



University
of Glasgow



11th Annual University of Glasgow
Learning and Teaching Conference

28th and 29th March 2018

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

If you've read almost anything about the University of Glasgow recently, it is highly likely that you will be aware of the major changes that are underway and planned for the University's estate at Gilmorehill. Whilst the building plans cover all areas of the University's business, the first building planned for completion will be our new dedicated learning and teaching building. Given that we hope to be using this by September 2019, this year's Conference seemed an apt time to think not only about how we might use these new spaces, but also about all the spaces in which learning takes place. We have also chosen to focus the first day of the Conference on a very new and exciting 'space' for learning – the ways in which visualisation, virtual and augmented reality can be used to support and enhance learning and teaching.

The spaces in which we teach are changing, the ways in which we assess students and give them feedback on their work are changing, and the spaces in which students consume and engage with learning are changing. Sessions in this Conference will address very different aspects of these issues, but all will seek to consider where learning takes place, where teaching happens and how we can make the best use of all the different 'learning spaces' available to us.

Please take the opportunity the Conference provides to explore and reflect on the spaces you use for learning and teaching with colleagues from across the University and the Higher Education sector. We are once again fortunate that the event will be enriched by the presence of external delegates, to whom I would like to extend a particular welcome. I hope that every delegate today will find something which lights that little spark in them to say 'ah, that's something I could try', or 'yes, I could do that better', or even 'I'd love to try that, but I'm not sure quite how yet'.

There are some changes to the Conference this year, but we have also kept the things that were successful last year. The major change, of course, is the expansion from one day to two. This has allowed us to have a focussed first day, as well as allowed for more networking in both days, which people asked for last year. We again have lightning talks either side of lunch on day two where staff can talk in a shorter period about practical issues they grapple with, and we will be hearing the best student presentations from our recent 'Let's talk about [X]' undergraduate research conference, which was shortlisted for Times Higher Education award this year.

As a University, we can be justifiably proud of the excellent and truly innovative practice that continues to keep our student learning experience amongst the best in the world and the quality of our annual Conference underlines this.

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.

Best wishes



Dr Matthew J. Williamson

Director, Learning Enhancement and Academic Development Service (LEADS)

Keynote Address, Day One

Transformative education – a new map for learning

Dr Claudia Krebs, University of British Columbia

One of the greatest impacts on postsecondary education over the past decades has been the digital revolution. We have now arrived in a world where technology is the natural extension of our lives. Increasingly, universities leverage this technology to improve the education of students – to create a skilled and knowledgeable global citizenry.

At its best, education is a transformative experience for students: the knowledge and reasoning skills of learning, the emotional reactions to content, the acquired skills and competencies forever change the students' outlook and interaction with the world. As educators, we carry the responsibility to help our students in these processes; pedagogy and technology are our allies in this journey.

With so many pedagogical and technological options on the table, how do we choose the right medium for the competencies we want our students to acquire? How do we design learning materials to best support our students? Can we provide a map for learning that will help students navigate this often confusing and overwhelming journey?

This talk will discuss effective ways to design materials for students - from simple to complex, from chalk talks to virtual reality – and how to integrate these materials into evolving curricula.

Biography

Dr. Krebs is a Professor of Teaching at UBC where she has been teaching neuroanatomy and gross anatomy since 2004. During this time, she has worked on the integration of technology and novel visual approaches to the classroom. She has received numerous teaching awards, both from her students and her peers at UBC, and nationally. Together with anatomy educators from across campus at UBC and from partner universities she is creating open educational resources for neuroscience and anatomy for the global community; including video, e-books, and interactive web materials. In collaboration with Microsoft, her team has developed an interactive app for studying the deep structures of the brain with the HoloLens. She is currently building a 3D/AR/VR Makerspace for anatomy education where students can work on projects for their coursework. Dr. Krebs and her colleagues have just published the second edition of “Lippincott’s Illustrated Reviews Neuroscience”.

Keynote Address, Day One

The Pros and Cons of Augmented and Virtual Realities for Learning and Teaching

Professor Paul Chapman, Glasgow School of Art

Immersive technologies have been around for decades but recent technical advances have caused a huge surge in popularity within the last 24 months. Haven't we been here before? Is this yet another failed push by the tech companies with gimmicky technology crying out for real-world applications? Or, have we reached a tipping point similar to the birth of the web in the early 90's where it's now time to get on board or be left behind? Given the huge investment in AR/VR by Facebook, Nokia, Microsoft and Samsung it's imperative that we understand its potential and especially its application for learning and teaching.

This talk will initially give a quick overview of the current state of the art relating to AR/VR systems. We then consider some of the pros and cons of the technology with a particular focus on learning and teaching. Finally, we will make some bold predictions about where we think the technology will be in another 10 years.

Biography

Professor Paul Chapman is Head of the School of Simulation and Visualisation (SimVis) at GSA where he has worked since 2009. SimVis is a postgraduate research and commercial centre based in the Digital Media Quarter in Glasgow housing state of the art virtual reality, graphics and sound laboratories. Previously Paul was Director of the Hull Immersive Visualisation Centre and spent several years working as an offshore engineer in the oil, gas and diamond mining industries. Paul holds BSc, MSc and PhD degrees in Computer Science, he is a Chartered Engineer, Chartered IT Professional, Fellow of the British Computer Society and member of the Royal Society of Edinburgh's Young Academy.

Keynote Address, Day Two

“Space Matters: Supporting active learning anywhere”

Adam Finkelstein, McGill University

Students that engage in deep learning show greater educational gains and success at university. However, in order to create opportunities for meaningful, deep learning students need to be actively engaged in the classroom. While active learning can be implemented in any classroom, where we learn has a significant impact on how we learn. As educators, we need to be aware of the impact that learning spaces have on learning and how we best take advantage of them. We will examine evidence of the impact that space can have on learning and why space matters for not only active learning, but for all learning.

Biography

Adam Finkelstein is currently an Educational Developer at Teaching and Learning Services at McGill University where he develops educational university-wide initiatives to improve teaching and learning. He has managed a team of instructional designers and multimedia programmers, developed many different types of award winning technology-enhanced teaching and learning projects, and managed multiple implementations of McGill’s learning management systems. His area of research interest include teaching and learning in physical (classrooms and teaching labs) and virtual (online) environments. Adam is currently the Chair of two working groups responsible for the selection, design and renovation of classrooms and teaching labs at McGill. He is the learning design lead for all renovations and been focused on designing innovative spaces, including numerous Active Learning Classrooms. He is also Team Lead for the design and delivery of McGill’s Massive Open Online Courses (MOOCs) and has worked with thousands of faculty on integrating technology into teaching and learning, course design and using active learning strategies. He has given numerous keynotes, presentations and workshops both nationally and internationally on topics ranging from learning design to learning technologies to learning spaces.

Invited Speaker, Day One

Technology in education – The Past, the Present and the Coming Revolution

David Sime, Google and the Chartered Institute of Marketing

In this talk David Sime – lecturer for Google and the Chartered Institute of Marketing – will discuss the amazing developments in communications technology – where we've come from, where we have got to and where we are going.

With an 18 year background in both education and digital communications coupled with keen observation human behaviour, David will reveal the precedents and antecedents of our communications breakthroughs, from papyrus to the printing press, the tools which

have shaped our current world-computers and the internet, through to the emerging future of augmented reality, virtual reality, holograms and haptics.

Each of these communications revolutions will be placed in the context of their effect on education, and we will see how one inevitably and fundamentally affects the other.

By looking at these trends and charting a course by the one constant – human behaviour – David will seek to give us a reliable indication of where the future of education lies – not in mass production but in personalisation. Not in staring at a screen or page, but in immersion. Not in raw theory as a preparation for work, but in practical, hands on interaction without the current barriers of distance, cost or even safety.

