very useful, 'Hearing the student voice: involving students in curriculum design and development': <http://escalate.ac.uk/4314>  
<http://www2.napier.ac.uk/studentvoices/curriculum/index.htm>

## Identification of students' motivations and attitudes towards attendance at peer-assisted study sessions @ Ulster (PASS@Ulster)

University of Ulster (Learning and Teaching Enhancement Project) – Joan Condell

### Introduction and overview

This HEA project looked at students' decisions on attendance and engagement at PASS sessions. A framework known to be particularly appropriate for exploring an individual's decision-making process is the theory of planned behaviour. The aim of the study was to employ psychological theory to support the evaluation of a PASS programme and in so doing to identify the factors influencing students' attitudes and motivations to engage with the process, to assess their relative importance and to inform its future delivery.

While there is no conclusive evidence to suggest that characteristics that students bring with them, such as gender, ethnicity or ability levels, will influence the extent to which they engage as students (see Trowler and Trowler, 2010), there is some evidence to suggest that other factors might contribute to their interest and level of engagement in learning. For example, economic and social pressures (Longhurst, 1999), dissatisfaction with courses and teachers and peer influences (Brewster and Fager, 2000) may all play a role.

Clearly, these influences will be more important for some students than for others and an understanding of the most salient issues for a particular student population will be fundamental in shaping the design and delivery of a programme. However, perhaps surprisingly, despite the rhetoric on the value of student engagement, there is little evidence to suggest that students are engaged in issues beyond their own learning. Consequently, there is a need to involve them more directly in shaping the design and delivery of the curriculum.

### Generation of evidence

#### *Elicitation study*

Beliefs were elicited by conducting one-to-one interviews with first-year students and evaluated in conjunction with the results obtained from a series of focus groups conducted with students in three separate disciplines (Law, Psychology and Maths).

Questions were of the form:

- What do you consider are the **advantages and/or disadvantages** of attending PASS sessions?
- Are there any groups or people who would **approve and/or disapprove** of you attending PASS sessions?
- What factors might **encourage and/or prevent** you from attending PASS sessions?

### Project findings

Qualitative measures have been employed to identify the benefits and shortcomings of PASS from the students' (participants and leaders) perspectives. Feedback has been obtained via focus group sessions. Results of the evaluation have highlighted students' perceptions of the benefits and shortcomings.

#### *Advantages/disadvantages*

The main advantages given for attending PASS sessions were: being able to ask more questions; better understanding of course material; achieving better results; learning from other students; and making friends. The main disadvantage noted was the workload.

Gain a better understanding of course material:

*Going to PASS means we get a chance to look over our notes and gain a better understanding of what has been taught in lectures. Hopefully that will pay off when we get our results.*

*What I like most about PASS is the less formal, comfortable and relaxed atmosphere, with the freedom to ask questions and no pressure to answer correctly . . . It helped me in learning and in understanding the topics.*

#### Make friends:

*I wouldn't have made some of my friends if it wasn't for PASS. It's good because you have time when you can talk openly to each other about the course and our work because we wouldn't do it any other time.*

*It sort of helps you make friends. You know at the start like people were really off and didn't really talk to one another and then getting to know a small group at least and then talking out loud. There was one girl in our group who at the beginning was really shy and now she is bubbly and chattering away all the time and it is because it came out when we were in our PASS classes really. And then it helps with knowing what is going on and how you are doing and if you are stuck with anything.*

#### Prevent me from getting on with other things:

*It's hard to go to PASS when we have so much work to do at times, we definitely don't need any extra.*

*I guess it would be better if more students went but I know some people are really worried about all the work they have to do and going to additional things just stresses them out.*

#### Significant others who might approve/disapprove

The groups of people identified who would approve/disapprove of attendance at PASS sessions included: partner; classmates; family; and PASS leaders.

#### My Family:

*My Dad would expect me to take every opportunity I had to try my best to get a good grade in my degree, so I guess that would include going to PASS.*

#### My PASS leaders:

*Our PASS leaders are really nice and easy to talk to. If we don't want to ask a lecturer something in front of everyone in class we can just ask them at PASS.*

#### Factors that might encourage/prevent attendance

Factors identified that might encourage/prevent students from attending PASS sessions included: previous experience of PASS; effective PASS leaders; a more organised structure; and lack of motivation.

#### An organised structure to PASS:

*I wish there was more structure to the classes, that would definitely make me go more. Sometimes they (PASS leaders) don't know what to do with us.*

#### Previous experience of PASS:

*I think it works well if it is done well if you know what I mean. If the leaders are doing what they are meant to be doing it works, but when they are just having a chat or messing around there isn't much point on you going, you could do better on your own.*

Preliminary findings suggest that PASS is serving to:

- enhance academic performance by providing opportunities for students to clarify their learning;
- aid the transition process by allowing students to build supportive networks.

Moreover, attendance seems to be influenced by:

- the belief that it will facilitate learning;
- effective PASS leaders and a coherent structure to sessions;
- the influence of one's significant others.

### Project outcomes and impact

There is now a substantial body of evidence to suggest that individual student engagement in educationally purposive activities leads to more favourable educational outcomes. Fostering student engagement has been shown to deliver better retention and stronger and deeper learning and to develop graduate attributes. Perhaps in recognition of this and in a desire to improve the student experience, there has been a proliferation of PASS activity within many UK institutions and research evidence is accumulating to suggest it can have a beneficial effect, particularly in relation to academic performance. This project has explored students' attitudes and motivations to attend a peer-assisted study programme with a view to shaping future delivery.

The main implications are to:

- highlight academic and social benefits in promotional materials;
- acknowledge the role of one's significant others when promoting PASS;
- provide careful recruitment, training and ongoing support for PASS leaders;
- increase emphasis on planning to ensure a coherent structure to PASS sessions.

These findings will all be explored further in future studies.

### Links

TPB resource, Icek Aizen's webpage: <http://people.umass.edu/aizen/>

PASS – the UK National Centre: <http://www.manchester.ac.uk>

### Bibliography

Brewster, C. and Fager, J. (2000) *Increasing student engagement and motivation: From time-on-task to homework*. Portland, OR: Northwest Regional Educational Laboratory.

Longhurst, R.J. (1999). Why aren't they here? Student absenteeism in a further education college. *Journal of Further and Higher Education*. 23 (1), 61-80.

Trowler, V. and Trowler, P. (2010) *Student engagement evidence summary*. York: Higher Education Academy.



## Using screencasting to enhance student feedback

### University of Ulster (Learning and Teaching Enhancement Project) – David Comiskey

#### Introduction and overview

“Students must have routine access to the criteria and standards for the task they need to master; they must have feedback in their attempts to master those tasks, and they must have opportunities to use the feedback. Excellence is attained by such cycles of model-practice-feedback-perform” (Wiggins, 1998). Effective feedback is essential as a way of engaging with students, enhancing the teaching and learning process and in preparation for professional life. With increasing class sizes, feedback is often being delivered at too slow a pace and lacking in the required detail, clarity and quality to be effective. This report presents the preliminary findings of a pilot study undertaken at the University of Ulster, focusing on an alternative method of providing feedback, by using screencasting technology to produce short videos. It evaluates the effectiveness of the method from both the student and academics’ perspective and gives an insight into the students’ reaction to the new technique compared to more traditional feedback modes.

The study was carried out with Year 2 students in Semester 2 of the academic year 2010-11 for a Computer Aided Design (CAD) Applications module within the BSc (Hons) Architectural Technology and Management undergraduate degree programme. The learning outcomes for the module required the students to become familiar with different software programs used for the production of architectural drawings. The module content required the students to create presentation plans, elevations, sections and a site plan for a hypothetical building.

At the beginning of the semester an informal meeting was held with the students to ascertain their views on effective feedback methods. Traditionally, within the CAD Applications module written feedback was provided to the students. However, discussions highlighted that this method was not valued in modules where new software was being learnt. Students commented that with the vast content to be covered in such modules, by the time feedback was received the topic had progressed. The feedback therefore couldn’t be used in a productive manner to impact upon future submissions.

Suggestions were aired that at times written feedback was not specific enough and lecturers were not always available to answer queries or clarify certain issues. The above comments support the suggestions of Brown and Glover (2006) who, after interviewing 112 students found that the students did not use written feedback to improve their future work, despite a relatively quick return for assignments, because the topics had moved on. The feedback was therefore not timely. A further comment regarding traditional feedback methods was that while the information was useful when it was received, after a short period of time students tended to have forgotten the lecturers remarks or had mislaid the written comments received. The result of the discussions suggested that feedback should ideally be delivered in a format that could be viewed repeatedly.

In the same module in the 2009-10 academic year, the author had carried out a pilot study on the use of video and screencasting as a teaching aid. “Screencasting involves recording the computer screen, along with a voice narration, to create an online video which captures exactly the actions of the computer user. Rather than present students with static images or screenshots of a computer application, screencasting enables the user to produce exact replications of any computer sequence. In this way, the viewer sees exactly where the mouse clicks on-screen, or where to add text or data to a programme, or where to go online to view related materials and resources” (Comiskey and McCartan, 2011).

Videos were created using screencasting software, which contained demonstrations on how to use the software to create various building components. The feedback from the pilot study was extremely positive and showed that 91% of the class had indicated that they would like to see screencasts more widely used. Comments from the students highlighted the videos as being accessible and they praised the ability to pause and rewind. Other positive comments such as “clarity” and “no confusion” indicated that this medium could

potentially be effective for producing meaningful feedback. As a result of the meeting with the students it was decided to use video and screencasting as a feedback method in the 2010-11 academic year.

The aim of the study was to provide the students with effective and useful feedback in an appealing medium which in turn could be used to enhance future work.

### Project findings

Upon receipt of the feedback using screencasting, students were asked to complete an evaluation form. Of the 44 students enrolled on the module 39 responded, which equates to a response rate of 89%. Regarding feedback preference, 72% of the respondents stated that they favoured video feedback, 20% were ambivalent and only 3% favoured the more traditional written feedback method. When asked if they would like future feedback delivered in this way, 92% responded that they would, with 8% responding negatively.

To gain a better understanding of the students' views on video feedback further questions were asked and a likert-type scale was used to record responses. Students were asked if they thought the video feedback file was easy to access and the content easy to understand. 95% of the respondents either agreed or strongly agreed. A question was asked if they thought the length of the video feedback was adequate. 90% stated that they felt the length of the video feedback file was satisfactory, 5% were ambivalent, with a further 5% feeling that the videos could have been longer in duration. 100% of respondents strongly agreed that the content of the feedback in the videos was adequate.

The students were also asked some open-ended questions on the evaluation form and given space to record their views. In relation to what they liked most about the video feedback, the main response was that the ability to view the feedback over and over again was seen as very beneficial. It gave students flexibility to see where they were making mistakes in their own time and learn from it for future submissions. Some key comments included:

*I liked the flexibility. You can look back over it to grasp it completely.*

*I preferred video as you could see where marks had been lost and how this could be improved in future.*

*Video was great help as opposed to getting verbal or written feedback. Being shown exactly where I could improve has really helped.*

*The feedback was given very quickly. In many cases in other modules you just get marks back and you don't get the chance to see where you went wrong!*

*Video feedback is a lot quicker and means that I can go back to review it anytime whereas with lecturers being very busy this is not always possible for a face to face consultation.*

*Given the nature of the information I could not find any faults at all and would greatly recommend this for future projects and coursework.*

*The feedback information is conveyed whilst the submission file is being viewed which makes it easier to understand which elements of the submission the feedback is relative to.*

In relation to what the students didn't like about the video feedback, some stated that being unable to ask questions if unsure about an element was a major disadvantage. This was also brought up at the focus group and was addressed by setting up an in class session where the students could clarify any issues which were concerning them. One of the students commented that the thing they least liked about the video feedback was that: "You can see your mistakes very clearly". From a lecturer's perspective this would be viewed as a positive comment as it highlights areas from which the students can learn. There were a number of general

remarks on technical issues such as poor sound quality on some of the videos and problems accessing the videos. Some of the key comments included:

*The videos were quite short and obviously you don't have the option to ask questions.*

*The sound quality could be improved.*

*It was like a one sided conversation I would at times prefer a discussion with the lecturer about feedback.*

Finally, the students were asked their views on what improvements could be made to enhance the video feedback method. Suggestions were made that as much focus should be put on positive feedback as well as highlighting areas in which they could improve. This was an interesting observation and further discussion with those in the focus group suggested that positive feedback followed by recommendations/improvements and a positive ending would be the ideal format. The group felt that this was the best way of delivering useful feedback to students while encouraging and recognising the good work produced.

There were numerous positive comments recorded, the main one being that feedback could be received remotely, more specifically at home over holiday periods. Traditionally, the first coursework submission for the module was due before the Easter break; therefore feedback would not be received by the students until they returned to university. During this period students would be working on the second coursework submission for the module, so when they did receive the feedback it was too late to have any impact on the upcoming submission. Other useful suggestions included the request that videos be produced in a format allowing them to be downloaded to mobile phones, especially iPhones. The Camtasia software used allows the videos to be produced in this format and it is a suggestion that will be taken on board for the next academic year.

#### Project outcomes and impact

The pilot project has demonstrated that feedback given in this medium does appeal to students. As everyone has different learning styles, no feedback method will appeal fully to all learners, but the overwhelming feeling from this study was that feedback delivered in this medium, accompanied by a follow-on question and answer session would be embraced by the vast majority of students.

In relation to the benefits for academics, this delivery method has the potential to drastically reduce the amount of time taken to produce detailed feedback. In this study, the average time taken to record and produce the videos was around four minutes. It was kept to this length as a result of listening to the views of the focus group, with the feeling that a video over five minutes in length would lose students' attention. This compares to an average of seven minutes per student to produce the written feedback. The study found that it was more time-consuming to view the students work on screen and then record written feedback, rather than producing an audio recording while viewing the work on screen.

This would be particularly advantageous when giving feedback to large cohorts, as there is the potential for substantial time savings. In the architectural technology profession, feedback in this medium closely mirrors what would be encountered in practice and therefore would be advantageous from a professional perspective. Practitioners are constantly reviewing work produced and offering comments and suggested improvements.

The findings from the project suggest that the ideal feedback method would be sitting down with students on an individual basis giving one-to-one feedback. Increasing class sizes and the many time constraints lecturers are faced with mean that this is not always possible or indeed practical, and thus video feedback could be seen as a viable alternative in preparing students for professional life.

Changing student demographics have led to an increased number of part-time students and students who live at home and commute to university (Parson *et al.*, 2009). This feedback medium would prove beneficial to distance learners as it could be viewed remotely, without the need to physically visit the university building.

This medium has the potential to give a more personal approach to the feedback process, more so than sending out written feedback with general comments. This view was echoed by one of the students in this study who commented: “I liked the way the feedback was personalised, it felt like the lecturer was speaking to and encouraging me rather than giving general feedback to the entire group.”

Although this project has in the first instance, concentrated on Architectural Technology students, there is the potential that it could be rolled out to other courses within the built environment sector that use similar software on their courses. Indeed, this feedback medium could be useful in numerous disciplines as there are advantages for both the students and the academics. It allows detailed and personalised feedback to be given in a way that appeals to students, and more importantly students recognise that feedback has been received and make appropriate efforts to improve.

### Bibliography

Brown, E. and Glover, C. (2006) Evaluating written feedback on students' assignments. In: Bryan, C. and Clegg, K. (eds.) *Innovative Assessment in Higher Education*. Abingdon and New York: Routledge, pp. 81-91.

Comiskey, D. and McCartan, K. (2011) Video: An effective teaching aid? An Architectural Technologists perspective. *CEBE Transactions*. 8 (1). Available from: <http://cebe.cf.ac.uk/transactions/list.php?identifier=cebe.ltsn.ac.uk:493210161016&edition=8.1> [30 July 2012].

Parson, V., Reddy, P., Wood, J. and Senior, C. (2009) Educating an iPod generation: Undergraduate attitudes, experiences and understanding of vodcast and podcast use. *Learning, Media and Technology*. 34 (3), 215-228.  
Selvester, P., Mulholland, R. and Wong, P. (2006) Camtasia: A Tool for Universal Design Learning. *College & University Media Review*. 12 (2), 9-17.

Trail, M.A. and Hadley, A. (2010) Assessing the Integration of Information Literacy into a Hybrid Course Using Screencasting. *Journal of Online Teaching and Learning*. 6 (3). Available from: [http://jolt.merlot.org/vol6no3/trail\\_0910.htm](http://jolt.merlot.org/vol6no3/trail_0910.htm) [4 July 2011].

Wiggins, G. (1998) *Educative Assessment: Designing Assessments to Inform and Improve Student Performance*. San Francisco: Jossey-Bass Inc.

