Interdisciplinary Learning and Teaching: Frameworks and Practice

Conference Programme

Thursday 6 April 2017

The Open University Library¹, Milton Keynes

¹ http://www.open.ac.uk/library/services/library-at-walton-hall
# Programme

Please use the hyperlinks in the document to browse the abstracts for each session. You do not need to pre-register for individual sessions – you will be able to select your preferences on the morning of the conference.

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<td>09.00 – 10.00</td>
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<td>09.30 – 10.00</td>
<td>Arrival (with refreshments)</td>
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<td>10.00 -10.15</td>
<td>Welcome – Professor Patrick McAndrew, Director, Institute of Educational Technology, The Open University</td>
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<td>10.15-11.00</td>
<td>Keynote address – Professor Eileen Scanlon, The Open University</td>
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<td>Technology enhanced learning research as a site for interdisciplinary working</td>
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<td>11.15-12.15</td>
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<td>15.30-16.00</td>
<td>Plenary – Professor Peter Taylor, Director of the Open Programme, The Open University</td>
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Session details

KEYNOTE ADDRESS - Professor Eileen Scanlon, The Open University

Technology enhanced learning research as a site for interdisciplinary working

This presentation draws on my experience of teaching in multidisciplinary teams and researching as an educational technologist. Working in educational technology, the community we join has people who come from a variety of disciplinary backgrounds, for example education, computer science, psychology and in many cases subject specific expertise such as science education or mathematics education (as their first training was in a subject in the curriculum which they become interested in teaching innovations). A popular term for educational technology embraced in the UK and in the EU and the Open University is Technology Enhanced Learning (TEL). The experience of working in interdisciplinary teams in TEL gives the community the opportunity to reflect on their experiences in practice and how these relate to a substantial literature on interdisciplinary and multi-disciplinary working.

Several interview studies of TEL project teams have outlined the advantages of this way of working in terms of growth, multiple perspectives and design methodologies but also recognised the challenges in terms of sustainability, career progression and publication, the benefits of technologies for communication within teams. This presentation draws on TEL researchers’ accounts of their experiences and reflects on whether interdisciplinarity (as is sometimes claimed) is an imperative for meeting the challenges of knotty real world problems.
POSTER SESSION

Poster contributions received so far include the following – additional posters will be presented on the day.

An unexpected journey: The students that present at an extra-curricular undergraduate research conference and what they present
Dr Chris Little, Keele University, Staffordshire

A case-study report on an undergraduate extra-curricular pilot module in Transdisciplinary Design and Innovation, Trinity College, Dublin
Penny Humby, Jake Bryne and Michael Wride, Trinity College, Dublin

Integrated and situated academic development across the disciplines: lessons from an HEA-accredited Continuing Professional Development scheme
Jane Roberts, Laura Hills and Jill McLachlan, The Open University

Learning By Developing in a Living Lab
James Stewart, Arno Verhoeven, Ewan Klein, Edinburgh Living Lab, University of Edinburgh

Co-discovery: the value of Broadening within the Undergraduate student journey at the University of Leeds
Caroline Campbell and Karen Llewellyn, University of Leeds

How loyal are Open degree students to specific disciplines?
Helen Cooke and Peter Taylor, The Open University
### Breakout sessions (follow links to access abstracts)

#### SESSION 1: Frameworks – theory and engagement

→ 2 themes to choose from (each option includes 3 x 20 minute presentations)

| Option 1: Theory into Practice | “Ill-Structured Problems”: Pedagogic Innovation in the Liberal Arts and Natural Sciences  
Dr Simon Scott, University of Birmingham (14) |
|---------------------------------|---------------------------------------------------------------------------------|
|                                 | Implementing Interdisciplinarity as Transactive Memory across Existing Arts/Science Modules  
Dave Morrison, Plymouth University (16) |
|                                 | Integration and Transdisciplinarity in Teacher Education  
Dr Penny Humby, Trinity College, Dublin (19) |
| Option 2: Engaging new students in interdisciplinarity | The Student Hub Live: an interdisciplinary approach to student engagement  
Karen Foley, The Open University (3) |
|                                 | Revisions and Decisions: Revising and Implementing an Interdisciplinary Module at Stage One  
Dr Rachel Clements and Dr Thomas Astley, Newcastle University (9) |
|                                 | The value of visual literacy in interdisciplinary study  
Dr Veronica Davies, The Open University (7) |