The world of education is about to hit the biggest paradigm shift it has ever seen – this talk will prepare you for what that will involve

Learning & Teaching Conference 2018 – Abstracts

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1-1A Glasgow's Virtual Reality Teaching Project - A work in progress

Neil McDonnell, Humanities

In early 2017, the Centre for the Study of Perceptual Experience (backed by the Knowledge Exchange Fund, and the office of the Vice Principal for Academic and Educational Innovation), launched a University-wide competition for ideas for the use of Virtual Reality (VR) in teaching. The aim was to identify a range of teaching applications which could transform higher education teaching in Glasgow and beyond.

In this talk, I will report on the project's progress, reflect on the lessons learned, and share a roadmap for future involvement.

Firstly, I will outline the rationale behind the competition, and how we plan to make it sustainable. I will then reflect on the process of the competition and share some of the outstanding ideas that we selected to take forward – ideas that come from all four colleges of the University.

Looking to the future, I will lay out our plans for funding, and our longer-term ambitions for the project. I will finish by outlining the route by which those with an interest in Virtual and Augmented Reality and Teaching can become part of the project.

1-1C Interactive Simulation of Biopsy Puncture Training Procedures Using Immersive Virtual Reality and Haptic Technology for Motor Skills Training

Jordan Trench and Matthieu Poyade, *The Glasgow School of Art, Simulation and Visualisation* and **Paul Rea**, *Life Sciences*

This study aims to enhance conventional surgical skills and anatomical knowledge teaching to novices using virtual reality (VR). By proposing an immersive and interactive experience within a virtual dissection laboratory, we aim to support the development of those fine motor skills that are required in a liver biopsy procedure. This simulation empowers users with enhanced control of a virtual biopsy needle using a force feedback haptic device allowing multiple rehearsals of the retrieval of tumour samples from a patient in a safe and reliable environment.

This study has been developed using CT and MRI scan data; models of the abdomen have been developed and textured to create an accurate representation of real life anatomical structures. Immersion within the virtual environment using the HTC Vive allows the users to explore realistic anatomical structures in context. When performing the liver biopsy, an in-app ultrasound camera was created to allow the user can see inside the abdomen, with the purpose of training users to interpret scan data, something that is done in real biopsy procedures. Users can manipulate a Phantom Omni device to insert the virtual needle into the patient and receive force feedback from the application.

A heuristics study involving an expert radiologist was performed to configure and verify the haptic accuracy of the system. This expert-validated application has real potential to be developed further to create a helpful tool for trainee surgeons. This pilot study demonstrates that visualisation and VR has great potential to be an effective tool for learning due to improved engagement and interaction of users.

1-2A Manuscripts, maps and material culture: using visual resources to teach Burns Online

Ronnie Young, *Critical Studies*

I will present, on behalf of our BOLD project team, the topic 'Manuscripts, maps and material culture: using visual material to teach Burns Online'.

In this presentation, I will detail our experiences of working with digitised manuscripts, interactive maps and also images/examples of material objects to both help deliver and to enhance student learning in an arts and humanities e-learning environment. I will also offer some reflections on practice with regard to working with external resources and external partners to source material. Finally, some brief reflections on possibilities for moving from 2D to 3D objects in the areas outlined above in line with advances in VR and AR technology.

Did not present at the Conference.

1-2B Interactive tools for visualizing quantitative data to promote statistical literacy among Social Science students: an example of the use of R-shiny

***Katherin Barg, Education Nema Dean, Mathematics and Statistics,
Brian Fogarty and Niccole Pamphilis, Social and Political Sciences***

Teaching in subjects across the University involves the use of statistics, numerical literacy and quantitative data, and there is a constant need for the development of teaching tools to promote this ability. The Q-Step Centre at the University of Glasgow promotes quantitative literacy among Social Science graduates and members at the Centre recently started using R-shiny as a tool to visualize quantitative data on education and political sciences topics in order to facilitate student learning.

R-shiny is a package implemented in the statistical software R to create web applications through which students can produce statistical graphs and tables through a graphical interface without having to interact with the coding part of R. R-shiny allows instructors to translate data analysis into web applications without requiring coding in Java or HTML. The student user can then conduct basic analyses of data sets on social science topics through interactive websites.

The students do not require statistical or coding knowledge to participate in these web-based activities. They explore distributions of variables such as school performance or party preference and relationships between variables on the basis of their interests and theoretical assumptions. With a few clicks they can produce tables and colourful graphs, which they can then interpret to answer research questions. The students independently investigate topics of interest to them, rather than passively following along as an instructor demonstrates an analysis. This encourages greater engagement on the students' parts.

In this presentation, we explain and demonstrate how we used R-shiny to facilitate student development of basic quantitative data literacy (in our applications, educational inequality and voting behaviour). We also present wider possibilities of using this tool in teaching and learning related to the interpretation of statistics. We place a focus on teaching and encouraging interest in students who have little or no quantitative literacy skills.

1-2C Extraneous cognitive loading of 3D animations and the use of Google cardboard (VR) in undergraduate teaching

Craig J Daly, Janette Bulloch and Dorothy Aidulis, Life Sciences

Digital and online learning, and development of multimedia technologies, have contributed to a large-scale shift in learning methods and student expectations in higher education. We have re-examined existing theories to guide the design of multimedia presentations and maximize learning potential. These include; 'Split Attention Effect', 'Spatial & Temporal Contiguity Principles', 'The Coherence Principle' and the 'Redundancy Principle'. These theories were originally developed to guide the design and delivery of multimedia which was mainly 2D but comprised words and pictures. However, these theories may need revised when considering modern 3D animations, virtual reality (VR) and augmented realities (AR). Our own research on the extraneous cognitive loading of 3D animations revealed that 78% of students (of 41 tested) prefer a presentation design which is contrary to the 'Redundancy Principle'. The students selected a presentation that had both a spoken narration and on-screen text.

We have recently trialled the use of Google cardboard in undergraduate teaching to deliver VR viewing of 3D molecular structure using smart phones and cheap viewers. This approach was extremely well received and provides the impetus to develop further VR-based teaching content. Interestingly, the extraneous cognitive load (background & setting) that provides the immersive experience (and so becomes essential not extraneous) may reduce learning or the level of complexity (intrinsic cognitive load) that can be delivered.

Therefore, our presentation will provide a report on our previous work on cognitive loading of animations and will consider the issues that lie ahead for the instructional design of VR and AR content.

References

Daly, C.J., Bulloch, J.M., Ma, M. & Aidulis, D.A. (2016) A comparison of animated versus static images in an instructional multimedia presentation. *Advances in Physiology Education*. 40: 201-205

Did not present at the Conference.

1-3A Visualising Inequalities in Lifewide Literacies in Glasgow

Catherine Lido and Kate Reid, Education

We will present our work 'Visualising Lifewide Literacies' in Glasgow, an IAA funded project using Urban Big Data Centre (UBDC) data from the integrated Multimedia City Data Project (iMCD). Big secondary data are increasingly being used by social scientists to address global societal challenges, yet the statistical approaches to interpret this data are not always made clear to the general public, community groups, citizen activists and key policymakers. Yet, it is these non-academic groups who can often make the most difference in society.

Therefore, the team worked closely with social enterprise organisations in prototyping a range of 'touchable' objects which represent 'literacies' in a number of domains (mainly- health, eco and financial), in the socio-spatial urban context of Glasgow. These objects were piloted with BA Community Development students, and presented to the public at Science Sunday and ESRC Festival of Social Science (Ikea). The objects include a laser cut wooden interactive map of Glasgow, which visualised the relative mean scores of Health, Eco and Financial literacies in the local authorities. The second object was a digital quiz, which participants could take part in, and they received a token for the correct answer. Finally, participants were invited to create their own literacy person, by attaching limbs to the central badge, representing the literacy skills they see as their strengths (e.g. reading/writing, maths, science, arts, cultural, digital, foreign language, and political literacies). Over 150 badges were created at Science Sunday, allowing us to present current work at UBDC, and offer the opportunity to win a school visit from our team to discuss the importance of wider literacies in later life success.

We are confident that increasing the scope, diversity and resulting inclusivity of representing data engages a wider audience, starting the 'literacies conversation' in schools and at home.

