

# EXETER EDUCATION INCUBATOR CAFÉ



## Project Summaries

Amory C501, Streatham Campus  
Friday 13<sup>th</sup> July



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#### Success for All

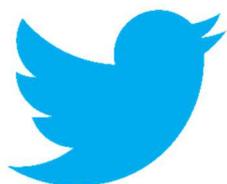
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# 1

## Transition to university following the reformed A Levels

This was an interdisciplinary project on the effects the new reformed A Levels in England may have on students' transition to university. Drawing on existing literature and conducting focus groups the project team have looked at how the revised content and changes in assessment structure and the skills taught – in Biosciences/Biology, English and Geography - may impact the transition from school to university for the first cohorts of students taking these A Levels who are entering universities from 2017-2020.

Focus groups were run – across all three subject areas – with students taking these A Levels at a local college and their teachers and also with first-year undergraduates and academics with specific involvement in first-year teaching.

The project team was Dr Matt Finn (Geography) with student researchers Katie Boyd-Lee, Anastasia Marsden (Biosciences), Finlay Simmons, Connor Spence (English), Alice Clarke, Scott Lewis, Bella Tull, Sarah Tyrrell (Geography).

### *Outputs confirmed to date*

Workshops in Streatham (9<sup>th</sup> and 10<sup>th</sup> July) and Penryn (17<sup>th</sup> July) with invited members of the university with key involvement in first year teaching and transitions – Dr Matt Finn, Katie Boyd-Lee, Finlay Simmons, Connor Spence.

Report on the project findings – The project team

Blog update – Scott Lewis and the student researchers

<https://uoeeuinc.wordpress.com/2018/06/28/tending-to-the-transition-exploring-the-impact-that-the-reformed-a-levels-will-have-on-university-learning-april-2018-update/>

Presentation at Academic Practice Network - 7th December 2017 - Dr Matt Finn

<http://www.exeter.ac.uk/teaching-excellence/educationincubator/meetings/#fvd8A6KGxIJKvTKJ.99>

Presentation at EduExe2018 Education Conference – 4th May 2018 – Dr Matt Finn, Alice Clarke, Scott Lewis, Connor Spence, Bella Tull, Sarah Tyrrell

<http://www.exeter.ac.uk/teaching-excellence/educationincubator/meetings/#fvd8A6KGxIJKvTKJ.99>

Presentation at Enhancing Student Learning Through Innovative Scholarship Conference, Bristol, 11-12th July – Dr Matt Finn and Katie-Boyd Lee and Finlay Simmons

Presentation at RGS-IBG Annual International Conference 2018, Cardiff, 29<sup>th</sup>-31<sup>st</sup> August – Dr Matt Finn

Presentation at 3rd International Conference on Geographies of Education, Loughborough, 3<sup>rd</sup>-5<sup>th</sup> September – Dr Matt Finn

Invited keynote presentation at IGU CGE London Conference, 15<sup>th</sup>-17<sup>th</sup> April 2019 – Dr Matt Finn

# 2

## Success for All in Group Work

### Aims and Objectives:

This project aimed to pilot a new approach to supporting group work by developing tutors' knowledge and skills in leadership coaching. The project was also intended to provide more detailed data on the key issues and successes students experience in group work assignments at Exeter. This should lead to the development of resources to help scaffold group work more effectively.

### Findings and Results:

- Students at Exeter are involved in a lot of group work in both undergraduate and postgraduate programmes. By their final year over half of the university's undergraduates have carried out 5 or more piece of group work.
- Students prefer to be assessed on an individual basis – although this view can change as a result of well-run group assignments. Students made positive comments about the pilots that combined a group mark with an individual element – often a form of peer evaluation.
- Peer evaluation is poorly integrated into the VLE and there is a lack of support from technical staff in this area – which has led to a lot of individual initiatives from individual members of academic staff – these are appreciated by students but need better support from senior management.
- Students recognise many of the benefits of group working but have particular preferences in terms of how the process should be managed – for example, being able to choose their own groups, having small group meetings with tutors, and including formative elements in modules with group work.

### Impact:

- Informed the development of new university guidance for group work presented to the Taught Faculty Board in June, through the working party chaired by Prof. Sue Prince.
- Interim findings and materials presented/shared at the EduExe 2018 conference and at an Academic Practice Network event in May.
- Informed the development of new professional development resources on managing group work for early career academics under development by the Aspire team.

### Next Steps:

- Conduct wider research to understand extent, efficacy and nature of group work at Exeter
- Extend use of materials to a wider group of modules and tutors
- Develop further materials in collaboration with tutors

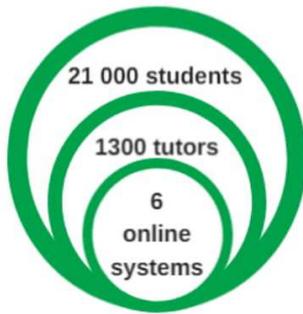
### Contact Details:

Alex Janes – Senior Lecturer in Strategy – [a.w.s.janes@exeter.ac.uk](mailto:a.w.s.janes@exeter.ac.uk) , 01392 723208

# 3

## Tutoring and the Dashboard

Dr Alice Osborne  
UEMS



### Project Aim

To develop resources to help tutors and students use the new My Progress dashboard

1. Tutor and student guides embedded in dashboard; including guidance on interpreting data, signposting and recording meetings. Developed with wide consultation and evaluation.
2. Tutor training around using the dashboard; face to face and online. Developed with the academic development team.
3. Resources for academic tutor group sessions. Developed in liaison with academic group tutor leads.
4. Wish list for future developments.

### Outputs

Dashboard including final guide due for release in September 2018 across university  
Tutor training resources- online and face to face material released June and July 2018

# 4

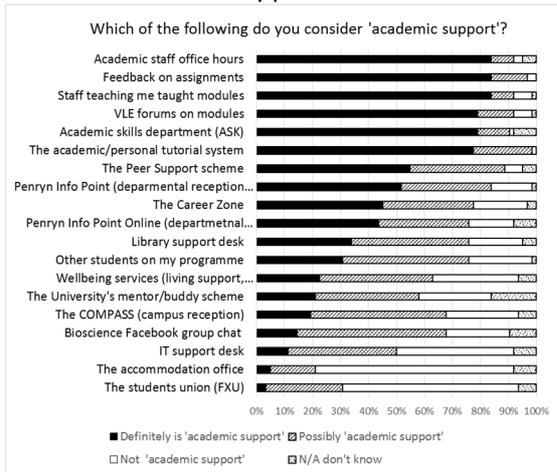
## Digital Academic Support

Dr Andrew Pye [a.j.pye@exeter.ac.uk](mailto:a.j.pye@exeter.ac.uk)

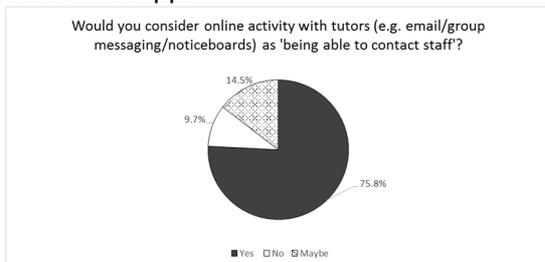
Aim: To explore student views on 'academic support' and to identify ways of supporting academic and peer tutor groups online.

We used a focus groups and a questionnaire to establish student views. The questionnaire was sent to all 1<sup>st</sup> and 2<sup>nd</sup> year Bioscience Penryn students, 17% completed the questionnaire (n=62).

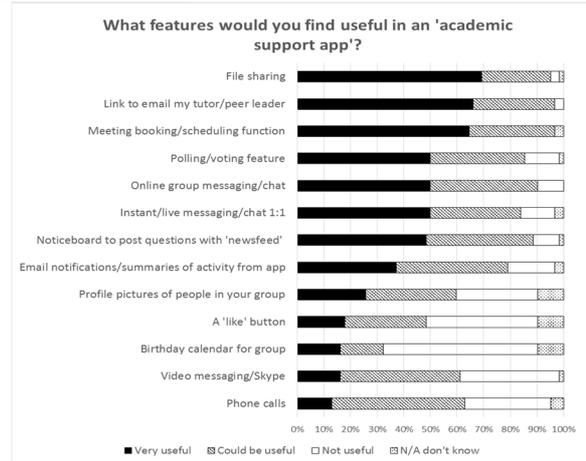
Students seemed to associate the term 'academic support' with all activities conducted with academic staff. This may have implications when interpreting the NSS as it is not just about academic tutors (which were ranked 6<sup>th</sup> on graph below). Students considered staff teaching them on modules and feedback on assignments as the highest form of 'academic support'.



