



University
of Glasgow

5th Annual University of Glasgow Learning and Teaching Conference: Empowering Student Learners in Higher Education

17th April 2012



Welcome to the fifth annual University of Glasgow Learning and Teaching Conference

The theme for this year's conference: 'Empowering Student Learners in Higher Education' has been chosen to explore the way in which we are enhancing active student engagement in learning. The theme underlines the commitment of the University of Glasgow to developing a meaningful partnership with our students in all aspects of campus life and, in so doing, supporting our student population in engaging and deriving maximum benefit from their educational and life experiences at the University

The topics covered by the presentations and workshops this year, reflect some of the key priorities of our Learning and Teaching Strategy (available from: www.glasgow.ac.uk/services/planning/staff/public/learningandteachingstrategy). In particular, the conference provides a showcase for innovative work on retention, assessment and feedback and developing the graduate attributes. It also provides a forum for productive discussion of these topics.

I would like to extend a special welcome to those conference delegates from outside of the University of Glasgow. This is the first time that our conference has been open to participants from other institutions. It provides a real opportunity to share our collective experiences to the benefit of our staff and students.

I hope that you have a very productive day and that you leave our conference with renewed inspiration to continue to enhance the learning experience of your students.



Frank Coton
Vice Principal (Learning and Teaching)

Keynote Addresses

Undergraduate Research: Empowerment through Ownership

Martin Luck

University of Nottingham

Undergraduate students are at a crucial point in their personal development, taking steps and making decisions which will affect the rest of their lives. We expect them to get degrees, and we hope they will get an education, but we also want them to own the subjects they have been studying.

Ownership comes through deep engagement. It depends on knowledge and understanding but it also requires personal identification with the subject, its development and its culture. So, what exactly turns a student of engineering (or biology, political science, history, mathematics...) into an engineer (or biologist, political scientist, historian, mathematician...)? I suggest that this happens when the student makes a contribution to their subject and takes personal responsibility for some element of it.

Research project work creates the perfect opportunity for this development. It turns the student into a contributor of information, rather than a passive absorber of knowledge, and into a critical evaluator of new understanding, rather than an acceptor of current wisdom.

Evidence shows that undergraduates are capable of doing real research if the environment is conducive. They need the right support and supervision and they need to undertake their investigation within an appropriate educational framework. For each subject or discipline area, it should be possible to identify the conditions necessary for a fulfilling and creative research experience. Surprisingly, resources need not be limiting and academic staff can derive tangible benefits from their own involvement.

Making the transition from subject studier to subject owner is exciting and motivating. Research gives a student a unique opportunity to identify with their discipline and become empowered by their studies.

Biography

Martin is Associate Professor of Animal Sciences and Biosciences Senior Tutor at the University of Nottingham. He has research interests in reproductive biology and worked in the UK, Germany and Australia before joining Nottingham in 1990. He was a founder member of the consortium of *Bioscience Horizons: The National Journal of Undergraduate Research* and is

currently its Chair of Management. He has twice received Nottingham's Lord Dearing Award for Excellence in Teaching and Learning and was awarded a National Teaching Fellowship in 2011. Martin loves teaching and sees no separation between the educational, research and student support elements of his academic life.

Keynote Addresses

Global Graduates into Global Leaders

David Docherty

Chief Executive, Council for Industry and Higher Education

What are Global Graduates and do they matter? Is the Global Graduate alliterative hype or business reality? The Council for Industry and Higher Education, working with the Association of Graduate Recruiters and CFE, interviewed the global recruitment teams in major businesses to discover the answers to some of the biggest challenges facing graduates who wish to enter business: How much do languages matter? What's the best use of a gap year? How are businesses preparing their talent to lead the organisations of the future. The answers are both surprising and challenging of UKHE.

Biography

David Docherty is a seasoned Chair and Chief Executive of television and new media companies. He also has long experience of the public sector as Chairman of the University of Bedfordshire, and as a member of the Board of Management of the BBC. He is currently Chair of the Digital Television Group, which is an industry-wide body responsible for the UK digital TV industry, and CEO of the CIHE – a unique strategic leadership network for business and higher education.

David led the BBC's launch into digital media as its first Director of New Media and Deputy Director of TV, and in the commercial world, headed up Telewest's (now Virgin) drive into broadband content, was Chief Executive of the UK's largest independent interactive TV business, and then of the largest group on independent TV channels in the UK.

In the public sector, David was Chair of Governors of the University of Luton, where he recruited and worked with a new Vice Chancellor to create the highly successful University of Bedfordshire.

He has written extensively on media and technology convergence as a regular columnist for the Guardian, but also for the Financial Times and most other national newspapers.

David is the author of six books, including three novels, and has been profiled in the Times, the Telegraph and the Scotsman, as well as in the media trade magazines.

He has served on government committees on various issues, including Lord Mandelson's Postgraduate Review and the Browne Review into Higher Education Funding.

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Learning and Teaching Conference 2012 – Abstracts

1A Student representation, engagement and the ability to make change within Higher Education Institutions

Presenters:

James Harrison, GUSRC Vice President (Learning and Development), Hera Hussain, GUSRC Undergraduate Convenor for the College of Social Sciences and Dave Walker, GUSRC Life Sciences School Representative

We aim to highlight the effectiveness of student representatives within HEIs, specifically at the University of Glasgow, and how they can affect their learning environment to make positive changes. It will give details on the recent structural changes within the Glasgow University Students' Representative Council (GUSRC), and how this has allowed for a much more collaborative environment between student representatives themselves at class, School, College and University level as well as through their dialogue with staff. It will also look at examples of past successes. It will discuss methods of how students can be engaged more to represent, by seeing incentives and examples of how their efforts can make an impact.

It will highlight how graduate attributes have been developed, through the enhancing of skills of the representatives themselves, as well as the potential to spread the information on graduate attributes to the student community as a whole through these representatives. At the University of Glasgow, the implementation of graduate attributes has been worked on jointly with GUSRC, and is one example of how representatives and the University can work together for mutual benefit.

It will also give examples on how the curriculum can be enhanced, and how recent developments can allow for representatives to have more of an impact on their curriculum.

Recent examples of student representatives' impact on the areas of using technology (particularly in Social Sciences) and feedback and assessment will be discussed.

1B Programme Assessment Strategies for Empowering Student Learners in HE

Presenters: Ruth Whitfield, Project Manager and Peter Hartley, Project Director, PASS Project, University of Bradford

The PASS (Programme Assessment Strategies) project was set up to directly confront issues which concern every course/programme leader in HE: how to design and deliver an effective, efficient and sustainable assessment strategy which ensures that the main course/programme outcomes are satisfied. Programme-Focussed Assessment (PFA) provides a framework for such effective strategies.