#### SESSION 2: Frameworks – undergraduate and postgraduate curriculum

→ 2 themes to choose from (each option includes 3 x 20 minute presentations)

| Option 1: Undergraduate curriculum | Applying Interdisciplinary Approaches in the Liberal Arts through ‘Living Labs’  
Dr Andy Zieleniec and Ella Tennant, Keele University (4) |
|-----------------------------------|---------------------------------------------------------------------------------|
|                                   | An institutional research-based education strategy in practice: The UCL Connected Curriculum and How to Change the World  
Brent Carnell and Mark De Freitas, UCL Centre for Advancing Learning and Teaching / UCL Careers (11) |
|                                   | A programme of research led interdisciplinary learning for all level 2 students: “10bn” at the University of Sheffield  
Alastair Buckley, University of Sheffield (20) |
| Option 2: Postgraduate curriculum | Learning together, evaluating together: An enhanced evaluation of interprofessional postgraduate learning  
Dr Christopher Little and Ms Jane Jervis, Keele University (1) |
### Beyond the curriculum: embedding inclusive learning and interdisciplinary engagement
Bobby Nisha, The University of Sheffield (13)

### Supporting inter- and multidisciplinary teaching and learning at taught postgraduate level
Dr Payam Rezaie and Jay Rixon, The Open University (6)

## SESSION 3: Case studies

→ 4 x case studies to choose from (each option includes one 30 minute session)

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<th>Enhancing (in)formal learning ties in interdisciplinary management courses: a quasi-experimental social network study</th>
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<th>Option 2</th>
<th>Emergence and convergence: Opening space for interdisciplinary initiatives in Canadian higher education</th>
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<td>Nick Baker and Alan Wright, University of Windsor, Canada (8)</td>
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<th>Option 3</th>
<th>Larg ing it - Implementing interdisciplinarity, a progress report from the University of Sheffield: what have we learned?</th>
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<td>Claire Allam, University of Sheffield (12)</td>
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<th>Option 4</th>
<th>Liberal foundations: what does every first-year undergraduate need to know (how to do)?</th>
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<td>Helen Brookman, King’s College London and Angus Lockyer, SOAS University of London (21)</td>
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## SESSION 4: Theory into Practice

→ 4 x workshops to choose from (each option includes one 45 minute session)

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<th>Open discussion on the development of interdisciplinary postgraduate curriculum</th>
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<th>The potential for open educational resources to support interdisciplinary problem solving</th>
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<th>Supporting knowledge construction and participation in interdisciplinary discourse communities</th>
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<td>James Wilkinson and Stacie Withers, Queen Mary University of London (10)</td>
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<th>Option 4</th>
<th>Changing gears – expediting organisational reorientation towards a successful interdisciplinary learning and teaching environment</th>
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<td>Marcus Hill, University of Leeds (15)</td>
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SESSION 1: Frameworks – theory and engagement

→ 2 themes to choose from (each option includes 3 x 20 minute presentations)

Option 1: Theory into Practice

“Ill-Structured Problems”: Pedagogic Innovation in the Liberal Arts and Natural Sciences
Dr Simon Scott, University of Birmingham

Whilst Liberal Arts and Natural Sciences degrees are relatively new to higher education in the UK this approach to education has a long history reaching back to Ancient Greece. As it was then, the aim of a liberal arts education today is to develop well-rounded individuals with breadth and depth of knowledge of a wide range of subjects; with mastery of a range of transferable skills; and of an ethical and virtuous character. With an emphasis on becoming ‘global citizens’, graduates from Liberal Arts and Sciences will have with the capacity to pursue lifelong learning and become valuable members of their communities. This approach to education is fundamentally underpinned by the principle of interdisciplinarity but how is this to be delivered in a higher education system designed to channel students into single discipline degrees with minimal flexibility? It will be argued in this paper that this challenge can be met in part by using ‘ill-structured problems’ as a critical pedagogic device. The paper will: discuss the nature of ill-structured problems; assess their contribution to the development of a range of skills; evaluate the role played by these problems in creating knowledge; and explore how to introduce practically this innovation in teaching within an interdisciplinary learning environment.

→ Back to Session 1 overview

Implementing Interdisciplinarity as Transactive Memory across Existing Arts/Science Modules
Dave Morrison, Plymouth University

This presentation will discuss the early stages a HEFCE funded project implementing an experimental new model of interdisciplinarity into undergraduate teaching and learning across the Arts and Sciences. The model focuses on explicitly promoting deep expertise and development of communication skills within students’ own subjects as part of an interdisciplinary ‘transactive memory system’, instead of traditional models of individual breadth of learning (electives) or shared/pooled knowledge collaborations (Morrison 2014,2016). The biggest departure is that interdisciplinarity is seen as integrating disciplinary knowledge, but not in the minds of specific individuals. Individuals rather, learn to enhance and uphold the integrity and accuracy of their subject expertise while also learning to negotiate a common goal with other experts. Similar models outside of HE have shown positive results (Zhang et al. 2007).