References

Lido, C., Osborne, M., Livingston, M., Sila-Nowicka, K. & Thakuriah, P. (2017). AHEA Book chapter. 'Big Data' techniques to improve learning access and citizen engagement for adults in urban environments. In Scott, L., Watson, C. & Wu, A.T., Quality of Life in Adult Learning (In preparation). American Higher Education Alliance Series: Adult Learning in Professional, Organizational and Community Settings. Charlotte, NC, USA: Information Age Publishing (In Press)

Osborne, M., Houston, M., and Lido, C. (In Press) The role of Big Data in elucidating learning cities ancient, present and future. In Stenger, Jan R. (ed.), *Learning Cities in Late Antiquity: The Local Dimension of Education*. Abingdon: Routledge

Lido, C., Osborne, M., Livingston, M., Thakuria, P., and Sila-Nowicka, K. (2016). Older learning engagement in the modern city. *International Journal of Lifelong Education*, 35(5), pp. 490-508. (doi:10.1080/02601370.2016.1224037)

Osborne, M. and Lido, C. (2016) Big Data techniques to improve learning access and citizen engagement for adults in urban environments. Keynote Paper, presented at International Conference of Taipei Learning City, Taipei, Taiwan, November 2016

Osborne, M., and Lido, C. (2015) Lifelong learning and big data. In: Gartenschlaeger, U. and Hirsch, E. (eds.) *Adult Education in an Interconnected World: Cooperation in Lifelong Learning for Sustainable Development*. Series: *International perspectives in adult education* (71). DVV International: Bonn, pp. 116-125. ISBN 9783942755238

1-3B Evaluating a digital 3D dissection of the forearm for teaching Anatomy

Laura Pérez-Pachón, Simon Parson, and Flora Gröning, Medicine, Medical Sciences & Nutrition, Aberdeen University

Introduction: Understanding the anatomy of the human forearm is challenging for students as it includes 20 muscles organised in several layers. At the University of Aberdeen, students learn Anatomy primarily by using prosections, i.e. cadaveric specimens that have been dissected by trained prosectors. To prepare for classes and facilitate the identification of structures in the prosections, students are encouraged to use labelled diagrams and dissection photos in Anatomy atlases and textbooks (incl. a digital atlas that is accessible via our virtual learning environment). However, as these are 2D images of individual dissection stages, it remains difficult for students to understand the complex, layered arrangements of muscles in the forearm and to distinguish between superficial and deep muscles in the prosections. Therefore, we created and evaluated a new digital 3D learning tool that shows the dissection of the human forearm muscles step-by-step.

Materials & Methods: We created a high-resolution photo-based 3D model of a cadaveric forearm using photogrammetry. We then animated this 3D model, highlighted its muscles and added text labels. To evaluate this learning tool, we handed out questionnaires to 23 undergraduate Anatomy students.

Results & discussion: Students found the 3D model realistic and highly detailed. They indicated that the digital 3D dissection was more helpful than photographic and illustrated anatomy atlases to identify the muscles of the forearm in a cadaveric specimen. In addition, 90% of students agreed they would use the animation outside the Anatomy lab and they would prefer to access it from their personal laptop or PC.

Conclusions: The results of this evaluation indicate that our animated digital 3D model of the forearm facilitates students' learning. Based on the students' suggestions we are planning to make some adjustments to this tool and make it available online to our students via our virtual learning environment.

1-3C Virtual Reality poster feedback session within Second Life

Jenny Crow, *Digital Education Unit*, **MVLS Barbara Mable**, *Biodiversity, Animal Health & Comparative Medicine* and **Professor Jo-Anne Murray**, *Digital Education Unit*

The use of virtual worlds (VW) in education has increased in recent years, with Second Life (SL) being the most commonly used VW in Higher Education. At the University of Glasgow SL has been predominately used with online distance learning (ODL) students. However, due to a lack of availability of physical space to run a poster session with on-campus Masters students in the Institute of Biodiversity, Animal Health and Comparative Medicine SL was used as an alternative. A purpose-built poster display area within the Gilbert Scott building on SL was used to facilitate this session.

During these sessions students logged into Second Life, created their avatar, viewed the posters and provided feedback comments beside the posters - all within the virtual reality environment.

This presentation will focus on the processes we employed and the obstacles we encountered setting up and running these virtual poster sessions.

We will also report on the lessons learned, including student's autonomy (Xie and Ke 2011) in creating their own unique avatars (Pellas 2014).

References

- Pellas (2014). "What Makes Students to Participate in Online Collaborative Settings Through Second Life? Students' Views and Perspectives Based on Adult Participation Theories." *International Journal of Digital Literacy and Digital Competence* 5(1)
- Xie, K. and F. Ke (2011). "The role of students' motivation in peer-moderated asynchronous online discussions." *British Journal of Educational Technology* 42(6): 916-930

2-1A Practical Applications of Game-Based Learning in the HE Classroom

Emilia Todorova, QAA Scotland, Matthew Barr, Humanities

The workshop will explore how Game-Based Learning (GBL) and gamification can be embedded in the learning process in Higher Education. The workshop will provide insights from the findings of two research projects which looked at how GBL has been used in the University of Glasgow and Glasgow Caledonian University to develop graduate attributes in groups of students at different stages of their course.

Participants will have a chance to explore how games can be used to support student learning and engagement in their classroom. Furthermore, the workshop will explore how educators can effectively embed games in the curriculum and ensure they form a complete part of the learning experience.

Challenges and limitation associated with game-based learning in HE will also be discussed, giving attendees a better understanding of what they would need to consider before they get involved in GBL.

Finally, the workshop will get participants to play the games involved in the projects mentioned in the workshop. This will give them a practical way to explore first-hand how games can contribute to the learning experience and how their students can learn from playing games in class.

References

- Squire, K. D. (2003). Video games in education, *Int.J.Intell.Games & Simulation*, 2 (1), 49-62.
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development* (Vol. 1). Englewood Cliffs, NJ: Prentice-Hall
- Barr, M. (2017). Video games can develop graduate skills in higher education students: A randomised trial. *Computers & Education*, 113, 86-97

2-1B What we talk about when we talk about independent learning

Dustin Hosseini and Mark Dawson,
Lancaster University Management School

The term 'independent learning' is highly contested, although research does show that it takes in aspects of both informal and social learning (O'Doherty, 2006; Meyer, 2010). Nevertheless, that which fosters informal, social and/or independent learning (both within and beyond the University) remains somewhat elusive.

Beyond the University's more formal spaces, then, we only have limited, often anecdotal evidence of the places that students inhabit in order to learn 'independently'. This presentation attempts to address this in some detail, and ask where students seem to learn more independently and how that process takes place. Indeed, it asks: what are we talking about when we talk about independent learning?

The Lancaster University Executive MBA students undertake a blended course over 2 years and across 3 continents. Students have access to the Moodle VLE and attend intensive campus-based 3-day workshops for most modules. However, these together only form part of their learning experience. By asking students to contribute images, sketches and descriptions of where and how they learn, we seek to further question the notion of (independent) learning spaces. In doing this we refer to, and offer an evolution of, Peter Goodyear's work on 'design for learning', and respond to his call for a clearer idea of what really happens when and where students learn (Goodyear, 2017).

Goodyear states that learning is 'neither random nor determinate'; this suggests a certain unpredictable, unknowable element haunting the learning event to such a degree that it will always undermine any attempt at its design. Nevertheless, learning can be anticipated through categories such as infrastructure, task (episteme) and its social context. We suggest, however, that it is the unknowable quality of learning that remains its potential to be, or become, independent, and that design for learning, must itself learn to come to terms with its inherent impossibility.

