REFLECTIONS

About *Reflections*

Welcome to the tenth issue of Reflections, the newsletter which focuses on teaching, learning and assessment in Queen's and more generally in higher education. Reflections is published once a semester by the **Centre for Educational Development** and provides a forum for discussing learning and teaching initiatives in Queen's. We aim to balance articles from the various support units within Queen's with contributions from academic staff and guest writers.

We lead with an article by Dr Kate Exley from the University of Leeds. Kate gave a workshop recently in the CED Guest Speaker Series looking at how to engage students in group work and in particular how to assess group contributions. Dr Ruth Jarman from the School of Education looks at how science students can be involved in education and Dr Joan Rahilly provides an account of the peer mentoring scheme in the School of English. Staff members from CED, CES and the Centre for Medical Education provide updates on their latest initiatives including a report on progress in the Centres for Excellence in Learning and Teaching (CETLs), using podcasting as an educational tool, using Questionmark for on-line assessment, recent careers events and developments in deaf awareness education for medical students.

Contributing to the next *Reflections*

We would very much welcome contributions for our next issue of Reflections to be published in Autumn 2010. Contributions can take several forms:

* **Articles** on an aspect of teaching and learning or student support (generally 500 – 1,000 words);

* **Shorter "newsflash" items**, e.g. reporting on a recent event or advertising a new venture or up-coming event (100 -200 words);

* **Brief synopses** of recent interesting articles on teaching and learning from the educational literature (100 – 200 words);

* **Responses** to previous articles or to recent developments in H.E.

Contributions can be submitted via e-mail to Linda Carey, l.carey@qub.ac.uk or e.mcdowell@qub.ac.uk in the Centre for Educational Development.

Linda Carey, Editor of *Reflections*

Managing and Assessing Students Working in Groups

by Dr Kate Exley, Senior Academic Staff Development Officer, University of Leeds and Independent Consultant in Higher Education Development

Most share the view that developing effective group working abilities at university is a positive and valuable addition to a student's skills set. We hear that team working is an attribute particularly desired by employers and the professions. Teachers recognise that collective and peer collaboration can also improve student engagement and deepen learning. However, accepting that group working has lots of positive potential doesn't prevent it from being decidedly tricky to manage, support and above all, to assess.

Many of the problems associated with incorporating group work in the assessed curriculum stem from the fact that the degree is ultimately an award gained by an individual. Therefore, students are very understandably concerned when some of their marks and success are dependent on the effort of others, over whom they actually have no control and only marginal influence. So despite the finding that many students enjoy and value team work it can be fraught with problems.

Providing students with guidance and clear goals for team work is important. Guidance could include information

Dr Kate Exley

about how to conduct team meetings, record decisions, allocate tasks and very usefully to consider what they will do if and when they disagree or have a colleague who doesn't contribute effectively.

There are a number of ways that groups can be formed. Students can self-select their team-mates or teams can be allocated by the tutor using a variety of criteria. Some tutors seek to socially engineer groups to provide diverse mixes of people whilst others allow student groups to form around shared interests – so they choose what they want to work on rather than who they want to work with. A more sophisticated approach could involve

considering what team working behaviours and roles are important for the group to function well and use this insight to build teams with complementary skills sets, personalities and abilities. The most commonly cited 'team role theory' was developed by Dr Meredith Belbin in the 1970s. Belbin proposed nine different ways in which people can contribute to teams, ('team roles') and he found that people show different tendencies to adopt these roles.

Some team roles are more visible and high profile than others. Everybody notices the person who takes the driving seat (Shaper) or the extrovert 'fixer' (Resource investigator) but the contributions of the quiet and creative 'ideas' person (Plant) or the person who provides the social glue that holds the team together (Teamworker) are less obvious but just as needed in a successful team. The latter point is well worth remembering when it comes to assessment – if tutors are attempting to observe team behaviour in order to assess it, great care must be taken to ensure the criteria are clear, transparent and value all team working skills.

Broadly speaking, assessment strategies for team work can be divided into two strands. Teachers can assess the products of team work, the joint reports, design drawings, posters or websites built by the team.

Alternatively, the assessor can focus on marking the process of team working and seek to grade how the team functioned and the skills individuals developed along the way. In Higher Education we have more commonly assessed products and many of the quality assurance mechanisms we use rely on having 'things' that we double mark and send to the external examiners.

Learning processes and skills do not necessarily generate outputs to allow such quality checks and so capturing these experiences becomes the challenge for assessment.

Many academics have asked their student group workers to keep reflective logs, journals or to build evidence-based portfolios in order to do this. These self–assessment tools do provide a way of seeing into the learning gained through team working, but they tend to end up focusing on the reflection on an experience rather than the experience itself.

Assessing 'products' too has its difficulties. The biggest decision is should all members of a student team be awarded the same mark? Such an approach really does value the collaborative effort as a whole and more closely models 'real life' but it can lead to students' disaffection when they feel their peers haven't contributed equally. Alternatively, teachers can explore ways of recognising the different abilities and contributions made by the individual students and grade accordingly.

There are many ways that this differentiation can be made: it could involve demarcating specific group tasks and allocating them to named individuals; it could involve peer assessment where students develop group working criteria that are then used to judge themselves and their fellow team members; it could involve the students dividing their team's mark between themselves or weighting it according to their peer assessments or it could require teachers to individually question/viva students about their particular contribution… and so the list goes on.

It does seem to me that there are a number of pros and cons to all of the above strategies and, therefore, I personally have come to favour a half-way house in which the group work assessment is based upon two measures. Firstly, a grade awarded for the product of the group work (eg a report or poster) that is the same for all and, secondly, an individually assessed piece of work related to the group task or team experience. This could take the form of a 'lessons learnt' reflective account or could be the incorporation of a question in the end of module examination that specifically tests the group work and will favour those students who fully engaged with and contributed to it.