The emphasis in PFA is on integrative assessment which relates very directly to the overall programme aims and outcomes. This can deal with assessment issues at two rather different levels: dealing with specific issues in assessment as currently practised across HE, and supporting course/programme leaders with responsibility for the overall assessment strategy.

The advantages of and main barriers to PFA will be illustrated by major case studies which PASS has investigated. These include a range of different approaches and show how PFA can address major criticisms of current HE practice. For example, Margaret Price *et al* (2011) bemoan the lack of “pedagogic, and particularly assessment, literacy” possessed by both academic staff and students. Comparing approaches to assessment, they suggest “an incremental approach focused at module/unit level provides an assessment experience that appears ready disaggregated to students, whereas a program/course focus enables an overview of assessment tasks and progression.” That overview, coupled with the level of student understanding, is a key component of effective PFA.

References

Price, M., Carroll, J., O'Donovan, B. and Rust, C. (2011) “If I was going there I wouldn't start from here: a critical commentary on current assessment practices”, *Assessment & Evaluation in Higher Education*, 36 (4): 479-492.

Case studies from the PASS project can be found at <http://www.pass.brad.ac.uk/>

1C Video capture of lectures - the Undergraduate Medical School's experience

Presenter: Aileen Sherry, Medicine

Co-Author: Steven Jack, IT Services

The MBChB programme is delivered through a number of different teaching methods, including clinical bedside teaching in both general practice environments and in central Glasgow teaching hospitals. In order to provide greater flexibility in attending clinical placements for phase 3 of the course, video capture of lectures was introduced. The aim was to allow students to attend clinical placements without the restrictions of having to travel to campus to attend lectures.

Echo360 system was the platform recommended and installed by IT services in the main lecture theatres. The EchoSystem captures audio and video sources along with course visuals from document cameras and PCs. Capture is scheduled in advance and recording is automated – requiring no technological input from lecturers. The system transforms the captured audio, video and VGA sources into ready to play rich media and podcasts. Links to recordings are automatically published to a course portal and made available to the students on the VLE. Students can see, hear and experience the lecture as if they were in the class, viewing the lectures on demand anytime, anywhere on a computer or a mobile device with a web browser, stopping, pausing, or replaying any part of the lecture. Instructors can benefit from reviewing their lecture performance, save time by pointing students to online instruction rather than answering questions covered in class, and can review user statistics.

As the majority of lecturers on the MBChB programme are NHS staff, copyright and performance rights' consents were obtained before any recordings were made. To ensure students adhered to an agreement not to breach any copyright restrictions of the recorded material an agreement page was displayed before students were provided with access to the course portal.

Response from students is positive and user statistics indicate significant student usage, a full review and student evaluation will be completed.

1D Online Synchronous Teaching in Psychology

Presenters: Maxine Swingler, Paul Bishop and Donna Boyle, Psychology

In recent years the increased need for flexibility in the delivery of courses and the rise of the Virtual Learning Environment (VLE) has led to tutor/student interaction through forums, instant messaging tools or other communication functions. This has been particularly useful in undergraduate Psychology, as it allows for a more flexible delivery of support in large class sizes as well as encouraging student generated content. The aim of this Learning and Teaching Development Fund (LTDF) project was to evaluate the use of synchronous discussion by focussing on the “open source” web conferencing software the Big Blue Button (BBB). This is a free and basic version of commercial products such as Adobe Connect, and is available through the University VLE Moodle. After a period of “stress testing” the software was evaluated as an educational tool within three small group teaching contexts in Psychology: a teacher led tutorial session, collaborative group project work, and a student led approach (Peer Assisted Learning). We evaluated students’ and the facilitator’s/tutor’s experiences in each of the contexts using a variation of the Technology Acceptance Model (Venkatesh and Davis, 2000), which included measures of “Perceived Ease of Use” and “Self Efficacy”, and incorporated a focus group discussion to examine the main themes that emerged from the students’ experience of BBB. We also sought to address technical issues encountered while using BBB software by developing user guidelines to ensure students/ teachers can use the software independently. Results of the evaluation and implications for future use of BBB software in the University VLE will be discussed. There is potential that the use of BBB will help develop graduate attributes such as being adaptable and responsive to the use of innovative technologies in effective communication.

Reference

Venkatesh, V. and Davis, F. D. (2000) A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2):186–204.

1E Developing e-assessment using the Quiz Activity within Moodle: Empowering student learning

Presenters: Maureen Griffiths, Mary McVey and Chris Finlay, Life Sciences

Using formative assessment within Moodle has been shown to encourage self-directed learning (Bromham & Oprandi, 2006). Our experience of using formative assessment quizzes as stand alone entities, as well as within Moodle lessons, has been used to introduce Moodle assessment quizzes over the past year in Level 1 and Level 2 Life Sciences courses. This experience has been distilled to inform the content of this workshop.

Some advantages of incorporating assessments in the form of Moodle quizzes are that they allow for quick, reproducible and flexible assessment with a relatively small initial set-up cost, and substantial long-term staff and administration savings. One significant advantage is that staff and room pressures can be reduced as students can attempt the assessment at a time and location of their choice within a specified time period.

This flexibility can help to reduce student stress associated with completion of a continuous assessment for their course. It is also a relatively simple process to account for students entitled to extra time during assessments. Providing clear instructions beforehand and at the start of the quiz ensures that students understand their responsibilities for completion of this assessment and ultimately the course.

There are some disadvantages and limitations to the system as it currently exists, for example there is the perceived ability for students to “cheat” by completing the assessment as a group, accessing books and the internet. Strategies to account for these can be put in place and will be discussed in detail during the workshop.

This workshop aims to take the participants through the initial set up of a quiz, highlighting the various question types and how these can be used to create a challenging assessment that can be quickly graded and prove informative for staff and course development.

Reference

Bromham L. & Oprandi P. (2006) Evolution online: developing active and blended learning by using a virtual learning environment in an introductory biology course. *Journal of Biological Education* 41 (1): 21-25.

2A Staff and students co-creating curricula: conceptualisations and practical guidance.

Presenter: Catherine Bovill, Learning and Teaching Centre

The higher education sector is becoming increasingly interested in empowering students within their own learning experiences with students becoming co-creators, co-producers and co-designers of learning (Collis and Moonen, 2005; McCulloch, 2009; Neary, 2011). There is also growing interest in students participating in curricula design in higher education with growing evidence of positive outcomes for students that relate to a range of graduate attributes (Bovill et al, 2011; Cook-Sather, 2010; Delpish et al, 2010).

Along with a colleague, I have adapted Arnstein's (1969) model of citizen participation to enhance the model's relevance to different possible and desirable levels of student participation in curriculum design – the 'Ladder of student participation in curriculum design' model (Bovill & Bulley 2011). The intention of creating this ladder model is to illustrate a continuum of possible and desirable levels of student participation in curriculum design.