References

- Goodyear P. (2000) Environments for Lifelong Learning. In: Spector J.M., Anderson T.M. (eds) *Integrated and Holistic Perspectives on Learning, Instruction and Technology*. Springer, Dordrecht
- Goodyear, P. (2017) *Shaping Spaces*. Keynote at ALT Conference 2017, Liverpool
- O'Doherty, M. (2006) *Definitions of independent learning—Initial overview*. *Learn Higher*
- Meyer, W. R. (2010) *Independent learning: a literature review and a new project*. In *British Educational Research Association Annual Conference* (pp. 1-7)

2-1C Using open access peer-reviews and pre-printed submissions to enhance independent learning and accessibility of academic writing in PGT students

**Niamh Stack, Phil McAleer, Heather Cleland Woods
and Helena M. Paterson, Psychology**

One of the most difficult challenges that novice learners face is to read and assess verbose, complex journal articles, filled with a mix of subject-specific jargon and intricate analyses, challenged with understanding the terminology as well as the general concepts of the work. A recent blog captures this frustration, stating, “Nothing makes you feel stupid quite like reading a scientific journal article” (Ruben, 2016); whilst a follow on looks to alleviate this issue by offering insights from experienced professionals on how best to approach articles (Pain, 2016). Yet while numerous rubrics exist for improving general structuring and writing (Derntl, 2014; Hillier et al., 2016; Kording and Mensh, 2016), few if any exist on how to improve conceptual understanding; a key skill required for students to support their own academic writing with evidence-based literature. We looked to address this issue by creating a mock ‘peer-review’ assessment as part of a portfolio of skills in our Masters-level conversion course; a cohort faced with the stern challenge of having to rapidly, and independently, learn to read and comprehend academic writing from a novel discipline over a relatively short time-span. Our approach involved three stages. First a brief explanation of the peer-review process using freely available online materials from publishers (e.g. Wiley, PLOS). Next an analytical discussion of open access peer-reviews of published articles (via PeerJ, Royal Society Open Science); i.e. a learn-by-example approach. Finally, the student’s own mock peer-review of one of three open access pre-printed journal articles (via PeerJ, PsyArXiv, etc) with specific guidelines to focus on the key aspects of theory, methodology and readability.

Here we present qualitative and quantitative feedback from the students as regards to how this task improved their ability to understand complex academic writing, and how it has altered their approach to reading such articles in future.

References

Derntl, M. (2014). Basics of research paper writing and publishing. *International Journal of Technology Enhanced Learning*, 2014 Vol.6, No.2, pp.105 – 123. doi: <http://dx.doi.org/10.1504/IJTEL.2014.066856>

Hillier, A., Kelly, R. P. & Klinger, T. (2016) Narrative Style Influences Citation Frequency in *Climate Change Science*. *PLOS ONE* 11(12): e0167983. doi:10.1371/journal.pone.0167983

Kording, K. P. & Mensh, B. (2016). Ten simple rules for structuring papers. bioRxiv. <http://biorxiv.org/content/early/2016/12/17/088278>, doi: 10.1101/088278

Pain, E. (2016). How to (seriously) read a scientific paper. [online] Available at: <http://www.sciencemag.org/careers/2016/03/how-seriously-read-scientific-paper>

Ruben, A. (2016). How to read a scientific paper. [online] Available at: <http://www.sciencemag.org/careers/2016/01/how-read-scientific-paper>

2-1D Implementation of problem based learning in STEM undergraduate laboratory teaching

Catriona McAllister, Eric Yao and Pedro Parreira,
Physics and Astronomy

Enhancing student engagement and promoting active learning not only helps students to gain deeper understanding of the material they study, but it also helps them to develop skills and graduate attributes so highly sought after by employers. Traditionally in STEM subjects, laboratory teaching is used to consolidate conceptual understanding, develop practical skills and inculcate an evidence based problem solving approach. At the same time, laboratory work promotes the active engagement of the students. However, it is easy for students to be distracted by technical details and simply follow a set instruction thereby missing out on the benefits of being actively engaged.

Here we present an alternative to the traditional introductory level physics laboratory experiments which enhances students' learning by focusing on problem solving. Students are tasked with clearly stated challenges and are offered only limited instructions. The student focus is therefore on the planning, design and execution of the experiments as well as analysing and understanding results. Conceptual understanding is enhanced by connecting students' prior learning and experiences with the predominant use of everyday objects rather than traditional laboratory teaching equipment. Working in small groups, students achieved the aims of the experiments through self and peer-instruction. Discussions between learner and teacher moved into higher cognitive levels, became more focused on underlying concepts and interpretation of observations rather than technical issues with equipment. The entire laboratory component of a first year Physics course was successfully reorganised based on this approach. Students obtain better quality results, score more highly in tests and give highly positive feedback on their experience compared to when performing the same experiments with conventional educational equipment. Students perceive such an approach as particularly helpful in furthering their understanding. Laboratory teaching can truly fulfil the function for which it was originally conceived by following this approach.

2-1E Using traditional virtual spaces in non-traditional, innovative ways: Civil Litigation on the Diploma in Professional Legal Practice (DPLP)

Kerry Trewern and Rhona McNair, Law

Students wishing to practise law in Scotland must complete the DPLP; a vocational course regulated by the Law Society of Scotland. Our case-study highlights innovation in our Civil Litigation course. Our case-study highlights innovation in our Civil Litigation course and shows how this can be applied more widely. The DPLP managerial and administrative team, with student representatives, will demonstrate how technology assists independent learning. The DPLP team has obtained feedback from students, the legal profession and regulator, all of whom support innovative learning.

- Collaborative, independent learning: a look at how this is encouraged and assessed on our course and the subsequent benefit to students;
- Quizzes: students can direct their own learning, by self-testing throughout and must complete an online assessment;
- Peer Review: students submit a client advice letter and then carry out a peer review exercise via Aropä. Each student must review three letters and comment upon clarity and use of plain English;
- Filmed Assessment: students are filmed interacting in a mock court hearing. Senior tutors and external examiners then moderate the advocacy standard. This type of assessment could be used by other areas across the University;
- • Filmed Resources: students can watch examples of court hearings, filmed in the School of Law's moot court room with role-play by legal professionals. Interviews with court staff in Glasgow Sheriff Court are also available, providing a meaningful context for learning;
- E-modules: students watch e-modules and can download transcripts, to enhance independent learning;
- Feedback: students submit online feedback via Moodle mid-way through course.

Presentation from three perspectives:

1. Educator: managerial team will discuss pedagogical reasons for and advantages of use of technology in a vocational course.
2. Administration: DPLP administrative assistant will explain benefits and challenges of using technology for assessments.
3. Student: DPLP students will provide insight into and feedback on the student experience.

2-1F 'I was interested to see you'd...': Tasks that engage learners on an online course

Carole MacDiarmid, *Modern Languages and Cultures*

How do we engage students on online courses with learning content? How can we facilitate knowledge building through peer interaction, but also allow students to work flexibly and independently through weekly cycles of work? And how do we ensure demands on tutor time are manageable?. This talk will discuss these factors drawing on an evaluation of the postgraduate Teaching English for Academic Purposes online course, one which attracted participants working in eight different countries and across eight time zones.

The evaluation is based on weekly feedback surveys, which enabled a dynamic element to the course development, and on a content analysis of forum postings (based on Salmoni and Gonzalez, 2008). In addition, post-course interviews with lecturers and students provided further insights into the perceived usefulness of a range of different task types, and of the opportunities to collaborate, both planned and unplanned, that occurred. I will illustrate the key findings of the evaluation with both collaborative and individual tasks that were viewed as effective in encouraging engagement with the learning materials and with their peers. I will also identify those which, at least in this context, proved less successful in some respect.

References

Salmoni, A.J. & Gonzalez, M.L. 2008, "Online collaborative learning: Quantifying how people learn together online", *Medical Teacher*, vol. 30, no. 7, pp. 710-716

2-1G Creating effective educational videos: a toolkit for a quick and low cost approach

Niall Barr, *IT Services*, **Shazia Ahmed**, (*LEADS*), **Sue Milne**, *Chemistry*, **Ruth Douglas**, *LEADS*

There has been increasing interest in the use of videos for teaching in recent years for many reasons. It has become easier to share video files, and this has been utilised by MOOCs and sites like Khan Academy to share educational videos. In addition, the popularity of flip teaching and other forms of blended learning to enhance traditional education, has increased interest in the use of video to complement or replace conventional lectures. High quality video production is both time consuming and costly, however, the success of Khan Academy has demonstrated that simple low production value videos, combining clear audio with a screen-captured video of text and diagrams being drawn on a virtual blackboard, can be very effective for education (Thompson, 2011). These videos have been shown to engage students better than slide-based tutorial videos (Guo et al. 2014), and are watched multiple times. Video has been shown to be useful for explaining procedural tasks, and for going through worked examples (Kay, 2012), making it particularly appropriate for teaching core mathematical concepts and its applications in other disciplines.