Looking at degree programmes overall it seems that the best designed courses do seek to provide a real progression route for learners, that builds on the complexity and demand of group working activities, from the first year through to the final year. In many disciplines, but perhaps particularly in Engineering and Health, the group work is carefully integrated with both the knowledge base and embedded in the ethos of the professions. Whilst in other disciplines group working is seen more as a personal skill which once developed can enhance an individual's future career prospects. Whichever the view, it is clear that the importance of group working is continuing to grow and the challenges of how best to teach, support, manage and assess it will remain with us for the foreseeable future.

Peer Mentoring in the School of English: Students Supporting Students

by Dr Joan Rahilly, School of English

'The best form of welfare will be to ensure that people can adapt to change'.

(Education Strategy, 2008–2011, quoting *The Leitch Review,* 2006)

In 2008–2009, the School of English began Queen's first Peer Mentoring (PM) scheme for students. The initiative grew from discussions in the School's Staff Student Consultative Committee during 2007–2008.

Our student members, articulating feedback from their undergraduate and postgraduate constituencies, asked for support in their attempts to achieve a more coherent grasp and experience of student life.

For first year students, in particular, the need for rapid adjustment to the undergraduate context can seem daunting, as they re-site themselves academically, socially and, often, regionally. We take the view that some aspects of change associated with arrival at university are more easily handled with timely advice, offered by students whose own recent experience coincides with that of the newcomers.

Our increased efforts in supporting students synchronised with those of the University more generally, wherein the growing momentum towards systematising means for engaging and retaining students led to the restructuring of the BA degree.

The changes facilitated a growth of BA students' sense of academic centredness and involvement in the curricular arrangements of their home School or Schools and we envisaged PM as a complementary means for encouraging appropriate social and personal development, with students from second and third year acting as mentors for first years.

Various models for student-to-student support are already well-established in many Russell Group institutions, including PAL (Peer Assisted Learning), PASS (Peer Assisted Study Support) and PM (Peer Mentoring). The differences between them relate to the degree of emphasis on specific module or course-related content. Our adoption of a PM scheme signals our focus on holistic support for learning, rather than module-specific activity.

Peer Mentoring is not a teaching scheme; the mentors are not teachers, and all specific academic queries must continue to be directed to relevant members of academic staff. In order to address the breadth of areas related to academic progress in students' first semester with us, our second and third year mentors designed a series of information and discussion sessions to raise awareness of key induction, assessment and support mechanisms in the School:

(1) **Finding your place in the School of English**

Introduction to your Peer Mentoring Group
Keeping in touch: QoL and e-mail
Highlights from the School of English Handbook

(2) **Queen's campus and social spaces**

English lecture and tutorial venues
The Student Guidance Centre
The Students' Union
Clubs, societies and amenities

To further complement curriculum-oriented activity, mentors liaised with colleagues in the Learning Development Service, the Careers Service and with academic staff to organise workshop activities on, for example, writing skills, the 360^0 responsibility involved in the feedback process, and careers options related to English and Linguistics.

During Freshers' Week, mentors invited new students to participate in a treasure hunt, a bus tour of Belfast, a visit to St. George's market and local coffee houses. Throughout the semester, they have continued to offer a variety of social activities, in the form of DVD showings, text readings and performances, and pub quizzes.

It is worth noting, based on the 2008–2009 evaluation of the scheme conducted by the Widening Participation Unit, that students who come to Queen's report a wide range of concerns, including coping with new teaching methods, meeting new people, fitting in, finding their way around campus and not knowing what to expect from university life, i.e. precisely the issues which have informed the design of PM activity. The distribution is as follows:
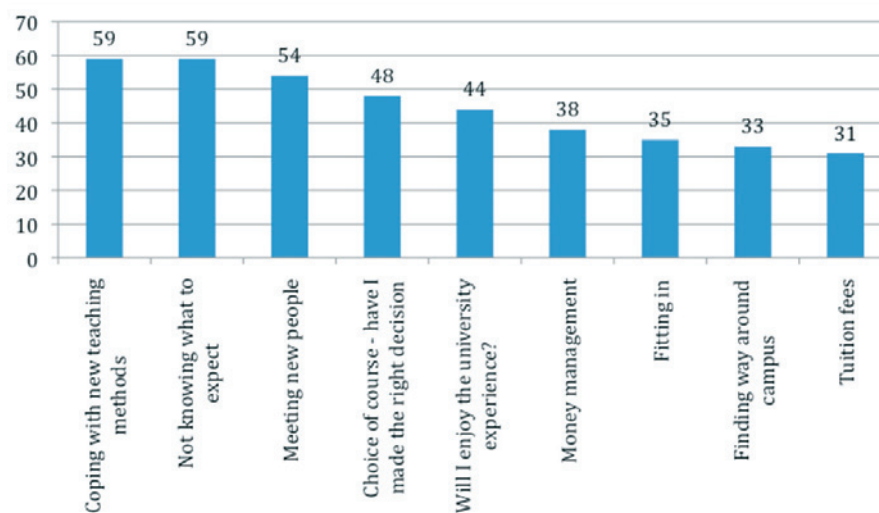

Fig 1: Frequency of respondents' biggest concerns about starting Queen's (WPU Evaluation, 2008–2009)

The WPU evaluation indicates that, of first year students who participated in the PM scheme, 86% felt they had been helped in their concerns about starting university, and 89% agreed they had been helped with issues regarding their course once they had begun their studies.

Our selection procedures for mentors involve an application and personal interview process and, once appointed, the mentors undertake the 'Approaches to Mentoring' programme delivered by LDS.

The programme equips mentors with skills in listening and facilitation, and in mental health awareness, and provides continuing development in these areas throughout each mentor's term of office.

LDS plays a central role, too, in advising and helping mentors to plan their workloads and manage their own study time effectively, in tandem with their PM responsibilities.