We asked students if they would consider online support as 'being able to contact staff' (NSS question 12). The majority agreed, demonstrating the potential value of online academic support.



Next, we asked students what features they would find useful in a hypothetical academic support app.



We then compared students preferences with existing platforms. Facebook, Yammer and ELE had the closest feature profile matches.

| Feature   | Yammer | Ele | Facebook | LinkedIn | Google+ | WhatsApp | Skype | Slack | Zoom | Microsoft Teams |
|---|--------|-----|----------|----------|---------|----------|-------|-------|------|-----------------|
| File sharing  | ✓      | ✓   | ✓        | ✓        | ✓       | ✓        | ✓     | ✓     | ✓    | ✓               |
| Link to email my tutor/ peer support leader         | ✓      | ✓   | ✓        | ✓        | ✓       | ✓        | ✓     | ✓     | ✓    | ✓               |
| Meeting booking/ scheduling function                | ✓      | ✓   | ✓        | ✓        | ✓       | ✓        | ✓     | ✓     | ✓    | ✓               |
| Polling/ voting feature                             | ✓      | ✓   | ✓        | ✓        | ✓       | ✓        | ✓     | ✓     | ✓    | ✓               |
| Online group messaging/ chat                        | ✓      | ✓   | ✓        | ✓        | ✓       | ✓        | ✓     | ✓     | ✓    | ✓               |
| Instant/ live messaging/ chat 1:1                   | ✓      | ✓   | ✓        | ✓        | ✓       | ✓        | ✓     | ✓     | ✓    | ✓               |
| Noticeboard to post questions with 'newsfeed'       | ✓      | ✓   | ✓        | ✓        | ✓       | ✓        | ✓     | ✓     | ✓    | ✓               |
| Email Notifications/ summaries of activity from app | ✓      | ✓   | ✓        | ✓        | ✓       | ✓        | ✓     | ✓     | ✓    | ✓               |
| Profile pictures of people in your group            | ✓      | ✓   | ✓        | ✓        | ✓       | ✓        | ✓     | ✓     | ✓    | ✓               |
| A 'like' button                                     | ✓      | ✓   | ✓        | ✓        | ✓       | ✓        | ✓     | ✓     | ✓    | ✓               |
| Birthday calendar for group                         | ✓      | ✓   | ✓        | ✓        | ✓       | ✓        | ✓     | ✓     | ✓    | ✓               |
| Video messaging/ Skype                              | ✓      | ✓   | ✓        | ✓        | ✓       | ✓        | ✓     | ✓     | ✓    | ✓               |
| Phone calls   | ✓      | ✓   | ✓        | ✓        | ✓       | ✓        | ✓     | ✓     | ✓    | ✓               |

Facebook is popular but suffers from a blurring of boundaries between the social and academic. In focus groups students reported that they sometimes found ELE unintuitive. The majority of students hadn't heard of Yammer.

Yammer is essentially 'Facebook for business' and is part of the University's Office 365 package. Yammer offers more administrative control and doesn't blur the boundaries between the social and academic. It can be accessed online and is also available as an Android or iPhone app.

Based on student preferences Yammer could offer the functionality of a tutoring app in a readymade professional package. The next step is to trial the use of Yammer more widely. One page how-to-guides have been created to facilitate this and are available on request.



## 5

## Building bridges between academic skills and employability through the Academic Tutor Group system.

Vrinda Nayak, Emma Taylor, Claire Gallon, David McDonald

The main aim of the project was to better link students' skill development needs to the Academic Tutoring system in BSc Medical Sciences, to enhance personalised support and guidance. This was based on lack of effective engagement with reflective writing by students and awareness of students' skill profile by academic tutors. The project was developed and delivered as follows:

- a. Phase 1: September 2017-March 2018 – a new Academic and Professional Learning Support (APLS) form was designed to replace reflective essay writing by students. Students evaluated various skills and discussed these with their Academic Tutors during one to one meetings. Successful engagement with the form was identified as one of the aspects for which professionalism judgement marks were awarded.
- b. Phase 2: January 2018-June 2018 –
  - I. *Development of evidence based skill list.* The skills list in the APLS form was based on a general understanding of transferable and academic skills required for undergraduate study. The project aimed to increase the evidence base of the skills list. This was achieved by scanning the person specifications of 33 job descriptions relevant to BSc Medical Sciences graduates and tallying the required skills. This list will be used in the APLS form for next academic year.
  - II. *Catalogue of University student support system for development of skills:* Skill development resources provided by the University in the form of online resources (ELE and academic skills web page); workshops and one to one sessions (academic skills and student engagement team and the Career Zone) were collated in an Excel document. These resources were categorised by discipline and it was noted that there are not many Medical Sciences-specific skills sessions compared to some other disciplines (e.g. Business School).
  - III. *Electronic platform for storing APLS form and for sharing with Academic Tutors:* Currently, online shared documents have been used by students and Academic tutors to store and access the APLS form. We would like to use the My Progress dashboard in future if functionality permits.
- c. Phase 3: July 2018-September 2018 –
  - I. *Evaluation of usefulness of the APLS form:* Feedback on the existing APLS form is currently being collected from students and tutors by a Summer Work Placement (SWP) student, working with Dr Emma Taylor, via online questionnaire.
  - II. *Modification of the APLS form:* The form will be modified in light of the feedback received, and by modifying the skill list according to the evidence gleaned from the job description audit. Reference to the STARR (**S**ituation, **T**ask, **A**ction, **R**esults and **R**eflection) technique for evaluation of skills has also been added, to help students to structure their answers to job application form/interview questions.
  - III. *Evaluating existing university student support resources:* The SWP student is currently accessing the existing online resources available to students and preparing an evaluation of their usefulness to Medical Sciences. This information will be used to identify gaps in provision and need for further resource development.
  - IV. *Training of Academic tutors and students in using the new system:* A training session for tutors will be held at the beginning of the academic year to inform them about the new system of evaluation of skills and providing them some examples of evaluation by students which we believe will enable them to understand what support could be provided. Students will receive instructions on completing the APLS form via an early Academic Tutor Group meeting.

Finally, the work done in this project has been disseminated through various conferences (UKAT 2018, HEA 2018, ExeEdu 2018 & Academic Network seminar 2018) and we have received positive feedback. We aim to publish this work in an education journal in near future.



# 6

Chris Laing, Nicole Goodey, Juliet Osborne and the Eden Project

Our MOOC

## **Grand Challenges: Food for thought**

Starting Jan 2019

Runs for 4 weeks

Week 1 – Global food production and sustainability

Week 2 – Sustainable land

Week 3 – Sustainable seas

Week 4 – Start the discussion and take action

“Our demand for food from natural systems is changing the world we live in from the soil beneath our feet to the birds in the sky and the fish in the sea. Unsustainable practices of production like intensive farming and consumerism are to blame. Widely publicised examples include mere decades of soil fertility for crop growth, drastic declines in pollinating insects and the overexploitation of around 85% of commercial fish stocks. Environmental change may be irreversible unless action is taken and this starts with understanding the grand challenges we face. This course aims to educate you in the way that every human being can reduce their impact on our planet and inspire you to make global connections to tackle sustainability issues.”

Here are some taster questions from our week 1 quiz to see what YOU know about sustainability...

Question 1: What are the three pillars of sustainability?

- A. Environment, sustenance and society
- B. Economy, environment and society
- C. Sustainability, economy and water

Question 2: How much of our global water usage is used for food production?

- A. 70%
- B. 50%
- C. 30%

Question 3: What does the term ‘commodification’ refer to?

- A. The processing (or modification) of food stuff for global sale
- B. The trading of food as a commodity
- C. The shift from consumers mostly buying produce to buying ready-made meals

Some other fascinating facts from our course include...

[!] Did you know that the age of enlightenment most likely coincided with people drinking coffee in the morning instead of beer!?

[!] The most commonly sold banana, the *Cavendish*, is actually a herb and may be extinct in 10 years....its bananagedden!!!!