In this presentation we will describe how we have developed efficiently produced videos for teaching mathematical concepts to science students using a combination of commercial screen capture software, custom developed virtual blackboard software and a high quality graphics tablet. The videos are embedded in Moodle lesson, alongside conventional mathematics notes and learning materials, and help the students see the process of doing example calculations more clearly.

We will also describe a portable low production value video toolkit, developed using our custom virtual blackboard software in combination with a mix of open source and custom software and relatively low-cost hardware that can be used to create an effective studio for rapid video production in any reasonably quiet space.

References

Guo, P.J., Kim, J., Rubin, R., 2014. How video production affects student engagement: an empirical study of MOOC videos. ACM Press, pp. 41–50. doi:10.1145/2556325.2566239

Kay, R.H., 2012. Exploring the use of video podcasts in education: A comprehensive review of the literature. *Computers in Human Behavior* 28, 820–831. doi:10.1016/j.chb.2012.01.011

Thompson, C., 2011. How Khan Academy is changing the rules of education. *Wired Magazine* 126, 1–5

2-5A Adventures in Student Interaction: planned and unplanned audience engagement

Helena Paterson, Phil McAleer and Ute Barrett, Psychology

We like noisy classrooms, but it can be a challenge to get students to make that noise. Classrooms can be face-to-face sessions or in the virtual space and while the challenges are different in different environments, we have found that blending the virtual and face-to-face classroom often leads to collaborative student learning communities.

In this session, we share some of the tips and tricks that we have used to engage students in forming collaborative learning communities. While some of the tricks are in face-to-face teaching, we also use online technology and assessments to foster student collaboration along with problem-based learning. We have used planned and spontaneous activities to allow for flexible learning to engage with student audiences and we discuss here the value of both. We will invite some of our students to share their experiences of engagement in the face-to-face and virtual classroom.

For much of this session delegates will engage in planning their own noisy classrooms and will share practice about how we foster group working and the technology that we use regularly. Technology included Slack forums, audience interaction software, Twitter and Moodle.

2-5B Enhancing the student learning experience in TEAL spaces

Susan Deeley, *Social and Political Sciences*, **Wendy Anderson**, *Critical Studies*, **Jessica Penney**, *Social and Political Sciences*, **Jack Tully**, *Culture and Creative Arts*

Embedding appropriate technologies in the learning environment is a key strand of the University's Learning and Teaching strategy. A significant part of this is the development and use of TEAL (technology enhanced active learning) spaces, which can involve a flipped classroom (Santos Green et al, 2017). However, there appears to be reluctance in using learning technologies in some areas (Deeley et al, 2017). Indeed, even in areas keen to engage with these new facilities, the decision to adopt a TEAL space is not without its risks and challenges, for students and staff.

This talk will present the findings of an LTDF-funded project, 'Evidence Based Co-Created Teaching Tips for TEAL Spaces'. The project has sought to develop a set of teaching tips for inclusion in GUSTTO (Glasgow University's Teaching Tips Online), centred around good practice in the use of TEAL spaces in the University. Working in partnership with students, the project aim has been to discover what works well, how and why, in learning, assessment and feedback in TEAL spaces. Various methods have been used for data collection, including course materials, critical incident questionnaires, practitioners' fieldwork diaries, and student focus groups, the latter conducted by two student project assistants who have also been involved in identifying the focus of the resulting teaching tips.

The project concentrated on the use of TEAL spaces (the Hugh Fraser room and St Andrews room 202) in two Colleges: Social Sciences and Arts. The talk, however, will focus on project, findings which may be transferable or adaptable for multidisciplinary use across the University.

References

Deeley, S., Karadzhov, D., and Koristashevskaya, E. (2017) College of Social Sciences Assessment and Feedback Review. University of Glasgow: Unpublished report

Santos Green, L., Banas, J.R., Perkins, R.A. (eds) (2017) *The Flipped College Classroom*. Switzerland: Springer

2-5C Can all students benefit from mobile applications?

Nicola Veitch and Pam Scott, Life Sciences

Molecular biology theory and methods are now perceived fundamental and underpinning to all Life Sciences, however, students can often find molecular biology conceptually difficult. Distinct and tailored methods to engage all students are therefore paramount and a range of materials have been developed to accommodate a variety of student academic backgrounds.

Digital media technology has been used to create a mobile app to support students studying molecular courses, in order to enhance understanding of molecular biology practical skills. The Molecular Methods app is available to download and is now being accessed globally. The app houses bespoke online resources, including explanations of many commonly used techniques such as PCR, cloning and DNA sequencing, illustrated with images and flow charts. Developed as a digital resource to support student learning, it contains University of Glasgow bespoke YouTube videos with linked revision quizzes, in order to enhance theoretical understanding of certain aspects of practical molecular biology. This app is currently used by students undertaking the Molecular Methods course as part of a Life Sciences undergraduate degree programme at the University of Glasgow, and is now being accessed by students internationally, with 11,000 downloads to date.

The app has been developed in collaboration with undergraduate students and graduate teaching assistants in order to ensure the material available is focused on areas that students find most challenging. Feedback studies showed that students engaged well with the app in this context at the University of Glasgow, and further student feedback is being collated to understand the use of other apps in Higher Education and to examine if the Molecular Methods app enhances student learning at external institutions. The advantages and disadvantages of using this approach will be discussed in a wider context of designing apps in Higher Education.

The Molecular Methods app can be downloaded for free from the App Store or Google Play onto a mobile device. Please download in advance to facilitate discussion during this session.

References

Scott, P. H., Veitch, N. J., Gadegaard, H., Mughal, M., Norman, G., and Welsh, M. (2017) Enhancing theoretical understanding of a practical biology course using active and self-directed learning strategies. *Journal of Biological Education*, (doi:10.1080/00219266.2017.1293557)

2-5D Learning in Practice: Managing stakeholder expectations and the value of experiential learning approaches

Jillian Gordon and Paul Ferri, Adam Smith Business School

Entrepreneurial Ventures, Management and Practice is an applied experiential learning course offered to senior honours year students as part of the MA Business and Management Honours Programme. It is an elective course designed to provide students with a learning opportunity to apply their knowledge and skills beyond the classroom on a project for a small to medium sized enterprise. The project is focussed on an aspect of business growth and development and is value additive to the host organisation.

This course has been designed to enable the academic and practitioner environments to intertwine and synergistically provide students with a deep learning environment. As academics, we are faced with how best to balance the challenges of applying theory and practice in a meaningful setting to prepare our students for a future career. Moreover, this type of approach to facilitating learning combines a number of tensions including: managing the expectations of an external organisation, the anxieties of students whose lack of appreciation for their own applied business skills requires careful management and coordination within the tri-partite relationship between institution, students and small business.

The presentation will draw on learning and reflections from all stakeholders: academic staff, students and participant external organisations. It will elaborate on the opportunities and challenges of adopting such a pedagogical approach. It will also discuss the value added through engagement in this type of applied learning to all the stakeholders and offer insights as to how such an approach might be considered in other contexts and disciplines. The presentation will feature video soundbites from prior students and graduates.