In this presentation, I intend to present examples of students co-creating curricula and to map these against the 'Ladder of student participation in curriculum design' model. I also intend to present some practical guidance for those interested in undertaking co-created curricula in their own practice.

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Bovill C., Cook-Sather, A. and Felten, P. (2011) Changing Participants in Pedagogical Planning: Students as Co-Creators of Teaching approaches. *Course Design and Curricula. International Journal for Academic Development* 16 (2): 197-209

Collis, B. & Moonen, J. (2005) *An on-going journey: technology as a learning workbench*. Available online at:
http://doc.utwente.nl/50888/1/rede_Collis_Moonen.pdf

Cook-Sather, A. (2010). Teaching and learning together: College faculty and undergraduates co-create a professional development model. *To Improve the Academy* 29: 219–232.

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McCulloch, A. (2009) The student as co-producer: learning from public administration about the student-university relationship, *Studies in Higher Education*, 34(2): 171-183.

Neary, M. (2011) Student as Producer: *Student engagement and the idea of the University*. Paper presentation at Student Engagement Conference, Galway University and the National Academy for the Integration of Teaching and Learning in Ireland, 9-10 June.

2C Positively changing student perceptions of their role in lectures

Presenters: Quintin Cutts and Karen Renaud, Computing Science

Co-Author: Beth Simon, University of California, San Diego

A number of successful teaching innovations such as Peer Instruction, the Khan Academy and Flip Teaching rely on reversing the typical instructional design ordering. Instead of introducing material in lectures, these innovations place the responsibility for initial acquisition on the students prior to class; instead of deepening understanding through follow-up self-study activities such as reading, tutorial questions, and essay writing, such deepening takes place during lectures, with student debate and discussion at their core. The role of the teacher in class is less as a subject instructor and more as a facilitator of learning and exploration, who also happens to be in mastery of the subject; and the role of the student in class changes from passive observer to engaged, questioning student/apprentice.

This paper presents three different courses led by the authors where this reversed design has been adopted: a 500-participant general education course in computational thinking, an introduction to programming with 160 students, and an Honours computer security module with 40 students. The first two courses focus on skill development, the latter on developing a deep understanding of challenging security concepts. This spread suggests the design is flexible across class size and learning outcomes. The course designs have used voting handsets to varying degrees – a useful, but not essential, part of the model.

In all three courses, students commented on their role within the lecture sessions in these courses compared to more traditional courses. Their comments highlight: increased responsibility for their learning; greater ability to assess their progress; and significantly increased engagement with the on-going learning process.

We will present an overview of the courses and analyse the effort required to design and present a course in this format. Crucially, we will explore the student viewpoint on their role as a learner in these and other courses.

2D Implementation of a Comprehensive, Integrated Virtual Learning Environment for the Bachelor of Veterinary Medicine and Surgery (BVMS) Undergraduate Programme

Presenters: Ute Barrett and Fiona Dowell, Veterinary Medicine

A recent pilot project undertaken by the Veterinary Pharmacology course team at the University of Glasgow resulted in the restructuring of the Veterinary Pharmacology Moodle site to facilitate enquiry-led student learning.

The outcomes of this project highlighted the vastly underused capabilities of Moodle.

This is a 2-year project to restructure the VLE (Moodle) to reflect enhancements of the BVMS Programme in Veterinary Medicine curriculum which is taught with a vertically integrated approach. There is a particular emphasis on interdisciplinary learning in integrating clinical and professional skills from Year 1 to Year 5.

Results will be available from the Stakeholder consultation and the requirements analysis preceding implementation of the new Moodle structure. There will be a demonstration of the new structure for BVMS Years 1 to 5. The new structure has been created as a series of interlinked Moodle courses centred around a core BVMS programme hub page which will ultimately address the RCVS Day-One competencies (graduate attributes). This new structure has enabled staff to highlight the fundamental linkage between the courses which comprise the BVMS programme; the greater usage of Moodle functions such as Quiz and Wiki has promoted student engagement with learning and enhanced both the student learning experience and the capability of our staff to utilise new and developing technology.

The successful outcomes of this project will be that we have motivated and supported student learning; promoted student engagement with learning; used new and developing technologies to support the student learning experience and enhanced the capabilities of our academic staff to utilise this technology.

Despite bad press VLEs are not dead. If they are tailored to the subject matter, reflecting diverse learning styles and varied teaching approaches with stakeholder needs as a first priority they can facilitate a highly successful learning environment for the student (including self-directed, enquiry-led and peer learning, improved feedback and assessment, addressing issues such as accessibility, student diversity) and an effective teaching environment for staff.

3A An investigation into attendance at, experience of, and views towards Peer Assisted Learning (PAL) in level 1 psychology students.

Presenters: Lorna Morrow and Judith Stevenson, Psychology

Co-author: Donna Boyle, Psychology

Peer assisted learning (PAL) is run by students for students, whereby students in higher years mentor groups of students in lower levels on difficult topics including coursework writing, statistics and study skills. Previous research testifies to students' perceived benefit from this, including developing writing skills, and feeling less intimidated in the small informal setting (Longfellow et al., 2008). PAL has been running in Psychology for several years. It would seem particularly beneficial here where the Level 1 class size is large as it can reduce anonymity and provide opportunities for informal conversation with fellow students, thus easing their transition into university and all the difficult social and academic challenges accompanying this. Furthermore, Tariq (2005) highlighted how student confidence can be low in courses involving numerical components, a central component of psychology where statistical analysis is core to experimental design and scientific reports, and where additional support is required. However, despite these potential benefits of PAL for L1 students in particular, attendance is low, thus either students do not perceive these benefits or else are missing out for some other reason. Our investigation aimed to address this issue by asking the 2011-2012 L2 class why they did or did not attend PAL in their first year. A brief questionnaire was completed which focussed on attendance at, experiences of, and views towards PAL, including whether students ultimately trust the help offered by fellow, albeit more advanced, students, or would ultimately only trust staff. The results are discussed in light of implementations to improve PAL uptake and enhance the student learning experience and skill development in a more sociable and less formal setting. The implications are also discussed in relation to how peer learning can provide both academic and social support to students and so ease the transition from school to university.

References

- Longfellow, E., May, S., Burke, L., Marks-Maran, D. (2008) "They had a way of helping that actually helped": a case study of a peer-assisted learning scheme. *Teaching in Higher Education*, 13(1): 93-105
- Tariq, V. N. (2005) Introduction and Evaluation of Peer-assisted Learning in First-Year Undergraduate Bioscience. *BEE-j*, 6

3B A Case Study of Summative Assessment Methods and Feedback in Chemistry

Presenter: Linnea Soler, Chemistry

A case study was carried out over three years in which three different methods for delivering Class Tests in 2nd Year Chemistry were developed and critically compared. Throughout the year, Chemistry 2 students have to sit multiple Class Tests, which contribute 15% of their final assessment. These class tests are delivered to 200-300 students, which cause a great burden on staff to administer, deliver and mark. The traditional paper-based exam format was modified into an electronic Moodle based test and also into a test using Intelligent Character Recognition (ICR) based software. Over four years, the methods have been critically compared in this case study by assessing:

- Average class exam results between the three methods;
- Impact on final examination results;
- Improved learning experience for the students;
- Ease and speed of formative feedback to the students;
- Teaching efficiency for staff; and
- Overall student satisfaction.