Our project calls for transforming this theoretical interdisciplinary pedagogy into a working reality in existing 2nd/3rd year modules across six subjects (3 pairs) combining Arts and Sciences. As the first empirical trial of the new approach, there are many lessons to share, from an educational development role, about negotiating the broad range of interpersonal and instrumental challenges. Our approach also involves explicitly training teaching staff and tutors from each subject in the new model of interdisciplinarity, and this has meant navigating a broad range of different assumptions and beliefs. Other hurdles I will discuss include:

- Entrenched ideas about interdisciplinary teaching and outcomes,
- Securing sufficient teaching resources in each subject to support student learning,
- Belief that interdisciplinarity is not useful (from staff who agreed to take part already),
- Effectively training staff to support the new pedagogy,
- Working with pairs of existing modules which were not designed to merge,
Navigating unfavourable timetabling and module change processes,
Developing formative and summative assessment of interdisciplinary learning.

References:

- Morrison, Dave (2016) “New Evidence on Interdisciplinarity: how can we teach it?”, presented at Interdisciplinary Learning and Teaching: Frameworks and Practice, University of Sheffield

Integration and Transdisciplinarity in Teacher Education
Dr Penny Humby, Trinity College, Dublin

Many modern school curricula have introduced the concept of curriculum integration to address the needs of 21st Century society and to cope with the historical overload of a subject-based curriculum. Purposeful teaching approaches to these concepts during a student’s BEd programme should be able guide them into developing a deeper and more effective approach to curriculum integration. This paper considers changes in third-year primary student-teacher’s understanding of curriculum integration after taking an integrated studies module. Using concept map assessment, the findings showed that students further developed their ontological but not epistemological understanding of curriculum integration. They had a stronger vocabulary, had better ideas of how to relate constructivism and understood more methodology such as themes and project-based learning. They did not demonstrate a more complex understanding of underlying ideas and theoretical frameworks. There was no evidence that students understood the concept of transdisciplinarity, nor did they distinguish between subject-based and student-based approaches. Their focus was on cross-curricular methods and there was no evidence to suggest that students, having taken this module, would be better equipped than in-service teachers to execute integration in a more comprehensive way.

Curriculum integration in its purest form requires a paradigm shift. Such a shift cannot be accepted without both theory and evidence (through application) being presented effectively. The move from subject-based teaching to one of integration requires a framework of understanding and practical guidance. The faculty that teach on these modules cannot be expected to intuitively understand integration any more than any other teachers. They must have a strong understanding of the theoretical underpinnings and ‘buy in’ to the theory of integration in order to advance their students’ engagement. Support needs to be in place to help faculty make these shifts and understand the broad scope of curriculum integration. Only then, will integration modules truly transform a student’s perception and understanding.

Option 2: Engaging new students in interdisciplinarity

The Student Hub Live: an interdisciplinary approach to student engagement
Karen Foley, The Open University

The Student Hub Live presents extra-curricular, live, interactive, online events for Open University students studying at a distance. Developing from a virtual Freshers fair where interdisciplinary content represented the majority of the programme, the format of the SHL is expanding to skills-based events and discussions about current affairs. Whilst the interdisciplinary aspects remain key in
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programming, there are higher levels of student engagement in the live events when there is a clear
benefit such as skills development. Yet students appear to enjoy learning new things (based on
engagement in the live chat and catch up figures) and being exposed to ways of thinking from other
disciplines, and this is an important part of facilitating an academic community, the key objective of
this initiative.

This presentation will discuss how extra-curricular activities appear to be more valued when there is
a perceived benefit to students. It will also cover the interdisciplinary content of the programming,
capitalising on Open University students lived experiences and ability to contribute to academic
discussions, and the way that this is used to facilitate engagement from students from any discipline
or level of study.

Revisions and Decisions: Revising and Implementing an Interdisciplinary Module at Stage One
Dr Rachel Clements and Dr Thomas Astley, Newcastle University

This paper offers further reflection on the development and teaching of a stage one Combined
Honours module at Newcastle University, discussed at the previous Interdisciplinary Learning and
Teaching conference. We have continued to develop our pedagogical approach to the module, now
in its third iteration, and though we feel that we have achieved many of the goals set out in the
previous paper – to structure interdisciplinary learning and teaching in a more holistic manner, to
develop enquiry-based pedagogies which are student-led, and to facilitate transformative learning
(as we have discovered, in both students and teachers) – there are still challenges to be addressed.