# Determining an appropriate mode of assessment for enhancing deep learning in programming

University of Ulster (Learning and Teaching Enhancement Project) – Dr Sonya Coleman

## Introduction and overview

Deep learning and attendance are ongoing issues. There are multiple coursework assessment methods that can be implemented in every programming module. If the results of this study indicate that a particular mode of assessment improves attendance and assessment marks and ultimately provides a framework for deep learning, then this is a valuable piece of research that can benefit others who teach computer programming modules in the UK and the wider computer science educational community.

The aim of this project is to analyse the coursework and exam results over the past three years from an Algorithmic Programming module at the University of Ulster to determine if one particular coursework mode leads to deeper student learning and hence improved exam results. In addition, attendance records are analysed from lectures and practicals for each year to determine the impact of disparate coursework modes on student attendance. The analysis shows different modes of assessment lead to a change in coursework marks, exam marks and attendance, as the last year had the highest class test results and the previous year had the best performance in practical assessment and attendance. Lecture attendance and exam marks were greatest with the first-year's coursework mode, and this suggests deeper learning is best implemented by individual class tests and practical assessments forming the coursework.

## Generation of evidence

Over the past three years, different assessment styles have been used in the Algorithmic Programming module:

- In 2008-09 individual practicals and written class tests formed the assessment.
- In 2009-10 paired programming was introduced as part of the assessment to enhance deep learning (funded by HEA).
- In 2010-11, assessment was based on two WebCT tests and one written test.

Different classes participated in the Algorithmic Programming module over the three years and in order to achieve a consistent dataset, only the courses involved in all three years of the module (Computer Science, Electronics and Computer Systems, and Computer Games Development) are included in the analysis. Evidence was gathered in the form of lecture and practical attendance records and from results of practical assessments, class tests and exams from the involved courses for each of the three years. These records and results were compared year to year in order to determine the strengths of each year's students. The algorithm for calculating the each year's information involved:

- 1a. Add the total marks or attendance records from the courses involved in all three years of the Algorithmic Programming module;
- 1b. Divide the result in 1a by the number of students whose marks were calculated to get the programming average for each year.

Average student ability can vary from one year to another. An attempt is made at reducing the yearly ability variable by analysing data from the same students in a different module to arrive at an expectation for a year's students. The class test coursework, exam marks and lecture attendance records were analysed over three years for the Mathematics I module for each student. Cross-correlation with other module marks determines if an overall improvement is unique to the mode of coursework, or if the student cohort is academically superior with another year. For consistency, only data from students in courses in existence in each of the three years were analysed and, from that dataset, only students that were in both the Mathematics module and Algorithmic Programming module were analysed. The analysis steps were as follows:

- 2a. Calculate the Mathematics average for each of the three years using the methods in 1a and 1b.

- 2b. Subtract the sum of 2a from each result in 2a to get the Mathematics difference from average for each year.
- 2c. Add the results in 2b to the average of 1b's results to arrive at the expected exam marks for each year.
- 2d. The difference from expectation is arrived at by subtracting 2c from the corresponding year's result in 1b.

The analysis is completed by comparing the yearly results from step 2d to one another.

**Project findings**

2010-11 had the highest class test results despite having the lowest practical attendance.

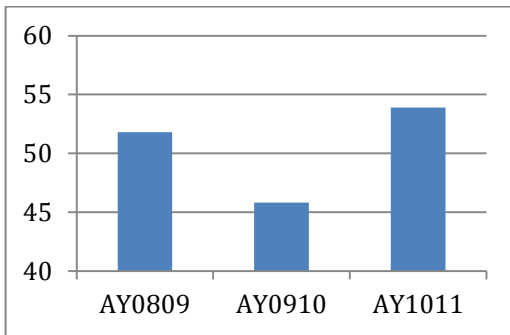


Figure 1: Class test results

The 2010-11 students who did not attend any practicals and also attended fewer lectures, had better results in class tests and in the exam than those who attended at least one practical.

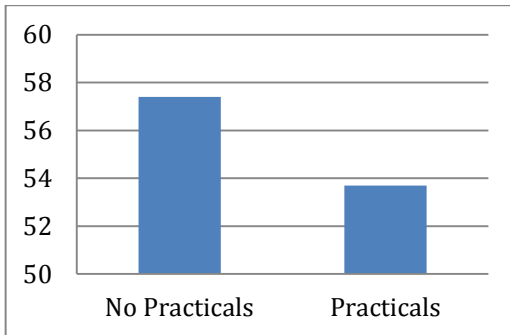


Figure 2: 2010-11 class test results (by practical attendance)

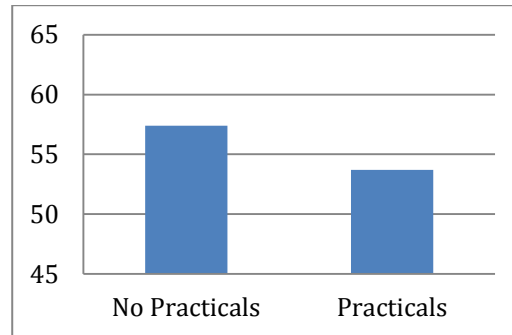


Figure 3: 2010-11 exam results (by practical attendance)

2008-09 had the best overall exam results, followed by 2010-11.

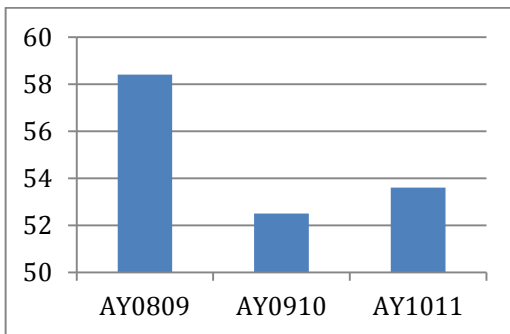


Figure 4: Exam results

This implies that the combination of practical assessment (solo) and class tests improves attendance and enhances deep learning.

### Project outcomes and impact

The outcome of this research demonstrates that the mode of coursework for a programming module that leads to deeper learning and overall improved module results is the combination of individual practical assessments (not paired programming) and class tests, and this should be considered when designing a coursework mode that will lead to deeper learning for computer programming module or indeed any module that contains a significant practical aspect; hence this knowledge can be transferred to other (non-computing) disciplinary areas. However, individual practical assessments can be very time-consuming for modules with large numbers, and this should be considered in the coursework design and implementation. Those involved in designing university coursework, such as lecturers and course co-ordinators, will benefit from the knowledge in this research and should consider the outcome and the analysis shows that students in practical-based courses should have a deeper understanding of the modules being studied.

The impact of this project is a better understanding of an optimal mode of coursework for implementation in other areas. Students attended fewer practical classes when there was no practical assessment in 2010-11. However, the students who did not attend one practical had better class test and exam results than those who did attend practicals. This suggests the better students remained away from practicals, freeing time for demonstrators in practical sessions to assist those who were not as proficient at programming. This is reflected in 2010-11 students having the best class tests results.

However, deeper learning (reflected in exam results) was best achieved in 2008-09. Consequently, the students were able to remember more where they participated in practical attendance and assessment, and this mode is recommended where there is an exam. Without an exam, students excelled where there is no practical assessment and those who needed assistance chose to attend the practicals.

The outcome of this project will have direct impact on the coursework designed for the Algorithmic Programming module in the University of Ulster. We will aim to disseminate these results soon via journal publication in order to assist others (nationally and internationally) on the best mode of coursework for their modules.

### Bibliography

Cockburn, A. and Williams, L. (2001) The costs and benefits of pair programming. In: Succi, G. and Marchesi, M. (eds.) *Extreme Programming Examined*. Boston, MA: Addison Wesley, pp. 223-243.

Coleman, S.A. and Nichols, E. (2011) Embedded inquiry based learning into programming via paired assessment. *Innovation in Teaching and Learning in Information and Computer Sciences (ITALICS)*. 10 (1), 72-77.

Sanders, D. (2003) Student perceptions of the suitability of extreme and pair programming. *Computer Sciences Education*.

## Students as change agents developing a student guide to assessment and feedback for learning

### University of Ulster (Learning and Teaching Enhancement Project) – Avril Honan

#### Introduction and overview

This project involved students in producing a guide on assessment and feedback for their peers. The guide explains the many and varied forms of assessment and feedback that may be encountered in higher education, reflecting the range of university disciplines. The guide also highlights the role of students in making effective use of feedback and opportunities provided for feedback, to enhance student learning. It promotes the need for active student engagement in the feedback process, and the importance of self- and peer assessment in this process. The guide encourages students to seek out feedback opportunities and to take positive action so that the use of feedback is seen as an integral part of learning.

The students used their own experience, research carried out by the Students' Union and similar publications produced by other institutions to formulate this guide. This has been included in the Students' Union *Survival Guide*, which is circulated widely to new students and will also be distributed to students as part of a week-long campaign during Week 4 of the academic year.

#### Generation of evidence

An online survey was carried out using class representatives before this project to gather current opinion on assessment and feedback. This information was used to inform the students who developed the guide. This will be carried out again in Semester 2 of the incoming academic year to assess if knowledge or attitudes have changed.

The guide was developed through the course of a one-day workshop, which was facilitated by the Students' Union and the Centre for Higher Education Practice. The students discussed their experiences of assessment and feedback and listed all of the types that they had encountered. The facilitators highlighted other feedback methods that may be in use and during this session the students began to realise the broad spectrum of methods that were available.

The group then looked at information produced by student groups in other institutions, such as the University of Edinburgh, the National Union of Students and Leeds Metropolitan University. These ranged from a simple bookmark (Edinburgh) to a fully interactive website (Leeds Met). The group considered factors such as production time, resources required and how to most effectively inform students. From these discussions it was decided to produce an informative leaflet that could be distributed to students and also placed online where required. The Students' Union officers present also suggested that these would be given to students as part of an awareness campaign to ensure a conversation was taking place to explain the context of the information.

Once the format of the communication was agreed the students then moved on to the design of the publication and the content. The theme of 'focus on feedback' with the use of a target was agreed on the day, and the full-time officers of the Students' Union took responsibility for developing and producing the final document with a designer over the Summer months.

Student representatives were also involved in the parallel staff initiative to ensure consistency of approach. This involved students forming part of a wider University working group, which devised the new 'Assessment and Feedback for Learning Principles'.

A paper survey was used to evaluate the student experience in preparing the guide.



### Project findings and outcomes

Research confirmed a mismatch of expectations between staff and students regarding assessment and feedback and highlighted the need for a mechanism to clarify the nature and purpose of assessment and feedback. The guide was produced for students to clarify expectations.

The guide will be given to students to raise their awareness of the methods of assessment and feedback they may encounter, and also how they should interact with this aspect of their learning experience. It is intended that the guide will encourage students to recognise all aspects of feedback, whether it is in a classroom setting or the more traditional paper-based feedback. Further, this guide aims to encourage students to engage with all feedback they receive, to seek out further clarification where required or use it to inform the next stage of their learning.

It is also intended to foster and embed a collective understanding of assessment and feedback within the student body, as well as to facilitate an ethos of partnership between staff and students. This has wide-ranging implications within the institution to ensure that all academic programmes effectively implement the 'Assessment and Feedback for Learning Principles'.

It has further implications for staff development programmes, e.g. PgCHEP, and for Heads of School in relation to CPD activities. It represents a cultural shift across the institution to ensure consistent practice.

There is also external transferability with our partner institutions, e.g. FE colleges.

Students will be working closely with staff as part of the parallel initiative. This will include:

- presenting at staff briefing events on the new principles;
- how the guide will be distributed to students and any follow-up activities;
- presentation at the University Assessment and Feedback for Learning Conference in January 2012.

### Links

University of Ulster, 'Assessment and Feedback for Learning Principles':

<http://www.ulster.ac.uk/centrehep/doc/UlsterPrinciplesofAssessmentandFeedback.pdf>

University of Ulster, Viewpoints project: <http://viewpointproject.blogspot.com/>

*Resources reviewed by student group:*

University of Edinburgh, 'Enhancing Feedback': <http://www.enhancingfeedback.ed.ac.uk/>

Oxford Brookes Business School, 'Assessment Standards Knowledge Exchange:

<http://www.brookes.ac.uk/aske/index.html>

Leeds Metropolitan University: [http://www.leedsmet.ac.uk/090820-student\\_guide4WEBPRINT\\_LoRes.pdf](http://www.leedsmet.ac.uk/090820-student_guide4WEBPRINT_LoRes.pdf) [30 September 2011]

The National Union of Students, Assessment and Feedback Guides:

<http://www.officeronline.co.uk/education/articles/275707.aspx> [30 September 2011]

Reap principles:

<http://www.reap.ac.uk/Portals/101/Documents/Theory%20and%20Practice/REAP%20principles.pdf>

University of Technology Sydney, 'Assessment Futures': <http://www.iml.uts.edu.au/assessment-futures/>

## 2. Student engagement in curriculum design and delivery

### Encouraging creative and innovative ‘viewpoints’ in curriculum design

**University of Ulster (seminar) – Catherine O’Donnell, Dr Alan Masson, Dr Vilinda Ross with contributions from Karen Virapen and Jill Harrison.**

Keywords: curriculum design; assessment and feedback; learner engagement; information skills and creativity in the curriculum.

#### Introduction and overview

This seminar introduced Viewpoints<sup>1</sup>, a JISC curriculum design project<sup>2</sup> developing reflective resources to aid curriculum design. Viewpoints resources are focused around four main themes: assessment and feedback, information skills, learner engagement, and creativity in the curriculum. These themed resources are underpinned by well-established pedagogical approaches and have been designed to help teams build ideas towards a more student-centred curriculum design model.

The Viewpoints project is working to help the University of Ulster address some of the strategic goals outlined in its Teaching and Learning Strategy<sup>3</sup> such as “to enhance the quality of the student learning experience” and “to promote and foster creativity and innovation in the curriculum”.

The objectives of the seminar were to:

- demonstrate how course teams can use pedagogic principles and ideas in their teaching and learning plans, and be encouraged to be more creative and innovative in their designs;
- share research findings to date and demonstrate how the Viewpoints approach can help stimulate constructive dialogue and foster collaboration;
- invite attendees to participate in activities using one specific Viewpoints theme (e.g. assessment and feedback, learner engagement or information skills);
- provide opportunities to share experiences and discuss how the approach may be applicable to other institutions and/or teaching practice.

#### Generation of evidence

At the HEA seminar, the Viewpoints team shared some research findings and experiences from past workshops (e.g. photos, evaluative commentaries and workshop examples).

#### *Evaluation activity*

To date Viewpoints has focused on harnessing user feedback to inform and develop the use and development of project resources. Evaluation activity reported at the HEA seminar was based on the perceived usefulness of these themed resources and the value of the workshop process in curriculum design for internal and external staff, course teams, students and other related scenario groups.

#### *Viewpoints evaluation questionnaire*

An evaluation questionnaire was designed (September 2010), which was tailored for all workshop-related events and activities. Questionnaires were mainly administered to staff and students during face-to-face workshop settings. An online version of this questionnaire was also designed in SurveyMonkey enabling the capture of the user feedback after the workshop activity. However, with a very low response from Ulster staff this did not prove a successful method of gathering user feedback so only two out of the ten workshops reported in the seminar used this method of data collection.

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<sup>1</sup> <http://viewpointsproject.blogspot.com/>

<sup>2</sup> <http://www.jisc.ac.uk/whatwedo/programmes/elearning/curriculumdesign.aspx>

<sup>3</sup> <http://www.ulster.ac.uk/tls/>

The Viewpoints questionnaire asked participants to provide their initial reflections about the approach. Questions asked how useful they found the workshop for their specific educational purpose, what aspects of the Viewpoints process they considered useful, whether the workshop helped them to consider the learner perspective, if the approach encouraged their team/group to be creative in curriculum design, and to reflect if they considered it useful in their own teaching and learning practice. Participants were also asked to gauge what the potential overall value of the Viewpoints process was for them and the related value of outputs created and themed resources used.

#### *Summary evaluations*

On completion of each workshop, summary evaluations were drawn up and fed back to the project team with any comparative data aggregated for dissemination purposes.

#### *Qualitative commentaries and workshop observations*

Open-ended comments made by staff and students have provided an informative picture of users using the Viewpoints approach.

Observations from the workshops have provided an informative picture of staff and student engagement for the Viewpoints project. However, no specific observation-related information was formally reported at the HEA seminar.

#### Seminar findings

Table 1 provides a range of qualitative comments made by participants on completion of the Viewpoints workshop and subsequent use of themed resources. A selection of those commentaries presented in Table 1 were provided at the HEA seminar and have been collated for this paper under four key themes that have emerged from the data.

Comments indicate that engagement with the Viewpoints process and resources can stimulate discussion and reflection in curriculum design and enables innovative ideas for curriculum design to be considered while keeping the learner central to this planning. The process can help course teams to work in a common environment with shared meaning and priorities and help other groups/teams with a scenario-type goal also to have valuable and meaningful discussions about curriculum design. Only after a one- or two-hour workshop course teams/groups are able to create a 'good visual display' or output of their new design or redesign and have been able to explore creative ideas and consider alternative approaches in an informal setting.