Progress so far

Week 1 content is completed and week 2 is 90% there. Week 3 is well under way. All weeks are awaiting videos to camera (all shot but not edited) and graphics.



# 7

## The Many Faces of Chinese Culture: Conflict and Convergence

*Ting Guo, Zhiguang Yin, Yue Zhuang (Department of Modern Languages)*



It is never easy to define a culture. This is especially true for a culture like China, which has a history of more than five thousand years and over 1.4 billion population now. Rather than attempting to provide a general overview of contemporary Chinese culture, this four-week MOOC course focuses on the conflicts, diversity within the culture and rupture with its past. You will study topics such as the image of an ideal persona represented through political posters, literary works, stage performances and movies, the landscape aestheticisation supported by the government, and the new trends and focus of writing practice associated with the emergence of new media and urbanisation in China. Studies of these topics will enable you to break stereotypes of Chinese culture, enhance your intercultural communication skills, and develop a deeper understanding of contemporary Chinese culture.

**Week one:** As the beginning of the course, this week explores the historical mapping of China in the world map and some stereotypes of Chinese culture. Tracing the formation and development of the concept of ‘harmony’, it discusses how Chinese cultural identity was produced in the Confucian tradition and continues in the modern society. Similar ideas are also found in the slogan for constructing a ‘beautiful China’ advocated by the Party-state. It asks students to reflect on these seemingly similar aesthetic styles and converging thoughts and reflect on the diversity of Chinese culture and their own perspective on Chinese culture

**Week two:** Ashmore and Del Boca once provided a simple definition for ‘stereotype’, which was seen as ‘a set of beliefs about the personal attributes of a social group’. This week we will use this definition and view stereotype as one of the most commonly experienced images of the Other. Since images of the Other come from both self ‘imaginings’ and ‘experiences’ of the Other, we could look at these changing images of the Other and do ‘reverse engineering’. By looking at stereotypes created by different people throughout history, we could try to picture the historical development of self-perception and the socio-political environments in which these images were shaped.

**Week three:** As both a cultural practice and a product of culture itself, writing constitutes and shapes our understanding of a culture. In week two, we will examine the new changes of writing practice enabled by improved education and new media technology in contemporary Chinese society, including the widened participants, shifted focus and the increasing digitalisation and visualization. With case studies of writings by various marginalized social groups in China such as migrant workers and LGBT people, and writing in the forms of words (e.g. poems) and images (photographic self-portrait), we will explore how these changes unstabilize the once elite dominated discourse and suggests new directions and possibilities for Chinese culture.

**Week four:** One of the main conflicts in Chinese society is that between man and nature; as well as the divide between urban and rural. We suggest that the production of beautiful landscape images may be seen as a mechanism helping the state to deal with these conflicts and reproducing harmony in society. Displacing the political with the aesthetic, beautiful landscape images create harmonious feelings amongst subjects whilst leaving the root of conflicts intact--a process that is called landscape aestheticisation in this module. We shall demonstrate this process by looking closely at two areas of landscape aestheticisation in China: leisure travel or middle-class tourism and the real estate companies’ appropriation of ‘feature towns’.

# 8

## Reimagining the learning space to fit the 21<sup>st</sup> Century curriculum: An Exeter Incubator Project – Sue Prince

Higher Education teaching in the future will not take place in large lecture theatres but through a blended combination of space and online resourcing (The Guardian, 2014). Didactic teaching through the transmission of information is no longer the sole goal of the 'sage on the stage' (THES, 2018). Instead, the role of the lecturer is to help students assimilate and analyse large quantities of information. The physical construction of university spaces should therefore be based on pedagogical considerations rather than utility. Innovative digital and technological tools now give us the opportunity to be highly creative in our teaching and to use space creatively. The focus of this project is on re-imagining learning and teaching for the 21<sup>st</sup> Century university through the medium of space. This project has considered different ways of thinking about learning space and how there is a need to drive the design and utilization with educational rather than operational priorities.

Traditionally, timetabling of teaching rooms is based upon administrative demand rather than through informed or innovative pedagogy. The priority is administrative and operational because for the university to be able to deliver teaching, staff and students must be timetabled into rooms. One example is the increase in the use of groupwork in different programmes. However, in order to be able to deliver teaching in this way different types of learning space are required to encourage more active learning.

The project suggests that there is an active pedagogy of learning spaces that goes far beyond traditional modes of teaching and learning. What sort of space best encourages all students to participate in an active task for example? How can rooms be designed to support active learning?

The key objectives for the project were as follows:

- To consider new technologically driven pathways to achieve quality in learning.
- To consider new ways to focus on teaching / learning intensity in the future environment of subject based TEF.
- A new focus on the way we timetable groupwork in particular.
- To foster a dialogue around the taught curriculum and learning spaces which focuses on a more active and therefore less passive approach to teaching and learning ie more focus on small groups even in a large lecture setting.

### Project Findings

1. **Summary** - The project has reinforced the need for these objectives as it has illustrated how we are still at the beginning of a journey to encourage academic reflection on how the built environment should be developed in the future to align with pedagogical development. Therefore many of the project

findings are developmental and encourage continued dialogue and reflection in order to meet the larger strategic objectives.

2. **Student Growth and Room Allocation for Teaching / learning Intensity** - Rapidly, it became clear that the constraints of the university are such that efficiency in space allocation is the powerful driver of day-to-day operations as well as change because of the rapid growth of the university. Over a five year period numbers of students have grown from 18,453 in 2013/14 to 22,540 in 2017/18. This represents a 22% increase across the University of Exeter campuses. Such a significant increase in numbers puts severe pressure on space. In addition, an audit of teaching spaces conducted on Streatham Campus shows that there are few rooms on campus that are specifically designed for groupwork, especially for courses with large numbers of students, and so these spaces are particularly at a premium. As the demands for space continue to increase and we welcome larger numbers of students the way the university uses space creatively should be much more at the forefront of pedagogic thinking. Currently, there are no systematic structures within the University that allow and encourage staff and student to come together to discuss the evolution of learning spaces which is indicative of the current focus on administratively-driven learning space policy. It is recommended that an active Working Group is created that reports to Education Executive and the Learning Spaces Management Group.

3. **Innovative teaching and new technology pathways** - The historic approach to teaching is through lectures and seminars. Two events were held to assess the interest of staff in learning spaces. One event was the '**Learning Space Symposium: Do we need a lecture theatre in the 21<sup>st</sup> Century?**', held on 3<sup>rd</sup> May. There were 80 participants to the event which ran from 9.30 – 1pm and there were three invited external speakers.

The second event was the '**Space Walk**', held on 6<sup>th</sup> June with the purpose of reviewing a series of different learning spaces via a guided walk around campus. There were 25 student and staff participants. The aim was to create a dialogue around learning spaces as we travelled between different lecture and study spaces on campus. The recommendation from the final meeting of the Groupwork Working Group sub-committee was that a Group should continue to meet and that they should host one event per year for academics, students and staff from across the University.

4. **Innovative use of technology** – the use of web-based and digital technologies – a study of RECAP as an example of moving from an operational tool to a pedagogic tool has been written with a case study considering attendance and recap usage.
5. **Models of good practice in learning spaces across the world** – the project has written a report considering a variety of innovative learning space and their practical use in programmes with a view to advising developments at Exeter.

# 9

## Embracing a Digital Pedagogy in Mathematics

Barrie Cooper

### Project overview

Increasingly students are looking for anytime, anywhere access to learning resources and particularly resources that are rich, interactive and can provide real-time feedback on learning. Jupyter notebooks are a mature digital technology that have the potential to facilitate this research-like learning, blending accurate mathematical typesetting with blocks of executable programming code. Theory and dynamic user-editable examples can be intertwined to provide rich sets of notes for the learner. This project has explored how Jupyter notebooks can be used effectively to shape the learning journey in scientific courses and evaluates the impact on students learning.

### Student-led research

In the Autumn term, a team of eight 3rd-year mathematics students undertook an educational research project to determine the effectiveness of Jupyter notebooks on student learning. As part of the project, the group designed three versions of a mathematics resource: traditional paper-based materials; a Jupyter notebook with interactively-coded versions of the examples; and a hybrid that was a non-interactive version of the notebook.