We set the scene by recounting the context of introducing, redesigning and developing this
malleable module, before discussing the effect of the pedagogical changes implemented in this third
version, and reflecting on the wider considerations for interdisciplinary curricula. The paper will
focus on the introduction of team-teaching and the impact that has had on the module, on the
students and on the pedagogical approaches of teaching staff, discussing this benefits and
challenges of this pedagogical approach for facilitating interdisciplinary learning and teaching more
broadly. We also highlight the emotional components of transformative learning, an aspect of
interdisciplinary learning and teaching that we have found to be under-represented. We also discuss
further developing effective pedagogical tools for widening participation, given that interdisciplinary
learning requires wider considerations for supporting students’ learning needs and styles. We
conclude by addressing the central issues moving forward with facilitating transformative learning in
an interdisciplinary curriculum, especially the issue of bridging the gap between developing radical,
students-as-partners curricula, and actually communicating – or ‘selling’ – those curricula to
prospective students.

The value of visual literacy in interdisciplinary study
Dr Veronica Davies, The Open University

Part of the debate in the autumn of 2016 about the threatened dropping of the Art History A-level
centred around the need for visual literacy in our present image-saturated culture. The argument
was and is that the skills inherent in the discipline of art history have a value that can be applied in
other subject areas, for example many kinds of historical study or the social sciences.

This is an issue that has always been a key concern for our development at Access level of our
students’ skills of analytical and critical looking. This is perceived as a core skill that goes hand in
hand with those of critical and analytical reading and thinking, and one that will then feed forward
into students’ level 1 study. My paper will explore these issues with detailed reference to the
options offered for the end of module assignment in Y031, the Arts and Languages Access Module,
and to elements of assessment in the first level module where art historical approaches are used in conjunction with history and religious studies.

SESSION 2: Frameworks – undergraduate and postgraduate curriculum

2 themes to choose from (each option includes 3 x 20 minute presentations)

Option 1: Undergraduate curriculum

Applying Interdisciplinary Approaches in the Liberal Arts through ‘Living Labs’
Dr Andy Zieleniec and Ella Tennant, Keele University

The new Liberal Arts Programme at Keele University has been designed to be both interdisciplinary and innovative in teaching and learning.

This is reflected in the first year core module Understanding the World Through the Liberal Arts, which provides an introduction to perspectives, approaches and methodologies from various disciplines in the Faculty of Humanities and Social Sciences. True to the liberal arts’ origins in classical antiquity, this also allows students to engage with theories and perspectives outside the classroom, in ‘living labs’. These ‘field trips’ to specific locations encourage exploration and application of knowledge and methodologies, through thinking and doing, in real living communities and physical and social landscapes.

With specific examples of the ‘living labs’ approach, this presentation will argue that learning outside the classroom can generate creative interactive activity, which in turn leads to new thinking through engaged and participatory, interdisciplinary teaching and learning. The linking of classroom and field activities also provides the opportunity for students to develop critical-thinking and problem-solving skills.

This integration of learning activities and problem-solving reflects the educational theories of Dewey, Vygotsky, and Piaget, which have informed the field of outdoor learning and pedagogy. ‘Living labs’ and interaction with the surrounding environment is a reflection of the innovative and distinctive nature of liberal arts at Keele.

References:

An institutional research-based education strategy in practice: The UCL Connected Curriculum and How to Change the World

Brent Carnell and Mark De Freitas, UCL Centre for Advancing Learning and Teaching / UCL Careers

The climate in which higher education institutions operate is under continuous flux; decreasing government funding and the knock-on effect of higher education fees is a particular driver in the national context in England. Within UK universities and beyond, improving the student experience is a key agenda, to ensure learners receive the most relevant and appropriate education possible. Coherent strategies must enhance the student experience while being flexible enough to respond to an uncertain climate in which students will graduate: we must foster flexible learning which prepares students to work in and thrive in an unknown future. Importantly, students need to be able to develop a critical mind-set that can operate across disciplines, boundaries, and traditional roles. In short, interdisciplinary thinking must be at the core of student experience improvement strategies. A growing body of literature argues one way the student experience can be improved, while also preparing students with the skills needed to succeed in a fast-changing future, is by enhancing curriculum synergies between education and research (e.g. Brew 2012). Bringing students closer to research and the production of knowledge has a number of benefits relevant to students’ present experiences and future careers. This paper advances the theme of enhancing the student experience through a dual approach: at a broader level, it outlines an institution-wide strategy for curriculum enhancement; and at the more specific level it focuses on a relevant curriculum intervention in an Engineering faculty, known as ‘How to Save the World’.

The paper begins by discussing the long-term flexible ‘Connected Curriculum’ strategy for higher education at a research-intensive UK university, University College London (UCL) – it covers both its ethos and its flexible framework of six dimensions of connectivity (Fung and Carnell 2016), with a particular focus on the dimensions relevant to interdisciplinarity, and connection. While UCL has long-excelled in research, this agenda seeks to draw attention to its educational offering, while aspiring to be a global leader in the integration of both – leading to “an inspirational student experience” (UCL 2034). This new model – part of the institution’s twenty-year vision and commitment to changing UCL’s programmes of study – will enable students to participate in research and enquiry throughout their undergraduate years, while also building connections both vertically across programme year groups and horizontally across disciplinary divides, as well as beyond the university setting – out to alumni, employers and the wider community.