Table 1: A range of qualitative commentaries collated across Viewpoints workshops

<p><b>Teamwork/social/collaboration</b></p> <ul style="list-style-type: none"> <li>• “Can stimulate discussion, collaborative team working and initiate new ideas for curriculum design. It also prompts teams to be mindful of the student learner.”</li> <li>• “It was useful to be able to work in a common environment with other course teams and consider comparative approaches.”</li> <li>• “Allowed for different people to bring in their ideas and hear mine, which we could then use to work together in sorting out a problem.”</li> <li>• “Great to get together ... It’s good to talk.”</li> <li>• “Time away from the office to explore your subject and think in a new way.”</li> </ul>	<p><b>Learner perspective</b></p> <ul style="list-style-type: none"> <li>• “We continually considered how the learner would perceive this, what they would get out of it and how it could be carried out and assessed by the learner in the best way possible.”</li> <li>• “It is good to see how much effort goes into helping students. It took away the whole them and us feeling that I had in first year.”</li> <li>• “I was already conscious of the ‘learner experience’ from previous training exercises but the workshop provided me with another example of its importance.”</li> <li>• “As I did it with students who had completed the course I received immediate feedback on what would be useful/beneficial.”</li> </ul>
<p><b>Creativity/reflection</b></p> <ul style="list-style-type: none"> <li>• “Structured, yet creative.”</li> <li>• “Excellent at facilitating thought development.”</li> <li>• “The potential for new approaches to ‘old’ ideas.”</li> <li>• “Good flow of ideas, we tapped into many areas of discussion.”</li> <li>• “It assists you to step back from the course/module you are delivering and assessing if it is fit for purpose.”</li> </ul>	<p><b>Visual approaches/resources</b></p> <ul style="list-style-type: none"> <li>• “Even something as simple as the colours of each card makes them easy to keep track of and structures meeting/debates.”</li> <li>• “Visual approach was easy to grasp.”</li> <li>• “The creative layout really helped as the module planning didn’t have to follow a linear structure.”</li> <li>• “Really helped to visualise different ways we could do it.”</li> <li>• “Good visual display of our work and our plan for the semester. We continually looked at it seeing the ‘whole picture’ in front of us.”</li> <li>• “Card prompts helped to see the users’ perspective.”</li> </ul>

*The value of the Viewpoints process*

One external delegate attending a Viewpoints workshop at the SEDA Conference, May 2011, commented that the value of the Viewpoints process was “visual, interactive, fun, productive and collaborative”. Some other comments made by workshop participants about the value of the Viewpoints process are included below:

*It is clear, thought provoking and engaging.*

*Flexibility and simplicity.*

*To start with a ‘blank sheet’ and to be more innovative in approach.*

*It brought out different voices and ways of thinking.*

### Outcomes of seminar

The experiences and resources produced by Viewpoints should be relevant to other FEIs/HEIs. In particular, the findings of various review processes will be transferable across the sector. The resources developed by the project will provide institutions with a curriculum design approach that can promote effective reflection on courses and innovation in curriculum design. These resources are available via the Viewpoints workshop resources website<sup>4</sup> and the Viewpoints Handbook<sup>5</sup>.

Educational staff and students who could benefit from using the Viewpoints resources include:

- course directors;
- module co-ordinators;
- subject teams;
- teaching staff;
- students;
- staff development departments;
- subject librarians;
- learning technologists;
- students' union groups/representatives.

For example, students could look at a completed course plan (developed by using Viewpoints resources) to see what is expected of them, or librarians could use Viewpoints resources and the information skills theme to illustrate the cumulative need for information skills development throughout a course.

The Viewpoints process and resources are generic enough to be relevant to other institutions involved in curriculum design. We are currently considering adding the JISC logo at the top of the worksheets and referencing the University of Ulster at the bottom of worksheets so that other institutions can use them. All project resources are now available to download and use under a Creative Commons licence and are being disseminated via the project blog, the Viewpoints workshop resources website, Slideshare<sup>6</sup> and the JISC Design Studio<sup>7</sup>.

### Emerging themes from seminar

Three topics were identified and debated during the workshop that merit further investigation and reporting:

- Use of further sets of principles and standards – the potential for the Viewpoints approach to support other areas of curriculum development was felt to be an opportunity. The group agreed that graduate attributes would offer an obvious area to investigate as it is a live topic within the HE sector. The local interpretation of these attributes was identified as a potential barrier to creating a universal/reuseable set of resources, however.
- Incorporating the student voice – it was agreed that the resources presented could be used effectively by students and that this opened up opportunities to engage in the curriculum design process and to use the resources to facilitate discussion in staff-student consultation forums. One external delegate commented that we should “bring our students to this table – Viewpoints is a very accessible approach. Get everyone to take part in a non-hierarchical way ... it scaffolds everyone’s engagement”.
- Institutional embedding issues – consideration was given to a number of issues that could support the institutional adoption of these resources. The group identified the role of the facilitator was key and that there were potential risks and benefits for both top-down and bottom-up implementation approaches.

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<sup>4</sup> <http://viewpoints.ulster.ac.uk/resources>

<sup>5</sup>

[http://wiki.ulster.ac.uk/download/attachments/15893589/Viewpoints\\_Workshop\\_Handbook\\_final.pdf?version=1&modificationDate=1306927734000](http://wiki.ulster.ac.uk/download/attachments/15893589/Viewpoints_Workshop_Handbook_final.pdf?version=1&modificationDate=1306927734000)

<sup>6</sup> <http://www.slideshare.net/Viewpoints/presentations>

<sup>7</sup> <http://jiscdesignstudio.pbworks.com/w/page/29227748/Viewpoints-project>

### Annotated project tools

The project uses a number of web tools and communities to promote, disseminate and share its work. These include:

**Project blog:** <http://viewpoints.ulster.ac.uk/>

This is the main public information site for both internal and external audiences. Team members regularly update the blog with news and events, so that anyone reading can quickly find out what's happening within the project, or comment online if they want to discuss or feedback on any issues.

**Project wiki:** <http://wiki.ulster.ac.uk/display/JVPP/Home> (project team only)

This wiki area is used for internal communication within the project team, to share ideas and collaborate on different aspects of the project, from tool development to project planning, design, development and administration.

**Project Ning communities:** <http://viewpointsproject.ning.com/> (by invite only)

<http://viewpointinfoskills.ning.com/> (by invite only)

Some project work in development will be shared via a number of secure Ning social networking sites. Stakeholders and key supporters can use these sites to get an overview of the project progress and to comment on work in progress.

**Slideshare:** <http://www.slideshare.net/Viewpoints>

This online resource permits project members to share information, presentations, printable resources and other documents regarding the project, on Slideshare, an online presentation site. By adding relevant descriptor tags, project presentations will be discoverable for online presentations and dissemination.

**YouTube channel:** <http://www.youtube.com/user/viewpointsproject?feature=mhum>

The Viewpoints YouTube channel hosts a series of project-generated YouTube videos (with closed captions available for accessibility purposes), which describe the project, its aims, activities and interactions with users and stakeholders.

**Flickr:** <http://www.flickr.com/photos/36265730@N07/show>

Project-related photos and images are shared through our Flickr online photo gallery. These include photos taken during Viewpoints workshops, both internal and external to the University. All teams who are photographed during Viewpoints workshops are asked to sign a photo release form, to allow us to use these photos for dissemination purposes.

**Twitter:** <http://twitter.com/viewpointsuu>

Twitter allows us to send short, 140-character updates and links about Viewpoints activity to our followers.

**Delicious:** <http://delicious.com/Viewpoints>

This social bookmarking site allows us to share links, useful articles and research we have found that inform and support the project.

### Links

Download pack: <http://wiki.ulster.ac.uk/display/VPR/Home>

Viewpoints Handbook:

[http://wiki.ulster.ac.uk/download/attachments/15893589/Viewpoints\\_Workshop\\_Handbook\\_final.pdf?version=1&modificationDate=1306927734000](http://wiki.ulster.ac.uk/download/attachments/15893589/Viewpoints_Workshop_Handbook_final.pdf?version=1&modificationDate=1306927734000)

HEA event on Viewpoints blog: <http://viewpointsproject.blogspot.com/2011/06/hea-seminar-encouraging-creative-and.html>

University of Ulster, Teaching and Learning Strategy, 2008/09-2012/13: <http://www.ulster.ac.uk/tls/>

University of Ulster, Hybrid Learning Model developed by CETL(NI): <http://cetl.ulster.ac.uk/elearning/hlm.php>

University of Ulster, Centre for Higher Education Practice 'Creativity in the Curriculum' Group:  
[http://www.ulster.ac.uk/centrehep/creativity\\_curriculum.html](http://www.ulster.ac.uk/centrehep/creativity_curriculum.html)

University of Ulster, CETL Institutional e-Learning Services (CIES): <http://cetl.ulster.ac.uk/elearning/>

University of Strathclyde, Re-Engineering Assessment Practices in Scottish Higher Education:  
<http://www.reap.ac.uk/>

Society of College, National and University Libraries (SCONUL), Seven Pillars of Information Literacy original model: [http://www.sconul.ac.uk/groups/information\\_literacy/sp/model.html](http://www.sconul.ac.uk/groups/information_literacy/sp/model.html)

University of Liège, Belgium, 8 Learning Events Model developed by LabSET:  
<http://www.labset.net/media/prod/8LEM.pdf>

Quality enhancement themes – 'The First Year Experience: Transforming assessment and feedback – enhancing integration and empowerment in the first year':  
<http://www.enhancementthemes.ac.uk/docs/publications/transforming-assessment-and-feedback.pdf>

#### Bibliography

Godwin, P. (2002) *Information Skills Benchmarks*. Available from:

[http://wiki.ulster.ac.uk/download/attachments/4456690/information\\_skills\\_benchmarks\\_london\\_southbank\\_uni.pdf?version=1&modificationDate=1245936796000](http://wiki.ulster.ac.uk/download/attachments/4456690/information_skills_benchmarks_london_southbank_uni.pdf?version=1&modificationDate=1245936796000) [28 June 2011].

Nicol, D. and Draper, S. (2010) *A blueprint for Transformational organisational change: REAP as a case study*. Available from: <http://www.heacademy.ac.uk/assets/documents/learningandtech/Transforming-14.pdf> [25 July 2011].

# The dynamics of expectations in music performance modules in higher education: changing attitudes among students, part-time tutors and full-time teaching staff

University of Ulster (Learning and Teaching Enhancement Project) – Lilian Lima Simones

Keywords: part-time teaching staff; practical tuition; previous learning experiences; ‘HE-ness’.

## Introduction and overview

The project, led by staff in the Music department of the University of Ulster and supported by colleagues at Queen’s University Belfast, addressed the integration of specialist practical instrumental/vocal tuition into the modular structure of Music degree courses and the HE learning environment generally. Given the current difficult financial circumstances across the sector, its focus was on gaining a deeper understanding of the attitudes of stakeholders (above all students, but also part-time teaching staff and lecturers) in order to find ways of further promoting engagement among students and part-time teaching staff in particular that were affordable, administratively practical, and pedagogically consistent with the aims of music teaching at HE level. Data gathered from these stakeholders by various means, anonymously and face to face, appear to reveal, among other things, that in this area previous learning experiences have a disproportionate influence on the expectations not only of students but of part-time teaching staff too. More attention, therefore, needs to be given to the development of students’ critical thinking and transferable skills in the context of performance, and there is an urgent need to induct part-time teaching staff not only into the work of the department, which is already a normal part of the job of administering performance modules, but also into what might be described as the ‘HE ethos’.

Interpretation of the data prompted recommendations for future practice in the design and administration of performance modules in Music, but also possible applications in other disciplinary areas.

The background to the project is the perennial difficulty in effectively integrating specialist practical instrumental/vocal tuition into the HE modular structure. Students (often used to this sort of teaching since they were small children) have strong preconceptions about it, and frequently experience problems reconciling it with the wider HE pedagogical context; part-time tutors (who may also teach mainly younger pupils) tend either to be unwilling to engage with the different demands placed on HE students, or by contrast frustrated at not being able to take a more active role in curriculum planning and assessment (as they would, for example, as members of faculty in the US context). Even when fully engaged with the administration of performance modules, tutors may not always have an understanding of where performance fits into the wider curriculum. Full-time teaching and administrative staff find it a challenge to gauge and manage these attitudes, and in addition to ensure value for money in an area of expenditure that has historically been considerable. The institutions participating in the present study have tackled the problems in various ways, but the schemes piloted locally (including continental European conservatoire-style group teaching, increased student choice, voucher systems, and various ways of dealing with rapidly growing student numbers) have historically met with varying levels of success. In the current financial context, finding efficient and above all sustainable solutions has become imperative.

## Generation of evidence

A case study was carried out, involving relevant respondents at the University of Ulster (UU) and Queen’s University Belfast (QUB). The former offers one performance module in each semester, currently to c.125 students studying a range of musical styles (classical, jazz, Irish and other traditional, popular, crossover). Tuition comprises individual lessons with a tutor, weekly performance classes/platforms (involving performance to their peers) with a lecturer, and ad hoc master classes and workshops with visiting artists. Overall the modules are delivered by a roster of c.30 tutors and postgraduate student teaching assistants; the majority of lecturers are also involved to one extent or another. QUB currently has c.120 students studying within two core performance schemes: classical (c.75 students) and non-classical (c.45 students, including tuition in jazz, experimental, improvised, Irish traditional, and popular musics). In the classical scheme tuition



comprises individual lessons with a tutor, chamber ensemble lessons, weekly performance classes, and ad hoc master classes and workshops with visiting artists. In the non-classical scheme students are given group tuition for the first one and a half years, and subsequently individual tuition; they too attend weekly performance classes and ad hoc workshops and master classes. Involved in the delivery of performance modules are almost 40 tutors and postgraduate student teaching assistants, as well as several lecturers. In addition, both institutions offer students opportunities to include elements of performance in other undergraduate modules, and both also have programmes in performance studies at postgraduate level.

The study population was made up of a) Music undergraduate students taking performance modules, b) their instrumental/vocal tutors, and c) departmental full-time lecturers involved in the design, delivery, management and administration of performance modules.

The inquiry instruments were purpose-built for this research and aimed to:

- gather reflections from students and tutors regarding their current and past experience, and to read these reflections against factors such as genre/style of music practised and previous education to ensure that it is responding to the diversity of the current student profile and to widening access agendas;
- examine attitudes to existing teaching, assessment and feedback practices with a view to incorporating findings in future curriculum reviews in order to improve retention and progression, and to involve students in that process;
- interrogate more fully students' professional aspirations and connect these more realistically with their needs as performers; in general, to enlist their involvement in distinguishing HE curriculum design/delivery from school (or private) tuition and thereby promote employability and entrepreneurship.

The nature and aims of the project were explained to all the participants, and confidentiality and anonymity were assured. Each student/tutor/lecturer was given a number, which was used to identify them in interpretation of the data and the present briefing paper. Data collection was adversely affected by being carried out in May-June, at the same time as end-of-year assessments; the present briefing document represents a qualitative study based on 91 responses (in one or other of the forms detailed below), 59 from UU and 32 from QUB.

Questionnaires:

- Students responded to a questionnaire that asked about their previous experience in learning to play a musical instrument, expectations and experience of performance modules at university, relationship with their tutors, and general perceptions (satisfaction with lessons, motivation, self-efficacy and self-esteem).
- Tutors responded to a questionnaire that asked about their music educational background, experience as teachers/musicians, experience of and views on the attitudes of full-time teaching staff to performance modules, teaching expectations and how to improve instrumental music teaching and learning and student engagement.

Focus group interviews:

- were conducted with groups of students, to observe group dynamics and attitudes towards performance modules in the course of a discussion about their previous learning experiences, the challenges of performance as a subject at university, the support required from lecturers and tutors, and their suggestions for improving the module;
- were conducted with groups of tutors, to observe group dynamics and attitudes towards performance modules in the course of a discussion about their personal experience of teaching contexts, the challenges of teaching performance at university, the essential requirements for students to succeed, the support tutors need from the administration, and current assessment practices.

Semi-structured interviews:

- were conducted with lecturers to gather information about departmental philosophy regarding performance modules, aims and intended outcomes, the challenges related to planning and delivering the performance

modules, the role of tutors and their relations with lecturers and the department generally, current motivation among students/tutors/lecturers in performance modules, and any further support the university could provide.

Focus group interaction analysis was based on the template in Stevens (1996) and cross-referenced with other participants' views. The interviews were all recorded and transcribed and the data were analysed using a constant comparative/descriptive methodology, with repeated readings and triangulation across the data sources.