In the course of each semester, mentors report to a Key Peer Worker in the School, a recent graduate who co-ordinates administration and timetabling issues and monitors progress of the scheme.

Mentors are also encouraged to maintain contact with a designated member of academic staff who advises on educational developments.

Our mentors for 2009–10 are the first students from the School to avail of Degree Plus, and are proving to be impressive trailblazers for the new award which they now actively publicise in the School. Additionally, mentors are in a position to apply for accreditation with Open College Network, an affiliation made available to us by colleagues in LDS.

Early indications are that the PM scheme offers an obvious and deliverable means for realising the Queen's Vision for Education. Our recent Educational Enhancement Process highlighted Peer Mentoring in the School of English as good practice, an example to the sector and worthy of dissemination to other Queen's Schools.

Our initial PM phase was enabled by funding from the Teaching Quality Enhancement Fund and, this year, by School funds. Of course, the lack of a specific PM budget in the University does raise issues regarding sustainability, but we are thinking creatively about how to develop the delivery model in the absence of funding.

While we have paid mentors for the past two years, we believe that a voluntary scheme, with a larger number of mentors available, has the potential to work efficiently while enhancing the ethos achieved so far.

Planned developments of PM involve its extension to the particular context of the 7-day student experience, thereby enabling the key institutional priority and aspiration of involving students as fully as possible in all aspects of the Queen's environment.

In addition to the existing elements of the programme we aim to expand the timetable which is typically perceived by students to constitute their working week.

For instance, the workshops and social events which have proved immensely popular and beneficial thus far in the PM programme will be run at times which allow us to attract student interaction from Monday through to Friday, post-5pm and at weekends. We see our project as playing an invaluable role in raising awareness of and creating expectations that the University is indeed a 7-day institution.

Vicky Ennis (Key Peer Worker) pictured with Joan Rahilly and Angela McQuade from LDS

A fuller article on Peer Mentoring in the School of English is available on the CED website at:

http://www.qub.ac.uk/directorates/AcademicStudentAffairs/ CentreforEducationalDevelopment/CurriculumDevelopment/ TeachingEnhancementStudentSuccessFund

Students who volunteered as Peer Mentors: (l to r): Judith Lonergan, Ellen Diver, Alison Campbell, Saoirse McGrath and Ciaran Arthur

Mentors' comments...

There is considerable research evidence to indicate that mentors benefit immensely from their role in PM schemes. Our own mentors have made the following observations:

'Knowing that someone has trust and confidence in you is a fantastic boost to one's morale and also forms good foundations for future friendships.'

'The amount of responsibility we were given made me feel more confident in dealing with people.'

'I felt more involved with staff and the life of the School'.

Developing 'Business Awareness' in Undergraduates

by Dr John Copelton, Senior Careers Adviser, Careers, Employability and Skills

In any survey of what top graduate employers look for, student awareness of their business comes high up the list. The challenge for Careers, Employability and Skills is how to make students aware of the opportunities these major employers can offer without taking up any more time in an already crowded curriculum. Today's student may also have to fit in a part-time job, not to mention a social life.

Careers, Employability and Skills responded to the challenge in January/February 2010 by organising not one but four separate events that brought large numbers of undergraduates face-to-face with their potential future employers in ways that were time constrained yet very effective.

Dr Frank C. Danesy, Head, ESOC Human Resources Division in the European Space Agency, in conversation with students attending the Symposium. Frank flew in from Texas specifically to attend this event.

Engineering and Physical Sciences Careers Symposium

The Symposium took place on 15 February, starting at 11.00am, to take advantage of the traditional one hour tutorial slot on Monday morning in the Schools of Engineering.

The event this year had to be held in the Great Hall as the Ashby Building was undergoing a makeover to create new state of the art lecture rooms. The Engineering Schools pulled out all the stops to publicise the Symposium to their students and a really good turnout was the result!

The Great Hall proved a marvellous venue and coffee and scones for the students, courtesy of the Engineering Schools, ensured that no one went hungry while the Symposium continued over the lunch period. With extra space available 17 employers took advantage of the occasion to raise their profile with the students.

Companies attending included Arup, BAE Systems, Bombardier, BP, BT, CERN, the European Space Agency, MBDA, the Royal Navy and Schlumberger.

Biosciences Careers Awareness Event

This all-day event, organised by Careers, Employability and Skills and held in the Medical Biology Centre on 29 January, was designed to give students from Biological and Biomedical Sciences at Queen's an overview of careers in the Life and Health Sciences.

The event aimed to increase student awareness of the breadth of career options open to them within the Life Science, Environmental, Education and Health sectors, among others.

In light of the 2009 STEM report the event was also opened out to second level and grammar school pupils to encourage engagement with STEM subjects, which will be of significant importance to the Northern Ireland economy in future years. It also gave Industry a leading role in bringing the STEM message home to students.

The event was opened by Professor Ian Montgomery, Head of the School of Biological Science, and fully supported and endorsed by the Schools of Biological Science and Medicine, Dentistry and Biomedical Science, who also provided funding for catering on the day. The sessions, while positive in terms of long term career opportunities, did not ignore the reality of the current economic climate and the financial implications many employers face at present. Students were advised of the importance of work experience, networking and researching organisations thoroughly to aid their job search.

Although holding the event outside semester time was a potential gamble, Careers, Employability and Skills marketed it extensively and student support on the day was high both in terms of attendance and positive feedback afterwards.

Computer Science Careers Awareness Event

The Computer Science Careers Awareness Event was held on 17 February in the Bernard Crossland Building and proved to be a valuable opportunity for successful employer/student engagement. With 16 employers in attendance all offering placement, summer internship or graduate opportunities, it reinforced once again the relative vibrancy of this sector.

Employers in attendance included Autonomy, Asidua, Citi, Kainos, SAP Research, Liberty IT, NYSE Euronext, Cybersource, the Northern Ireland Civil Service and PricewaterhouseCoopers.