After framing the UCL Connected Curriculum, the paper moves to outline a celebrated example of research-based education in the Engineering Faculty, the How to Change the World programme. This is a credit bearing, intensive, two-week programme involving over 700 students from 11 different departments across the Engineering Faculty. Students work in multi-disciplinary teams of 5 to 6 developing practical solutions to societal and environmental challenges. For example, energy generation in rural African locations, reducing urban congestion, and reducing waste from domestic appliances.

The programme encourages students to operate across disciplines through working with a series of external challenge partners such as Arup, UK Department of Energy and Climate Change, Transport for London, the RSA and UN Habitat. The programme has a number of attractions from an employability perspective. The challenges are intentionally loosely defined so that the students refine the brief in consultation with the challenge partners. Students gain an understanding of how their various disciplines interact and develop the skills employers consistently identify as lacking. For example, inter-personal skills, commercial understanding, and the ability to articulate their strengths (BIS Research Paper 2015).

The programme focusses on tangible outputs. The teams work through each stage of the design process from researching and clarifying the client’s needs to working up a solution and finally pitching their proposals to the challenge partners. One of the most attractive features is the scale of
the programme. The 2016 programme involved 40 challenge partner organisations and provided over 700 second year undergraduate engineering students with the experience of a consultancy style project which they can market to prospective employers.

The focus on both institutional education strategy and curricula in practice will underscore the importance of interdisciplinary learning and teaching in the 2017 higher education setting.

References:


A programme of research led interdisciplinary learning for all level 2 students: “10bn” at the University of Sheffield

Alastair Buckley, University of Sheffield

Interdisciplinary education constitutes learning through the integration and synthesis of methods and knowledge from established disciplines. In doing so interdisciplinary programmes and modules promote students to draw on broader knowledge, methods and skills than are typical of mono-disciplinary equivalents. Since this breadth is a critical component of any post-graduation career pathway, interdisciplinary programme development has been actively evolving over many years.

In this session we would like to present recent developments at the University of Sheffield to make open to all students a programme that facilitates integration and synthesis, not between two or three specific disciplines, but universally across the university. The development is scaffolded on, motivated by and uses exemplars from research concerning the future of the planet and our place within it - the so called “wicked problems of the anthropocene” - “How will we live in a future of 10 billion people?”

The programme, titled “10 billion”, was launched in 2016 and brings together students from all faculties and departments. It comprises a 3-week online course hosted on the FutureLearn platform and an accompanying series of face-to-face talks, workshops and events. We’ll present the mechanics of the programme and outline our plans to scale it to become compulsory for all 5000 level 2 Sheffield students. We’ll explain our expectations of the students in terms of learning and give examples of how the programme can be integrated into different degree structures.

We’ll also briefly present the pedagogic motivation for the different elements, and how they are being brought together into a coherent, scalable and universal interdisciplinary learning experience. Using material from the programme we’ll briefly review existing frameworks for explaining interdisciplinary before examining our own understanding, a development that was required in order for a truly universal programme to make sense. The focus here will be on the processes of research and on research as a relational practice, in which a multiplicity of voices need to be heard. Our goal is for students to critically appraise both a range of wicked problems (food security, climate change, migration, healthcare for all etc) and the assumptions of their own discipline and integrated approaches to addressing the issues. We’ll finish the presentation by reviewing the student
experience feedback from our 2016 and 2017 deliveries and the associated student learning as demonstrated by reflective submissions as the endpoint of the programme.

### Option 2: Postgraduate curriculum

**Learning together, evaluating together: An enhanced evaluation of interprofessional postgraduate learning**  
**Dr Christopher Little and Ms Jane Jervis, Keele University**

This paper will detail an investigation taking place with post-registration, postgraduate learners in Keele University’s School of Nursing and Midwifery. The project sought to investigate the impact of interprofessional learning with students of an Advanced Clinical Practice module. This module recruited 47 learners, from 6 professions, including nurses, pharmacists, physiotherapists, podiatrists, optometrists, and paramedics. This investigation is in its infancy and this paper will very much be a report on research-in-progress.

The project utilised the student response system Mentimeter to gather 22 responses utilising an in-class evaluative survey consisting of both qualitative and quantitative questions. These responses equate to 47% of the cohort. Students were left, unattended, to complete the in-class evaluation using their own devices or iPads provided by the School. All students in the room completed this evaluation. This paper will present a discussion about the benefits and disadvantages of presenting students with in-class evaluations and what it may mean for the data gathered.