### Theme I: Past experiences informing present expectations

Of student respondents, 67% had experience only of one-to-one weekly instrumental/vocal sessions prior to university, 13% only of group tuition, 17% of both, and 4% were self-taught. All these students' attitudes towards, and expectations of, learning in HE appeared to be strongly influenced by past experiences of learning.

All students in the first group emphasised their 'continuous need' of this type of tuition on a weekly basis. In fact, they showed satisfaction with HE only when provided with the same type and amount of tuition, a satisfaction in turn reflected in positive attitudes towards learning in HE in general (higher levels of motivation for learning, self-esteem, self-efficacy and self-conception of talent). When the type and frequency of tuition differed from what they were used to, students expressed concern about their development.

Students who had been exposed to both individual and group tuition prior to university enrolment also showed a marked preference for one-to-one sessions, but there was recognition of the benefit of group lessons:

*Individual [tuition focuses] on my own faults, however group [tuition] allows you to learn from others. (Student 19)*

Students who had prior experience only of group tuition *and* those who were self-taught showed higher levels of flexibility. This group had varied performance interests: classical, traditional/folk, jazz and pop/rock.

All participants in the focus groups, whichever type of tuition they were used to and whichever musical genres they practised, especially prized the development of instrumental/vocal technical skill. As has been reported elsewhere in the literature (e.g. Ritterman, 2000), it was considered much more important than other areas of the curriculum; this was clearly reflected in students' dialogues, where they mostly agreed with each other:

*I assumed there would be a lot more tuition and a lot more opportunities to perform, instead of so many know-it-all [...] lecturer sessions. (Student 5)*

*A lot of unnecessary assignments and I am left with not enough time to play my violin. (Student 34)*

It appeared that there was little perception of any connection with other areas of the curriculum, or of the value of these other areas in contributing to higher levels of musicianship or better-prepared performances (whether in a professional performing context or as teachers).

These students appear to be attracted to HE by the vocational opportunity of developing instrumental/vocal skill, but are alienated by course requirements that emphasise critical thought. Students' reasons (as expressed in the questionnaire) for choosing to enrol were a love of or passion for music, enjoyment of playing and desire to develop their skill. It seems pertinent to ask why they did not go to a conservatoire instead, but the lack of conservatoire provision in Northern Ireland, as well as the traditional perception of the added value of a university degree, are clearly factors here.

## Theme II: The clash between professional/personal aspirations and resistance to change

What student respondents wanted from the university were knowledge and professional recognition. Just over half (51%) saw themselves in future working as both music teacher and performer, 29% only as teachers and 20% only as performers. Almost a third (31%) were already engaged in teaching, mostly private instrumental tuition.

Anyone pursuing a musical career is quite likely to be involved in one sort of teaching or another at some point. However, despite the aspiration of the majority, few students expressed concerns about developing relevant teaching skills. Neither does the universities' main mission, 'preparing students for professional life', appear to include any reference to it. The perception, no doubt, is that the PGCE (for school teaching) and the various diplomas and licentiate courses of the conservatoires (for specific instrumental/vocal teaching) are the proper places to gain those skills and knowledge. At the same time, almost half the tutors (43%) are not graduates and only 29% had a practical teaching qualification. Taken with other results, this seems to suggest a faint contradiction, in which excellence in instrumental/vocal tuition both is and is not associated with HE, and by both students and tutors.

Given students' professional aspirations, the present employment market and the importance of transferable skills, however, it would seem that a broader conception of the place of performance in degree programmes, one that perhaps includes more critical examination of pedagogical issues, could be of real benefit. The transferable skills in question and the personal attributes they draw on (self-awareness, empathy, vision) are self-evidently valuable (Pearce, 2000, p. 44), and seem more readily acquired through interaction between students, tutors and lecturers in performance than in other contexts. This would also be an obvious way of developing interpersonal skills, perhaps through peer learning and peer assessment (Blom and Poole, 2004; Hunter, 2006).

## Theme III: Teaching, learning, assessment and feedback practices

Most tutor participants in this study (93%) teach in a variety of contexts: private lessons, state and private secondary schools, local music schools and FE colleges as well as HE. They teach a wide range of ages, from six upwards. The focus group interviews revealed that these settings are in most cases similar to their own experience as students. However, learning to teach simply by imitating the example of one's own teacher may not adequately equip individuals with the communication and diagnostic skills deemed necessary (Gillespie, 1991, cited in Reid, 2000). Especially as most HE institutions now insist on specific HE teacher training for all new lecturers, it seems that greater emphasis needs to be placed on tutors' specific pedagogic educational background.

As might have been expected, tutors unanimously reported that at least one hour of instrumental/vocal tuition per week is necessary for developing students' musicianship and performance skills; a high percentage (62%) stated that students tend not to practise as much as they should. Tutors' answers were divided about whether demands from other university subjects leave the students with little time to practise, 23% agreeing and 23% disagreeing; 54% neither agreed nor disagreed. This last figure may suggest that the majority of tutors have only limited interest in the rest of the curriculum; certainly, 54% claimed to have little contact with lecturers and 62% thought it important that there be greater involvement from instrumental teachers in curriculum development and assessment processes.

Views about the two-hour weekly performance class (featuring lecturer and peer feedback on student performances) differed:

*Performance modules are important to focus on things like platform technique, rhetorical elements of performance, interpretation and presentation. (Tutor 6)*

A minority of tutors and students expressed concerns that advice given by non-specialists could be harmful for students, that students might not be well enough prepared at the start of the year to perform, and that these classes would only be beneficial if held towards the end semester, as preparation for the exam. Implicit here is an idea of performing as an individual process, worked out between tutor and student, with a final end

product that is not negotiable. From a psychological perspective, premature exposure may indeed affect subsequent performances negatively. However, research has shown substantial benefits from peer learning in music; there are aspects of performance that students learn more readily by contact with their peers than in other ways (Ritterman, 2000, p. 36).

The need to: develop a relationship with the student; be able to contribute to students' development (be given the resources to do so); be part of the practical end result of achievement and of students' development; and have university acknowledgement of one's work were all considered very important by tutors:

*Students seem to be inspired by inspiring musicians, people who are successful and knowledgeable in their own musical areas and I certainly try my best to inspire my students. (Tutor 3)*

*I feel instrumental tuition is important in creating higher level of musician and should be recognised more. (Tutor 10)*

*I have a feeling of being invisible and it's not rewarding to feel invisible. (Tutor 9)*

The idea of the 'higher level of musician' would seem to imply a wider role for instrumental tuition than is generally recognised by students. The sense of invisibility, on the other hand, clearly shows the impact of not engaging tutors in the wider enterprise of the HE Music department.

The study confirmed that for both tutors and students assessments were the priority; learning/teaching efforts were mostly directed towards success in a performance exam. Naturally, assessments are essential to "allow students to pass and proceed, to rank order students and to facilitate their learning through the feedback provided" (Bull and Pendlebury, 1997, cited in Brown, 2000, p. 5). However, if learning and assessments are not connected by feedback then learning is minimal (Brown, 2000, p. 5). Students themselves recognise this:

*For me, weekly instrumental lessons are very important because my tutor's comments are insightful about what needs to be done to perfect the repertoire. (Student 23)*

*When we just sit down and listen to people's performances we don't learn as much. (Student 29)*

Responses seemed to indicate that the value ascribed to one-to-one lessons resided mainly in the immediacy of the feedback. However, research (Schmidt, Norman and Boshuizen, 1990, cited in Brown, 2000, p. 5) has suggested that it is reflexive feedback that accelerates the shift from novice to expert. More systematic use of self-assessment and peer learning/assessment in HE may help to bridge the gap between the expectations students bring with them from school and private lessons to the HE environment (Philip, 2006; Hunter, 2006). Some students are not prepared for this type of experience:

*If you just sit down and listen to other people's performances all you do is kind of judge yourself against other people. (Student 2)*

*We need to get critically inside the performance [but if] I need to critically discuss a pianist's performance I don't really [...] know all the technique. (Student 41)*

In focus group discussions it emerged that some students, even the most experienced performers, find performing for their peers to be the most stressful. It may be that this derives precisely from the tension between learning for assessment and a much less familiar (but possibly more profound) learning experience.

#### Theme IV: Dilemmas of planning and delivering performance modules

Beyond the published learning outcomes, one lecturer had this to say about the aims of performance modules:

*To develop musicianship and performance skills at an individual level, according to the year of studies; to familiarise students with the ins and outs of making music, ensemble or solo; to develop time management and*

*organisational skills, ambition [and] self-confidence; to manage their own expectations and organise their work within their [own] context. (Lecturer 1)*

Naturally, the individual-student-centred nature of these aims has considerable financial implications:

*Finance is the key of most concerns that I have. (Lecturer 4)*

*We manage to give students a lot from very little. (Lecturer 2)*

*We've seen our budgets cut progressively over the years. (Lecturer 3)*

*In the current financial climate we are being squeezed more and more [...] I think [the students] expect more and more and we are able to provide less and less. (Lecturer 2)*

At the same time, students paying several thousand pounds a year in tuition fees have increasingly firm ideas about what they have the right to expect:

*We bought a degree here. (Student 9)*

*The way that this degree was sold to me was [...] with a lot of workshops. (Student 2)*

However, as suggested above, these ideas may not necessarily be consonant with the aims of the degree courses that students are purchasing at such large expense. Their demands, in the case of Music both disproportionately focused on performance and disproportionately informed by previous learning experiences, mean that it is becoming even more difficult than before to strike a balance in the design and delivery of performance modules.

A further challenging aspect is the relatively recent inclusion of a wider variety of musics (traditional, pop/rock, etc.) in an environment traditionally dominated by western art music. Catering for different styles may also imply catering for different models of pedagogy or even engaging with areas of musical knowledge in which it is normal for practitioners to be to some extent self-taught (i.e. traditional music or rock). In addition, qualities such as technical ability, interpretation and reinterpretation, and the role and importance of supporting technology may be valued quite differently, and imply different teaching and assessment priorities, not to mention tuition administration. For the present purposes, perhaps the most important differences may be that to do with one's identity as a musician. Some tutors pointed out specific concerns:

*There is not yet a specific curriculum for Irish Traditional music performance. (Tutor 5)*

*For less typical genres, the guidelines are less clear in an effort to lump together all the non-classical stuff. (Tutor 7)*

To the extent that different musics imply different skills and knowledge, and therefore arguably different assessment criteria, students too have queries:

*The different musical styles [...] on offer imply that there [are different] standards [...] required from different students. (Student 12)*

However, while this democratisation may be seen as a challenge, in HE it also has the potential for acting as a seedbed for the mutual development of the varied kinds of skills mentioned above. For this to happen, more attention may need to be given to precisely the group dynamics and reflective and interactive learning that students are so wary of.

### Project outcomes

- From the findings it emerges that while it is important to understand the expectations and attitudes of a number of stakeholders in the HE learning context, considering their respective roles as students, tutors and lecturers, it is equally important to understand how those expectations and attitudes were formed.

- Given the fact that the development of performance skills is a lengthy process, which demands years of practice prior to university, it might be expected that students would have developed a high degree of independence as learners (e.g. as proposed in Ritterman, 2000, p. 28). On the other hand, they may be reluctant to develop their own ideas because they have become overdependent on their tutors (Ritterman, 2000, p. 35). What is the role of HE in promoting the former and limiting the latter? Part of the answer would seem to lie in encouraging, in the context of instrumental/vocal tuition, greater student awareness of how other curriculum areas can contribute to performance, and in general how independent critical thought can be made a bigger part of it. Notwithstanding the goal of the 'higher level of musician', tutors see their roles mostly as instructional and are not always aware of HE wider goals and the importance of their specific contribution in achieving those goals. It is clear that they need to be engaged more directly, beginning with more effective communication, support and recognition of effort. This should bring with it higher levels of efficiency and better value for money.
- Immediate, adequate and meaningful feedback, acknowledged as crucially important by students and tutors alike, needs to be promoted in a variety of forms. Strategies that include students' self-evaluation reports, reflexive approaches to teaching, peer learning and peer assessment can be of good use here. In general it seems that Music as a subject is not taking advantage of the obvious possibilities open to it in the form of mutual feedback on ensemble playing, cross-genre collaborations and collaborations on multidisciplinary projects.
- The inherent strong interest in teaching as a subject in itself represents an opportunity for connecting different areas of learning within Music. Consideration should be given to including an element of pedagogical/educational studies within the curriculum. This would in turn inform the development of personal attributes and transferable skills across programmes.
- The democratisation of musical styles brings with it a need to ensure that the values of western art music do not disproportionately inform assessment criteria (Philpott, 2010; Green, 2003, p. 266). Combining these very different musical genres and musicians with different goals and experiences in the same HE context, though challenging, has the potential to develop awareness, empathy and – looking at the issue from a broader perspective – elements of citizenship. Cross-genre collaborations should be encouraged in the interests developing communication, negotiation and empathy.
- Peer learning can have significant benefits in the domain of attitudes and values, in relation to the capacity to contribute meaningfully to the student's individual development as 'critical being' with the capacity for 'critical self-reflection' and congruent 'critical action' (Barnett, 1997, cited in Ritterman, 2000, p. 37) which are central to HE, not to mention the needs society as a whole.

### Transferability

- In other programmes where there is a strong element of practical skill that has been pre-learned, indeed forms the basis for interest in the subject as a whole (Dance, Drama, Fine Art, some subjects within Art and Design, etc.), the study's findings regarding the mutual attitudes of students and tutors will be of particular relevance. In the case of some of these subjects, it may also be useful to consider the point about the potential value of pedagogical/educational elements within the curriculum.
- Wherever there is considerable input from part-time teaching staff, it is necessary to take into account engaging/disengaging forces affecting them as well as the students.
- Notwithstanding the debate over module vs. programme learning outcomes, in subjects where there is substantial variety of teaching models across modules, it may be beneficial to design specific strategies to help students to realise the interconnectedness between the different areas of study.

### Bibliography

Blom, D. and Poole, K. (2004) Peer assessment of tertiary music performance: opportunities for understanding performance assessment and performing through experience and self-reflection. *British Journal of Music Education*. 21 (1), 111-125.

Brown, G. (2000) Peer learning and assessment: do they enhance student learning? In: Hunter, D. and Russ, M. (eds.) *Peer learning in music*. Londonderry: University of Ulster, pp. 2-10.

- Brown, R. (2007) Enhancing student employability? Current practice and student experiences in HE performing arts. *Arts and Humanities in Higher Education*. 6 (28), 28-49.
- Bryson, C. and Hardy, H. (2011) *Clarifying the concept of student of engagement: A fruitful approach to underpin policy and practice*. Paper presented at the HEA Annual Conference, University of Nottingham, 5-6 July.
- Cheng, E. and Durrant, C. (2007) An investigation into effective string teaching in a variety of learning contexts: a single case study. *British Journal of Music Education*. 24 (2), 191-205.
- Connolly, C. and Williamson, A. (2004) Mental skills training in musical excellence. In: Williamson, A. (ed.) *Musical excellence: Strategies and techniques to enhance performance*. Oxford: Oxford University Press.
- Damon, W. and Phelps, E. (1989) Critical distinctions among three approaches to peer education. *International Journal of Educational Research*. 13 (1), 9-19.
- Daniel, R. (2004) Innovations in piano teaching: a small-group model for the tertiary level. *Music Education Research*. 6 (1), 23-43.
- Duggleby, W. (2005) What about focus group interaction data? *Quantitative Health Research*. 15 (6), 832-843.
- Gaunt, H. (2008) One-to-one tuition in a conservatoire: the perceptions of instrumental and vocal teachers. *Psychology of Music*. 36 (2), 215-245.
- Green, L. (2003) Music education, cultural capital and social group identity. In: Clayton, M., Herbert, T. and Middleton, R. (eds.) *The cultural study of music: A critical introduction*. London: Routledge, pp. 263-274.
- Gruzelier, J. and Egner, T. (2004) Physiological self-regulation: Biofeedback and Neurofeedback in Musical Excellence. In: Williamson, A. (ed.) *Musical Excellence: Strategies and techniques to enhance performance*. Oxford: Oxford University Press.
- Homfrey, T. (2007) Music degrees: Conservatoire or University? *The Independent*, 22 March. Available from: <http://www.independent.co.uk/news/education/higher/music-degrees-conservatoire-or-university-441232.html> [August 2011].
- Hunter, D. (2006) Assessing collaborative learning. *British Journal of Music Education*. 23 (1), 75-89.
- Johansen, G. (2010) Music education from the perspective of system theory. In: Wright, R. (ed.) *Sociology and Music Education*. Aldershot: Ashgate, pp. 51-62.
- Jørgensen, H. (2004) Strategies for individual practice in musical excellence. In: Williamson, A. (ed.) *Musical excellence: Strategies and techniques to enhance performance*. Oxford: Oxford University Press.
- Mann, S. (2001) Alternative perspectives on the student experience: Alienation and engagement. *Studies in Higher Education*. 26 (1), 7-19.
- McCune, V. (2009) Final year biosciences students' willingness to engage: Teaching-learning environments, authentic learning experiences and identities. *Studies in Higher Education*. 34 (3), 347-361.
- McInnis, C. and James, R. (1995) *First year on campus: diversity in the initial experiences of Australian undergraduates*. Canberra: Committee for the Advancement of University Teaching, Australian Government Publishing Service.