References

Jones, C. (2011), *Teaching Entrepreneurship to Undergraduates*, Edward Elgar, Cheltenham

Neck, H; Brush, C and Green, P (2014). *Teaching Entrepreneurship: A Practice-Based Approach* Edward Elgar

2-5E Building a Sense of Belonging: Student-Led Creation of Resources to Aid in the Transition of International Students

Liam McQueen, Pegah Khazaeli, Fraser McGlennon, Martin Kartau, Ciorsdaidh Watts and Beth Paschke, Chemistry

The School of Chemistry welcomes a cohort of students each year from US HEIs to study organic chemistry. In addition to having to adapt to a different education system, these students come from diverse cultural and academic backgrounds and often have gaps in their knowledge that can be a barrier to developing their full potential whilst at the University of Glasgow [1]. To address this issue and to try to ensure a smooth transition, integration and to facilitate independent learning, we have been involved in a multifaceted, student-led project creating support materials. These resources include online tutorial-type videos and documents that align with the Year 1 and Year 2 organic chemistry lecture courses and an “Introduction to the School of Chemistry” handbook from the student perspective, that guides new students through the School visually as well as in text. As final year student project leaders, we also act as peer mentors/buddies for our visiting students.

As the undergraduate developers involved in this student-led project we see that, in addition to supporting visiting students’ learning and integration, we are involved as co-creators of the curriculum. Additionally, this project has provided us with an opportunity to develop positive graduate attributes; work-related learning; problem-solving, collaboration, organisation and communication.

We will present details of our experiences and the findings of this project and discuss the future sustainability of our resources.

References

[1] International Students - Transitions into Scottish Higher Education: A Scoping Study (2016) Irene Bell, The Quality Assurance Agency for Higher Education <http://www.enhancementthemes.ac.uk/docs/publications/international-students---transitions-into-scottish-higher-education-a-scoping-study.pdf?sfvrsn=18> (accessed 13/10/17)

2-5F Enhancing employability through a multi-disciplinary approach to graduate attributes: embedding engagement and developing self-efficacy in pre-honours undergraduates

Maxine Swinger, *Psychology*, **Archie Roy**, *Careers Service*, **Anna Rolinska**, *Psychology*, **Sarah Armour**, *Development & Alumni*, **Gillian Hendry**, *Psychology*, **Scott Kirby**, *GES*, **Heather Woods and Jason Bohan**, *Psychology*

There is increasing emphasis on the importance of making Graduate Attributes (GAs) explicit to students as part of their degree programme and the role of students themselves in proactively developing GAs (HEA 2015). However, it can be challenging to engage students in non-core activities in large pre-honours classes, and the success of employability activities are also subject to efficacy beliefs and personal qualities (Yorke & Knight, 2007). A further issue is how we embed employability whilst accounting for the specific needs of the subject discipline and linkages with university careers services (O'Leary 2016). The aim of the present project was to work in partnership with careers professionals and students in reflecting on how curricular and extra-curricular activities can develop graduate attributes throughout the degree programme (Daniels & Brooker, 2014).

To this end we extended our work with psychology undergraduates (Swinger et al., 2016), by developing and evaluating short-self-reflection in class exercises for pre-honours psychology, earth sciences, and business school undergraduates, which asked students to reflect on their curricular and extra-curricular activities and how the practical skills gained from these activities are linked to graduate attributes. Class activities were followed by discipline specific careers workshops and alumni events, focused on gaining confidence in communicating graduate attributes in an interview context, and the benefits of engaging with alumni on professional networking sites. Our presentation will focus on: 1) students' levels of self-efficacy in specific GAs across subject disciplines; 2) the relationship of student self-efficacy in GAs to self-efficacy in H.E.; 3) Student feedback on the in class reflection activities, careers and alumni events, and their intentions to further develop their GAs. The findings will inform participants about the benefits and challenges of embedding GAs and employability in the pre-honours curriculum and include perspectives from students and staff.

References

Academy, H. E. (2015). Framework for embedding employability-in-Higher Education. In H. E. Academy (Ed.), Higher Education Framework Series: Higher Education Academy

Daniels, J., & Brooker, J. (2014). Student identity development in higher education: implications for graduate attributes and work-readiness. *Educational Research*, 56(1), 65-76. doi: 10.1080/00131881.2013.874157

O'Leary, S. (2016). Graduates' experiences of, and attitudes towards, the inclusion of employability-related support in undergraduate degree programmes; trends and variations by subject discipline and gender. *Journal of Education and Work*, DOI: 10.1080/13639080.2015.1122181

Swingler, M.V., Armour, S., Bohan, J., Cleland-Woods, H., Curry, G.B., Roy., A.W.N. (2016). Where am I now and where do I want to be? Developing awareness of graduate attributes in pre-honours students. *New Directions in the Teaching of Physical Sciences*, 11, 1

Yorke, M., & Knight, P. (2007). Evidence-informed pedagogy and the enhancement of student employability. *Teaching in Higher Education*, 12, 157-170

2-6B The design of spaces for different modes of learning – a case study of Teesside University Library

Anne Llewellyn, Liz Jolly and Richard Sober, Teesside University

This presentation will draw on our experiences of designing student-centric learning spaces in the library at Teesside University and will discuss the importance of the design of physical spaces for different modes of learning. There is growing interest in the development of learning spaces that facilitate learner-centric pedagogies in higher education and the design of learning spaces is recognised as an important factor that motivates and engages students (UK Higher Education Learning Space Toolkit, 2016). Higher Education institutions face increasing competition to attract new students as well as retain and engage existing ones. Investment in the Learning environment is therefore driven by various agendas but evaluation of the usage of these is vital to ensure that they have pedagogical value. Students work in a variety of ways so variation and flexibility in layouts is important (Rex, 2014)

The library at Teesside University has undergone a major refurbishment creating a vibrant environment for student engagement and learning. The space is designed to provide different types of spaces for different types of learning, moving from informal learning on the Ground Floor to silent study areas on the 3rd Floor.

Reflecting the fact that learners have increased choices about where and when they work and will therefore choose to work in spaces that they like, students have been involved in the design phases of the refurbishment through focus groups and the use of mood boards, as well as sitting on the project board. The learning spaces have been evaluated through mixed methods analysis, using both quantitative and qualitative methods to explore how the space is used. The presentation will share the findings of this analysis, discussing the factors that influence choice of spaces as well as how the design of the spaces benefits learning (Arora, 2013).

References

- Arora, B. (2013) Why well-designed learning spaces pay educational dividends. Times Higher Education. 29 August 2013
- Rex, C. (2014) Maximising value from the physical environment. In Peberdy, D. (ed) Active Learning Spaces and Technology: Advances in Higher and Further Education. Worcestershire, DroitwichNet
- SCHOMS, AUDE and UCISA (2016) UK Higher Education Learning Space Toolkit

2-6C Student Teaching Awards 2018: Best Practice & Active Learning

Hannah-May Todd and Aimee Cuthbert,
Students' Representative Council (SRC)

The Student Teaching Awards (STAs) have been run by the SRC for 7 years and we class this event as a vital celebration of learning and teaching within the University of Glasgow. This presentation will be co-presented by the SRC VP Education and their student engagement coordinator; partnership between staff and students really fosters the ideology behind the Learning and Teaching Conference, and the ethos of the University as a whole. It will showcase the qualitative data highlighted within the 2017/18 STA nominations, displaying examples of good practice within learning and teaching throughout the University.

The topics of these comments may vary, but previous comments very much fit into the Conference sub-themes. In terms of promoting active learning in the classroom, we would aim to collate examples of staff using innovative and novel ways to engage students during contact hours from all areas of the University. This topic is always discussed in nominations where staff have gone above and beyond the norm to engage students in inventive ways.

Moreover, last year we added in a new category to the STAs - 'Best online learning experience'. The nominations received within this category would allow us to feed into the Conference topic of Learning in a Virtual Space. It would highlight ways students' learning experiences had been enhanced by staff who are making ground-breaking use of online/blended learning.

This data set is often underused and it is the first time it will be presented formally at the Learning and Teaching conference. It will be a fantastic opportunity for staff to take away some ideas of good practice and perhaps give inspiration for future projects/assessment ideas. Too often this rich data set is set aside, and this would be a great way to showcase it.