While much of the relevant literature consists of studies conducted in the United States, our investigation does also find that this interprofessional learning promotes truly respectful collaborative practice and afford learners a greater understanding of both their own discipline, and the disciplines of fellow practitioners (Hall & Weaver, 2001; Hammick, 1998). The data gathered here points to an extremely positive evaluation of interprofessional learning. Students noted that new perspectives this learning had added to their academic and clinical practices. This short paper will also prompt colleagues to consider the place of in-class evaluations in their own practices and the implications of this upon the traditional end of year module evaluation.

**References:**


**Beyond the curriculum: embedding inclusive learning and interdisciplinary engagement**  
**Bobby Nisha, The University of Sheffield**

The postgraduate taught programmes sees students from diverse cultural and educational programmes where disciplinary boundaries arguably begin to blur or take a more definitive shape. With the responsibility of Higher education catering to a diverse range of international students, from a range of disciplines there is a need to invest effort in supporting a transition to the learning environment in order to enrich the learning experience of students. The initial contact time with the students is critical as it sets the framework for learning in this new environment and a crucial time where expectations and impressions are formed and negotiated. They provide opportunities to diligently design student engagement activities that align expectations, empower communication channels, promote intercultural engagement and negotiate understandings to enable a global learning environment. This presentation will draw on the learnings from an Induction project that
Department of Urban Studies and Planning at the University of Sheffield piloted that strategically aimed to support all PGT students and foster intercultural competence and promote integrated learning experience across several Masters Programmes (Urban Design and Planning, Town and Regional Planning, Real Estate and Cities and Global Development).

The project catered to 200 international students from 23 nationalities. The broad range of disciplinary and educational backgrounds represented though poses a challenge in terms of session design; it has the potential to shift the emphasis away from discipline specific knowledge transfer to allow students to focus on the process of learning; an interdisciplinary approach that encourages reflection, inter-disciplinary interaction and sharing of learning skills.

The talk will provide an overview of the project and present an operational framework of innovative learning exercises that was designed to embed in the PGT Induction Project that supports students adapt to inter-disciplinary teaching practices and pedagogical methodologies to foster intercultural learning competence and promoting integrated learning experience with in the many disciplines students come from and work with. By doing so, the discussion will open up to address the means by which we can enable learning skills methodologies to be transferrable across disciplinary boundaries. This discussion will also contribute to the debates around the importance of learning skills in HE to suggest that the process of ‘learning how to learn’ is a key skill that sets the ground to enable interdisciplinary learning engagement/ environment.

Supporting interdisciplinary teaching and learning at taught postgraduate level
Dr Payam Rezaie and Jay Rixon, The Open University

The Open University’s is currently assessing the feasibility of introducing an ‘Open Masters’ qualification, which would be a single framework, consisting of cognate areas of study and further professional development modules. The model comprises two ‘routes’ (pathways) through the qualification. The framework offers students the opportunity to pursue both career-driven (professional interest) and academic (personal interest) routes at postgraduate level. The qualification would be highly bespoke to the student, it would offer a breadth of study within a cognate study area, and a choice of further professional development modules providing a strong employability focus. The flexibility of choice offered by the qualification would allow students to ‘personalise’ their learning to suit both their individual interests and career aspirations.

This presentation will begin by providing an overview of our experience of interdisciplinary and multidisciplinary frameworks associated with Science Taught Postgraduate curriculum, which has supported students on our MSc in Science programme at the Open University for nearly two decades. The talk will explore what has worked well, some of the challenges associated with these types of curriculum, and discusses how such frameworks can be expanded to curriculum in other areas, ensuring that we put students first by helping them to personalise their learning.
SESSION 3: Case studies

➔ 4 x case studies to choose from (each option includes one 30 minute session)

Option 1

Enhancing (in)formal learning ties in interdisciplinary management courses: a quasi-experimental social network study
Dr Bart Rienties, The Open University (5)

While interdisciplinary courses are regarded as a promising method for students to learn and apply knowledge from other disciplines, there is limited empirical evidence available whether interdisciplinary courses can effectively “create” interdisciplinary students. In this innovative quasi-experimental study amongst 377 Master’s students, in the control condition students were randomised by the teacher into groups, while in the experimental condition students were “balanced” by the teacher into groups based upon their initial social network. Using Social Network Analysis, learning ties after eleven weeks were significantly predicted by the friendship and learning ties established at the beginning of the course, as well as (same) discipline and group allocation. The effects were generally greater than group divisions, irrespective of the two conditions, but substantially smaller than initial social networks. These results indicate that interdisciplinary learning does not occur “automatically” in an interdisciplinary module. This study contributes to effective learning in interdisciplinary learning environments.