- Mills, J. and Smith, J. (2003) Teachers' beliefs about effective instrumental teaching in schools and higher education. *British Journal of Music Education*. 20 (1), 5-27.
- Monks, S. (2009) *Becoming reflexive practitioners – exploring the role of summative assessment in encouraging vocal skills in first year undergraduate singer*. PALATINE Development Award Report. Available from: <http://www.palatine.ac.uk/publications/development-award-report/> [March 2010].
- NUS (2010) *Student engagement hub*. Available from: <http://www.nusconnect.org.uk/campaigns/highereducation/student-engagement-hub/> [10 August 2011].
- O'Neil, S. (2002) The self-identity of young musicians. In: McDonald, R., Hargreaves, D. and Miell, D. (eds.) *Musical Identities*. New York: Oxford University Press, pp. 79-96.
- Papageorgi L., Haddon, E., Creech, A., Morton, F., Bezenac, F., Himonides, E., Potter J., Duffy, C., Whyton, T. and Welch, G. (2010) Institutional culture and learning I: perceptions of the learning environment and musician's attitudes to learning. *Music Education Research*. 12 (2), 151-178.
- Pearce, A. (2000) Peer learning and assessment within a music curriculum designed for the promotion of personal attributes. In: Hunter, D. and Russ, M. (eds.) *Peer learning in music*. Londonderry: University of Ulster, pp. 44-48.
- Pearce, A. (2000) Preparing music undergraduates for work: Embedding opportunities for the development of transferable skills in the music curriculum. In: Barnes, J. and Holt, G. (eds.) *Making Music Work*. London: Royal College of Music, pp. 57-72.
- Philip, L. (2006) Encouraging reflective practice amongst students: A direct assessment approach. *Planet*. 17, 37-39.
- Philpott, C. (2010) The sociological critique of curriculum music in England: Is radical change really possible? In: Wright, R. (ed.) *Sociology and Music Education*. Aldershot: Ashgate, pp. 81-92.
- Pitts, S. (2005) *Becoming a music student: Understanding and fostering the study skills of first year undergraduates*. PALATINE Development Award Report. Available from: <http://www.palatine.ac.uk/files/1669.pdf> [January 2010].
- Purser, D. (2005) Performers as teachers: exploring the teaching approaches of instrumental teachers in conservatoires. *British Journal of Music Education*. 22 (3), 287-298.
- Reid, A. (2000) Self and peer-assessment in a course on instrumental and vocal pedagogy. In: Hunter, D. and Russ, M. (eds.) *Peer learning in music*. Londonderry: University of Ulster, pp. 56-61.
- Ritterman, J. (2000) Learning what is to perform: A key to peer learning for musicians. In: Hunter, D. and Russ, M. (eds.) *Peer learning in music*. Londonderry: University of Ulster, pp. 28-38.
- Rodgers, R. (2002) Supporting first-year students in the Bachelor of Arts: An investigation of academic staff attitudes. *Arts and Humanities in Higher Education*. 2 (3), 293-312.
- Venn, E. (2010) *Music performance tuition in Higher Education: Student expectations*. PALATINE Development Award Report. Available from: <http://www.palatine.ac.uk/publications/development-award-report/> [March 2010].
- Wenger, E. (1998) *Communities of practice: Learning, meaning and identity*. Cambridge: Cambridge University Press.



## Are Northern Ireland Accounting graduates equipped to deal with the challenges of sustainable development?

**University of Ulster (Learning and Teaching Enhancement Project) – Mary Kelly**

### Introduction and overview

The aim of the project was to identify ways by which Accounting sustainability education is currently being delivered within higher education in Northern Ireland. Recommendations are put forward on how Accounting graduates can be better equipped with the knowledge and skills necessary to understand and deal with the challenges of sustainable business and society. This project explored the extent to which sustainability issues are being sufficiently integrated within the Accounting curriculum offered by the two universities in Northern Ireland. Education is recognised as having an important role in developing students who are able to reflect, critically, on ways of thinking and techniques that have contributed to society's sustainability challenges. It is the responsibility of educators, particularly those within the Accounting discipline, to set the agenda and embrace this challenging area.

### Generation of evidence

A survey of final-year undergraduate Accounting students enrolled at the University of Ulster and Queen's University Belfast was used to provide evidence of the extent to which students have engaged with sustainable development (SD) issues within their current curriculum. The students were asked to complete a questionnaire to determine their level of knowledge on a range of SD issues including their perception of the importance of SD to themselves, to business and to society as a whole. Students were asked a number of open-ended questions allowing them to elaborate on any views. Finally, we reviewed the content of the professional accounting bodies' websites to evaluate the SESA knowledge and skills currently required by the professional accountancy bodies operating in Northern Ireland. One hundred and forty usable questionnaires were returned and these were analysed using SPSS. Finally, a number of local employers were interviewed to ascertain their perspective on the readiness of Northern Ireland Accounting graduates to deal with the challenges of sustainable development.

### Project findings

Our findings indicate that SD education is, currently, a bolt-on to existing modules and reflects a piecemeal approach that may be indicative of a banking approach to learning. This type of learning focuses on the development topics, particularly in core modules such as Management and Financial Accounting, we found little evidence to suggest that such limited coverage of SESA issues is sufficient to challenge the capitalist-orientated techniques as required in financial and management accounting supporting a managerial approach. Furthermore, while there is evidence to support coverage of some SESA principles of conventional accounting, a critical perspective is developed in a wider sense across a range of modules, on the Accounting degrees at both universities, through the use of case studies and the critique of articles within individual modules.

The championing by a particular member of staff with a personal interest in SD can encourage a wider appreciation of SD, and its relationship with accounting, by students within the degree programme. This is evidenced in our findings by some of the student responses from one of the universities. The responses indicate a longer-term focus by the students with an emphasis on the need for businesses to consider the sustainability impacts of their operations. This could represent the start of a challenge to the short-term economic focus adopted by many corporate organisations. Strong views were articulated by the students on the need for businesses and other organisations to be responsible for, and held accountable for, their actions, which indicates an increased need for more stringent, possibly mandatory, reporting requirements and legislative penalties. Our findings reveal that students at both universities are receptive to developing their knowledge in the area of sustainability and SD. As educators, we must recognise that the concepts underlying sustainability accounting and SD are more than just teaching new techniques such as sustainability scorecards

or analysing the sustainability reports of organisations such as BP or Shell. Indeed, sustainability issues are regarded as being much wider than the domain of individual organisations. SESA techniques now, to some extent, form part of the portfolio of accounting practices of professional accounting syllabi and conventional Accounting degree programmes. Topics such as sustainability reports, sustainable scorecards, connected reporting and full cost accounting are now becoming, at least incrementally, more mainstream. Indeed, SESA techniques can be linked with accreditation requirements.

Our research indicates that there are no stand-alone SESA courses in any of the syllabi of the professional bodies examined; there is, however, evidence of a managerial approach to SESA, which falls short of the type of transformative education envisaged by UNESCO. Interviews with practitioners support the view that students are expected, when they enter the profession, to have “an understanding of SD issues” with an acknowledgement that a critical perspective will be “useful in the long term as their career develops within the accounting profession”. There is widespread recognition within practice that SD and SESA techniques are important for the future and the approach adopted within practice will involve “a process of evolution rather than revolution”.

### Project outcomes

The kinds of changes required to educate Accounting students in SD will not be met by adding, incrementally, SESA topics and courses that fail to challenge the traditional principles of capitalist accounting. Consequently, there is a real danger that SD will not be taken as seriously as it should be. Pressures of accreditation and overcrowded syllabi leave little time for critical reflection on sustainability issues. This is not helped by the lack of clarity around the terms ‘sustainability’ and ‘sustainability development’. If the use of sustainable pedagogies is to become more widespread among Accounting academics, then those lecturers who are already committed to sustainability principles will need support to develop their teaching along these lines. How many students of Accounting develop the sense that “accounting plays a key role in defining organisations and, increasingly, in mediating the relationship between organisation, society and the environment?” (Gray, 1995). Our research findings support the view that Accounting graduates in Northern Ireland do not currently perceive themselves as ‘agents of change’ through business and the accounting profession, and until they do the transformation required for SD will not occur. The SD challenges facing all of us, as educators and members of society, are complex and ever changing, and the need for a more inclusive teaching by a multidisciplinary team and radical changes to current curricula needs to be seriously considered. Providing opportunities for our students to question and challenge current business practices could be a way of developing alternative and innovative business approaches. In our view, teaching more SESA topics is not sufficient to equip graduates with the knowledge and skills necessary to become ‘sustainability literate’. SD is not just about the material taught but how the material is delivered, debated and applied through an interdisciplinary lens. Accounting and accountants have a pivotal role to play in implementing UNESCO’s vision for education for sustainable development: the crucial question is whether Accounting educators and the professional accountancy bodies are up for the challenge of leading the paradigm shift so urgently required.

### Bibliography

Bebbington, J. (1995) Teaching social and environmental accounting: a review essay. *Accounting Forum*. 19 (2/3), 263-273.

Bebbington, J. (1997) Commentary on: some thoughts on social and environmental accounting education. *Accounting Education: An International Journal*. 10 (4), 353-355.

Bebbington, J. and Gray, R.H. (2001) An account of sustainability: failure, success and a reconceptualisation. *Critical Perspectives on Accounting*. 12 (5), 557-588.

- Bebbington, J. and Thomson, I. (2001) Commentary on: some thoughts on social and environmental accounting education. *Accounting Education: An International Journal*. 10 (4), 353-355.
- Birkin, F., Edwards, P. and Woodward, D. (2005) Accounting's contribution to a conscious cultural evolution: an end to sustainable development. *Critical Perspectives on Accounting*. 16 (3), 185-208.
- Bradley, J.F., Sayce, S. and Lewis, A. (2010) Sustainability and built environment professionals: a shifting paradigm. In: Jones, P., Selby, D. and Sterling, S. (ed.) *Sustainability Education: Perspectives and Practice across Higher Education*. London: Earthscan.
- Brooks, C. and Ryan, A. (2008) *Education for Sustainable Development: Strategic Consultations Among English HEIs*. York: Higher Education Academy.
- Collison, D.J., Ferguson, J. and Stevenson, L. (2007) Sustainability Accounting and Education. In: Unerman, J., Bebbington, J. and O'Dwyer, B. (ed.) *Sustainability Accounting and Accountability*. London: Routledge.
- Coulson, A. and Thomson, I. (2006) Accounting and sustainability, encouraging a dialogical approach; integrating learning activities, delivery mechanisms and assessment strategies. *Accounting Education: An International Journal*. 15 (3), 261-273.
- Department for Environment, Food and Rural Affairs (DEFRA) (2005) *Securing the Future: The UK Government Sustainable Development Strategy*. London: The Stationery Office.
- Department for Innovation, Universities and Skills (DIUS) (2008) *Investing in Our Future: Sustainable Development Action Plan 2008-09*. Available from: [http://www.dius.gov.uk/about\\_us/-/media/publications/7/76-08-C\\_on](http://www.dius.gov.uk/about_us/-/media/publications/7/76-08-C_on) [1 May 2010].
- Dillard, J. (2002) Dialectical possibilities of thwarted responsibilities. *Critical Perspectives on Accounting*. 13 (5-6), 621-641.
- Gray, R.H. (1990) *The Greening of Accountancy: the Profession after Pearce*. Certified Record Report 17. London: ACCA.
- Gray, R.H. (1995) *Briefing social and environmental accounting research*. ESRC Global Environmental Change Programme. Available from: <http://www.st-andrews.ac.uk/-csearweb/intromaterials/esrc.html>
- Gray, R.H. and Collison, D. (2002) Can't see the wood for the trees, can't see the trees for the numbers? Accounting education, sustainability and the public interest. *Critical Perspectives on Accounting*. 13 (5-6), 797-836.
- Gray, R.H. and Milne, M.J. (2002) Sustainability reporting: who's kidding whom? *Chartered Accountants Journal of New Zealand*. 81 (6), 66-70.
- Gray-Donald, J. and Selby, D. (2004) Through the (not so) green door: university campus greening and curriculum change. *Ekistics*. 71 (427-429), 203-212.
- Higher Education Funding Council for England (HEFCE) (2009) *Sustainable Development in Higher Education: 2008 Update to Strategic Statement and Action Plan*. Bristol: HEFCE. Available from: [http://www.hefce.ac.uk/pubs/hefce/2009/09\\_03/-9\\_-3.pdf](http://www.hefce.ac.uk/pubs/hefce/2009/09_03/-9_-3.pdf) [5 January 2011].

Illich, I.D. (1971) *Deschooling Society*. London: Calder and Boyars.

Inter-governmental Panel on Climate Change (IPCC) (2007) *Climate Change – The Physical Science Basis: Summary for policy makers*. Geneva: IPCC Secretariat.

Jackson, T. (2009) *Prosperity Without Growth. Economics for a Finite Planet*. London: Earthscan.

Mangion, D. (2006) Undergraduate education in social and environmental accounting in Australian universities. *Accounting Education: An International Journal*. 15 (3), 335-348.

Merino, B.D. (2006) Financial scandals: another clarion call for educational reform – a historical perspective. *Issues in Accounting Education*. 21 (4), 363-381.

Milne, M. and Gray, R.H. (2007) Future prospects for corporate sustainability reporting. In: Unerman, J., Bebbington, J. and O'Dwyer, B. (eds.) *Sustainability Accounting and Accountability*. London: Routledge.

Orr, D. (2004) *Earth in Mind: On Education, Environment and the Human Prospect*. Washington DC: Island Press.

Springett, D.V. (2005) Education for sustainability in the business studies curriculum: a call for a critical agenda. *Business Strategy and the Environment*. 14 (3), 146-159.

Springett, D.V. (2010) Education for sustainability in the business studies curriculum: ideological struggle. In: Jones, P., Selby, D. and Sterling, S. (eds.) *Sustainability Education: Perspectives and Practice across Higher Education*. London: Earthscan.

Stevenson, L. (2002) Social and environmental accounting teaching in UK and Irish universities: a research note on changes between 1993 and 1998. *Accounting Education: An International Journal*. 11 (4), 331-346.

Stevenson, L. and Thomson, I. (2010) Editorial. *Social and Environmental Journal*. 30 (2), 51-63.

Sundin, H. and Wainwright, L. (2010) Approaches to integrating social and environmental accounting (SEA) into Accounting Majors in Australian universities. *Social and Environmental Accounting Journal*. 30 (2), 80-92.

Thomson, I. and Bebbington, J. (2004) It doesn't matter what you teach? *Critical Perspectives on Accounting*. 15 (4-5), 609-628.

Unerman, J., Bebbington, J. and O'Dwyer, B. (2007) *Sustainability Accounting and Accountability*. London: Routledge.

United Nations Educational, Scientific and Cultural Organisation (UNESCO) (2004) *United Nations Decade of Education for Sustainable Development (2005-2014): Draft International Implementation Scheme*. Paris: UNESCO.

United Nations World Commission on Environment and Development (UNWCED) (1987) *Our Common Future*. Oxford: Oxford University Press.

Wilson, R.M.S. (2011) Alignment in accounting education and training. *Accounting Education: An International Journal*. 20 (1), 3-16.



### 3. Enhanced learning opportunities, electronic learning tools and excellence in teaching

#### The use of non-linear and responsive audio-visual material in the teaching of mental state assessment

**Queen's University Belfast (Learning and Teaching Enhancement Project) – Dr Michelle Gilmore and Dr Ciaran Mulholland**

Keywords: flexibility; risk assessment; mental health.

##### Introduction and overview

The project uses an innovative presentation software as a platform to introduce arguably the most essential aspect of the course, the 'Mental State Assessment'. Through funding for the project, actors were employed to reproduce clinical scenarios. Within small groups students identify relevant aspects of the clinical assessment presented in the audio-visual material. The content is reinforced through the use of teaching interspersed with group work. This teaching is planned in order to maximise interaction of the class and explore and build on students' knowledge. The project gives students the opportunity to discuss difficult aspects of mental state assessment, including suicidality, with the opportunity for role play. Students use the Northern Ireland Department of Health risk assessment and learn skills in presenting relevant information. This information communication is essential for patient safety and is assessed at the end of the term through a viva. The software programme allows group work to lead the tutorial thereby promoting a student-centred rather than a teacher-centred approach.