Each resource was given to 20 students and all 60 students took the same test. The project team performed hypothesis testing on the results and also attempted to fit a linear model to explain the test scores. The multiple linear regression indicated that the resource used was the most significant factor in explaining the test scores with use of the Jupyter notebook adding an average 22% to the test score and use of the hybrid adding an average 12% to the test score. In hypothesis testing, the Jupyter notebook was better than the traditional resource to 99% confidence; the differences between other pairs of resources were not statistically significant to 90% confidence. This research is being written up by one of the students for publication.

### Dissemination and current work

Three workshops have been delivered showcasing the potential of Jupyter notebooks and reporting on the student-led research, at the HEA STEM Conference 2018 in Newcastle and at the Streatham and Penryn campuses. The associated resources are being developed into a self-study package for staff.

Interested staff have already started to include interactive notebooks as elements within their courses, including examples in cryptography using the Python programming language, and in a statistics module using the R programming language. Since the Spring term, mathematics staff have also been developing a 2nd-year module on mathematical modelling to pilot the use of these resources in an integrated way to include interactive lecture notes and worksheets.

### Introduction

The Wakeham Report (2016) described a 'mathematics gap' in Biological Science Degrees in the UK, resulting in poorer employment outcomes, including for students at high tariff institutions like Exeter. He concluded that it was better to integrate mathematics into the curriculum rather than impose an absolute requirement for A level maths or offering catch up modules. The Institute of Fiscal Studies (2018) have shown a lifelong benefit for a A\* GCSE grade in maths and for A-level maths qualifications.

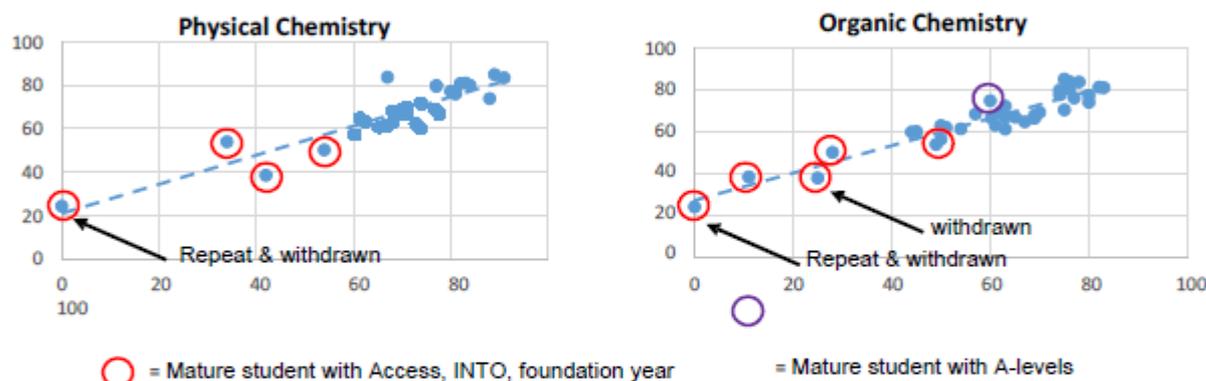
### The Maths Gap in Biosciences (Streatham)

A very strong Maths Gap is observed for L1 Genetics and L2 Bioinformatics Modules as well as L1 Physical Chemistry. In addition, I have observed that students with A-level Maths are more likely to access the highest grades and have 'protection' from poor performance in some Biology modules. For Chemistry and Biochemistry modules, a strong 'Chemistry gap' and 'Tariff Gap' is observed.

### Case Study 1: Mathematics Tutorial Support for Physical Chemistry (BIO1346)

This year mathematics support has been provided to support those without A-level maths, which includes 4 WP students. Historical and current data show that there is no statistical difference between performance on coursework but for the exam (and hence module) there is a strong correlation.

Attendance at tutorials has seen ALL students improve their maths ability, however, attendance of the target group was poor and none of the WP students attended more than half of the tutorials. This means the Maths gap has increased for these students.



Physical Chemistry was the highest performing L1 chemistry module this year but performance of WP students generally poor. Tutorial attendance will be made compulsory next year.

### Case Study 2: Pharmacology and Medicinal Chemistry (BIO3041)

This module is taken by a wide variety of students and student performance is patchy and can be correlated with post-16 maths qualifications. A bespoke maths tutorial and practice questions were developed using NUMBAS which embeds into the on-line classroom. Performance on the maths component of the module was significantly improved this year, however now there is a Chemistry gap.

### Survey of Biosciences Modules

L1 Genetics has a very strong maths gap (and Chemistry, Tariff gaps) which weakens as you progress up the years. L2 Bioinformatics still has a (weaker) maths gap and is a popular module for NatSci students but by L3, with a much smaller and self-selecting class and no examination, the maths gap has disappeared. In Ecology, the maths gap is completely gone by L3 as has the Tariff gap which is what you would expect as the students progress through University.

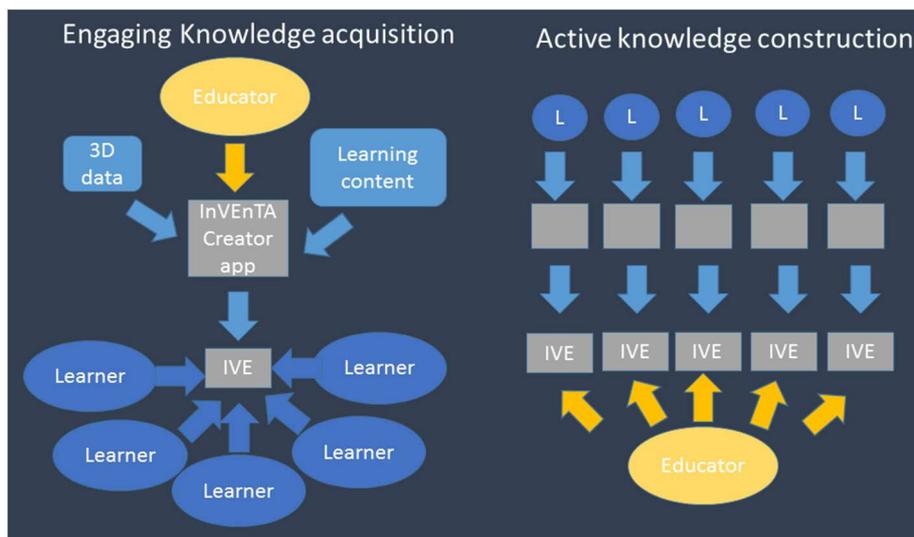
For the Chemistry and Biochemistry modules, however, there is a strong chemistry and Tariff gap throughout the years due to the huge gap at L1 which reduces but never disappears. This disproportionately affects the WP students without A-levels and there is a trail of withdrawals, repeat years and poor outcomes with many taking 4 years to get a third or lower second class honours degree. Of the six WP students starting BMC/Biochem in 2017/2018, one was repeating L1 and has withdrawn; another has withdrawn. Of the remaining four students, only one has a first class average (this student had A-levels); two have lower second class averages and one below 40%. My work suggests all of these three are likely to achieve a third class honours degree at best.

**Conclusion:** The maths gap can be successfully addressed through tailored support but student engagement is key. Key to student success is addressing the gaps in L1 which give long-lasting benefit.

### Project Summary

The InVenTA project embraces the recent advances in geospatial and visualisation technologies to develop a software tool for efficiently producing ‘free roaming’ immersive Interactive Virtual Environments (IVEs). Environments can simply be created from freely available digital elevation data and satellite/airborne imagery, from new datasets collected by UAVs or kite-based photography, or even from a handheld camera (for smaller areas) or smartphone (for simpler objects). There is enormous potential for using these 3D data to form the basis for interactive, immersive virtual representations of real-world environments for teaching and learning, not just in the Geosciences, but in many other disciplines.

As part of the project, we have developed ‘case study’ examples, to demonstrate the tool and to explore the use of IVEs in existing and planned undergraduate teaching activities. These environments lend themselves to the engaged knowledge acquisition approach to learning. The alternative approach is to enable the learners to create the educational beneficial material in the environments for themselves, allowing an active knowledge construction approach.



### Workshop Findings

Following the announcement of continued funding, we held an ‘early adopter’ workshop with targeted academic staff to generate feedback on what functionality would be useful in future and potential non-geoscientific applications. As development continues through 2018/19, we will hold focus groups to explore the pedagogical value of IVEs, and their potential for promoting engagement with learning content.