The methodology used to explore these issues includes the quantitative comparison of results, analysis of feedback questionnaires and the use of focus groups to assess best practice. The general merits and disadvantages of each method will be compared and conclusions for future practice in Chemistry will be developed. Further innovations and plans for future developments will also be discussed.

3C Source: Empowering Students to Identify, Nurture and Sustain their Motivation within and Beyond Art and Design Education.

Presenters: Susan Roan and Elise V Allan, Glasgow School of Art

The idea that working with intrinsic motivation best stimulates and sustains creativity is fundamental to our practice of learning and teaching within Higher Art and Design Education.

Despite achieving a highly competitive place within a course at Glasgow School of Art, we have observed within our discipline that some students have appeared to be underachieving, losing motivation and not working to their strengths.

Our action research project sets out to address the issue that as students progress toward the awarding of a degree, some will become, in this environment with its externally defined goals, “more self-motivated, energised and integrated,” while others will find themselves “apathetic, alienated and lacking in responsibility” under the same conditions. (Ryan & Deci, 2000)

Initially inspired by Daniel Pink’s ‘Drive’ and Sir Ken Robinson’s ‘The Element’ and ‘Out of Our Minds’, we put together a package of five workshops with a combination of approaches; presentation of evidence based research from the work of Deci, Ryan, Lepper, Greene, Nisbett, Csikszentmihalyi, and Dweck and its influence on education and business; reflection on learning theories, Kolb’s Learning Cycle, Seligman’s Positive Psychology, and Clifton Strengthfinders; speculation and musings of writers, artists, analytical psychologists, and the focussing movement; compassionate mindfulness; and play.

We included an activity or project, discussion and reflective writing in each workshop; students explored how experiences of intrinsic motivation in childhood might refresh their current work, identified unnecessary rules and broke them, visualised their inner critics and reconsidered their internal dialogue with them, used Clifton Strengthfinder to utilise their strengths, and played with the idea of the Muse as part of their creative relationship with themselves.

In this presentation we will give a brief description of the material presented to the students and a selection of their responses to the workshops, visual, spoken and written.

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- Ryan, R.M and Deci, E.L. (2000) Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being. *American Psychologist* 55 (1), 68-78.

3D Using Active Feedback to develop Professional Software Engineers' Skills

Presenter: Leif Azzopardi, Computing Science

Professional software engineers need to be able to effectively and succinctly communicate with clients, managers and other developers through specification and design documents. Such documents contain technical writing along with explanatory diagrams. Mistakes, errors or omissions, at this point in the process, can lead to poor/wrong solutions and costly fixes. To develop the professional skills of software engineers in terms of both reporting and critically assessing such reports, we introduced peer feedback into the assessment process. This was supported by: (i) exemplar feedback on their own reports by staff each week, (ii) a list of questions/points to critical assess in peer reports, then once they had performed/received the feedback (iii) time to reflect and then respond to feedback provided, and perhaps crucially (iv) the opportunity to actively address the feedback (where the incentive was that their revised report was remarked so they could gain lost marks).

In 2010/2011, we ran the course with 91 students (masters and level 3) [1], where the students formed 19 groups and produced 19 reports of varying quality. Each student was asked to review 2 reports, so each report received 8-10 reviews[2]. The initial reports received 60% on average, while the resubmitted reports improved to 74% on average. We argue that the improvement comes from the “active” nature of the feedback, where the students needed to respond to the feedback, apply it, and then resubmit their work. While this appears to be the case, there were a number of other issues that arose from a survey conducted, which are worthy of discussion. They include how the students; developed an appreciation of the difficulty of assessing/critically appraising work, felt that providing feedback was more useful, than receiving it, and by reviewing reports this improved their learning experience. However, there were also problems associated with the introduction of peer feedback, i.e. controlling the quality of feedback and the perceived authority of peers to give feedback (which actually resulted in outright rejection of the peer feedback despite its intrinsic validity).

[1] The courses titles were Distributed Information Management 3, and Internet Technology (M), but they run as a combined course. See the course handbook for details of the assessments and the process along with the guidelines to students on reviewing:

http://dl.dropbox.com/u/382885/iTech-DIM3/iTech-DIM3_Course_Handbook.pdf

[2] The system used to collect peer feedback was Aropa, see:
<http://www.dcs.gla.ac.uk/~hcp/aropa/index.html> for further details.

3E Online peer review of scientific writing – Aropa

Presenters: Chris Finlay, Anne Tierney, Mary McVey, Life Sciences, Amanda Sykes, Student Learning Service and Joe Gray, Life Sciences

Students' writing skills are subject to criticism, particularly in science subjects where there may be a lack of opportunity to practise. This is especially true in large classes, where assessments are often administered as multiple choice tests. In addition, the increasing number of students whose first language is not English makes the nuances and the conventions of scientific English particularly difficult to acquire.

In the School of Life Sciences at the University of Glasgow, we have implemented an online peer support system for Life Sciences students. This system is managed through a software program called Aropa which allows for the efficient delivery and management of such activities, (<http://www.dcs.gla.ac.uk/~hcp/aropa/index.html>).

We have evaluated students' experience of the system. In this instance students have had the opportunity to write short pieces of written work on biological topics and receive feedback from their peers. The work completed and the feedback received then builds across several repetitions to a final submission of written work for assessment.

This has benefits for international students as the assignment process is asynchronous, allowing sufficient time to complete the task, see examples of work from other students and receive feedback on their own work, helping to improve their fluency in scientific English. Of course, these principles can also be employed with home students; in effect ALL students could benefit from such a peer review process.

4A Empowering students to promote independent learning: A project utilising coaching approaches to support learning and personal development.

Presenter: Dawne Gurbutt, Higher Education Academy

Co-author: Russell Gurbutt, University of Leeds

With the publication of the White Paper (BIS, 2011) focusing on student experience, together with the increase in tuition fees and the changing landscape of higher education, there is an interest within the sector in initiatives which enhance the learning process. Coaching offers an approach which seeks to enable and empower learners and thereby has the potential to contribute to the personal development and facilitation of solution focused approaches which are transferable to the workplace.