The Mental State Assessment serves as the cornerstone of mental health evaluation and the primary diagnostic tool used by physicians. Previously teaching was didactic and followed a transmission model with the use of PowerPoint slides to deliver a lecture. Feedback suggested that students could feel overwhelmed with large amounts of factual information with difficulty understanding its relevance. The project aimed to promote student engagement and analytical thinking through the use of audio-visual material presented within a software program that is non-linear and responsive. The class was redesigned to focus on group work to encourage students to engage with the subject matter through problem solving to analyse specifics of the assessment.

##### Generation of evidence

QUB fourth-year medical students were first introduced to the resource on 1 September 2011 with a focus group evaluation on 2 September.

##### Project findings

The focus group feedback reported benefits in the use of the software program and also the variation in how the class is structured (i.e. active learning process rather than didactic). Students recognised the importance of an interactive approach stating: "Videos (were) great, the words and patients come alive and help you remember". They preferred the approach taken where the teaching component was interspersed with clips, reporting that this improved concentration and allowed them to debate the topic. Students did report some discomfort with the teaching approach, which is now focused on the students exploring and developing their knowledge; however, they felt in the longer term this approach was beneficial as they would learn more from it. Similarly regarding the introduction of role play some students reported discomfort in learning through this approach; however, there was agreement that role plays were of value within the class, stating that they were "needed". Students felt that this opportunity to "get into character" aided retention of information both for the clinical situation and also for exam technique. Some of the students reported feeling uncomfortable having to give negative criticism to their colleagues partially due to their own limitations of knowledge in the area, but also due to discomfort in giving negative criticism; they did not appear to have encountered problems giving positive feedback. Others reported that they felt relaxed and did not feel under

pressure with this approach, recounting improved interaction within the group. Some students would have preferred that actors were employed as this would then prepare them for the reality of the clinical situations and examination. Given the change in the teaching style of this tutorial and the feedback from the focus group, the co-ordinators plan to run this tutorial with two facilitators in order to improve student experience and the group interactions.

Regarding the risk assessment form students reported that this was useful to access stating: “The broad headings were good so it is not a yes or no, not a criteria that is either in or out. It guides you to say are they are high risk or low risk.” They reported that it was useful to incorporate into the class and felt it would be beneficial to include in further tutorials and also in their online teaching resources.

Students reported the following statements when asked on their views about the use of Prezi as a software tool:

*Prezi was easy on the eye – good.*

*Looked better.*

*Kept you engaged better cause you were going from one (clip) to another.*

They felt it was useful to be able move within different the relevant topic areas and this option allows a lecturer to reinforce clinical points particularly if there was confusion about a topic. They also felt the tool could have increased potential within smaller group tutorial settings. Students felt able to approach the tutor to clarify aspects of a class. No one within the group reported difficulties with motion sickness from the use of the zoom and turning features of the technology; however, they did recognise the importance of the lecturer’s ability in competently using the material. They requested that the material be made available online as a learning resource. Students also requested an expansion of the material used, finding more benefit in being given the opportunity to explore how to elicit symptoms both through discussion and audio-visual material. In order to prevent the class from running past the allotted time they recommend leaving audio-visual material available through the online resource of the more well-known areas such as drug or social history, but not to actually cover this in the class. It is the intention of the co-ordinator to introduce this as there will be variation in the learning needs of different groups and the product has the flexibility to allow this to occur.

### Project outcomes

The project will be disseminated through RCPsych educational meetings both locally and regionally. To allow for wider dissemination, resources developed during this project will be made accessible/available to a larger audience through the use of already established online educational repositories. The co-ordinator’s main difficulty at present is the size of the file and how to best post the information online given its size. Lecturer competency in the use of the material is essential, and the co-ordinator plans to create a teaching aid for lecturers providing a map of the material and its use. This will be posted alongside the developed resources. The ability to provide the material online is essential. The host institution has agreed to pay for photographic image used as the canvas for the project. This allows the image to be used online for educational purposes. The co-ordinator is liaising with the institution’s information technology department; one possibility is to link the resource material to the institution’s home site from the educational forums providing the teaching aids directly on the educational repository website. In the interim period interested parties are requested to contact Dr M Gilmore on michellegilmore@me.com and relevant links will be forwarded.

### Bibliography

McEvoy, P. (1998) Curriculum Development. In: *Educating the Future GP: The Course Organizer’s Handbook*. 2<sup>nd</sup> ed. Abingdon: Radcliffe Medical Press.

# Improving clinical practice with the introduction of modern teaching tools to an old science

**University of Ulster (Learning and Teaching Enhancement Project) – Raymond Bond, Cathal Breen and Dewar Finlay**

Keywords: electrocardiogram; electrode; misplacement; cardiology; clinician.

## Introduction and overview

The 12-lead electrocardiogram (ECG) is a diagnostic tool used routinely to assess the cardiac state of patients. It must be recorded in a standard fashion, by positioning ten electrodes at precise locations on the patient's torso. It has, however, been observed that medical personnel often misplace these electrodes. Despite this, students rely on ECG textbooks that do not address or include material regarding the effects of electrode misplacement. Moreover, more advanced pedagogic tools such as mannequins do not allow electrodes to be arbitrarily moved and therefore cannot be used to demonstrate such effects. As a result, we designed an Electrode Misplacement Simulator (EMS). The EMS is an intuitive web application that allows students and researchers to freely move each of the electrodes while viewing the effects this has on the 12-lead ECG. The 12-lead ECG generated from the misplaced electrodes is calculated by the EMS from real data recorded from a patient. It was then decided to use the EMS for research purposes to quantify just how much the ECG is affected when a commonly erred electrode configuration is used. With the EMS and data recorded from 232 patients, 464 12-lead ECGs were generated. This dataset consisted of 232 ECGs generated from the correct electrode positions and 232 ECGs generated from the incorrect electrode positions. Statistics provided by the EMS were used to quantify the differences in the signals between the correct recordings and the corresponding incorrect recordings. A random sample of these ECGs (150: 75 correct and 75 incorrect) were then interpreted and serially compared by two different clinicians. The results show that lead V2 is affected the most when misplaced and that there is a reasonable chance (16-24%) that the clinician's interpretation will be different if the ECG is recorded incorrectly. It can be concluded that the results justify the use of the EMS and other methods for educating students about the effects of electrode misplacement. We developed the EMS to be used for educating clinicians and students. This was informed by the fact that electrode misplacement occurs 4% of the time (Rudiger *et al.*, 2007) and yet ECG textbooks still do not address this issue (Rudiger *et al.*, 2003). However, in 2007 the American Heart Association (AHA; Kligfield *et al.*, 2007) acknowledged this issue and published a recommendation to educate students about the effects of electrode misplacement. Given the AHA is a recognised body that dictates practice standards in the ECG community, this statement provided impetus for the project. Although we have developed the EMS, we sought to find more evidence to justify the need for the EMS in education. Moreover, the material generated from this study would be unique and could be used again for pedagogic purposes.

## Generation of evidence

Body surface ECGs consisting of 192 electrodes (Lux *et al.*, 1978) placed around the torso were previously recorded for 232 patients. From each of these recordings, the EMS was used to extract a correct 12-lead ECG and a corresponding incorrect 12-lead ECG. This amounts to 464 12-lead ECGs. The effects of electrode misplacement were investigated in two stages. The first stage consisted of a statistical analysis and the second stage consisted of a clinical analysis.

For the first stage, statistics were provided by the EMS. These statistics were used to quantify how different the correct ECG leads were from the incorrect ECG leads. Statistical metrics included the Root Mean Square Error (RMSE), Correlation Coefficient (CC) and Similarity Coefficient (SC).

The second stage involved taking a random sample of these ECGs (150 ECGs: 75 correct recordings and the 75 corresponding incorrect recordings). Two clinicians were then recruited to serially compare and interpret each of the ECGs. Serial comparison was used as opposed to blind interpretation to avoid the influence of



intra-observer variability. More specifically, it was to avoid mistaking a change in diagnosis due to electrode misplacement when in fact it might have been intra-observer variability.

### Project findings

Figure 1 shows the averaged statistics generated from the first stage of the study. Statistics were generated to quantify the difference between each of the correctly recorded leads with each of the corresponding incorrectly recorded leads. Furthermore, two components (QRS and STT segments) from each of the correct leads were directly compared to the corresponding components from the incorrect leads. As a general observation from the statistics, it can be concluded that the erred electrode configuration affects lead V2 the most followed by leads V4 and V1. We also found that these leads are affected the most irrespective of the patient's condition (whether they were normal or patients with a myocardial infarction).

From the second part of the study, according to the interpretations given by the first clinician, 24% of the incorrectly recorded ECGs would be given a different diagnosis from the corresponding correctly recorded ECGs. However, according to the second clinician, some of these are still quite similar and based on his opinion 16% of the incorrectly recorded 12-lead ECGs would be given a different diagnosis. As a result of this study, it can be concluded that there is a 16-24% chance the diagnosis would change when the 12-lead ECG is acquired using the commonly erred electrode configuration. More specifically, from the interpretations given by serial comparison carried out by the first clinician, the diagnosis of acute myocardial infarction (AMI or 'heart attack') was concealed in eight cases when the erred electrode configuration was used.

	Least affected leads			Most affected leads		
	→					
<b>PQRST</b>						
RMSE (μV)	V6 (48±29)	V3 (64±30)	V5 (70±43)	V1 (100±47)	V4 (114±59)	V2 (185±82)
R	V3 (0.97±0.02)	V6 (0.95±0.09)	V5 (0.94±0.11)	V4 (0.88±0.13)	V1 (0.84±0.14)	V2 (0.79±0.19)
SC	V3 (0.75±0.09)	V6 (0.71±0.23)	V5 (0.68±0.22)	V4 (0.55±0.22)	V1 (0.44±0.22)	V2 (0.33±0.19)
<b>QRS</b>						
RMSE (μV)	V6 (108±71)	V3 (120±58)	V5 (160±107)	V1 (198±99)	V4 (264±148)	V2 (338±172)
R	V3 (0.97±0.02)	V6 (0.95±0.13)	V5 (0.94±0.11)	V1 (0.88±0.12)	V4 (0.86±0.19)	V2 (0.85±0.16)
SC	V3 (0.75±0.11)	V6 (0.68±0.31)	V5 (0.60±0.40)	V1 (0.52±0.20)	V4 (0.42±0.34)	V2 (0.42±0.18)
<b>STT</b>						
RMSE (μV)	V6 (26±17)	V5 (34±22)	V3 (54±37)	V4 (54±36)	V1 (76±51)	V2 (169±99)
R	V3 (0.97±0.07)	V5 (0.96±0.10)	V6 (0.95±0.14)	V4 (0.95±0.09)	V1 (0.60±0.47)	V2 (0.38±0.56)
SC	V5 (0.75±0.26)	V6 (0.73±0.22)	V3 (0.73±0.16)	V4 (0.69±0.33)	V2 (0.0008±0.52)	V1 (-0.19±0.99)

**Colour key**

	V1		V4
	V2		V5
	V3		V6

Figure 1: A summary of how much (or little) the PQRST, QRS and STT intervals of each lead are affected when the incorrect electrode configuration occurs

(Based on each of the averaged statistical measurements, the least affected lead is displayed on the left and the most affected lead is displayed on the right. The cells have been colour coded to show the distribution of most and least affected leads. Each cell also includes values for the arithmetic mean and standard deviation.)

### Project outcomes and impact

For academics and teachers, this study highlights the importance of teaching students how to adequately acquire the 12-lead ECG. It also highlights the importance of demonstrating the effects of electrode

misplacement to students. It also justifies promoting awareness that misplacing electrodes can result in a misdiagnosis, the administration of inappropriate therapy and possibly death.

For authors of ECG textbooks, it highlights the importance of committing a section that details the effects of electrode misplacement; in particular the dramatic effects the commonly erred electrode configuration has on leads V2, V4 and VI. Students and clinicians should also be made aware that electrode misplacement can conceal AMI.

For senior clinicians, it emphasises the importance of retraining staff and regular supervision of technicians. For technologists, this work provides rationale and motivation to develop modern teaching tools to aid teaching in cardiology. For the PI, it justifies use and further development of the EMS. More specifically, it justifies the integration of the EMS into the University of Ulster's 'Clinical Cardiology' module. For ECG researchers, it contributes to the existing body of evidence for designing hardware or algorithmic solutions to either prevent or detect electrode misplacement.

The immediate impact of this research is the justification it has provided for the need for education regarding the effects of electrode misplacement. With this, it justifies and highlights the use of such a novel web-based tool. As a result, the EMS will be an integral part of educating clinical physiologists in the 'Clinical Cardiology' module delivered at the University of Ulster. Moreover, the impact of this research has influenced the decision to arrange a seminar regarding teaching practices in cardiology at the University. Finally, after conversing with an author (Galen Wagner) of a prominent ECG textbook, we have been offered to append the EMS software on a DVD-ROM as part of the next edition of the book entitled *Marriott's Practical Electrocardiography*. Finally, the long-term impact of this study remains to be seen considering a journal paper has also been written and is ready to be submitted.

#### Links

Electrode Misplacement Simulator <http://sim.raymondbond.com>

#### Bibliography

Byrne, J., Heavey, C. and Byrne, P.J. (2010) A review of Web-based simulation and supporting tools. *Simulation Modelling Practice and Theory*. 18 (3), 253-276.

Kligfield, P., Gettes, L.S., Bailey, J.J., Childers, R., Deal, B.J., Hancock, E.W., Van Herpen, G., Kors, J.A., Macfarlane, P., Mirvis, D.M., Pahlm, O., Rautaharju, P. and Wagner, G.S. (2007) Recommendations for the standardization and interpretation of the electrocardiogram. Part I: The electrocardiogram and its technology: A Scientific Statement from the American Heart Association Electrocardiography and Arrhythmias Committee, Council on Clinical Cardiology; the American College of Cardiology Foundation; and the Heart Rhythm Society. Endorsed by the International Society for Computerized Electrocardiology. *Heart Rhythm*. 4 (3), 394-412.

Kohn, L.T., Corrigan, J. and Donaldson, M.S. (2000) *To Err is Human: Building a Safer Health System*. Washington DC: National Academies Press.

Lux, R.L., Smith, C.R., Wyatt, R.F. and Abildskov, J.A. (1978) Limited Lead Selection for Estimation of Body Surface Potential Maps in Electrocardiography. *IEEE Transactions on Biomedical Engineering*. 25 (3), 270-276.  
Rudiger, A., Schöb, L. and Follath, F. (2003) Influence of electrode misplacement on the electrocardiographic signs of inferior myocardial ischemia. *The American Journal of Emergency Medicine*. 21 (7), 574-577.

Rudiger, A., Hellermann, J.P, Mukherjee, R., Follath F. and Turina, J. (2007) Electrocardiographic artifacts due to electrode misplacement and their frequency in different clinical settings. *The American Journal of Emergency Medicine*. 25 (2), 174-178.

## Using animation to enhance the learning experience

### Queen's University Belfast (Learning and Teaching Enhancement Project) – Colin O'Hare

#### Introduction and overview

This project aims to take dry actuarial theory and to improve student engagement with the material through the development of a series of animated videos/problem solutions. The focus is on demonstrating to the students the steps involved in actuarial problem solving rather than just providing the finished product.

Actuarial Science is a mathematically complex, vocational, problem-based subject matter requiring a rigorous lecture style to ensure thorough coverage of the theory. This can lead to student difficulty outside the lecture when attempting to apply the theory in practice. I am making significant efforts to bridge the gap between theory and practice so that our actuaries can be both academically skilled and with the necessary understanding of the context within which they will have to adapt those skills after university. Developing resources that address the employability and wider skills development is not a primary objective of universities and the work I have done to date has been due to my own interest with limited commitment from the university. The outcome of this project will be a series of animations addressing the theory and application of actuarial science in the workplace. I anticipate a series of animations being developed following this successful project applying the same framework with continuing cohorts of students on the degree.

#### Project findings and outcomes

The feedback in the use of the tools I developed has been very positive with student testimonials below.

#### Audio podcasts:

*I found the recordings of lectures to be very helpful; it not only allowed me to learn at my own pace but also **allowed me to better concentrate in the lectures** without having to worry about copying down anything that was being said throughout. It ensured all the material was accessible and not just the information that was on the slides.*

*I think these are useful to go back **over for revision purposes** and they also worked well when you weren't in, however I'm not sure that I would want them all the time instead of traditional lectures as I find traditional lectures easier to follow.*

*The lecture recordings were a valuable source of **reinforcing the material delivered in the lecture** with the added benefit of being able to use them at your own pace. It was useful to have the lecture recorded as if you missed anything that was said and didn't want to interpret the lecture it allowed you to follow up and replay the lecture to help gain a better understanding. The material was easily attainable and provided the opportunity to refresh on the material or specific sections.*

*This is a very good idea, my only opinion of improving the podcasts would be to separate the recordings into, say, 8 chapters in iTunes. And label in the notes of the podcast which slide is at the start of which chapter of the audio book. This is simply because, I began listening to the podcasts and then had to stop, and power down my pc, only to attempt to find the point which I had left off at the following day. If there were a few chapters with labels (to the relevant slides) within the podcast, it might be easier to find where you left off. Otherwise **a truly invaluable resource**.*

*Excellent idea as due to interviews etc some lectures were missed and so I felt I could still easily keep up with the rest of the class. Easy to download and **can listen in your own time and do the examples at your own speed** which helped me understand the material more clearly.*

**These are a brilliant addition to the course.** Even though I attended all lectures, it helped me to understand points that I may have missed in class. I found this the most useful of all the e-learning resources.