2-6D Celebrating Cultural Diversity through Rotational Focus Groups

Shufan Yang, Lei Zhang and Muhammad Imran, Engineering

Current electronic engineering teaching needs to devote more attention on fostering diversity, at the same time allowing subjects to maintain disciplinary technical contents. Unfortunately, historical approaches of using different teaching methods for different social culture groups have only focused at specifying the underlying culture difference and, in addition, they almost exclusively focus on the individual's ethnic background. In order to increase diversity in the engineering profession, teachers need to know how to use their students' cultural diversity to expand their intellectual horizon and potential for academic achievement.

In order to establish pedagogical connections between cultural/gender responsive teaching in electronic and electrical engineering subjects, we created rotational focus groups technique to enable students of different gender to work together and we investigated how students performed during focus group discussions. We applied this technique in third year undergraduate electronic and electrical engineering course in 2017/18 cohort with 220 students and currently plan to run it again in next year cohort to re-test the method and verify the validity of our observations. This research is intended to address socio-cultural diversity in electronic and electrical engineering courses and find out how students can be motivated differentially as groups.

Taking advantage of existing teaching modalities (lectures, seminars, and labs), in this work we demonstrate rotational focus groups that use three various learning models to improve the traditional one-way style teaching method. We are interested to know how students can draw from their unique experiences and learning styles to construct new knowledge and achieves learning outcomes with using their own unique learning styles. Furthermore we have developed culturally responsive curriculum and instructional strategies to enhance skills that electronic and electrical engineering students need to acquire.

References

- Ra, Sungsup, Brian Chin, and Cher Ping Lim. "A holistic approach towards Information and Communication Technology (ICT) for addressing education challenges in Asia and the Pacific." *Educational Media International* 53.2 (2016): 69-84
- Gay, Geneva. "Preparing for culturally responsive teaching." *Journal of teacher education* 53.2 (2002): 106-116

2-6E Developing a Strategy for Supporting Active Pedagogies

Donald Spaeth, Humanities, Aaron Chan, Education

In spring 2017 academic and support staff from four North American universities were interviewed about how they had introduced active learning spaces, and how they had supported and developed staff who teach in them. The LTDF-funded Active Pedagogies Project aimed to learn lessons from their experience, as we introduce active learning spaces to the Learning and Teaching Hub and other buildings. The project report makes seven recommendations which are being fed into University planning. The interviews also provided valuable information about institutional strategies in introducing active learning spaces, staff reactions (positive and negative), different approaches to active learning, room design considerations, and the role of graduate teaching assistants.

Support in pedagogical development was deemed crucial for academic staff members intending to teach in active learning classrooms, as the spaces lend themselves to an active way of teaching that involves a paradigm shift. The form of support varied, with some institutions providing support through formal courses, while another established a fellowship programme which supports staff throughout the year and helps build a sense of community. The scale of curricular change is significant, so it is important to identify 'thought leaders' and gain support from managers early. For adopters of active pedagogy, the most important aspect of active learning spaces is a layout that encourages conversations. Active learning approaches can be used in a traditional layout, but are less effective there. Challenges included a preference for traditional methods, uncertainty about how to change, lack of time for curriculum development, and concerns about loss of authority and student participation. It was thought advisable to allocate the spaces to people who can really make good use of the rooms. Those who are unfamiliar with active pedagogies may feel uncomfortable teaching in such spaces, leading to a poor experience for students and staff.

2-6F Students living at home: learning from their experiences: what can we do to make it better?

Maria Gardani and Stephany Biello, Psychology

“Living at Home” or “commuting” students are as a group at higher risk of not progressing with their academic studies and can be more disengaged and are more likely to withdraw from their studies. The University of Glasgow has a high proportion of students from the local area (approximately 40% of undergraduate students). Previous initiatives from the University to enhance engagement and retention of the students living at home led to the organisation of very successful events such as the Local Student Orientation (Browitt, 2015). Following from this we aimed to identify what actions can we put in place to enhance the student experience of students living at home when studying? How can we make their academic experience better and create an accessible and inclusive student environment?

In collaboration with the Students’ Representative Council we engaged with students living at home and enquired about their academic experiences and what obstacles and enablers they faced during their studies. We particularly explored what resources they value at the University, where they found the most support from and any or what changes would enhance their student experience. We have conducted focus groups to explore their personal experiences and how these are shaped through their academic progression. Drawing from their experiences students were asked to impart the most important advice for the new local students. Based on these a list of 10 top-tips was created and shared with new local students started their academic degree at the University of Glasgow following their Local Student Orientation event. Students who lived at home for part of their studies were actively involved in the project and will join staff to present the findings and the process of the initiative.

References

Enhancing engagement of local ‘commuter’ students at induction to support transition and promote student retention and success (Browitt and Croll, 2015)

2-7A Theory and Practice: the professional placement as a learning experience

Ann Gow and Adele Redhead, Humanities

The MSc Information Management and Preservation is a double accredited, professional preparation Masters programme, designed for those wishing to enter the world of archives, libraries, digital curation and records management. As part of the programme students have a placement in a repository to develop their graduate attributes and professional competencies, attitudes, and values. This paper will explore the learning experience from the perspectives of place; for students, academic and professional staff.

The placement is designed to not only support the effective learning opportunities in a professional environment but embeds digital technology and peer assessment to further develop competencies and graduate attributes, such as transferable skills. Students are placed in a range of locations, from traditional archives, through to repositories of born-digital collections. Central to the experience are the collections that students engage with to develop a collection level catalogue, using Encoded Archival Description (EAD) and XML to deliver the content. This digital output is the basis of the assessment, designed to embed both subject knowledge and practical experience of the real-world professional environment. A peer assessment element further develops skills within the professional sphere, building competencies in critical reflection of peers' information management and digital curation skills.

Central to the programme is the blend of theory and practice, using place as key element in the learning process. Students engage with academic staff and professional archivists in the classroom (a traditional learning space), while the placement element has been developed by academic staff, it is delivered by the professional network of key staff associated with the programme. Aims and learning outcomes are developed in partnership to ensure effective learning in the placement, while delivering professional opportunities to the students and engaging the profession in the ongoing and future of academic approaches to information management. Accreditation encourages and recognises excellence and development by certifying the achievement of best practice, and thus cements the partnership of students, academic and professionals.

References

<http://www.fine-art.leeds.ac.uk/news/on-placement-with-the-inclusive-archive-project/>
<http://blogs.ucl.ac.uk/digital-education/category/learning-spaces/>

2-7B Student partnerships focus on embedding digital skills into the curriculum

El Spaeth, (LEADS), Aileen Linn and James Boyle, Undergraduate Medical School, Mary McVey, Life Sciences, Rhian Noble-Jones, Nursing and Healthcare, Robert McKerlie, Dental School, Fiona Dowell and Gordon McLeod, Veterinary Science and Education, Scott Ramsay, LEADS, Dickon Copey, Social Sciences, Jo-Anne Murray, Digital Education Unit

During the 2016-17 academic year undergraduate students from across the College of Medicine Veterinary Medicine and Life Sciences engaged in a digital skills enhancement project. Students from the Schools of Medicine, Dentistry and Nursing, Veterinary Medicine and Life Sciences were invited to participate in the Digital Identity needs analysis survey, the results of which were presented at the University of Glasgow Learning and Teaching Conference in 2016.

The needs analysis survey identified digital identity management, professionalism in an online environment, digital wellbeing, productivity skills including management of digital distractions, and communication and collaboration online as key topics that students wanted more guidance on. 40 student partners from across the schools worked in collaboration with staff focusing on potential challenges, solutions, and opportunities for curriculum developments in these areas. Face-to-face and online teaching resources were created based on their insights.

This presentation will focus on the development of digital citizenship skills that our students have identified as key graduate attributes that will help them thrive throughout their University career and within the work place. The presentation will also focus on the benefits of working in partnership with students to enhance curriculum development.

2-7C Meeting students in a social space: Using SnapChat to facilitate work-related learning

Kezia Falconer and Sarah Armour, Careers Service

Effective learning is cultivated best in a space where students are comfortable. And one of those widely acknowledged but perhaps under-used spaces is the Social Media space. It's a space that to some of us, can feel like outerspace! But this presentation is by two people who were once alien to SnapChat and are now delighted to present a case study on how it was used break down barriers to careers education and facilitate work-related learning.