With a high level of student turnout throughout the afternoon it was encouraging to find that all employers surveyed were keen to come back on campus for future events.

Jane Askin from Kainos Software Ltd speaking to Queen's undergraduates.

Environmental Careers Awareness Event

The Environmental Careers Awareness Event on 17 February brought together many of Northern Ireland's leading Environmental agencies, stakeholder organisations and employers representing government, consultancy, waste management, conservation and biodiversity.

Attendees included Northern Ireland Environment Agency, ARENA network, AFBINI, Ulster Wildlife Trust, RICS, Chartered Institute of Waste Management, Bryson Recycling and well as strong representation from the Voluntary and NGO sector.

Although 2010 has started with tough economic conditions, the medium to long term prospects for those in the 'green jobs' sector remains strong. In addition, environmental responsibility has become part of the public psyche with individuals basing many decisions on the green credentials of associated organisations and companies.


Dave Seffen from Lantra (the Sector Skills Council for Environmental and Land-Based Industries) describes the support students can expect when entering this important sector.

The event gave students an opportunity to engage with employers and find out about growth areas, trends, current opportunities and how best to enter employment within the sector.

This event had cross-disciplinary appeal and engaged students from environmental, biological, geographical and engineering programmes across undergraduate, taught postgraduate and research courses, with a strong turnout on the day.
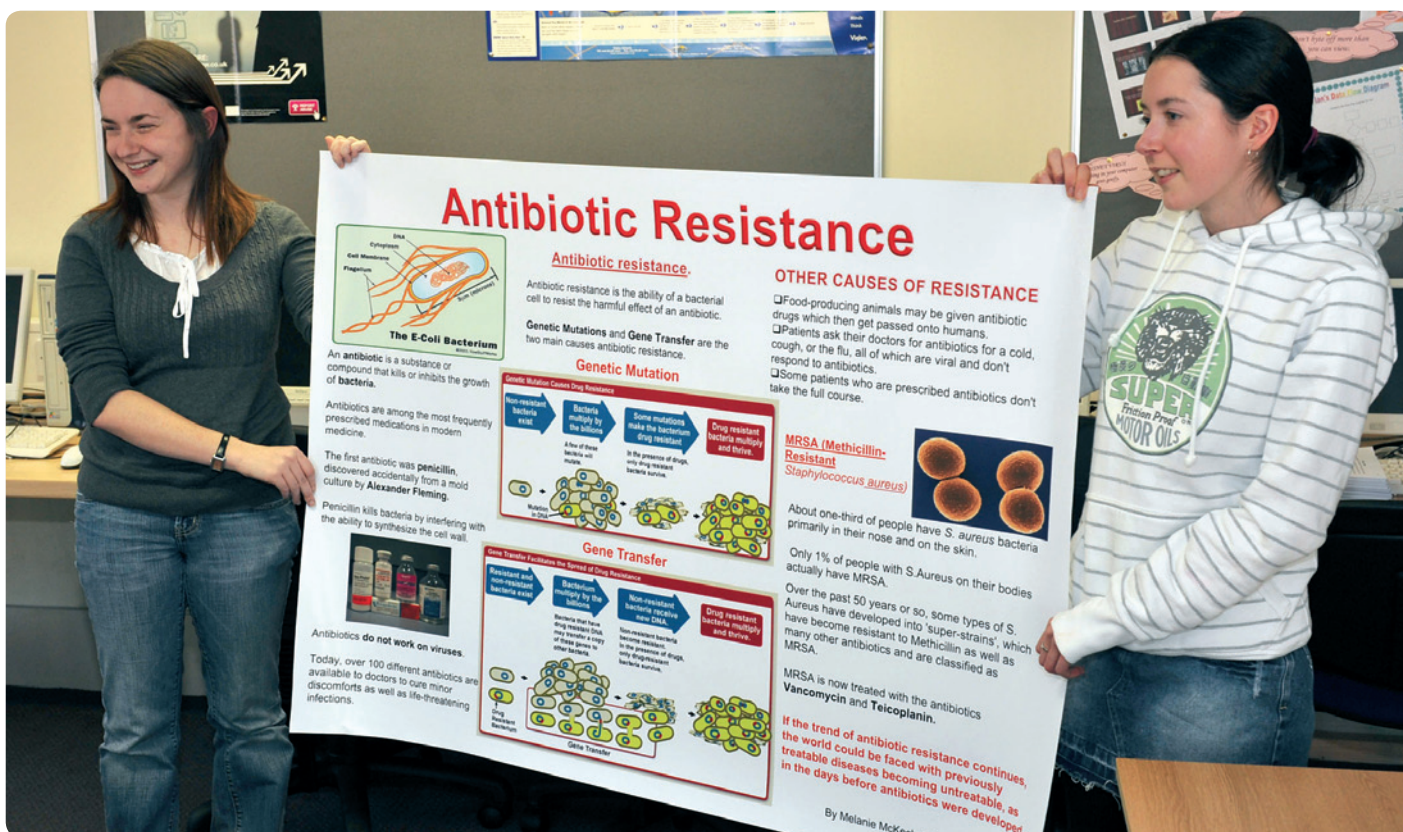
Melanie McKechnie and Christina McNair, two Biomedical Sciences students, present a poster on 'Antibiotic Resistance' that they designed for their host schools

Science and Education...

by Ruth Jarman, School of Education (on behalf of Tom Gardiner, Billy McClune, Colette Murphy and Paul Stevenson)

A very worthwhile project!

So wrote the head of department of a large Belfast secondary school. She continued 'My pupils saw these students as young scientists who loved their subject'. It was very gratifying, though not surprising, to hear our undergraduates described as positive role models, promoting school children's enthusiasm for science.

The students in question were observing and supporting teaching in their placement school as part of the 'Science and Education' module. This module, launched last year with funding from the Undergraduate Ambassadors Scheme (UAS), is innovative in a number of ways.