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Option 2

Emergence and convergence: Opening space for interdisciplinary initiatives in Canadian higher education
Nick Baker and Alan Wright, University of Windsor, Canada (8)

Higher education globally has long recognised the value of interdisciplinary learning and working, but it is only in recent times that structures to support interdisciplinary work have begun to emerge in universities. Coupled with extrinsic drivers such as industry and government demands, universities are faced with trying to rapidly develop the necessary conditions and climate that will allow interdisciplinary teaching, learning, and research to flourish. Questions remain over whether interdisciplinary collaborations can emerge organically, or whether they require catalysis by external actors, and once formed, how can these collaborations become sustainable?

The landscape of Canadian HE has changed significantly over the past five years as institutions and government authorities adapt to society’s shifting demographic, economic, and academic realities. New structures, incentives, and funding models are leading to the emergence of new programs and initiatives, as well as an observed convergence of orientations and goals across elements of the HE system. Traditional disciplinariness, while still highly valued, is being questioned more frequently as society and its actors demand individuals who are capable of thinking and working across, within, and between traditional disciplinary silos.

This session explores the context of interdisciplinarity in higher education in Canada, in the context of the changing local and international landscape. We trace the founding and growth of the University of Windsor’s Office of Open Learning (OOL) as it attempts to take full advantage of the Province of Ontario’s current policy and funding environment to build campus-wide interdisciplinary capacity. We argue that interdisciplinarity is a continuum of activities and expand upon Nessini’s work as a framework for exploring interdisciplinarity in higher education. The model is designed to help educational developers to take stock of their initiatives and to raise awareness of the broader
impact and potential spin-offs of the many interdisciplinary and multi-institutional projects instigated or supported in the last several years. We will explore case studies of recent interdisciplinary practice and activity in Canada, sharing successes and challenges to support an international dialogue on interdisciplinary practice in higher education.

**Option 3**

**Larging it - Implementing interdisciplinarity, a progress report from the University of Sheffield: what have we learned?**

Claire Allam, University of Sheffield

In 2014, the University of Sheffield launched its Achieve More initiative. There are three main areas that set Sheffield’s initiative apart:

1. The scope of the ambition – to use an interdisciplinary program to give Sheffield a unique selling point and to differentiate it from its competitors
2. The scale - Achieve More will eventually operate at all 3 levels, for all undergraduate students at the University.
3. The verticality - Achieve More is an integrated programme which begins at level one of undergraduate studies.

This presentation reviews the level one offer in the Faculty of Social Sciences (a module called State of Sheffield) and the student experience to date. The module uses a range of enquiry based learning approaches and requires students to conduct an interdisciplinary group-based research project within their first semester of University study. The module is challenging and requires an element of ‘risk-taking’ in terms of the style of assessment. It also provides a cross-faculty exemplar of desirable student attributes and ways of working. In attempting such an ambitious project with almost 2000 students, 30-plus academic staff and 70-plus PG facilitators, a number of pitfalls have been experienced and overcome. The presentation will contextualise the findings against the literature and draw some conclusions that, I hope, will further the conversation about interdisciplinarity. I will cover the question of the compulsory nature of the module and student response to this, as well as the issues of embedding an initiative of this size and the benefits and impacts on staff. However, I will dwell in most detail on the learning design and the impact that the module has had on the ongoing work within the Faculty to enable students to become independent learners and thinkers. Within this, I intend to unpick the role that interdisciplinarity has played.

**Option 4**

**Liberal foundations: what does every first-year undergraduate need to know (how to do)?**

Helen Brookman, King’s College London and Angus Lockyer, SOAS University of London

The last few years have seen the emergence of an increasing number of liberal arts programmes in the UK, which seek to move away from degrees defined in terms of subjects and towards a curricular structure that enables students to define and pursue their own intellectual journey. Such programmes are interdisciplinary through and through, but their design and delivery poses a number of challenges, not least in the first year. Not only do they have to quickly move students from the early specialization and subject focus of their A-level experience and toward an interdisciplinary approach to learning. They also have to provide them with the core skills they will need in their studies, whatever the journey they choose to pursue.

This workshop begins with brief examples, from King’s and SOAS, of how two such programmes have sought to meet this challenge and how they continue to evolve, before throwing open the session to
the audience in order to explore the questions they raise for undergraduate education. How can a programme provide both structure and pedagogical opportunity? How can it balance skills and content? What skills are core and foundational? Are some kinds of content better than others at encouraging the interdisciplinary exploration intrinsic to liberal arts?