Key staff in an institution were offered training in coaching techniques and began to utilise this skill in a range of settings. This paper focuses on the integration of coaching techniques into personal practice and identification of the opportunities for using these tools to enhance the learning experience and to consider the potential effectiveness of these approaches in a variety of educational contexts. In particular it explores the use of coaching approaches with two groups of students via the evaluation of a small scale project using coaching applications. The aim was to enhance the student experience in relation to self-motivation, personal development planning and development of solution focused approaches. To this end coaching tools were employed in the context of personal tutorials, staff-student liaison activities and student initiated learning modules. The learning from the project highlighted the potential benefits of coaching in other specific educational settings.

Reference

BIS (2011) Higher Education: Students at the Heart of the System. London: HMSO

4B Regular Formative Assessment on a Large Scale – Practicalities, Problems and Benefits

Presenter: Suzanne McCallum, Business

Co-author: Margaret Milner, Business

A key goal in first year is to help students make the transition into Higher Education and adapt to a system where they are expected to monitor and evaluate their own learning. One way to shift the locus of control of their learning is to provide regular formative assessment opportunities at an early stage. Research by Yorke (2001) has shown that formative assessment in the early weeks of first year is associated with student success.

Looking at the Glasgow experience, results of the National Student Survey and general discussions with students clearly show that students want more feedback on their work. With ever increasing class sizes this is becoming more difficult. However, with information from the academic literature and from students themselves highlighting the need for more formative assessment in year 1, semester 1 - the course co-ordinators of the 2 relevant Accounting & Finance modules decided to implement a series of regular formative assessment quizzes. In order to make this process manageable (given each course has 120-160 students and only one member of staff) Moodle was selected as a tool to provide e-assessment quizzes.

This session reflects on the implementation of this project, including the benefits and problems of introducing the quizzes and considers student feedback on the success of this exercise. As is often the case there were problems encountered and action research techniques were utilised to consider ways to improve the project in its second year: for instance, it was apparent that students needed more information on data entry to help build confidence and trust in the assessment system.

Feedback from students has been very positive and they seem to perceive a definite benefit from the formative assessment quizzes. Information presented should allow attendees to evaluate the potential benefit of adopting a similar technique on their course.

Reference

Yorke, M. (2001) Formative Assessment and its Relevance to Retention. *Higher Education Research and Development* 20 (2): 115-126

4C 'Of Tribes and Territories': The Interprofessional Student - Health Graduate for the 21st Century?

Presenters: Nicola Andrew and Nichola McLarnon, Health and Community Sciences, Glasgow Caledonian University

The Nursing, Allied Health and Social Work undergraduate programmes in the UK place increasing emphasis on interprofessional learning. Traditionally these professions have developed within a specific discipline, forged strong and distinctive identities and constructed a discourse arising from defined boundaries. Academics in Health and Social Work disciplines are now expected to develop curricula in collaboration with a range of stakeholders including patients, carers, clinicians, other professional groups and students themselves. Through the development of this wider community, working with an extended range of stakeholders, we may now be liberated to explore and re-define identity through the lens of other allied health communities.

In the School of Health and Life Sciences, Glasgow Caledonian University, interprofessional education for Health and Social Work students starts in the first year of learning and continues throughout the undergraduate programmes. In the first year, a range of health and social care related disciplines from Glasgow Caledonian University, University of Strathclyde and Glasgow Dental Hospital work collaboratively to explore the interrelatedness of their professional roles.

- Nursing
- Radiography (Therapeutic and Diagnostic)
- Podiatry
- Occupational Therapy
- Physiotherapy
- Dietetics
- Prosthetics and Orthotics
- Speech and Language
- Social Work
- Dental Therapy

At the same time, in their uni-disciplinary groups, students start to develop a sense of their unique professional identity, perform the rights of passage associated with entry into the professional tribe and become aware of the limitations of their territorial boundaries.

This presentation seeks to explore what interprofessional learning means in different contexts and discuss the implications of collaboration across academic and professional boundaries.

4D Collaborative Masters Dissertations: working in partnership for demand-driven postgraduate research and enhanced employability skills

Presenter: Alan White, Social and Political Sciences

Co-author: Paul Jordan, Social and Political Sciences

This paper presents an evaluation of the Glasgow Refugee Asylum and Migration Network (GRAMNet) collaborative Masters' dissertation initiative piloted through Central and East European Studies in 2010-11. The model matched PGT students with knowledge exchange (KE) partners in order to undertake demand-driven research, with dual outputs: an academically assessed dissertation and a one month internship scheme. The internship provides an opportunity to convert this academic output into forms and materials suited to the needs of KE partners, providing students with "real world" research experience and KE partners with quality research. KE partners included NGOs, charities and public sector organisations. The model gave students an opportunity to gain valuable work experience in a competitive job market. The model also sought to make use of the University's technology to support learning and assist with on-going feedback and assessment by engaging with online diaries using the Mahara portfolio. This paper will seek to highlight the relevance that this model has for various subject areas across the University.

Co-author Paul Jordan was engaged on the initiative as a PDRA using participatory research methods to explore and evaluate the experiences of students, KE partners and academic supervisors to make recommendations for the extension and development of the model. This presentation will focus on these findings as well as draw attention to the experiences of Alan White, a PGT Masters student in the pilot model. This presentation will seek to draw out the relevance of the initiative in relation to the development of graduate attributes for PGT Masters students in terms of employability. It will also focus on the enhancement of the curriculum which flows from direct engagements with KE partners and the integration of training in "research impact" within the Masters dissertation experience.

4E Inspiring Critical and Imaginative Learners: An Interactive Workshop on Creative Geographic Writing

Presenters: Geraldine Perriam and Cheryl McGeachan, Geographical and Earth Sciences

This workshop aims to highlight the benefits of creative and interdisciplinary writing methods in the undergraduate and postgraduate classroom through a discussion and demonstration of their use in Geography. These methods can enhance student confidence (Barney & Mackinlay, 2010) develop critical thinking through creativity, and create new opportunities to explore key concepts as well as using creative expression and the imagination.

By exploring the concept of creative geographical writing through interactive exercises we hope to demonstrate the potential that this approach has to empower students in their learning, and also to generate new and creative working relationships between staff and students (a key aspect of good practice in learning, assessment and feedback).

This workshop will begin with a brief introduction to the use of creative writing and its development in recent undergraduate and postgraduate programmes - Geographical Thought Course and the MRes in Human Geography - and the responses from students to this alternative classroom activity.

Participants will then be invited to experience different writing activities in order to convey some of the potential these bring to the learning experience. The 'hands on' experience will also demonstrate the different ways in which creative writing can be incorporated into the classroom.

Finally, this workshop will turn to a broader discussion among participants of the potential development of these exercises in other disciplines and situations.