It is jointly taught by lecturers from three Schools within the University: Chemistry and Chemical Engineering; Medicine, Dentistry and Biomedical Sciences; and Education. By bringing staff and students together from different subject areas to work collaboratively and creatively, we model the interdisciplinary teamwork which is increasingly characterizing the academy and also the world of work.

The module has a strong emphasis on employability and developing transferable skills for the scientists. In the first instance, it is designed to provide a 'taster' for those thinking about or committed to teaching as a career. However, even if this is not the students' eventual choice, they still profit from participating. The accent in the course is on 'how best can we communicate our science' and developing this ability is important in many contexts.

The 'Science and Education' module stresses experiential learning. It consists of six university-based workshops and five school-based sessions at the post-primary level. The programme is challenging for the students: they are expected to participate actively in the university workshops and are required to conduct themselves professionally during the school placement. Assessment is by coursework which comprises two quite demanding assignments. For the first – an essay – students have to adapt to writing as social scientists rather than as scientists. For the second, they work as individuals or more typically as teams to prepare and present a 'science teaching resource pack' to give to their host school.

The response of the students

This year's cohort of students is still mid-course but last year's programme has been evaluated and the outcomes are very encouraging. The students were all very positive in their appraisal of the module, including its contribution to the development of transferable skills such as communication and teamwork (see comments overleaf). They enjoyed both the university-based and school-based elements of the programme. They also enjoyed the interaction with scientists from different disciplines – something they had not been

Matthew Davidson and Garth Donnell, School of Chemistry and Chemical Engineering, show the video on 'Atomic Theory' which they scripted, acted and filmed

exposed to from first year at university – as well as the contact with the social scientists. Significantly, two students reported that it had stimulated a renewed interest in science itself.

Their coursework performance far exceeded our expectations. They coped acceptably with the essay, but it was the quality of their 'teaching packs' that really impressed.

Typically, students tackled the task with imagination and flair as well as commitment and carefulness. They prepared, for example, pupil booklets and teachers' booklets on topics as diverse as the Chemistry of a Can of Coke, Fireworks, Green Chemistry, Antibiotic Resistance and DNA. One group produced a delightful collection of video clips on 'atomic theory' aimed at 14-year-olds and acted and filmed by the undergraduates themselves. The External Examiner for the course commented extremely favourably on these resources, as did the teachers from the students' host schools – with one describing the video she was given as 'amazing'.

The response of participating schools

At a follow-up conference we organized for host schools, the heads of science commented very positively on the rationale of the scheme, on the students' role in the classroom and on the resource packages they had prepared.

It was recognized that this was a valuable experience for those who were considering a career in teaching. However, all had found the students 'useful' in the classroom and two mentioned that involvement in the programme had aided their own professional development, the mentoring process having promoted reflection on practice. As noted already the teachers particularly welcomed the opportunity to introduce their pupils to young people who were currently pursuing courses and careers in science. This served their STEM agenda well.

This is an excellent concept which is very beneficial to the students and also allows our pupils to see people involved in science.

Students' comments...

"I thoroughly enjoyed this module. I found it interesting, interactive and fun. It has made me appreciate science and how it should be taught"

"The module was really enjoyable and would definitely be beneficial for those who wish to become teachers"

"Very interesting, challenging, enjoyable and well structured. The staff were very approachable and always helpful. The lectures were relevant, especially for the essay and report"

"There was a high level of team work, communication skills and other transferable skills learned. I truly found this a superb … module"

"An excellent course"

"As for me, personally, it made me address why I like science so much and how I had forgotten what a value it has been to me"

"I have discovered … a renewed devotion to science"

"Great opportunity to get real hands on experience of teaching"

"The interaction with pupils and the thrill of helping someone understand science made me really value my experience at my placement school"

In conclusion …

Its evaluation provides evidence that the module 'Science and Education' achieves successfully its aims of providing a 'taster course' for undergraduates considering a career in teaching, a learning experience which fosters students' key transferable skills and a scheme which supports science teachers in our local schools and also presents their pupils with positive role models of young scientists.

There remains one 'voice' yet to be heard – that of the five lecturers who teach the programme. We would go on record as saying that we have found the experience of working together to design and deliver this module very enjoyable and very rewarding.

by Lisa Treacy and Pat McNally, CETL Educational Developers, CED

CETLs (NI) at Queen's: nurturing employability through curriculum and pedagogical developments

Employability skills have become an imperative in a graduate's skill set and in Queen's, the importance of acquiring and honing these skills is highlighted in the current Education Strategy (2008–2011).

The Vision states that the University is striving to provide the highest quality education experience for a diverse student body. Within the environment in which this will be achieved emphasis is placed on the need for the content and delivery of the curriculum to be challenging and inspirational, equipping students for life in a global society and work in a global economy. As the University's three Centres for Excellence in Teaching and Learning (CETLs, NI) complete their fifth and final year of work, evaluation reports provide comprehensive analyses of their many achievements. In addition to developing innovative and exciting learning experiences for students, the CETLs' curriculum redesigns and creative, research-led, pedagogical approaches have provided valuable opportunities to develop employability skills. This article focuses on specific dimensions of CETL work which demonstrate how research-led teaching meets the needs of the skills agenda.