I found the recordings very helpful as I like to learn stuff at my own pace and sometimes feel lectures can be rushed and I can get lost whereas **with the recording I was able to listen back and understand everything.**

Online animations:

The **online videos served as good, well worked examples** of the sort of questions you would expect in the tutorials. The explanations were clear and easily followed.

I found the online videos I have gone through helpful as **each step is laid out and explained whereas in a set example you sometimes sit for hours working out how they got from one line to the next.** I think that more online videos posted would help and possibly if you went through the new ones you have posted just quickly at the start of lectures.

I thought these were helpful **maybe one or two more would be even better.**

These are easy to follow and very useful.

These were very useful for additional examples and solutions although I found out that some of the examples were repeated in the tutorials. The slides did not always show the equations etc clearly but **there was the option to view each slide separately in a larger format.**

These were plentiful based on each topic and correlated with the material learnt in the lectures. **I found it a great addition to my revision** for the multiple choice questions as I could use them as a trial test to find out which areas I needed to revisit before the test. The added benefit of the worked examples were the explanation of the solutions which really helped with grasping the concepts behind the solutions especially useful for the Actuarial Mathematics where several notations were used.

Having watched the Cox regression model and those about actuarial notation I have found these videos extremely useful, **especially in how you can pause and make notes, whilst not falling behind in the understanding** – this is what happens in lectures.

The tutorial solutions to the questions, as well as the exam style question that is included every week has really helped with understanding and revision though.

I really like these exercises and examples. **It's like a one to one tutoring session where you can see exactly how to progress through a question step by step.** You can learn so much more here than if you are simply looking at a solution. You see the reason behind each step. It is an excellent tool.

Following feedback from Level 3 students several areas were targeted for video tutorials and animated resources. Having successfully applied these resources in my teaching I have been successful in persuading colleagues across the School and across the University to adopt some of my methods having given seminars for CED at Queens.

#### Links

Revision video tutorials:

<http://www.mediator.qub.ac.uk/ms/Actuarial/podcast/2011/FIN2013/FIN2013revisionvideo.mp4>

<http://www.mediator.qub.ac.uk/ms/Actuarial/podcast/2011/FIN2012/FIN2012revision.mp4>

QUB template pages:

<http://www.qub.ac.uk/elearning/public/ActuarialMathematics/>

<http://www.qub.ac.uk/elearning/public/PrinciplesofActuarialModeling/>

Media Services created videos:

<http://www.mediator.qub.ac.uk/ms/mediasite/actuarialscience/actuarialmaths/Equationofvalue/player.html>

<http://www.mediator.qub.ac.uk/ms/mediasite/actuarialscience/actuarialmaths/Grosspremiumexercise/player.html>

<http://www.mediator.qub.ac.uk/ms/mediasite/actuarialscience/actuarialmaths/GrossPremiumReserveExcercise/player.html>

<http://www.mediator.qub.ac.uk/ms/mediasite/actuarialscience/actuarialmaths/LastSurvivorExcercise/player.html>

<http://www.mediator.qub.ac.uk/ms/mediasite/actuarialscience/actuarialmaths/ReservingExcercise/player.html>

<http://www.mediator.qub.ac.uk/ms/mediasite/actuarialscience/actuarialmaths/Variablebenefitsexercise/player.html>

<http://www.mediator.qub.ac.uk/ms/mediasite/actuarialscience/princliplsofactuarialmodellng/CoxRegressionModelExcercise/player.html>

<http://www.mediator.qub.ac.uk/ms/mediasite/actuarialscience/princliplsofactuarialmodellng/IntegratedKolmogorovExcercise/player.html>

<http://www.mediator.qub.ac.uk/ms/mediasite/actuarialscience/princliplsofactuarialmodellng/KaplanMeierExcercise/player.html>

<http://www.mediator.qub.ac.uk/ms/mediasite/actuarialscience/princliplsofactuarialmodellng/KolmogorovExcercise/player.html>

<http://www.mediator.qub.ac.uk/ms/mediasite/actuarialscience/princliplsofactuarialmodellng/MarkovChainExcercise/player.html>

<http://www.mediator.qub.ac.uk/ms/mediasite/actuarialscience/princliplsofactuarialmodellng/MarkovJumpProcessExcercise/player.html>

<http://www.mediator.qub.ac.uk/ms/mediasite/actuarialscience/princliplsofactuarialmodellng/MLEExcercise/player.html>

<http://www.mediator.qub.ac.uk/ms/mediasite/actuarialscience/princliplsofactuarialmodellng/SurvivalModelsExcercise/player.html>

<http://www.mediator.qub.ac.uk/ms/mediasite/actuarialscience/princliplsofactuarialmodellng/WaitingTimeExcercise/player.html>

## **cite<sup>2</sup>write: an interactive guide to academic referencing**

**Queen's University Belfast (Learning and Teaching Enhancement Project) – Tim Crawford**

### Introduction and overview

Plagiarism within tertiary education has risen substantially over the past decade with some students either deliberately or inadvertently presenting someone else's ideas as their own. Through working as a Learning Development Tutor in Queen's University Belfast, academic referencing has been identified as an emergent concern. Students have lost marks in assignments due to inconsistent and erroneous referencing. The problem is particularly apparent among first-year undergraduate students, which may be due to the transition from secondary level to university education or the absence of a universal referencing system.

Various HEIs host referencing materials online; however, they share many flaws between them. For example, the majority of sites are too text-heavy, static in nature and can be time-consuming to use and consequently highly unengaging. The few that instigate interactivity disappoint on their narrow focus on a single referencing system and fail to cover a wide range of references such as books, journals, website, multiple authors, secondary referencing, etc.

'Learn Higher' host numerous downloadable booklets on referencing, yet these seem lacklustre in nature. Other sites incorporate rollovers and clickable components, yet exude a sense of monotony, with the most attractive feature being clean formatting and simple navigation.

In summary, external teaching methods have failed to adequately address the problem of referencing and plagiarism in higher education, leaving a gap in the market for the development of an innovative teaching tool.

The perceived lack of appropriate resources justifies the need for a motivating, multimedia referencing resource. This project aims to bring the topic of referencing at a level students can relate to, covering the referencing systems of Harvard, MHRA, Vancouver (footnotes) and OSCOLA.

With students losing vital marks due to poor referencing and the lack of a motivating multimedia resource, the creation of an online referencing tool is both relevant and warranted. Accordingly, this project focuses on developing an interactive, media-rich tool to teach students how to reference properly: cite<sup>2</sup>write.

This project implements a proposed solution in the form of an online learning resource. The research methods consist of a wide review of relevant literature on referencing and plagiarism. The findings from this research show that the multimedia resource produced has the potential to be a practical, helpful and valuable tool. The ultimate aspiration is that this resource may improve the teaching and learning of referencing and plagiarism.

### Project outcomes and impact

This practical resource demonstrates the potential benefit of creating online tools to enhance students' academic skills. Thus the project is transferrable to a plethora of disciplines. Before embarking on a similar project, I would advise colleagues to preliminarily consult with a learning technologist, as a high degree of technical expertise is required, e.g. knowledge of html, css, flash, Adobe Captivate, etc.

I found this project challenging, yet invigorating. Upon reflection, the initial timetable was somewhat ambitious and several revisions were made to key deadlines. Implementation was very time-intensive, especially recording narration for the entire project and programming flash-based activities. Furthermore, trying to balance work with study proved taxing, as did acting upon feedback and making revisions to the dissertation. Nevertheless, the experience of implementing the project has been rewarding, both personally and professionally. I have improved my organisational and problem-solving skills, and I have produced an

educational resource that will be utilised in my workplace. It is my aspiration that the cite<sup>2</sup>write resource is a step towards helping students reach their academic potential.

With cite<sup>2</sup>write launched in August 2011, statistical evidence will be collected on a monthly basis through a webstats utility. There is also a comments page within the website and an online evaluation will be carried out at the end of Semester 1 2011-12, with the intention of disseminating impact through an external presentation at the 2012 conference of the Association of Learning Development in Higher Education<sup>8</sup>.

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<sup>8</sup> <http://www.aldinhe.ac.uk/>

## 4. Employability and entrepreneurship

### Creation of CPD material for structural steel design to Eurocode 3

**Queen's University Belfast (Learning and Teaching Enhancement Project) – Dr James Lim and Louise McCluskey**

#### Introduction and overview

Currently, most practising engineers have been taught to design steel structures using British Standards Design codes. With the introduction of the Eurocodes, which are a set of harmonised design rules to be used throughout various countries, and for steel structures, Eurocode 3 (EC3), the British Standards codes will be superseded. It is therefore imperative that there is high quality learning materials on the design of the Eurocodes readily available.

For this reason there was a need to carry out this project, the aim being to provide a set of e-lectures (for both practising engineers as well as students) covering the main parts of Eurocode 3 that a practising engineer is likely to use day to day.

A number of e-lectures were created covering a range of topics concerning steel design to Eurocode 3.

The following topics were covered:

- introduction to Eurocode 3;
- loading;
- structural analysis;
- cross-section classification;
- restrained beam design;
- unrestrained beam design;
- compression members;
- tension members;
- axial compression and bending;
- design of joints.

The e-lectures were based on material from Eurocode 3 and several worked examples were incorporated throughout. Some examples were created using MasterSeries software and 'The Interactive Blue Book' to show alternative methods of designing structural steel.

Summary handout sheets were created for each e-lecture containing all of the key points and design steps to be used as reference material for those that have already viewed the e-lectures.

Part of the EC3 course material was then incorporated undergraduate course material.

#### Generation of evidence

Initially, a discussion group was set up with some consulting engineers to gain ideas on what would be best to include and what way the information would be presented. It was decided that e-lectures would be the best medium to present the information along with complimentary handouts that could be used as a reference tool. In addition, it was mentioned that where possible there should be some comparisons between the two sets of design codes, and there should also be a number of worked examples.

The lectures were created using Microsoft PowerPoint. Diagrams, pictures and pieces of information from various sources were included and referenced, and once the presentations were completed a narrative was written out for each one.



The e-lectures were then recorded with the video consisting of the PowerPoint slides and the narration recorded by a microphone. Some post-editing was required in order to improve the sound quality of the e-lectures.

#### Project findings and outcomes

The lectures have been disseminated to PhD students at Queen's University Belfast, who have recently completed their undergraduate courses, and also to students who have just completed their MEng at the University of Strathclyde. Such lectures were found to be very helpful, since they can be replayed (at home) with a commentary to the PowerPoint slides. The author is planning to record commentary for his own undergraduate teaching PowerPoint slides, and to make this available to undergraduate students.

There was positive feedback on the use of a voice recording over the PowerPoint slides, with the composite PowerPoint slides and the audio commentary converted into a video that can be streamed. This may be something that can be adopted easily to other teaching areas.

Normally CPD material on the topic of Eurocode 3 is very expensive to access, and other material that is free is often not very high quality. The creation of the e-lectures and handouts now means that engineers who want to learn about steel design to Eurocode 3 can have access to free high quality information.

## 5. Widening access, retention and progression

**To seed an inter-generational and inter-professional ‘Excellence in the teaching of Restorative Practices (RP)’ base, through investing in early and mid-career University of Ulster staff and tutorial/mentoring staff located in University-Community Partnerships with public and civil society organisations in Northern Ireland**

**University of Ulster (Learning and Teaching Enhancement Project) – Dr Derick A Wilson**

Keywords: Restorative Practices; justice; civil society; narrative discourse; truth and reconciliation.

### Introduction and overview

Promoting more restorative societal cultures through relationships and structures that embrace opportunities to respect different citizens and recognise and address harm where it is caused is not just for societies emerging from civil conflict, such as Northern Ireland. Established societies, becoming more diverse, need criminal justice and public institutions to be committed to being open and diverse, maintaining the trust and good will of a diverse citizen base.

When respect is re-established as an anchor within relationships, civic structures, societal policies and daily cultures that may have previously been hurtful, Restorative Practices are promoted. They do not excuse individual and collective responsibility for harm being done, but seek some restoration of relationship and understanding, through facilitated meetings between those who have been offended, those who have offended and a number of people significant to the different parties, as long as those who have been harmed wish it. This University of Ulster, HEA-supported initiative, established an inter-generational and inter-professional base of early and mid-career staff and community-based tutorial staff from University-Community Partnerships in Northern Ireland.

The initiative:

- tracked some of the learning practices and challenges identified;
- synthesised some of the diverse restorative practice models emerging in Northern Ireland;
- drew on some best practice in Scotland, England and Wales;
- identified the challenges facing a diverse inter-generational group of practitioners in needing to meet one another beyond defined professional and community boundaries and, in some cases, within circles with a preference to working primarily with those harmed or those making harm.

The Masters in Restorative Practices at Ulster is one of only two postgraduate courses in Restorative Practices in the United Kingdom (along with the University of Hull). The research, teaching and developmental practice associated with our work has developed from innovative responses to:

- institutions within the Criminal Justice System becoming opened up to restorative practices through either civil conflict historically or the use of new statutory Restorative Practices with young people (The Justice (Northern Ireland) Act 2002);
- civil society responses to finding more restorative ways of addressing conflict;
- the specific needs of addressing harm – domestic, civil and criminal;
- the growing interest in wider civil society about the application of restorative processes and values to work with children and young people, schools, public and community organisations.

### Generation of evidence

A series of reflective workshops with early and mid-career staff from the University of Ulster and partner public and voluntary agencies working on Restorative Practices in Northern Ireland identified opportunities to promote excellence in teaching Restorative Practices.

The primary interests of practitioners attending were: working with those who have been harmed and those who had harmed; integrating best practice approaches emerging between schools, youth services, police and social service providers; and promoting restorative processes and values in wider civil society.

Leading-edge developments were drawn on such as:

- local practices such as: the Northern Ireland Youth Conferencing Service (2003); diverse approaches in support of victims; community-based restorative responses to crime (Alternativesni and CRJI); innovative work in schools and in civil society groups;
- the Scottish Government's *Building Curriculum for Excellence Through Positive Relationships and Behaviour* (see Brian Steele at: <http://www.scotland.gov.uk/Publications/2010/06/25112828/1>);
- the diverse practitioner and research base within the ESRC Seminar Group on 'Restorative Approaches to Conflict in Schools' (<http://www.educ.cam.ac.uk/research/projects/restorativeapproaches/>);
- five Restorative Practices workshops developed at the Corrymeela Reconciliation Centre Summer School (<http://www.corrymeela.org>). Corrymeela is now considering the development of school-based and residential experiential learning Restorative Practices courses.

The series leveraged support from the University of Ulster's Institute for the Research in the Social Sciences (<http://www.socsci.ulster.ac.uk/irss/>).

From these HEA events we have established: an inter-generational platform of people interested in Restorative Practices; a renewed base of case studies and teaching materials; and a potential inter-generational network of academic and community partners committed to promoting Restorative Practices within diverse settings.

Restorative Practices have often been conceptualised in two ways: around processes or values (Strang and Braithwaite, 2001, p. 1). This programme of work sought to establish the need for both conceptual fields to be valued and critically engaged with.

Over the period from June to August:

- a reflective seminar for practitioners working primarily with victims of harm and/or criminal actions was held;
- a reflective seminar for practitioners working primarily with those who committed harm and/or criminal actions was held;
- a workshop for 36 experienced and new teachers, senior managers, statutory and NGO curriculum support agencies was held on the theme of 'Promoting Restorative Practices in Schools', drawing on the Scottish Government 'Restorative Approaches in Schools' programme;
- five two-hour workshops for 100 people were held with inter-generational groups of citizens and members of civil society organisations involved in diverse peace and reconciliation practice at the Corrymeela Reconciliation Centre;
- the ESRC Series on 'Restorative Approaches to Conflict in Schools' was attended (as a member of the core group) co-ordinated by the School of Education at Cambridge, Edinburgh and Nottingham.

### Project findings

This was a locally bounded exploration with Restorative Practices practitioners.

1. While the power of the legal underpinning of the youth conferencing approach is deeply significant in encouraging Restorative Practices in Northern Ireland, the ownership of Restorative Practices should be promoted and located more within the voluntary, civil society space than the enforcement or legal sectors. To do so would strengthen the work in both.

Restorative Practices needs to become more citizen, civil society driven, underpinned by the statutory base but not dominated by it.

2. There are different and complementary learning cultures associated with the voluntary and legally driven approaches that should be articulated and shared.