Reference

Barney, K. & Mackinlay E. (2010) Creating rainbows from words and transforming understandings: enhancing student learning through reflective writing in an Aboriginal music course. *Teaching in Higher Education*, 15 (2): 161-173

5A Mahara and reflection to illustrate development of graduate attributes

Presenter: Gordon B Curry, Geographical and Earth Sciences

Co-authors: Dickon Copsey, Employability Officer, Social Sciences; Craig Brown, Learning and Teaching Centre; James Harrison, Vice President, Learning and Development, SRC; Jamie Wightwick, Careers; Susan Deeley, Social and Political Sciences; Sally-Anne Coupar, Hunterian Museum & Art Gallery; Lance Voute, Veterinary Medicine; Robert Croudace, Social and Political Sciences; Stephen Woodruff, HATII; Louisa Campbell, Postgraduate project co-ordinator

Staff and students have recognized three main challenges facing students when attempting to use the University's web-based e-portfolio tool (Mahara) for critical reflection on their employability and graduate attributes. 1. Mahara views start as a blank canvas which some students find difficult; 2. Data entry in Mahara is initially private, but users subsequently need to make it increasingly more public, unlike standard social networking software; 3. Students tend only to engage with Mahara where there is a strategic advantage, e.g. credit-bearing team-work, employability development within Graduate Skills Programme, assessed reflective diaries, and for specific employment opportunities.

To help overcome these problems, twelve example Mahara views were created by a group of twelve students recruited from all four Colleges. These views will be made available to, and widely advertised to, all students across the University. Each Mahara view includes critical reflection on employability and graduate attributes. A further objective of the project is to develop learning and teaching materials that staff can access and utilise for teaching, course convening, or student support. The views will represent templates that will allow for the embedding of sustained student critical reflection on employability plans and graduate attributes.

The presentation will demonstrate the main features and diversity of the example Mahara views generated, and discuss the lessons learned about student perspectives and awareness of graduate attributes, reflection, and online self-study. The practicalities of using the online learning and teaching resources generated by this project to embed sustainable student reflection within existing courses will also be discussed.

5B Feedback Calendars: Lessons so far

Presenter: Steve Draper, Psychology

Feedback calendars are, administratively, a simple, cheap and sustainable device that publishes to the students on each course not just when their work must be handed in, but when it will be returned and with what types of feedback. With respect to students, the hope is that this will make students more aware of the feedback they get. In fact students do not usually get any statement from staff about what feedback is for or how it could be useful. At the least, feedback calendars show that staff consider it an important part of the course. They may also tend to promote a more active approach to feedback and doing something with it. (This could be complemented e.g. by using elective feedback (having students attach questions for the marker to their work)). With respect to staff, the hope is that listing the feedback explicitly and in one place will naturally prompt reflection on this (costly) aspect of course design and delivery. The columns / prompts, either in their own or other courses' calendars, could prompt consideration of various facets of feedback. For example: is the feedback (or should it be) written or oral? From staff or from fellow students or both? Discussed or just "delivered" like a one-way missile? How many words? On what following occasion, and how, could this feedback possibly be acted on?

This talk will present the basic rationale, and discuss the different types of information that could be included, and which have each a place in the theory and literature on feedback. Finally, efforts to promote adoption to date will be reported (about six went into use in semester 1, 2011).

See also <http://www.psy.gla.ac.uk/~steve/rap/fcal/>

5C Developing Graduate Attributes through a work-relating learning module

Presenter: Jessica Jung, Careers Service, University of Newcastle

This presentation will outline key successes, challenges and innovations of an established work-related learning programme which increases graduate confidence upon entering an increasingly competitive jobs market by developing student attributes to enhance employability. Career Development Modules (CDM)[1] developed by Newcastle University Careers Service offer flexible work experience for academic credit and aim to develop students who can independently self-manage, proactively interact and ethically apply knowledge and skills in a work-related context.

The modules are chosen by around 650 students from a wide range of degree programmes annually, who undertake work-related learning in many different contexts. Students develop skills and attributes essential to graduate roles, including self-awareness and reflection, occupational awareness, planning and organising, communication, teamworking and personal enterprise (part of Newcastle University's Graduate Skills Framework and coherent curriculum). Student feedback indicates tangible benefits as the skills emphasised have empowered them to approach their placements innovatively, identifying areas for improvement and enhancement, making suggestions and in some cases carrying out projects with substantial impact. Innovative teaching and assessment methods, including assessed interviews, (Jung, 2001), encourage the articulation of key achievements in a format that will be encountered upon graduation.

Key to the module's success and longevity have been the support of the wider University and the flexibility to accommodate different work contexts and offer students who may not take a placement year or be able to gain experience on an extracurricular basis a structured opportunity to enhance skills and attributes alongside subject-specific knowledge. Support and enthusiasm for the module has engendered, with support from the CDM team, several bespoke work-related learning modules within academic schools, which have further broadened the range of work-related opportunities for students.

References

[1] See <http://www.ncl.ac.uk/careers/develop/cdm/index.php> for more information on the module

Jung, J. (2011) Assessing learning from a student community engagement project. *Education + Training*, 53 (2/3): 155 – 165 (<http://www.emeraldinsight.com/journals.htm?articleid=1917975>)

5D Maximising Student Learning with Autonomous Group Projects in a Philosophy Honours Module

Presenter: Lisa Jones, Philosophy, University of St Andrews

While group-learning activity is a common feature of undergraduate course curricula in sciences and social sciences it is noticeably less common within the traditional humanities subjects (including my subject, Philosophy), particularly if we look beyond the conventional tutorial or seminar setting. In Philosophy, as in many humanities subjects, it is widespread practice for students within tutorial or seminar settings to be broken down into smaller sub-groups and tasked with discussing ideas, arguments, or problems; but such group work is generally informal and temporary, lasting only for the duration of the seminar hour. Longer-term group work activities seldom form a substantial part of the planned curriculum in Philosophy programmes. This is regrettable, given the proven benefits of peer-learning experiences (Boud, Cohen & Sampson, 2001; Jacques, 2000), and the potential for longer-term group projects to encourage key research skills in undergraduate students. Designing curricula that incorporate group projects provides an important framework for such student research.

This paper describes and evaluates an action-research project carried out in one of my Honours-level Philosophy modules, where the curriculum was substantially re-designed so as to require students to carry out research in groups on a topic of their choice. The student research projects, which culminated in a presentation of the research to the rest of the class, counted as part of the formal (summative) assessment for the module and encouraged the development of a broader set of skills in line with the declared graduate attributes that our Philosophy programme aims to promote. Evaluation of the group research initiative reveals that students performed well in this activity, and found it a positive learning experience that did indeed enhance their 'graduate attributes'.

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Jacques, D. (2000) *Learning in Groups*. London. Kogan Page.