After experimenting with the software at an early adopters workshop, a majority of participants said they were likely to use InVenTA for future teaching and public engagement purposes (e.g. research impact). Additionally, half of those surveyed indicated they were likely to use it for module assessment.

### Future Development

Future development of the InVenTA software will focus on improving accessibility and portability (allowing it to be used more easily across more devices), as well as adding and refining features identified at the workshop. We will be holding more early adopters workshops in the future to further enhance the potential of the software.

**Contact:** For more information about InVenTA, or if you wish to participate in the next workshop, contact Steve Palmer (S.J.Palmer@exeter.ac.uk), Damien Mansell (D.T.Mansell@exeter.ac.uk) or Anne Le Brocq (A.LeBrocq@exeter.ac.uk).

# 12

## Utilising Gamification to Enhance Engagement and Learning within Medical Education

Jo Francis, University of Exeter Medical School

### The Impact of Gamification in Education

Gamification of learning is rapidly becoming established as an innovative way to increase student engagement and satisfaction, whilst promoting deeper learning. Within the University of Exeter Medical School, there is an identified need for the enhancement of innovative digital learning tools in accordance with aim 5 of the Education Strategy. Here, current efforts mostly focus on the development interactive Google Sites.

### Project Aims

This project aims to take key areas within the curriculum, such as life sciences and clinical skills, and develop a gamified learning resource, or pool of resources, to utilise alongside the current teaching. Assessing the requirements of the VLE platform will be developed alongside a conceptual framework and aims to be constructively aligned to the curriculums intended learning outcomes, editable, inclusive and monitorable through an engagement dashboard.

The resource would be made accessible through an online programme. Upon its development, this resource would then be incorporated into the appropriate module/s with a blended learning and assessment approach. Additional aims to this project are to utilise this resource across the university within courses teaching similar components such as Nursing and Medical Science. Finally, documented guidance on the resource creation will be published in order to streamline future work streams

### Objectives

- To increase student engagement in medical education through utilisation of an innovative gamified learning resource.
- To search current programmes that utilise gamification within education
- To engage students and colleagues in focus groups to establish where within the curriculum gamification would have the most positive impact and what style of resource/s would be continually engaging and sustainable.
- Establish a question bank and build learning and assessment resources to utilise within the game.
- To collaborate with e-learning and learning technology colleagues with specialism in games-based pedagogy, such as Steph Comley.
- To collaborate with software development and game design colleagues such as those in Falmouth Games Academy and Digital Games to establish an engaging, interactive and sustainable resource.
- To perform an initial pilot to focus groups of students, incorporating feedback into the development of a final resource.
- To create an online staff training platform for the game and conduct training sessions and CPD days within the medical school to enhance tutor-led utilisation.
- To develop a resource detailing the creation of the platform to allow streamlining of workload in the future.
- To publish on the development and utilisation of the resource.

TIMES OF REFLECTION



### Film Review: Sand Storm

RELEVANT POSTS

Dear Mum,

During the summer you made the statement 'I do not disagree with Islam, but I dislike the way women are treated within it'. It's a statement I have heard reiterated amongst many of your peers, and even my own. It's a statement that I think is unfortunately shared by a lot of the British population. It's a statement that I would like to oppose. In these letters I want to discuss with you why this fixation on women within Islam has arisen, why Islam is perceived as sexist and potentially shouldn't be. Further I will discuss debates around the practise of veiling, an area that seems to always be brought up when discussing women and Islam.



### Project aims:

This project explores how 'project-based learning' (PBL) can be enhanced through digital technologies and creative pedagogies in HE classrooms, which work through face-to-face interaction and virtual learning environments (VLEs). PBL engages students in solving real-world problems, and provides a deeper, more contextualised learning experience that results in active engagement and higher attainment, but little is known about its creative integration with technology.

Our primary aim is therefore to understand and share how digital technologies can be creatively integrated into project-based learning in a way that compliments, and ideally enhances, their capacity for deep, creative knowledge production. We will build on Natanel's ongoing use of PBL on her course 'Gender, Sexuality and Violence in Palestine/Israel', combining it with Chappell's educational research into creativity and creative pedagogy, and both academics' experience to date of working with digital environments. As part of Curriculum 2021, we aim to assess how combined VLEs and face-to-face interaction can best support creative project-based learning in the interest of maximising impact and enriching ethical communities of practice.

### Project objectives:

Our objective is to develop, pilot and promote a PBL model that maximises VLE potential to enhance deep learning, creative knowledge production and ethical communities. We will:

- Seek examples from UoE practitioners, and literature, of current work which creatively integrates digital tools within PBL;
- Combine learning from these with current creativity and creative pedagogy theory/practice;
- Test/pilot the outcomes of this combination in partnership with VLE design/capabilities;
- Disseminate research findings to share best practice.

**Network:** The project will produce – and relies upon – a cross-departmental/college network of scholars who engage in PBL with some digital tools integration.

**Student engagement:** This is vital to the project and includes a PhD student from GSE (Heather Wren) working with us as a research assistant and co-author, undergraduate students from the course (ARA3200/ARAM230) providing feedback and participating in planning sessions, and offering feedback on the publication.

### Timeline

Term 1: 3 x PBL network meetings to develop model

Term 2: Model piloting in ARA3200/ARAM230; data collection (observations, interviews and fieldnotes with students from course); interviews with researchers and network members

Term 3: Data analysis; symposium/workshop

Summer: presenting at British Educational Research Association (BERA) conference; writing/co-authoring article for submission to *Thinking Skills and Creativity* or *British Educational Research Journal*.

**Dr Nicky King, Director of Studies, Natural Sciences**

Laboratory based learning is a core part of all the Natural Sciences and Biological Sciences programmes, with first year students typically spending 6 hours per week in the laboratory. Good preparation for laboratory work and excellent and timely feedback are key to effective learning in this environment. Students starting these courses come from a variety of educational backgrounds and many have not had the opportunity for much lab based learning, nor been exposed to an environment like our teaching labs.

Smart Worksheets are a flexible tool developed by Learning Science to offer bespoke post-lab feedback to students using their own data and their own analysis. This project will develop new worksheets for our lab classes and integrate existing Learning Science resources into Bioscience and Natural Sciences practicals, improving preparedness for lab work, improving feedback and streamlining marking time. The project hopes also to transform the way students interact with the VLE, from often being a passive medium to one which is more interactive where students learn through experience, practice and instant feedback.

These resources provide a step towards mobile learning, virtual degrees, improving access to lab learning for WP groups and offer novel pedagogic approaches, in particular for better, faster and more streamlined assessment and feedback.

**The project will have three strands.**

- 1) A question and feedback framework will be designed by Exeter academics and integrated in to ELE by Learning Science. Bespoke Smart Worksheets will be developed across our 1st year chemistry and biology modules.
- 2) This will be coupled with embedding of existing Learning Science e-resources into Biosciences and Natural Sciences 1<sup>st</sup> year modules, and the development of ecology focussed resources in collaboration with Learning Science. These new resources will, in the first instance impact students on all first year Biosciences programmes at Streatham and Penryn, plus Medical Sciences and Natural Sciences first years (approximately 650 students).
- 3) We will engage with academics across other disciplines, particularly Geography, Sports and Health Sciences, UEMS and disciplines in CEMPS (Engineering, CSM, Renewables), to explore how these resources can be used effectively across STEMM and to disseminate best practice in the development of interactive resources for the VLE. We will host workshops in both Exeter and Penryn to showcase resources and create an online one-stop-shop within the VLE for academics to test resources and learn from each other about integrating them into their teaching effectively.

***Humanities in a Digital World: Integrating Digital Humanities into Undergraduate Teaching through VLEs***

Dr Helen Birkett (History), Dr Sarah Jones (History) and Dr Richard Ward (History)

Humanities students are keen to develop the technical skills and experience that will equip them for careers in a digital world, yet their degrees often fail in this respect. Currently, Exeter students are offered skills training only on a piecemeal basis, with little opportunity to develop them further — this is a pattern repeated across the sector, as revealed in the recent DH Landscape Report by SAS London. Integrating digital skills training into the UG curriculum therefore poses a major challenge throughout the UK.