SESSION 4: Theory into practice

4 x workshops to choose from (each option includes one 45 minute session)

Option 1

Open discussion on the development of interdisciplinary postgraduate curriculum
Chaired by Dr Payam Rezaie, The Open University

An opportunity for individuals to share their experiences and discuss some of the strengths and limitations of interdisciplinary postgraduate teaching and learning with regard to the following ‘themes’:

- curriculum design and existing frameworks and programmes (what works well and what has worked less well)
- the student cohort (background study, entry requirements, impact on performance)
- delivery of tuition and study support (e.g. expertise and resource implications).

Option 2

The potential for open educational resources to support interdisciplinary problem solving
Dr Rob Farrow, The Open University

This session focuses on the extent to which interdisciplinarity can promote practical solutions to global problems such as violence, conflict, injustice, unsustainable development, forced migration, inequality, and technological change. The proposed presentation would focus in the extent to which OER and open approaches can form part of a strategy for promoting interdisciplinarity and social justice (for example, providing targeted information; opportunities for interaction; building communities of inquiry; promoting literacies; building confidence and life skills; etc.) The presentation would build on work previously produced by IET [1] on the mutual affordances of interdisciplinarity and technology enhanced learning.

Following a short presentation with concrete examples of where open approaches have supported such an approach [2] [3] the workshop will focus on brainstorming and making connections between areas of inquiry and strategies for promoting interdisciplinarity through open approaches. The anticipated output of the session is a wish list of open educational resources that could be used as the basis for an interdisciplinary educational toolkit that could be released under open licence. It should help to develop lines of argument about the place of openness as an approach to international education needs; an area where the OU is a leader.

References:


Option 3

**Supporting knowledge construction and participation in interdisciplinary discourse communities**

James Wilkinson and Stacie Withers, Queen Mary University of London (10)

Within his earlier ‘Combined Learning for Employability and Research (CLEAR)’ framework (Wilkinson and Olason 2012), James sought to tackle difficulties relating to:

...students’ lack of critical engagement with theoretical perspectives; understanding of research methods theory; self, time and group project management; application and transfer of theory; and confidence, autonomy and identity.

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In addressing these difficulties, James reduced transmission-based elements and facilitated a more work-like learning environment, where students worked on small group projects to develop research proposals, regularly producing progress reports and reflective learning journals. The framework thus advocated learning which is:

- **active and student-centred** (eg. Elton 2001);
- **experiential and reflective** (eg. Laurillard, 2002; Kolb and Kolb, 2005);
- **inquiry based** (eg. Allan and Powell, 2007, Justice et al., 2007; Spronken-Smith and Walker, 2010);
- **socially constructed** (eg. Lave and Wenger, 1991);
- **situating with reference to cultural discourses** (eg. Quay, 2003; Sola and Wilkinson, 2008);

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The approach evolved over a number of years and grade outcomes improved substantially (see Wilkinson and Olason 2012:39). Nonetheless, the first CLEAR framework did little specifically to support students in their reading and writing, or to take account of contemporary higher education students’ different starting points. A new iteration of CLEAR – ‘Cooperative Learning for Engagement, Attainment and Retention’ – attempts to address these deficiencies and reflects the need for teachers to “guide and support travelling bands of diverse students as they learn to participate in unfamiliar knowledge communities...” (Northedge 2003:179). In this, it emphasises reading (Wingate 2015) and draws on Aronson’s (1979) jigsaw classroom as well as Allan’s ‘Portsmouth Model’ (Allan and Powell 2007), supporting students’ critical engagement with multiple perspectives through reading, speaking, thinking and writing.

During the workshop, each participant will experience the approach by reading a short text and sharing the main ideas with other colleagues who have read a text from a different subject discipline. If they were students, they would at this point produce a concept map and a paragraph of writing, synthesising the various texts’ main ideas. Instead, they will be invited to discuss how activities of this kind might be used to introduce and build interdisciplinary knowledge at the same
time as relevant academic literacy skills, in particular learning not just products but also processes of knowledge construction.

References:


Option 4

*Changing gears – expediting organisational reorientation towards a successful interdisciplinary learning and teaching environment*

Marcus Hill, University of Leeds (15)

This workshop will enable the group to surface and explore issues linked to creating organisations in which interdisciplinary learning and teaching can flourish. It seeks to gather the collective perceptions and experiences of the group in relation to the key components of an ideal interdisciplinary learning and teaching community and how these can be built. Lastly, it affords the group the opportunity to identify key actions back at their institution.

By the end of this session participants will have:

- Considered the perceptions of different key stakeholders (students, colleagues, institution) in relation to interdisciplinary teaching and learning.
- Explored the components of an environment which encourages interdisciplinary learning and teaching.
- Discussed which factors may hamper or impede interdisciplinary working and how may these be overcome.
- Considered actions they can take back to their respective institutions designed at achieving closer orientation towards the ideal interdisciplinary environment.