6A Learning through reflective dialogue: Assessing the effectiveness of feedback vivas

Presenters: Stuart Hanscomb and Benjamin Franks, Interdisciplinary Studies

Tutors frequently complain that written feedback is not being followed by students. This leads to frustration on the part of markers, and failure to improve performance by students. The short feedback viva was devised in response. It is a 10-minute formally assessed viva with a student discussing their written feedback from their previously submitted assignment. The written feedback on the essay is provided several days in advance (usually over a week) by the academics. The feedback viva has four educational goals: 1. to ensure that students read the comments; 2. to assist them in identifying strengths and weakness in their work; 3. to enable the application of the advice to the marked assignment and to future academic work; 4. to allow the students to reflect on the skills learnt on this course and their wider applicability. It also provides an opportunity for the student to respond to the comments and highlight areas of ambiguity or disagreement with the assessment, thereby encouraging constructive dialogue for both students and academics. This presentation will explain the rationale and procedure for the viva, and discuss the results of recent Higher Education Academy funded research into the vivas that aims to assess the benefits and drawbacks of this form of feedback. In particular, it aims to identify whether, and in what ways, the viva enhances or damages the student learning experience, meets its four educational goals and how utilizing this method has benefited academics in shaping their feedback and course delivery. Time will be allowed for audience Q&A.

6B Facilitating learning: supporting students' self-improvement through reflective use of feedback

Presenter: Julie Hulme, Higher Education Academy

Assessment and feedback is the experience with which students report least satisfaction in the National Student Survey. Academics are keen to find methods of delivering recognisably effective feedback; however, with funding cuts to the sector, improvements must necessarily be efficient and not overly burdensome to teaching staff. Hulme and Forshaw (2009) found that both students and tutors valued verbal feedback mechanisms, but that these were considered to be time consuming and inefficient. This study investigated a method of delivering verbal feedback efficiently using timetabled teaching time.

This study investigated the use of an alternative method of feedback return across three cohorts studying a biological psychology module (second undergraduate year). In year 1, students' marked coursework was returned at an interim point in the module, with structured written feedback on four transferable skills: literature searching, reading for understanding, academic writing and critical evaluation. In year 2, the same feedback sheets were employed, but students were guided (in seminar groups of 15-20 students) to reflect on their strengths and weaknesses with regard to each skill, and to identify benefits and strategies for improvement. In year 3, the same procedure was used, but an earlier additional formative assessment opportunity was provided. At the end of the module, feedback was evaluated and students were examined and marked on the same four skills.

Students consistently rated feedback as better than that received in other modules, and intended to continue to self-improve using feedback. Statistical analysis revealed that participating in guided reflection significantly improved students' performance in the subsequent examination, and also demonstrated the value of early formative assessment opportunities for overall student achievement. A model of good practice for feedback return is proposed, and exemplar resources will be shared with delegates.

Reference

Hulme, J.A. and Forshaw, M.J. (2009) Effectiveness of feedback provision for psychology undergraduate students. *Psychology Learning and Teaching*, 8(1): 34-38

6C Supporting Graduate Teaching Assistants in two STEM areas

Presenters: Mary McVey, Dorothy Aidulis and Anne Tierney, Life Sciences, Peter Sneddon and Eric Yao, Physics and Astronomy

Graduate Teaching Assistants (GTAs) are increasingly used to deliver a wide range of undergraduate teaching. In STEM subject areas (Science, Technology, Engineering & Mathematics) this has been predominantly in lab practicals, however GTAs may also be involved in marking assignments, leading tutorials or supervising undergraduate research projects. The Boyer Commission (2006) reports on the importance of adequate support for GTAs, especially those engaged in teaching First Year undergraduate students, where student retention may be an issue. This study, in Life Sciences and Physics, aims to look at the perceptions of the role of GTAs, by staff, First Year and other undergraduate students and the GTAs themselves, with a view to identifying how best to support the GTAs in all aspects of their teaching.

Using a mixed methods approach of survey and focus group, the data gathered will inform how best to support GTAs to develop effective teaching strategies, have a better understanding of teaching methodologies and encourage engagement with the scholarship of teaching at a discipline-specific level. It will also identify the problems of trying to foster a scholarly attitude towards teaching and learning at a school level. The University of Glasgow's Learning & Teaching Strategy of enhancing Graduate Attributes and the Vitae Researcher Development Framework (2010) Domain D (Engagement & Impact) are addressed by addressing GTAs' requirements in order to enhance their teaching roles.

The outcome of enhanced support benefits all stakeholders; by developing support for GTAs who teach in STEM subject areas, as there is some evidence from North America that their research skills may also improved (Feldon et al, 2011). Increased GTA confidence also improves the learning experience for undergraduates (Boyer Commission, 2006; Hanson & Overton, 2010).

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Vitae Researcher Development Framework (2010) Careers Research and Advisory Centre (CRAC) Limited available online at: http://www.vitae.ac.uk/CMS/files/upload/CIPD%20Handout_4pp%20A5_Web.pdf [accessed 29/11/2011]

6D Co-assessment: a democratic approach to deep learning

Presenter: Susan J. Deeley, Social and Political Sciences

A voluntary work placement in a Public Policy Honours service-learning course offers students an ideal opportunity to develop their employability skills and graduate attributes. This research is a follow up study to an earlier research project that identified employability skills and how they might be assessed within this service-learning course. The overall aims of the follow up study were firstly, to examine the effects of critical reflection in the non-traditional forms of assessment used in the course, on the students' perceptions and awareness of their learning. Secondly, the study aimed to examine the effectiveness of employability skills assessment through students' oral presentations. The course was taught in semester 2, 2010-11, during which time the small scale qualitative practitioner research study was undertaken. Eight semi-structured individual interviews and a focus group with the same eight students at the end of the course were conducted.

This presentation focuses on a pertinent and salient aspect arising from the research: summative co-assessment as a democratic approach to deep learning. As a consequence of the previous research study, students now self-assess their oral presentations on the development of their employability skills and graduate attributes by writing reflective feedback comments and suggesting an appropriate grade. Similarly, the teacher also assesses the presentations. Subsequently, on a one-to-one basis each student discusses, negotiates and agrees an appropriate grade for his or her presentation with the teacher. This agreed mark later contributes to the students' final degree classification.

In this presentation, the implications, effects and outcomes of summative co-assessment are critically analysed. It is asserted that co-assessment, while fostering greater student engagement and developing their graduate attributes, also empowers students. Co-assessment thus ultimately contributes to a democratic approach to deep learning.

6E Jigsaw in practice: a collaborative workshop about collaborative learning

Presenter: Sarah Honeychurch, Learning and Teaching Centre

This workshop will introduce participants to a number of ways of incorporating the Jigsaw technique into teaching practice. The Jigsaw technique is a method of turning groups into collections of mutually supporting small groups and encouraging scaffolded collaborative learning (Aronson 1978). It has been shown to be successful in terms of student satisfaction, retention and performance. The basic principle is easy to understand and to apply – a topic is split into smaller topics, with each student or group of students being responsible for researching a small piece of the topic each, which they then teach to their fellow students when the whole group convenes. We will begin with a short overview of the technique, giving some examples of courses that have successfully used it including a recent Higher Education Academy funded project at the University of Glasgow. Results and feedback from this project will also be given. In addition, we will show how the technique has been enhanced by incorporating some of the tools available as part of the University of Glasgow Moodle. Participants will then split into small groups according to interest and work together in order to design a Jigsaw lesson around a pre-agreed topic. Facilitators who have an understanding of how to use the Jigsaw technique will be on hand in order to provide help and advice. Each group will then present their lesson plan to the whole workshop, and there will then be a general discussion about the exercise and a consideration of how the technique might be adopted and adapted for particular subjects depending on who is teaching or being taught.