The creation of the Digital Humanities Lab at Exeter and the employment of staff with expertise in this area has the potential to help to bridge this emerging skills gap. However, the integration of digital skills training into the UG teaching programme is not a simple task. DH is a newly-emerging pedagogical area and traditional forms of training heavily rely on the input of non-teaching staff. It should also not be assumed that the skills required for research in the Digital Humanities are identical to the skills commonly used in the workplace.

This project will assess what digital skills training would be most valuable for UG students and how we can provide them in an effective and sustainable way, particularly through the use of Virtual Learning Environments. This initiative is led by staff from History, but it is intended to produce a College-wide solution. In doing so, the project will contribute towards Aims 2 and 3 of the Education Strategy and place Exeter at the forefront of Digital Humanities teaching in the UK.

This project explores how we can provide Humanities undergraduate students with the skills that they need to pursue careers in a digital world within the limits of our resources at Exeter. Working with student researchers and informants, we will conduct surveys, interviews and visits to external Digital Humanities Centres to investigate the following key issues:

*What digital skills do Humanities students need to pursue careers in the current (and future) work environment?*

*To what extent do these digital skills align with those used in DH?*

*How can we provide students with appropriate skills for the workplace given the constraints of teaching time and resources?*

*How might Virtual Learning Environments in particular be used to provide such training?*

Student researchers will work with recent graduates and employers to identify the digital skills needed in today's workplace. These will then be compared to the skills currently used and taught in DH research. We will also evaluate the amount of skills training needed and how this can be delivered online.

The project will deliver an action plan for integrating digital skills training into the HUMS UG curriculum at Exeter via VLEs. We will disseminate our findings internally (such as through the Digital Humanities Strategy Group) and externally via a paper at the SRHE Annual Research Conference 2019.

## CSD-Continuing Student Development: Enriching digital learning and personalising student support

Dr. Layal Hakim ([L.hakim@exeter.ac.uk](mailto:L.hakim@exeter.ac.uk)), Department of Mathematics

This project aims to provide more maths support by having ongoing online assessments, and launching the Maths Café.

Many students not only have difficulties with keeping on track with the content of the modules, but also with their own development. This leads to a lack of understanding what they understand and what they need help with. Due to the synoptic nature of mathematics, the topics taught at undergraduate level depend highly on prior knowledge and almost every undergraduate module requires the student to have a firm understanding of one or more other modules. This project will improve student support while meeting the students' demand and need for new technologies.

**Online assessments:** This project aims to advance computer-based applications through regular assessments to accelerate students' progress. One of the key challenges that mathematics departments in the UK are facing is the difficulty that students have with staying on track with their modules. This project will develop the use of existing web-based applications by providing weekly online formative assessments. Through these assessments, we aim to identify students' skills, strengths, and weaknesses. We aim to study the effectiveness of these online assessments using statistical analysis.

An online interactive graphical user interface will be created using NUMBAS. The weekly tests will initially be for first year mathematics students. Each student will be provided with an online account to access this GUI. The online test will display the questions and have an empty box for the student to type the answer. As soon as they complete their test, students will receive their mark, and full solutions will then be accessible. The students will be given the choice to do the test under exam conditions in a computer lab, or in their own time and space before a set deadline. These tests will be compulsory however the marks of these tests will not contribute towards the final grade. We will address the students' struggles and weaknesses, following these tests, by offering on-going support in the form of one-to-one help. The marks of the assessments will be collected and used to statistically analyse the effect of home assessments compared with lab-tests under exam conditions. An article will be written explaining and discussing the findings of the statistical studies carried out. In this paper, the effect of the assessments as well as the observations made as a result of the tests will be reviewed.

Since mathematics is highly interdisciplinary, the online tests will be distributed in other departments too as practice quizzes. We will incorporate a folder of statistics based online tests, for deployment in other departments, such as in Biosciences, Computer Science, Earth Science, Economics, Engineering, Geography, Psychology, etc.

**Maths Café:** The principal aim here is to put one-to-one student support at the heart of learning. Undoubtedly, at least for mathematics, this is the most effective and required technique to help students especially during the revision period. Students studying other subjects that involve maths and statistics also require help, particularly those who do not have an A-level (or equivalent) in maths.

To promote one-to-one maths help, we will open a Maths Café. This Café provides free exam preparation drop-in sessions. The sessions will occur for 2 weeks in the winter; and 4 weeks during the summer exams. The helpers will be postgraduate students from the Department of Mathematics. The sessions will run from Monday to Friday, 10:00 to 16:00.

**Academic Skills Development and Authentic Assessment:**  
Bridging the gap between students' conservatism and employers'  
needs in an increasingly virtual world

Dr Cris Burgess, Dr Hazel Mycroft

Over 80% of Psychology graduates pursue careers not currently recognised as professional Psychology pathways (QAA, 2015), competing with graduates from other disciplines. Psychology programmes provide opportunities to develop a vast array of graduate attributes that make our students competitive, but our students find these attributes hard to define and distinguish from those of other disciplines.

'Authentic assessments' require students, "to apply the skills and knowledge they have mastered." (Stiggins, 1987, p.34) and provide opportunities to self-assess valued attributes, offering concrete examples for future employers. However, students are risk-averse in their appreciation of assessment types not already encountered in their educational experience and the introduction of such assessments impacts negatively on student satisfaction and psychological wellbeing. Providing additional support does little to improve satisfaction, instead increasing expectations surrounding support for all forms of academic endeavour.

The development of academic skills is a priority across our programmes and a new core skills curriculum will be introduced in 2018/19. We wish to track its impact on our students' academic skills development, and their confidence in completing a variety of assessment types. Our aims are to:

- Consult with Psychology alumni/employers to identify the core academic skills that map onto graduate/employability skills on successful completion of the programme of study.
- Establish consistent cross module vocabulary for these academic/employability skills, informed by University's Education Strategy and CLES marking scheme's qualitative descriptors.
- Establish a methodology for mapping these skills across modules/programmes, in order to facilitate students' understanding of the development process throughout a programme of study.
- Develop VLE-supported methods for access to employers such as webinars with Alumni and podcasts in conjunction with ongoing self-assessment for students to enhance their academic skills development, and mapping the course of skills development throughout our undergraduate curriculum (cf. UEMS' Taylor and colleagues' 'Building bridges...' Incubator project from 2017/18).
- Improve satisfaction and psychological resilience by addressing students' concerns about 'new' forms of authentic assessment by focusing on the core academic skills developed throughout the undergraduate curriculum, their application under a variety of contexts and relevance to a variety of assessment types.
- Improve employability outcomes by increasing awareness of the relevance and application of academic skills to employment.

**Opportunities for collaboration:**

- Mapping academic skills across disciplines

An established methodology offers opportunities to map skills across disciplines and programmes, facilitating students' appreciation of their unique skill-set.

- Impact on students' psychological resilience

Our students' psychological resilience may be improved through recognition of their academic skills, building self-efficacy and reducing the stress created by perceptions of inadequate external support. Potential for collaborations with University's Wellbeing Services and Clinical Education Development & Research (CEDAR).

## Understanding the barriers posed by the **hidden curriculum** for HE students

The **hidden curriculum** can include norms, behaviours, perspectives and attitudes that reflect the current but also previous educational and cultural experiences of students and, therefore, can vary significantly between students from **diverse backgrounds**.

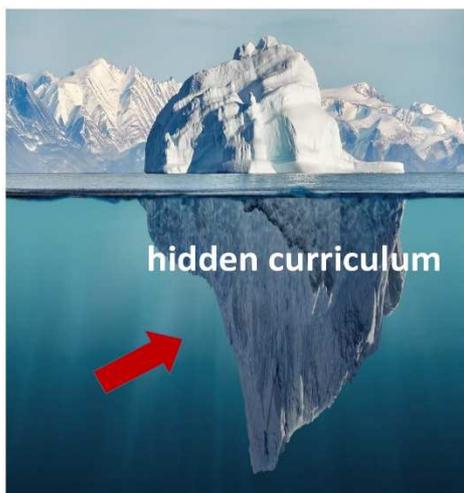
In addition, processes within higher education institutions might be implicitly modelled around a certain type of student (an **implied student**): a young, white, British, able-bodied, social student living away from home without caring responsibilities or financial worries.