The University's Alumni Volunteering Programme was established to connect alumni and students to support their career aspirations and support understanding of Graduate Attributes. The programme uses both online and physical space to facilitate mentoring and networking opportunities.

The Network SnapChat Takeover Series brought alumni – in their places of work – right to students' fingertips. Each event delivered exclusive insights, top tips and practical advice to students about life beyond graduation - all from people who were once in their shoes. After the initial success in delivering learning from local Alumni at the Beatson Cancer Charity, the next takeover in the series took place in the Capital. Alumni from across London and from organisations including Pinterest, Drax Group, the V and A Museum and Freshfields LLP delivered learning in this virtual space that was viewed over 92,000 times!

The presentation will give a brief overview of how the SnapChat takeover series worked and how it delivered high levels of student engagement. Content from the Takeover will be shown live in-session, and further resources made available following the session.

2-7D Embedding Play in Higher Education

Andrew Wilson, *Mathematics and Statistics*

Wisdom begins in wonder or so Socrates teaches — however embedding *wonder* in the fast-paced environment of Higher Education can be challenging. This session will discuss the benefits and challenges of cultivating playfulness in small-group settings on courses with a large teaching team through traditionally styled (and low-tech) games. The student interactions exist in a game dynamic that is ‘separate from the real world’ [Moseley and Whitton, 2015]. Time spent in class maximises the focus on learning and, by in-game reflection on the dynamics of the playful interactions, is both a spring-board for improvised directed discussions of learning outcomes, and a formative assessment tool to personalise the class to the needs of the individual and group. In addition to showing extremely high levels of student satisfaction, the creation of safe, playful and failure-friendly learning spaces gently shifts time in class towards a student-focused and student-centred experience at a pace defined by the group.

This presentation will expose innovative use of games in the promotion of active cooperative learning in the mathematics classroom. The author will discuss the planning and preparation involved in creating and leading a session built around the effective use of games to develop wonder. Through sharing student and tutor feedback and observations, the impact of this introduction to the classroom on student engagement and future teaching methodologies will be considered. Participants will leave this session with the tools to take forward the lessons learnt and embed playfulness in their teaching through the use of games. With little adaptation, the author believes these innovations can be successfully applied across other disciplinary contexts.

References

Whitton, N. and Moseley, A. eds., 2012. Using games to enhance learning and teaching: a beginner’s guide. Routledge

2-7E My place or yours? Delivering a research-led curriculum in situ by implementing a Mode 2 approach to executive education

Denis Fischbacher-Smith, Adam Smith Business School

The notion of a research-led, experientially-focussed curriculum is evident in the missions of many university programmes and especially for executive education. However, the processes of ensuring that the curriculum is relevant to the needs of practice and the need to deliver such training in a 'real-world' organisational setting remain significant challenges.

This paper reports on work that has sought to develop a symbiotic relationship between practice-relevant research which is co-produced with the end-users (termed Mode 2) and the development and delivery of executive education in the workplace. Here, the key questions are co-produced with the end-users of the work and the research findings are then incorporated into the development of an executive education curriculum that is both research-led and also attuned to the real-world challenges facing organisations. These programmes are then delivered in the workplace using a range of simulation and visualisation methods.

The paper considers the development of two executive education 'themes' that have been developed in this way and outlines the advantages and challenges that are associated with such an approach. The first of these relates to the delivery of Crisis Management/Business Continuity training within a workplace setting and it highlights the need for an evolutionary process that constantly tests curriculum content against the specific needs of practice and, particularly, through role play and simulation. The second, explores the processes by which a suite of programmes in Organisational Security were developed within the context of a curriculum triad – theory-based teaching, Mode 2 developed research, and in-house executive development. For practice-based academic areas, the symbiotic nature of such a co-produced approach has the potential to allow for a more integrated curriculum that meets organisational task demands. The paper concludes by considering the advantages and challenges of such an approach within the current environment for executive education.

2-7F Student Mental Health Awareness: A community approach

Undergraduate Psychology Society, Maria Gardani, Linda Moxey and Niamh Stack, Psychology

Good mental health is vital for personal development, learning, and living. Yet the incidence of mental health problems is increasing among the general population and among the student population in particular. While there are services available for students in distress, it is undoubtedly the case that stigma associated with mental health disorders prevents many students from seeking help (Thorley, 2017). Furthermore it is imperative that we create an environment in which students with mental health issues can be supported to help them thrive during their academic studies. This is consistent with the Scottish Government's mental health strategy 2017-2027 as well as the University's Mental Health Action Plan (2017).

In an effort to build this supportive and inclusive environment and to raise awareness of mental health, staff in the School of Psychology in collaboration with the Student Psychology Society organised a Student Mental Health Awareness week from October 16th – 20th 2017. Throughout this week together we hosted daily workshops on a variety of topics: Trichotillomania, Transitions, the importance of sleep, suicide prevention, staying active to de-stress, and countering stigma and discrimination in psychosis.

The initiative was intended to enhance the student experience and create a more inclusive learning space for all students. Its success was evidenced by the attendance and engagement of both staff and students. We plan to build on the success of this week in terms of community engagement and awareness by organising further workshops and presentations on a variety of topics suggested by staff and students who attended the events.

During this presentation the staff and students who organised this week of events will share their reflections on impact from both staff and student perspectives and the next steps in building an inclusive and supportive community for both staff and students.

References

Thorley C. (2017) Not by Degrees: Improving student mental health in the UK's Universities, IPPR

Recognising Excellence in Teaching (RET)

Recognising Excellence in Teaching (RET) is the University of Glasgow's Continuing Professional Development Framework and Recognition Scheme. RET is aligned with the UK Professional Standards Framework (UKPSF), and has been designed to promote career-long engagement in CPD focused on learning and teaching. Through participation in RET, members of staff who teach and/or support learning across the University are supported and encouraged to gain professional recognition of their practice. RET is a framework for all of the University's CPD activities (both formal and informal), and it aims to promote and encourage participation in such activities.

The University currently has approximately 120 Associate Fellows and 720 Fellows of RET and/or the Higher Education Academy (HEA). The number of staff holding the newer titles of Senior and Principal Fellow has grown since their introduction in 2011. Currently, the following individuals have been recognised as Senior or Principal Fellows of RET and/or HEA.

Principal Fellows

Thomas Anderson*	Jo-Anne Murray
Denis Fischbacher-Smith	Matthew Williamson
Moira Fischbacher-Smith	Bethan Wood

Senior Fellows

Kelum Akurugoda Gamage

Wendy Anderson*

Vivian Binnie*	Nyree Finlay*	Alison Parrett*
Jason Bohan*	Margaret-Ann Flynn*	Daniel Price*
Tara Brendle*	Joseph Gray*	Gayle Pringle Barnes*
Rhona Brown	Jennifer Hammond*	Helen Purchase
Joanne Burke*	Maria Jackson*	Paul Rea*
Anne Campbell	Margaret Jago*	Dot Reid*
Morag Casey*	Susan Jamieson*	Aidan Robson*
Gordon Curry*	Heather Jorgensen*	Ian Ruffell*
Vicki Dale	Catherine Kellett*	Nana Sartania*
Craig Daly	Carole MacDiarmid*	Peter Sneddon*
Susan Deeley	Leah Marks*	Maxine Swingler*
Rob Dekkers	Michael McEwan	Nicola Veitch*
Tim Dempster*	William McGuire	Joanna Wilson*
Carol Ditchfield*	Janis McIntyre Davidson	
Robert Doherty*	Robert McMaster	*RET scheme

For further information about the RET CPD Framework please go to:
<https://www.gla.ac.uk/myglasgow/leads/staff/ret>

Notes:

Learning Enhancement and Academic Development Service (LEADS)

www.glasgow.ac.uk/learn

The University of Glasgow, charity number SC004401