Reference

Aronson, E., Blaney, N., Stephin, C., Sikes, J., & Snapp, M. (1978) *The Jigsaw Classroom*. Beverly Hills, CA: Sage Publishing Company.

7A Early feedback in Level 1 Earth Science classes: using Moodle and Turnitin for in-course writing skills training.

Presenter: Fiona Meade, Geographical and Earth Sciences

The removal of report writing from the externally assessed portion of the Higher English syllabus in 2001 (Buie, 2009) means Scottish students have difficulties with several aspects of writing academic essays in university; from finding the information, to referencing it correctly and synthesizing it in a grammatically coherent and well-structured manner. Students often rely on general course textbooks and superficial web searches, leading to essays based on non-peer reviewed information and lacking in scientific detail (see Thompson, 2003).

First year students' difficulty with the transition from school writing to academic writing is well documented (Cook and Leckey, 1999, Lowe and Cook, 2003). Students expect a learning environment similar to school and university-style independent learning means they often feel unsupported by teaching staff (Lowe and Cook, 2003). Staff often consider academic writing to be a skill that should be taught centrally and the nuances of individual subject styles are often only implicitly stated in the assessment information (Street, 2004).

To address this imbalance, a series of Moodle-based study skills websites were created for L1 Earth Science students, covering topics such as writing skills, referencing, research and using the library. Combined with a single lab class introducing these resources and a low-credit, early writing assignment, L1 Earth Science students are familiarised with research, writing and using scientific journals. Essays are submitted and marked online where detailed, web-linked feedback, referring back to the Moodle resources is given using the Turnitin Grademark facility. This approach has been effective, well-received by students and the quality of submitted work has increased markedly.

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THOMPSON, C. (2003) Information Illiterate or Lazy: How College Students Use the Web for Research. *Portal: Libraries and the Academy*, (3): 259-268

7B Enhancing Employability for Chemists Through Personal Marketing and the Language of Industry

Presenter: Debbie Willison, Pure and Applied Chemistry, University of Strathclyde

Co-authors: Pauline Connell and Linda Thomson, University of Strathclyde

Our Department recognised over twenty years ago that our graduates needed to be both well trained chemists and possess a range of important interpersonal skills. A sustainable programme of training in transferable skills was introduced in 1986. This has been modified and expanded over the years (with input from a number of excellent resources (Grice, 2004)) and now features in every year of our undergraduate degree programmes. Students recognise the importance of the skills they are gaining and enjoy the activities as they involve varied delivery mechanisms ensuring high student engagement.

A current project which is underway builds on this substantial work. Comments from Industry acknowledge the academic ability of our students but indicate that their employability would be enhanced through further training in skills recognition and business skills.

We are currently creating a wide range of resources which will be made available to other HEI and FEIs. This toolkit of resources will be designed to be used directly or can be modified with subject specific case studies to better match a Department's own particular needs and goals. The project will enable graduates (from a wide range of disciplines) to assess situations from a different perspective and will enhance their employability in a range of career options. Graduates will be taught to understand both the language of Business/Industry and a range of self-awareness, team building and management techniques. The benefits to the students will include increased confidence from participating in the activities which will help them to advance their career. Employers will benefit as graduates will possess the range of attributes which industry and commerce requires. The activities will create graduates with the attributes that will allow them to fully engage in the current competitive employment market. We would be creating leaders for the future that could make their own impact on Society. This is particularly important in today's economy.

Reference

Grice, D., (2004) *Employability Resource Pack*. HEA Physical Sciences Centre

7C Trying to understand how I doubled the pass rate in a first year course

Presenter: Eric Yao, Physics and Astronomy

Co-author: Steve Draper, Psychology

Over the last four completed Sessions for a first year service teaching course on physics the pass rate has fluctuated (in rounded figures) 40%, 67%, 38%, 95%. The teaching approach was changed each year too. Since it is reasonably certain that the fluctuation has not been in the quality of the incoming students, and the teacher has not changed, it seems that a winning design has now been found.

This talk describes five explanations of the success, and how well available data supports each. These are:

- 1) “Teacher monitoring”: active monitoring of and commenting on each student’s work (whether it is handed in, what marks it gains) by the course leader, which may give a student a sense of being “known” and noticed.
- 2) “Self-regulation”. All students necessarily manage their attention and effort, but how they do so makes a big difference to their eventual performance (cf. “time on task”). Aspects of the course support this better than previously.
- 3) “2-dimensional feedback”: In Higher Education, most feedback gives a student a sense of how they did compared to the other students in the class. In schools, students often get “ipsative” feedback that comments on how this work compares to their own work on previous assignments: an independent dimension of comparison (within-students comparison). This course, unusually, offered a degree of both.
- 4) A careful redesign of the opening section of the course meant that (most) students began with an experience of successful learning, instead of being puzzled and unsuccessful at the first topic. Perhaps early success sets a student’s expectations and elicits more successful effort and learning later on.
- 5) In previous years there was typically one student clearly better than the rest. In the most recent year, there were several of these. A single “egghead” may be dismissed as a model of what is possible, but a group sets a tone in the class of doing well that pulls the rest upwards.

7D The use of PeerWise in a Student Selected Component within the Medical Curriculum led to Improvement in Examination Performance

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PeerWise is a web based system where students are able to write, answer and comment on each others multiple choice questions. It was introduced at the start of a five week Student Selected Component in head and neck anatomy for the third year medical cohort. It was not compulsory and participation in it did not contribute to the final examination marks. 39 of the total 52 students within the Student Selected Component enrolled with PeerWise and they generated 38 questions, with some students writing several questions and others none. Of those students that had written one or more questions, they scored higher in the final examination than those who did not ($p < 0.0005$ for rank in the year, $p = 0.001$ for percentage attained in examination). The students who had composed at least one question had improved their final examination mark. The number of questions answered did not correlate with an improved examination mark (Spearman's rho = -0.043, with percentage attained in examination ($p = 0.763$) and 0.041 with rank in year ($p = 0.773$)). This study has shown that the use of PeerWise in a Student Selected Component improves examination performance, but only when the student composes questions, and engages in the question writing process. It could be that a higher cognitive level of engagement with the course material occurs by constructing questions, providing the answers and creating a variety of options (including explanations) results in improved examination performance.

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