Yet, this suggests that previous experience and/or background can act either as **facilitator** or **barrier** to equal participation to a high-quality HE experience.

### Purpose

The purpose of the project is to:

1. Explore HE students' (coming from diverse cultural/ social backgrounds) perceptions of the hidden curriculum
2. Develop workshop material and resources for personal academic tutors to enable them **make the hidden curriculum explicit** to students



### Methodology

The work involves:

1. A participatory approach in that a group of students will be involved as co-researchers
2. The construction and use of **scenarios**
3. Focus group interviews with students

### Project team

George Koutsouris, Principal Investigator,  
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Anna Mountford-Zimdars, Co-Investigator  
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Graduate School of Education

Claire Lavers and Piklu Gupta

I am to create an on-line training resource to inform teaching staff how to make their in-class teaching accessible for a variety of the most commonly presented disabilities in the student body.

**Problem to be addressed.**

Staff know that we have an anticipatory duty towards students and an obligation to make 'reasonable adjustments' however this rather presupposes that all teaching staff understand the features of a range of disabilities and are able to factor this in to their teaching. While staff are told, in a variety of contexts, that they must make their teaching accessible, there appears to be nowhere where it is explained how this can be achieved. For example, few staff know how lecture slides can be easily adapted to accommodate the visual distortions dyslexic experience or how presentations can be simply adapted for colour-blind students.

Training teaching staff about how to make their teaching accessible is especially important when we consider the rising proportion of students with disabilities accessing HE; in 2011/12 9% of the student body declared a disability rising to 11% in 15/16 (HESA 2017). Additionally, there is evidence that students declaring a disability have lower completion rates and degree classifications (Richardson et al. 2003).

**Project Objectives**

I will be consulting charities and running a survey and focus groups with students to explore the barriers faced in class, in order to create a training resource for staff. It will have two components.

It will contain animation, videos with special effects and student testimony, illustrating the barriers to learning students with disabilities face, by replicating how disabled students' experience a range of learning environments. For example, animation will illustrate how text 'moves' for a dyslexic student and how induction loop systems can amplify background noise to the point of overwhelming the voice of a tutor in a noisy laboratory. This will illustrate why accessible in-class teaching is important and help to combat the attitudinal problems some students experience from staff (Fuller 2004).

Secondly, but most importantly, the training resource will act as a good practice guide to accessible in-class teaching, highlighting the simple changes staff can make, as a matter of course, to their teaching. While there is a body of literature, and good-practice guides, on physical access and out-of-class support in HE, there is very little written about accessible in-class teaching. I will only focus on the areas where academic staff have influence and where this is no current training or resource available.

## Evaluating the impact of peer programmes on students' learning gain and academic attainment - a cross-discipline approach

### Project Outline

Peer programmes have become increasingly popular over recent years with Exeter now boasting approx 30 schemes. Whilst there is much qualitative evidence to underpin these activities there is a paucity of quantitative research pertaining to the optimal design for maximising the impact on students learning gain and attainment.

This project will address the lack of empirical evidence by designing a robust study that will evaluate independently the impact of selected peer programmes on learning gain and academic attainment in first year student cohorts.

The level of learning gain will be assessed via short tests to be delivered within peer sessions or at the start/end of lectures according to group allocation. These tests will be designed by the module leads within the academic programmes involved with each test centred around the content of a lecture.

The peer mentors involved in this project will receive study specific training in addition to the standard peer mentor training. This will enable them to lead the scheduled peer sessions addressing the lecture content through facilitated discussion confidently & competently. They will not teach but guide discussion to support understanding of the lecture topics.

The aim is to disseminate initial project results towards the end of term 1 via a workshop/seminar, using these results and the suggestions of workshop participants to inform changes for term 2. Final projects results will be disseminated at educational conferences and further workshops/seminars.

### Project Timeline:

17/18

Term 3/summer: recruit peer mentors, begin preparing training, session & administration materials

18/19

Term 1: Train mentors, begin pilot study, conduct workshop to share interim results and invite comment

Term 2: Continue pilot and incorporate other modules

Term 3: Collect and collate results, undertake analysis, prepare report with recommendations

### Study Contacts

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## Gender Equality MOOC

Emma Jeanes

UEBS

### The Challenge

Gender inequality is a global, pervasive and enduring challenge facing our societies. Tackling gender inequality requires fundamental changes at multiple levels, including enhancing understanding of the nature and effects of gender inequality alongside policy-led activity. It has received increasing attention recently through campaigns such as HeforShe, #MeToo and policy developments such as the UK's Gender Pay Gap reporting making it timely to harness this interest and contribute to activities addressing this challenge.

### Aim:

- Increase understanding of gender inequality by creating a MOOC addressing:
  - What gender inequality is, how it is sustained, what can be done to tackle it – that incorporates theories and examples from different disciplinary areas (including STEM, humanities, social science, etc.).
- To ensure all Exeter alumni have the opportunity to graduate with gender equality training.
- In the longer term:
  - Targeted MOOC at Schools to extend the reach, and support widening participation.
  - Collect impact data on the response to the MOOC, in order to have evidence of the impact of the MOOC, and any associated activity.

### How will this be done?

This project will involve working with students, colleagues, and organisations (employers and NGOs) with an interest in gender equality in co-developing a gender equality MOOC focused on broader understandings of gender inequality as they affect the home/family, workplace, governance/politics, and society more broadly (e.g. media).

1. Student-led (but guided) discussion with academic colleagues, employers/NGOs. identifying core themes.
2. Design MOOC. Create material. Students to record interviews with academics, employers and NGOs for MOOC.
3. Where possible 'design in' ways of collecting impact data. This might include add-on activities, links to the Grand Challenges week, or volunteering activities.

## Future Food MOOC

**Question:** How can we create a sustainable food system for the 21<sup>st</sup> Century?

**Purposes:** To demonstrate the diversity of food system research at Exeter to potential funders; to attract potential students to the Master's degrees in Food Studies and Food Security & Sustainable Agriculture; to prepare students on the Master's degrees and on the Grand Challenges Food for Thought week for their studies; to foster collaboration among researchers across the University (by making researchers aware of one another's work)

**Content:** Short presentations (5min) by researchers from across Exeter (Streatham) addressing important issues in the global food system (from individual food choice to the impacts of agriculture on climate change) plus exercises investigating ways in which sustainability in that area is being, and could be, improved. There will be overviews that illustrate the links between the different components of the food system (e.g. how food choice influences patterns of agricultural production).

**Audience level:** The content will be aimed at undergraduates in an unrelated discipline (i.e. with a good level of background knowledge, but will not know the technical jargon of any particular element)

**Currently confirmed contributors:**

Dr. Dan Bebber (Biosciences) – Co-lead, Dr. Natalia Lawrence (Psychology) – Co-lead, Prof. Sarah Gurr (Biosciences), Prof. Charles Tyler (Biosciences), Prof. Steve McCorriston (Economics), Prof. Ian Bateman (Economics), Prof. Tim Lenton (Geography), Prof. Matt Lobley (Politics), Prof. Harry West (Anthropology), Prof. Henry Buller (Geography), Dr. Mark Van Der Giezen (Biosciences), Prof. Stephen Sitch (Geography).

**Summary:** This MOOC addresses the complex network of environmental, economic, social and cultural interactions comprising the global food system, providing a holistic overview of the challenges and opportunities on our road to a truly sustainable means of feeding humanity. Food production has transformed our planet, with 40 per cent of the land surface exploited for agriculture. Fresh water and soils are under threat, and many fisheries overexploited. While 800 million remain malnourished, 2.2 billion are overweight. Millions of smallholders face economic uncertainty, while just four transnationals control global grain supply. Solutions for social, economic and environmental sustainability require an interdisciplinary analysis based on the state-of-the-art research - Exeter University has the expertise, spanning climate change impacts and crop modelling to the psychology and economics of consumers dietary choices. We envisage three audiences: First, external students who may wish to pursue study at the University. Second, current undergraduates who wish to take part in the Food For Thought Grand Challenge (lead by Bebber and Lawrence). Third, students starting the MSc in Food Security and Sustainable Agriculture who require a quick-start in food system thinking. This MOOC will showcase Exeter's expertise, open minds to interdisciplinary thinking, and prepare our students for further study.