Centre for Excellence in Active and Interactive Learning (CEAIL)

Work Placement

The CEAIL Biosciences team has developed an effective Work Placement system that supports staff and students from pre-placement preparation through to post-placement reflection and academic assessment. Focussed on helping students relate theory to workplace practice, students have reported that this structured pre-during-post system has allowed them to see the relevance of their courses to future employment with a resulting increase in motivation and engagement. The team has created a 'How to set up work placement' website which supports all staff considering implementing a new, academically assessed work placement programme and also those interested in evaluating and improving existing programmes. [http://www.qub.ac.uk/sites/CentreforExcellenceinActiveandInteractiveLearning/BiosciencesProject/HowtosetupWorkPlacements]

Profession focused curriculum design

Mechanical and Aerospace Engineering have adopted the international Conceive, Design, Implement, Operate (CDIO) Initiative which aims to make engineering education more effective and closely aligned to the needs of the engineering profession. At its core is the creation of learning opportunities situated in the context of professional practice. Examples include a CEAIL CDIO team developed Maths programme which focuses on the solution of practical, real life engineering problems as a mechanism for learning the underlying mathematics theory; and the Introductory Module which provides opportunities for students to apply disciplinary knowledge and demonstrate professional skills and attributes in a project setting. The introduction of CDIO has resulted in degree programmes which enhance the skills, attitudes and abilities that are valued and required by professional engineers. [http://www.qub.ac.uk/sites/CentreforExcellenceinActiveandInteractiveLearning/EngineeringProject]

Centre for Excellence in the Creative and Performing Arts (CECPA)

Interdisciplinary Learning

The interdisciplinary MA and the interdisciplinary projects established by CECPA created challenging learning contexts. Staff and students from a range of disciplines have worked intensively together to create a public performance or workshop. This collaborative process required students to flourish in unfamiliar situations and develop strategies to negotiate working outside their discipline, and their comfort zone! Through a practice-based, experiential approach to teaching and learning, students have developed transferable and employment–related skills including:

- Scheduling and executing projects within a given timeframe
- Working creatively and collaboratively in teams
- Presenting ideas formally and informally and in written and oral formats.

The curriculum for MA students included business skills workshops and a 'Dragons' Den' activity. Students worked in interdisciplinary teams to make their pitch to 'Dragons' who represented the arts and business communities. The experience of this pragmatic activity helped several former students to set up successful businesses. Students who have participated in CECPA projects often cite working with students and staff from another discipline as the element that has had the greatest impact on their learning. [http://www.qub.ac.uk/cecpa]

Centre for Excellence in Interprofessional Education (CEIPE)

Interprofessional Skills

Interprofessional projects created by CEIPE have helped students to develop core skills that are a requirement of professional bodies and future employers. Students within health-related disciplines have been given opportunities to learn together with a specific focus on enhancing teamwork and communication skills. For example, human patient simulation workshops (SimBaby and SimMan), Paediatric Drug Prescribing, and online Medicines Governance workshops have encouraged student doctors, nurses and pharmacists to engage both as learners and evaluators. Through learning together and reflecting on their decisions and interventions, students have increased their understanding and respect for other health professionals.

Embedding interprofessional learning approaches in the curriculum is challenging. For example, there is considerable work involved in timetabling across subject disciplines and organising suitable venues for large numbers of students to work together in small groups. However, student feedback during and after participation in CEIPE activities indicates that interprofessional education enhances teaching and learning. Students consistently request additional interprofessional learning opportunities and are proactive in choosing modules that provide this experience. Increasingly employers value evidence that students are equipped with both profession-specific and interprofessional skills. [http://www.qub.ac.uk/ceipe]

What the students said...

"This process has gone far beyond anything I could have wished for in approaching a new, unique and refreshing way of performing"

CECPA student

"I feel that it would be of benefit if Interprofessional opportunities were introduced to students at an early stage to allow a more open-minded body of students to graduate into the workforce and give the best standard of care to patients."

CEIPE student

"Practical classes, modules, and projects are really useful and interesting; we physically learn how to carry out the tasks that we'll be doing when we work as professional engineers."

CEAIL engineering student

Using *QuestionMark*
to engage your students

Gill Kelly, Educational Developer, Centre for Educational Development

QuestionMark Perception 4 is a software tool which allows you to prepare formative quizzes and class tests for your undergraduate students. You can use QuestionMark with students for self assessment, diagnostic testing and benchmarking a cohort and then view reports on their performance. You can also add feedback for the students to see at the end of the test, or later in the form of an automatically generated report.

Issue 7 (pg 7) of Reflections gave a full list of question types available in QuestionMark which may also be found at: http://www.questionmark.com/us/perception/authoring_windows_qm_qtypes.aspx

All users have access to 7 basic question types and a limited number of licenses for additional question types are available to each School. In this article I will show examples of some of the question types and facilities QuestionMark offers which help to make these tests richer and more engaging for students.

Using diagrams

A major facility in QuestionMark is the opportunity to include graphics in the question(s), the response(s) or the feedback.

Question with simply drawn image

Figure 1 below shows a standard multiple choice question which (for copyright reasons) includes a simple image, but you could easily include a photograph or labelled diagram.

Figure 1
The name of the visual illusion represented in the picture below is:
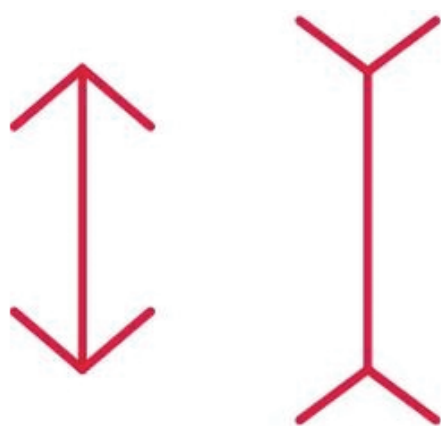
○ Oppel-Kundt illusion
○ Herman-Hering illusion
○ Muller-Lyer illusion
○ Ebbinghaus or Tichener illusion

Images used in question responses

The example in Figure 2 is one of a series of diagnostic questions designed to check Psychology students' level of numerical skills. Originally a question from a paper based test, it has been recreated here by including jpegs of fractions in the responses. Images of mathematical symbols can be constructed using the MathML editor in QuestionMark. The question illustrated is in a 'ranking' question format, which may also be used to ask students to indicate the sequence of a series of steps, e.g. for a methodology or procedure. Any type of graphic image may be used here. *Original question by Dr G Mulhern & Dr J Wylie, Psychology (Mulhern & Wylie, 2005)*