Members of civil society and civil society groups need to be supported when developing restorative approaches. In such ways the value of these approaches becomes more widely embedded and any 'problem orientation deficit labelling' attached to the approach in popular culture will be weakened.

3. The models of community that have been used in wider work through the conflict may now need re-examined for their utility, the values underpinning them and the extent to which they empower citizen voice rather than privilege identity. How valid are the models of community that implicitly are being used by civil society groups and government locally (see Pavlich). Is the lack of talk about building 'a shared society' but a dominance of building 'a community of communities', in fact, implicitly giving pre-eminence to community identities rather than a citizen-based model?

4. The skills of questioning and appreciative enquiry demanded of teachers in curriculum-focused work, youth workers in supporting and challenging young people, and social workers in daily practice are deeply aligned with the skills necessary for facilitating restorative practice and meetings. Some useful work in this area could be promoted as a means of enhancing professional understanding of the restorative elements already within their practice.

5. A major development would be to link the Restorative Practices agenda with health and well-being, family care approaches, and mental health. Financial cost benefits may well accrue from restorative approaches in these fields but the cases need articulated.

6. The balanced model of Restorative Practices promoted by Ulster does articulate the importance of 'victim's voice'. However it may now be important to examine whether this perspective is being diligently focused on, in a balanced approach, and whether the offender perspective may be too dominant, in reality, in some practitioner approaches.

7. A strong element in this discussion was the need for a restorative culture that was very clear about victims having rights – rights that are enshrined in UN conventions as well as local laws.

8. The extended range of restorative practice settings was returned to.

Some work could usefully be done to:

- articulate the characteristics of each model;
- identify a set of agency specific elements;
- identify a generic set of values, principles and ways of working associated with each;
- identify elements that would deepen the work further.

#### Project outcomes and impact

We have established interest in promoting and sustaining:

1. An early and mid-career group of academic and community tutors committed to excellence in RP teaching and committed to meeting together to distil essential learning from the models of practice developing in NI.
2. A group of Restorative Practices practitioners primarily committed to working with victims.
3. A learning network of people interested in critically examining Restorative Practices within schools.
4. An inter-professional and civil society base of people interested in learning about the application of Restorative Practices concepts.

The project has contributed to the refocusing of the Masters in Restorative Practices programme to offer modules in a manner and time that foster greater meeting and engagement between practitioners in a cross-disciplinary, inter-professional, professional and voluntary community engagement.

All modules are now being examined in relation to ensuring the 'balanced model' approach is fostering just that, a balanced approach between those who have been harmed and those who have harmed.

A new schools and Restorative Practice constituency has emerged and is being actively fostered through seminars, workshops, formative evaluations and teaching programmes.

#### Links

University of Ulster, Restorative Practices Teaching Programme:  
<http://www.socsci.ulster.ac.uk/restorativepractices/teaching.html>

Restorative Justice Online: <http://www.rjonline.org>

Restorative Justice Council: <http://www.restorativejustice.org.uk/>

Restorative Justice Forum NI:  
<http://www.youthjusticeagencyni.gov.uk/>

Community Restorative Justice Ireland: <http://crji.ie/>

The Scottish Government, Building Curriculum for Excellence Through Positive Relationships and Behaviour:  
<http://www.scotland.gov.uk/Publications/2010/06/25/112828/1>

Voluntary NGO materials relevant to restorative approaches in schools:  
<http://www.restorativejusticescotland.org.uk/html/schools.html>

ESRC seminars: <http://www.educ.cam.ac.uk/research/projects/restorativeapproaches/>

#### Bibliography

##### *Public and civic good*

Braithwaite, J. (1998) Institutionalising distrust, enculturating trust. In: Braithwaite, V. and Levi, M. (eds.) *Trust and Governance*. New York: Russell Sage.

Strang, H. and Braithwaite, J. (2001) *Restorative Justice and Civil Society*. Cambridge: Cambridge University Press.

##### *Values*

Pranis, K. (2007) Restorative Values. In: Johnstone, G. and Van Ness, D.W. (eds.) *Handbook of Restorative Justice*. Portland, OR: Willan Publishing, pp. 59-74.

##### *Restorative Practices and Northern Ireland*

Consultative Group on Acknowledging the Past (2009)  
[http://cain.ulst.ac.uk/victims/docs/consultative\\_group/cgp\\_230109\\_report\\_sum.pdf](http://cain.ulst.ac.uk/victims/docs/consultative_group/cgp_230109_report_sum.pdf)

The Northern Irish Association of Restorative Practitioners-A Forum for RJ Practitioners, inaugurated May 2012

Restorative Justice Forum (NI) - A General Forum for Restorative Justice Managers, key contact Jeanette McKnight (028 9020 1444), website under development.

Wilson, D.A. (2009) *Platforms for a Restorative Society in Northern Ireland*. Available at: <http://www.restorativejustice.org/10fulltext/Platforms%20for%20a%20Restorative%20Society%20Dec%2009.doc/view> (last accessed 3 August 2012)

Wilson, D.A. (2010) *Promoting Previously Unthinkable Ways - Some Restorative Learning Tasks in Northern Ireland*. Available from: <http://www.restorativejustice.org/articlesdb/articles/10127/?searchterm=Promoting%20previously%20Unthinkable%20ways> (last accessed 3 August 2012)

*Restorative Practices in schools: some core texts*  
*Principles*

Restorative Justice Consortium (England and Wales) (2005) *Statement of restorative justice principles: as applied in a school setting*. London: Restorative Justice Consortium.

*Core practice*

Braithwaite, V., Ahmed, E., Morrison, B. and Reinhart, M. (2003) Researching the Prospects for Restorative Justice Practice in Schools: The “Life at School Survey” 1996-99. In: Walgrave, L. (ed.) *Repositioning restorative justice*. Cullompton, Devon: Willan Publishing, pp. 121-144.

Cremin, H. (2007) *Peer Mediation: Citizenship and social inclusion revisited*. 1<sup>st</sup> ed. Buckingham: Open University Press.

Drewery, W. (2004) *Restorative Practices for Schools: A Resource*. 1<sup>st</sup> ed. Hamilton, New Zealand: School of Education, University of Waikato.

Flanagan, H. (2010) *Restorative Approaches in Schools Guidance Document*. 1<sup>st</sup> ed. Preston: Lancashire County Council.

Hendry, R. (2009) *Building and Restoring Respectful Relationships in Schools: A Guide to Restorative Practice*. London: Routledge.

Hopkins, B. (2004) *Just schools: a whole school approach to restorative justice*. London: Jessica Kingsley.

Morrison, B. (2007) *Restoring Safe School Communities-A whole school response to bullying, violence and alienation*. Annandale, New South Wales, Australia: The Federation Press.

Pavlich, George (2004). *Restorative Justice’s Community: Promise and Peril*, in Barb Toews and Howard Zehr (eds) *Critical Issues in Restorative Justice*, Criminal Justice Press.

*Some Scottish experiences*

Kane, J., Lloyd, G., McCluskey, G., Riddell, S., Stead, J., Weedon, E., Maguire, R. and Hendry, R. (2007) *Restorative Practices in Three Scottish Councils: Final Report of the Evaluation of the First Two Years of the Pilot Projects 2004-2006*. Available from: <http://www.scotland.gov.uk/Publications/2007/08/24093135/0> [9 July 2012].

Discipline Task Group (2001) *Report of the Discipline Task Group*. Available from: <http://www.scotland.gov.uk/Resource/Doc/158381/0042908.pdf> [30 July 2012]



## Retention and the student experience: practice that works to ensure student success

### Queen's University Belfast (seminar) – Linda Carey

#### Introduction and overview

Retention is a matter of high importance to universities in the UK and internationally. The costs of dropout are high, both institutionally in relation to financial disadvantage and poor performance against benchmarks, and also personally for the students who are likely to suffer the negative consequences in relation to both career and damaged self-esteem. Research tells us that students who have struggled to enter higher education in the first place are disproportionately represented among those who leave without completing their courses. We have learned a lot in recent years about the kinds of factors that predispose students to dropping out of university and the kinds of behaviours that are indicators of the likelihood of students leaving early. While there will always be a proportion of students who dropout for reasons beyond our control, there is much that can be done to minimise attrition.

This participative workshop, using examples of pragmatic approaches from the UK and internationally, explored a range of interventions that could be undertaken individually, as faculties and departments and as institutions as a whole to reduce the likelihood of student dropout.

#### Seminar findings

Professor Brown focused on enhancements to curriculum design and delivery, based on evidence from Leeds Metropolitan University and other institutions. She reported on methods to engage students in the first six weeks of their university career and the importance of mapping assessment, introducing formative assessment, in particular Computer Assisted Assessment (CAA), and not overloading students with assessment. She also emphasised the importance of making the most of feedback to students.

The workshop highlighted several strategies for academic staff to support student retention. These included: setting small assessment tasks early on in first semester for first-year students; monitoring attendance and engagement and following up when students don't come to class; making time for student support and referring students on where appropriate; and personalising the learning experience.

Some suggestions from our feedback suggest that delegates were interested in further discussion of:

- relevant research;
- mental health issues in relation to retention;
- examples from other institutions on the success (or not) of retention initiatives;
- how academics can get colleagues to implement the strategies discussed;
- case studies and examples;
- short action plans in which models can be implemented.

#### Links

Higher Education Statistics Agency: <http://www.hesa.ac.uk/>

#### Bibliography

Bowl, M. (2003) *Non-traditional entrants to higher education: 'they talk about people like me'*. Stoke on Trent: Trentham Books.

Boud, D. (1995) *Enhancing learning through self-assessment*. London: Routledge.



- Gibbs, G. (1999) Using assessment strategically to change the way students learn. In: Brown S. and Glasner, A. (eds.) *Assessment Matters in Higher Education: Choosing and Using Diverse Approaches*. Maidenhead: SRHE/Open University Press.
- Gibbs, G. (2008) *Designing assessment to support student learning*. Keynote speech given at Leeds Metropolitan University's Staff Development Festival, September.
- Hilton, A. (2003) *Saving our Students (SoS): embedding successful projects across institutions. Project Report*. York: Higher Education Academy.
- Kneale, P.E. (1997) The rise of the 'strategic student': how can we adapt to cope? In: Armstrong, S., Thompson, G. and Brown, S. (eds.) *Facing up to Radical Changes in Universities and Colleges*. London: Kogan Page, pp. 119-139.
- Northedge, A. (2003) Enabling participation in academic discourse. *Teaching in Higher Education*. 8 (2), 169-180.
- Peelo, M. and Wareham, T. (eds.) (2002) *Failing students in higher education*. Maidenhead: SRHE/Open University Press.
- Sadler, D.R. (1989) Formative assessment and the design of instructional systems. *Instructional Science*. 18 (2), 119-144.
- Yorke, M. (1999) *Leaving Early: Undergraduate Non-Completion in Higher Education*. London: Taylor and Francis.
- Yorke, M. and Longden, B. (2004) *Retention and Student Success in Higher Education*. Maidenhead: Open University Press.

## Improving student retention: research and practice

**University of Ulster (seminar) – Dr Melanie Giles, Dr Joan Condell, Amanda Zacharopoulou and Marcia Ody**

### Introduction and overview

This seminar set out to:

- disseminate the PASS model and show how to design and implement a tailored version that will meet the needs of a student cohort;
- share practice by exploring some of the difficulties associated with teaching high risk modules and show how PASS can address these difficulties;
- provide a clear understanding of how teaching initiatives can be used to enhance the quality of teaching provision;
- demonstrate the importance of pedagogic research;
- facilitate collaboration and establish networks.

The seminar began with a presentation focused on the implementation and evaluation of PASS within the University of Ulster. This was followed by interactive group sessions during which participants explored the implications for practice including issues related to the need for, implementation of and challenges associated with the PASS scheme. The session concluded with a set of guidelines on how to embed PASS within a programme.

### Generation of evidence

#### *Method*

Both quantitative and qualitative methods were employed to address the following research questions:

- What are the benefits and shortcomings of PASS from the student's perspective?
- What are the benefits and shortcomings of PASS from the leader's perspective?
- What evidence is there to suggest that PASS can enhance academic performance?

The evaluation has been ongoing throughout each semester in that students have been encouraged to provide feedback during the weekly PASS and debrief sessions, but data have been formally collected at two points in time, i.e. at the beginning and end of the process. A steering group has met on a monthly basis to monitor and review progress.

#### *Participants and procedure*

The evaluation has involved students from three schools (Law, Psychology and Computing and Intelligent Systems). Within each school, two groups of students have been included:

1. **PASS participants** (lower-year students): approximately 120 students in Law, 120 in Psychology and 25 in Computing and Intelligent Systems. The participants' perceptions of the scheme were assessed in two ways:

- a questionnaire survey administered to all participants including quantitative and qualitative data. Open-ended questions included at the end of the scheme were of the form:
  - What are the main advantages and/or disadvantages of attending PASS sessions?
  - Are there any groups or people that have influenced your decision to attend PASS?
  - What are the factors that might encourage and/or prevent you from attending PASS sessions?

- focus group interviews with a representative sample of students exploring the benefits and shortcomings in more depth. Questions were of the form:
  - What has been your experience of PASS this year?
  - What do you think are some of the benefits?
  - What do you think are some of the downsides? Is there anything about PASS that you dislike?
  - What would you like to see improved or developed in relation to PASS?

2. **PASS leaders** (higher-year students): work in pairs and were assigned to groups comprising approximately 12-15 students. As such, 12 leaders were involved in Law, 12 in Psychology and two in Computing and Intelligent Systems. The PASS leaders' perceptions of the scheme have been assessed through focus group interviews. Leaders have also been asked to comment more generally on a range of issues including:

- What have been your experiences of PASS so far?
- How have you benefited as a PASS leader?
- What do you think students gain from these sessions?
- What do you think students might dislike about PASS?
- What have you found difficult or not liked about being a PASS leader?

In addition, we have looked at **academic performance**. Here the intention has been to explore differences in attainment levels between those who have regularly attended PASS sessions and those who have not. As such, PASS leaders were instructed to be diligent in recording attendance.

### Seminar findings

Consistent with previous research, our findings suggest that PASS contributes to improvements in academic performance. However, of particular interest has been the finding that lower achieving students seem to benefit most from the PASS initiative calling for a need for us to more fully explore students motivations to engage with the PASS process and, in particular, to identify the reasons why some of our perhaps less able students are reluctant to expend the 'quality of effort' that is required to engage with these types of initiatives.

Our evaluation suggests that PASS has contributed to an improvement in student performance across a range of subjects, amelioration in student attrition data and the establishment of improved student support networks. As such, our findings will continue to inform faculty developments/dissemination of best practice across all participating schools within the University of Ulster and will also feed into the database of the UK National Centre for PASS.

The most dominant themes included:

- the practicalities of developing a PASS scheme;
- the outcomes of evaluation and in particular its effects on academic performance;
- how to reward the commitment of PASS leaders through the development of co-curricular modules and the development of employability;
- attendance and the difficulties of motivating students who are reluctant to engage with the academic curriculum.

### Bibliography

Ashwin, P. (2003) Peer Support: Relations between the context, process and outcomes for the students who are supported. *Instructional Science*. 31 (3), 159-173.

Bidgood, P. (1994) The success of SI – the statistical evidence. In: Rust, C. and Wallace, J. (eds.) *Helping students to learn from each other: Supplemental Instruction*. Birmingham, England: Staff and Educational Development Association, pp. 71-80.

- Capstick, S. (2004) *Benefits and Shortcomings of Peer Assisted Learning (PAL) in Higher Education: An appraisal by students*. Paper presented at the Peer Assisted Learning Conference, Bournemouth, February.
- Capstick, S. and Fleming, H. (2001) Peer Assisted Learning in an Undergraduate Hospitality Course: Second Year Students Supporting First Year Students in Group Learning. *Journal of Hospitality, Leisure, Sport & Tourism Education*. 1 (1), 69-75.
- Coe, E., McDougall, A. and McKeown, N. (1999) Is Peer Assisted Learning of benefit to undergraduate chemists? *University Chemistry Education*. 3 (2), 72-75.
- Donelan, M. and Kay, P. (1998) Supplemental Instruction: Students Helping Students' Learning at University College London (UCL) and University of Central Lancashire (UCLan). *International Journal of Legal Education*. 32 (3), 287-299.
- Loviscek, A. and Cloutier, N. (2001) Supplemental Instruction and the enhancement of student performance in economics principles. *The American Economist*. 41 (2), 70-76.
- McCarthy, A., Bridget, S. and Cosser, M. (1997) Assessing the effectiveness of Supplemental Instruction: A critique and a case study. *Studies in Higher Education*. 22 (2), 221-231.
- Price, M. and Rust, C. (1995) Laying firm foundations: The long-term benefits of Supplemental Instruction for students in large introductory courses. *Innovations in Education and Training International*. 32 (2), 123-130.