## Strategy and Security Institute Global Security MOOC

Martin Robson, David Blagden, Peter Cox, Anka Djordjevic

### Project Aims

The aim is to turn a very successful existing physical interdisciplinary SSI Grand Challenge (over 200 Undergraduates per year, 94% satisfaction, GC part of TEF Gold AWARD) into a MOOC. The intent for the Global Security MOOC is to have both potential internal and external audiences. The project would utilise the existing MOOCification of other Grand Challenges as a template for success using the FutureLearn platform. The MOOC itself will consist of the delivery of core skills and knowledge via content followed by users selecting to deploy those skills to a subject speciality selected five key contemporary challenges: the future of nuclear weapons; the future of European security defence; the causes of war; terror and terrorism; the relationship between the citizen and the state. The option to make this credit bearing will be enabled by both formative and summative assessment. Content will take the form of videos of SSI academics and external speakers, online reading and discussion forums. Formative assessment will take the form of interactive quizzes and student uploads of their presentations. Summative assessment will be in the form of a piece of applied writing, such as a Ministerial Submission.

### Project Objectives

Internal use of the MOOC would be a precursor to the physical week in June, allowing students to study the MOOC then take the physical Grand Challenges in a credit bearing manner. Students not wishing to take the credit bearing pathway could just complete the physical week in June. Externally, the MOOC can advertise the SSI/CSSIS and the UoE as a world leader in research and teaching within the context of global security, while allowing users/students to situate the challenge workstreams in their own 'context'. It will also allow all users to enhance transferable skills. The MOOC will place users in decision making roles in one of five key challenges outlined above. Students will be required to show understanding of their specific complex challenge selection before assessing the range of potential measures to address them to formulate policy decisions. Content will 'immerse' students in the challenge with videos, written content, interactive quizzes and debates, and applied, practical, exercises. Students will become strategists for the duration of the challenge providing long-lasting and transferrable analytical and decision making skills. By the end of the MOOC students will be able to articulate reasoning, deal with complex situations, analyse incomplete and uncertain information, and propose novel solutions to the most pressing security issues facing the world. Students will learn how to formulate a piece of applied writing, and produce a ministerial submission, the type of writing that many officials undertake across UK government to succinctly brief a Minister.

### Student Engagement

Students will play a central role in a number of ways. During the physical grand challenge week student's vox pops will be created to help in online marketing of the MOOC which will be based around student experience and the outcomes that students achieve from the MOOC / Grand Challenge. Students will, during the MOOC, also be creating their own content in the form of uploaded presentations which will be available to their peer groups for feedback as well as formative assessment. High quality student products (videos, written work) will also be utilised as exemplars. We also utilise PGR and PGT students to facilitate / deliver the physical Grand Challenge and I envisage utilising their research as a way to show that Grand Challenges unites UG and PG students and Academics from across disciplines.

The project will trial and evaluate a range of digital tools and platforms (Minecraft Educational, Unity 3D [with InVenTA software], 360 cameras and Snapchat glasses) for how it might help to enhance a critical engagement with ancient didactic poetry, and what the pedagogical implications and possibilities are for teaching texts more generally.

### What is didactic poetry, and what lies behind the project?

Ancient didactic poems are texts that try to teach you something. Two particularly famous and influential texts are Hesiod's *Works and Days* and Virgil's *Georgics*, which are both – at least for the most part – poems that teach you how to farm. Between them they cover subjects such as how to plant vines, animal husbandry, how to turn the soil, and what sorts of crops might be best. They also break down the year and prompt you to think ahead to the next season, or what jobs should be undertaken in the down time of winter.

The poems are really hard. They are hard partly because they are particularly complicated, allusive pieces that manage to weave together poetry, philosophy, and instruction. But they are also hard for our students here because many of them have never had the opportunity to stand in a farmed field, or had to think about the most appropriate crops to plant next to one another, or how the wind coming from a different direction might lead you to do things differently. In other words, they can appreciate the cleverness of the poems, but not necessarily the practicalities of them.

### Aims of the project

The project, then, speaks to a hierarchical range of points:

- In a very basic way: can you actually enact the things that it tries to teach you? (In other words: are they effective at teaching you how to farm?)
  - o The different software/platforms will be an opportunity for people to follow the instructions of the text to try out the different farming techniques.
  - o Using ancient farming techniques in a modern world isn't quite as mad as it sounds. The *Georgics* was visibly used in Britain until the end of the 18<sup>th</sup> century, and its techniques are more in line with some modern farming than that of the post-agricultural revolution.
  - o Using the information actively, instead of just reading it through, might also open up a greater understanding of how 'didactic' the didactic material is. Where is the flexibility and the wiggle room?
- One outcome will be an online site that will be an enhanced, virtual version of the real field trip that the students currently undertake.
- However, unlike virtual field trips that are based on 'real' locations, where the aim is to reproduce a version of reality, we are dealing with texts that are not based in specific places or times. We are partly interested in what happens when you try to realise, or make visible, or engage non-verbally with imagined locations.

- This means that part of the exercise is concerned with thinking about the information critically, to think holistically about what is included, what is excluded, how space and time are used and manipulated. We are thus interested in using the technological opportunities to think about what cannot be mapped or realised, as much as what can be.
- It will be an opportunity to contribute to a broader conversation about what might be embedded within virtual environments in order to enhance the sorts of educational possibilities they offer (what contextual information might have an effect on the instruction of the text, or is missing? Rain, for example, or access to particular tools).

### **How can you be involved?**

There are lots of big and interesting research questions that could sit behind this sort of endeavour, related to (e.g.) land management, environmental philosophy, cognitive spatial awareness and mapping, topographical and geographical information... Even a knowledge of how utilising the water table and spring detail in an area could affect where you might plant crops. We'd be interested to think through some of these points with students to help them to consider what might **not** be included in the text, but would be of importance were we in real life.

Experience of using Minecraft Educational, Unity 3D, VR cameras, headsets, etc. would all be appreciated. We're interested in learning from other experiences of these in a pedagogical setting so we can build on what has already been done.

We will be trialling the material with students throughout the project, and it would be useful to test some of this material with students outside of classics, as well as those within.

Introductions and links to the local community in relation to farming, agriculture, permaculture, animal husbandry, environmental management, land management, and outdoor education, would all be appreciated. We have a number of local contacts, but would be interested in building up a range of authorial voices to provide interviews and content for the enhanced sections of the virtual environments.

Invited keynote presentation at IGU CGE London Conference, 15<sup>th</sup>-17<sup>th</sup>  
April 2019 – Dr Matt Finn

## **A Sharing a social learning pedagogy across the institution: development and evaluation of an innovative online module for undergraduates across all Exeter campuses**

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The future of work will offer significantly different challenges and opportunities, shaped by digital innovations and trends towards global organising. For example, 3D printing, the Internet of Things, artificial intelligence and crypto-currencies will restructure entire industries and economies, transforming both the nature and location of employment.

Our aim is to develop a multi-disciplinary online module based on a social learning pedagogy which will be open to students across all Exeter campuses. It will equip them to:

- develop the knowledge, transferable skills and graduate attributes necessary to embrace this new age of work
- identify new career, entrepreneurial and social enterprise opportunities in a world that requires flexibility, adaptability and continual learning
- work collaboratively online to discover, share, network, discuss and reflect on specific content themes relating to the future of work
- spread the word in creative ways about preparation for the future workplace to their peers

The online model offers flexibility of student participation, study time and tutor involvement without the usual timetable constraints of face to face sessions.

The teaching team will be diverse, drawing upon specific expertise offered by a number of individuals who will also mentor less experienced colleagues.

The module will build upon the content and network building opportunities with fellow students from across the university and a global cohort studying the UEBS free FutureLearn MOOC titled "The Future of Work".

Inspired by the work of [Diana Laurillard](#), [Gilly Salmon](#), [Mike Sharples](#) and [Alejandro Armellini](#)

# EXETER EDUCATION INCUBATOR CAFE

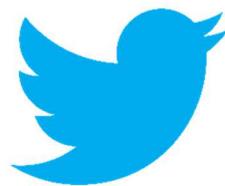
## 'Menu'

Grab your refreshments – we will start at 14.45

Find the table of the project you would like to discuss.

Every 15 minutes we will ring a bell and invite you to move to a new table.

We encourage you to share email addresses and to give feedback by writing on the table cloth.



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