Figure 2
Rank the following in order of magnitude, starting with the smallest.
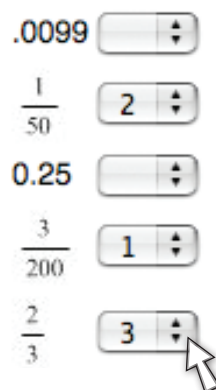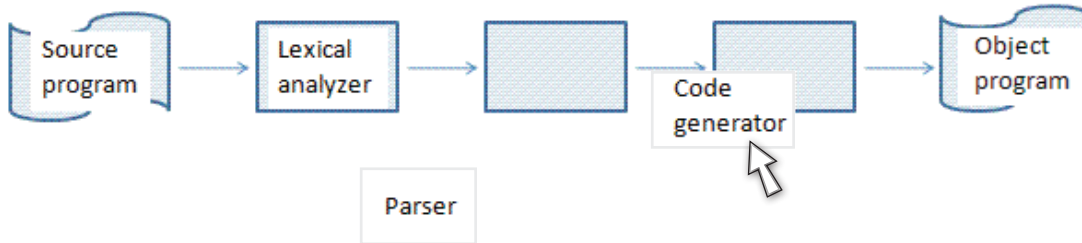
Figure 3
The process of converting a program from one language to another is called translation. By carefully dragging-and-dropping the text below, label the diagram to illustrate the translation process. (Place the labels on the coloured shapes.) [5 marks]

Drag and drop question

One use of images that adds a further dimension of interactivity for the student is the 'drag and drop' question. In this example (Figure 3 above) Professor Stan Scott in Computer Science has created a flow chart using the shape options in MSWord and designed a question which allows students to drag labels on to the chart. If required, QuestionMark then counts the number of labels correctly positioned to formulate the student's mark for the question. In Medicine and Engineering the same question type has been exploited very effectively in weekly formative tests which include labelling anatomical diagrams and screen shots of computer aided design software respectively.

The 'drag and drop' question type can take some time to create. However, QuestionMark offers a simple graphical option in its 'matching' question type , generating the graphic for you. This is illustrated in Figure 4 below.

Matching drag and drop

This example allows relevant definitions to be associated with their psychological topics but other uses might include dates with events or treatments with conditions. Again, a mark can be associated with each correct match.

Figure 4
Match each definition to its psychological topic area
Drag the options on the right to match the choices on the left
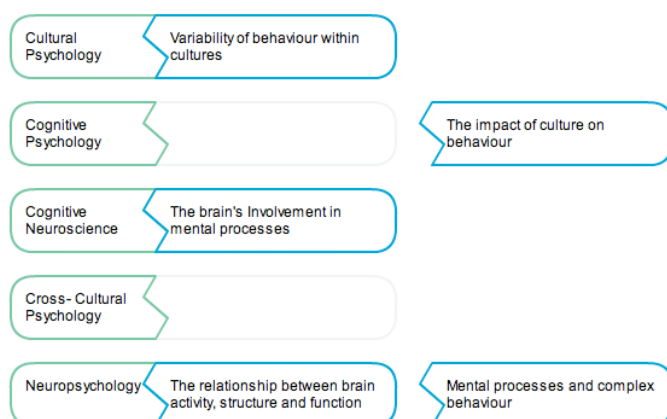
Feedback

When the student has completed all the questions, the end of assessment screen can be set up to show all or any of the following:

- an overall score and/or feedback message
- a score and/or the feedback for each question
- a hyperlink to further study

The type of feedback provided can vary according to question type and what you want the student to do. For example, the multiple choice question type allows you to set a different feedback response for each answer chosen, allowing you to explain why a particular option is right or wrong. Full feedback should give elaboration as well as verification of the correct answer (Kulhavy and Stock, 1989). Feedback can also be tailored to the correct or incorrect response in a true false question.

In questions which have multiple responses, feedback may be given for the correct solution, and one generic statement for any of the combinations of incorrect responses. This can be used to suggest some simple steps towards a solution or point the student to further material. For example, the feedback in a drag and drop question (Figures 3 and 4) can be set up to include the mark and/or an image of the correctly labelled diagram. Alternatively, if you would like the students to look over the topic again, it is possible to include some clues in the feedback or a link to where the material may be found in an online text.

In addition, a coaching report can be generated for each student which can be tailored to include much of the information the system holds about the student's test performance.

If you would like further information on QuestionMark or would like to register for the next introductory course, please contact Gill Kelly on g.m.kelly@qub.ac.uk.

References:
Kulhavy, R. W., and Stock, W. A. (1989). Feedback in written instruction: The place of response certitude. Educational Psychology Review, 1(4), 279–308.
Mulhern, G. & Wylie,J. (2005) Assessing Numeracy and other mathematical skills in psychology students as a basis for learning statistics. Retrieved May 05, 2010, from The Higher Education Academy Psychology Network: http://www.psychology.heacademy.ac.uk/docs/pdf/p2007509_Assessing_numeracy.pdf

Using Audio to Enhance Teaching and Learning

by Bob Wylie, CED

Recorded audio can be used in a variety of ways to enhance the teaching and learning process. Apart from being used as a way to effectively communicate ideas it offers flexibility in where, when and how often it can be accessed.

It can benefit students who have a particular learning style or have difficulty reading. Students themselves can also be encouraged to produce audio content. This can help to improve their knowledge and enhance their understanding of material, develop communication skills or share ideas and collaborate.

Ways to incorporate audio into teaching and learning

Audio is widely used to record lectures and sometimes seminars so that students have an opportunity to listen to the material, if they missed it initially or want to review sections of it again. However, rather than record entire lectures, audio recordings can be used to provide material in preparation for lectures or to expand and supplement them afterwards. Apart from supplementing the teaching process, audio is being used to provide feedback to students about their performance in assignments. It can be detailed, conveying more complex thoughts and provided quickly. Due to the subtleties and intonations of hearing a voice, criticism is not taken as harshly as when written. It is also more effectively received by the students as speech is considered more personal.

Advantages and disadvantages

Utilising audio can help to develop students' independent study skills. It can encourage greater engagement with the learning material and allow it to be more flexible and provide support and encouragement. However, providing resources just in an audio format can exclude people who have problems with their hearing and need text and/or visual alternatives. The development of audio resources needs to be part of a blended learning approach and integrated with other learning activities.

Range of possible uses by lecturers and tutors

- Providing preparation material for students prior to a lecture.
- Providing supplementary information that you may not have time to cover in the lecture.
- Providing supplementary material explaining difficult/complex areas of the course.
- Providing a summary of journal articles on a research topic.
- Interviews with specialists in a subject area.
- Providing information for placements, field trips or off-site activities
- Giving information about assignments, assessment criteria and submission procedure.
- Giving feedback to students on assignments.
- Providing pronunciation for words and phrases in different languages, technical terms or medical terms.
- Students summarising a key idea, concept or theory.
- Discussion between groups of students, for example, encouraging them to reflect on an activity.
- Completing assignment work, for example, a presentation or field report.
- Interviewing a lecturer, subject specialist or other students.

Training Course

If you are interested in learning about the practicalities of how to record audio and integrate it into your teaching an online course has been developed to show you how to capture, edit and share audio files. For further information contact David Robinson (david.robinson@qub.ac.uk) or Bob Wylie (bob.wylie@qub.ac.uk).

Relevant articles and links

- Podcasting in Higher Education
  http://itnow.oxfordjournals.org/cgi/reprint/50/3/22
- Guidelines for integrating podcasts in a blended learning environment
  https://lra.le.ac.uk/handle/2381/404
- Assessment using Audio Feedback
  http://sites.google.com/site/soundsgooduk
- JISC Digital Media Audio Advice
  http://www.jiscdigitalmedia.ac.uk/audio/
- Media Enhanced Learning Special Interest Group
  http://ppp.chester.ac.uk

Enhancing the deaf awareness and communication skills of medical students - *development of online resources*

By **Dr Kieran McGlade** (k.mcglade@qub.ac.uk), **Dr Jayne Woodside** (j.woodside@qub.ac.uk), **Clare Thomson** (c.thomson@qub.ac.uk)

"When I go to the supermarket I can tell when the employees have had deaf awareness training. The person will look at you, will wait until you look at them, will speak clearly, but not shout and will do things like show you the price on the visual display. It seems very sad that often in serious situations like a doctor's appointment similar consideration is not made."

Dr Margaret du Feu
Consultant Psychiatrist, profoundly deaf with a cochlear implant

Sample screen shot - educators' resource

Sample screen shot - student resource

Deaf and hard of hearing people regularly report problems in using the National Health Service (NHS). However, small changes in the way that healthcare staff interact with deaf people would make a big difference to their lives. The aim of this project, therefore, was to encourage greater provision of deaf awareness training in medical schools by providing a set of resources that teachers could use to create their own deaf awareness courses.

This has been enthusiastically embraced by RNID Northern Ireland who has partnered Queen's University Belfast in providing Deaf Awareness and Basic Sign Language training for undergraduate students over the last several years.

Current Course

Currently medical students at Queen's University Belfast can choose to do a Student Selected Component (SSC) in Second Year on 'Sign Language and Communication Tactics'. The course is delivered by staff at RNID and is co-ordinated by Dr Jayne Woodside.

The module comprises a series of seminars examining healthcare issues experienced by deaf people and the learning of sign language. Part of the assessment for this involves the students preparing and recording a medically based video sign language dictionary.

The resource builds on this knowledge and experience and includes:

- A personal video message from RNID

- Details of the report 'A Simple Cure' by RNID

- Exemplar course study guide

- Logistics of offering a course

- Examples of students' work

Over the coming months we plan to send out the pack to all UK and Irish medical schools.

All Ireland Society for Higher Education
6th International Conference
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Extending our curriculum

This exercise has enabled us to look afresh at how deaf awareness training might be delivered across a curriculum rather than solely as a SSC to a limited number of students. As a result of this project we are planning to integrate our deaf awareness training into the more general Communications Skills training resources for all students. This blends both online provision and facilitated tutorials and will take place during the first and second years of the curriculum.

The project has allowed us to create the following resources for inclusion:

- An introduction to deaf awareness, with a focus on the medical environment.

- Exemplar video scenarios on common health situations where hard of hearing individuals experience difficulties: in a GP's waiting room and in a hospital setting, including poor and optimal versions.

- A video dictionary of common healthcare related words or phrases in sign language.

Future development will include the extension of the video sign language dictionary of healthcare related signs.

Beyond expectations

We recognise that the SSC offered by Queen's plays only a small part in addressing the need, highlighted by RNID, for 'a culture of awareness among front-line NHS staff of the communication requirements of deaf and hard of hearing people' (A Simple Cure, 2004). However, it is important to start with students and this project will facilitate the dissemination of good practice among medical schools.

It is also hoped that this project could easily be extended to other healthcare disciplines.

We are now conducting a survey of medical schools in the UK and in Ireland to ascertain the current level of deaf awareness training and to offer this resource to those interested in developing their own courses. The findings will be available early summer 2010. A follow-up of past students who completed the Queen's Student Selected Component will make up the final part of this project. This will investigate the impact of the course on their communication with people with hearing difficulties.

This article is based on a poster which won overall poster prize at the 3rd Annual Scientific Meeting & Annual General Meeting of INMED (Irish Network of Medical Educators), February 2009 in Galway.

References:
A Simple Cure, RNID, 2004, available at: http://www.rnid.org.uk/VirtualContent/84923/asimplecure.pdflast accessed 30 October 2009

Creating the video dictionary: Student, tutor and film crew