

ENHANCING DISCIPLINE-SPECIFIC SKILLS IN TAUGHT POSTGRADUATE STUDENTS: EVALUATING THE IMPACT OF A PILOT 'TRANSITION' RESOURCE ON STUDENT EXPERIENCE

Project Report

Helen Durham





LITE creates a sector-leading community of excellence in teaching practice and scholarship.

Join the discussion:
@leedsteaching
teachingexcellence.leeds.ac.uk

Table of contents

Executive Summary	4
List of Figures and Tables Abbreviations	6
1. Introduction	7
1.1 Aims and Objectives	7
1.2 Report Overview	7
2. Background	8
2.1 The Changing Landscape of Higher Education	8
2.2 Student Diversity	8
2.3 Teaching Enhancement Project: Justification	9
3. Project Methodology	10
3.1 The Survey: Background	10
3.2 The Study Cohort	10
3.3 The Survey: Overview	10
3.4: The Survey: Results	11
3.5 Transition Resource and Evaluation	13
4. Development of a Pilot ‘Transition’ Resource: Modelling Disease	14
5. Student Evaluation of Transition Resource	16
5.1 Quantitative Feedback	16
5.2 Qualitative Feedback	17
5.3 Future Resources	18
6. Significant Project Outputs	19
7. Conclusions: Reflections on Project Impact and Legacy	20
References	22
Appendix A Survey and Resource Evaluation Questions	23
Table 1A Survey questions	23
Table 2A Resource Evaluation Questions	25
Appendix B The Resource Notes and Practical Instructions	26
Appendix C The Project Outputs	32
Output 1 Blog	32
Output 2 Conference Proceedings (Abstract)	35
Output 3 Poster	36
About the Author and Acknowledgements	37

Executive summary

Introduction

This report summarises a Leeds Institute of Teaching Excellence (LITE) Teaching Enhancement Project (TEP) undertaken over 44 days in the period from 1 January to 31 December 2017. The project explored students' 'readiness' for starting a taught postgraduate course in a discipline requiring strong quantitative methods and technical skills. The changing landscape of higher education and the diversity of students' academic, cultural and experiential backgrounds means that the transition to postgraduate level study can be more challenging than it used to be, particularly where those students are distance learners.

Exploring how the transition and induction needs of taught postgraduate students in the School of Geography at the University of Leeds could be enhanced was the initial basis of the project. Key findings could provide the basis for future research and scholarship activities, whilst simultaneously providing the foundation for good practice and enhancing an excellent student experience in the wider student education community.

Methodology

To gain an insight into students' perceptions on their readiness for study an initial survey was conducted, seeking the perceptions of campus-based and online distance learning (ODL) students enrolled on Master of Science (MSc) courses in the School of Geography at the University of Leeds. The survey sought to explore whether students felt that additional support in key discipline-specific skills at, or even before, the start of their studies would have resulted in a smoother transition and a more successful learning journey.

Based on the responses to the initial survey, a trial resource was created introducing students to modelling the spread of disease, developing skills in programming whilst also reinforcing the spatial context of the problem. The resource was distributed to current students studying for an MSc in Geographical Information Systems by ODL, for students to use in the 'down-time' period between modules. Students were given several weeks to work independently through the resources, with a model answer available upon completion to self-evaluate progress. A resource evaluation was undertaken to assess whether the resource was well received and what could be improved.

Findings

1. An initial survey of students studying for an MSc in the School of Geography indicated that some students lacked confidence and baseline experience in quantitative methods and technical skills at the start of their taught postgraduate studies.
2. Students' self-evaluation of expertise level in a variety of software and skills at the start of their studies indicated that there were some significant differences between students who were studying on campus-based courses versus ODL courses.
3. Previous experience in programming (coding) and data management software were identified as skills that were lacking by both campus-based and ODL students.

4. A transition resource introducing programming (coding) was piloted and students who completed the resource indicated that it had enhanced their experience and that additional resources in a similar vein would be welcomed.

Recommendations

1. As the University expands its taught postgraduate numbers, in particular with its growth into ODL, recognition of the diverse nature of the academic, cultural and experiential backgrounds of these incoming taught postgraduate students is vital. This is an area of student education research and innovation that needs continuing support and investment.
2. Based on the outcome of this teaching enhancement project, it is recommended that the inception of a University-wide framework for supporting taught postgraduate students via pre-sessional resources should be explored to enable a smoother transition for students, enhance the student experience and enrich the learning journey.

Conclusions

This teaching enhancement project has provided a valuable insight into students' perceptions of their confidences and competencies in quantitative methods and technical skills at the start of their taught postgraduate studies and has explored the use of a transition resource to support students and enhance their learning journey. There are opportunities to continue building on this enhancement project via collaboration with colleagues around the University who are seeking to support new students via similar, and complementary, transitional and pre-sessional activities.

List of Figures and Tables

Figure 1. Skills audit of students at the start of their taught postgraduate studies	12
Figure 2: The Susceptible-Infected-Recovered model	13
Table 1: Student evaluation of resource (N=16)	14

Abbreviations

GIS	Geographical Information Systems
HE	Higher Education
ODL	Online Distance Learning
MOOCs	Massive Open Online Courses
SIR	Susceptible-Infected-Recovered
TEP	Teaching Enhancement Project
TEPL	Teaching Enhancement Project Leader

1. Introduction

1.1 Aims and Objectives:

The aim of the project was to investigate how the learning journey could be enhanced for new taught postgraduate students starting their studies on a campus-based course, or online distance learning (ODL) course, requiring competency and aptitude in quantitative methods and technical skills.

The objectives of the project were to:

- Explore students' perceptions of 'readiness' for taught postgraduate studies in a discipline requiring good quantitative methods and technical skills.
- Develop a 'transition' resource that aimed to help build confidence and skills in quantitative methods and/or technical skills.
- Distribute resource to a cohort of online distance learning students for evaluation.
- Reflect on the potential opportunities of introducing discipline-specific 'transition' resources into the wider academic community.

1.2 Report Overview

The report will summarise the project as follows:

- Section 2 provides the background to the project, focussing on the changing landscape of Higher Education, student diversity and justification for this teaching enhancement project.
- Section 3 is an overview of the project methodology, including the initial survey of students and the results.
- Section 4 outlines the development of the pilot transition resource based on the outcome of the survey.
- Section 5 reports on the quantitative and qualitative feedback from students who completed the transition resource
- Section 6 summarises the significant outputs from the project
- Section 7 reflects on future potential research, collaboration and project legacy

2. Background

Perceived and actual readiness for postgraduate study is pertinent to both campus-based and ODL students but it is the challenges of a changing landscape in Higher Education (HE) and the academic, cultural and experiential diversity of the student body, particularly those who choose to study by distance learning (Durham, 2017b), that has provided the background for this teaching enhancement project.

2.1 The Changing Landscape of Higher Education

There has been a growth in distance learning programmes in Higher Education, enabling the massification of education. Massive Open Online Courses (MOOCs), accredited MOOCs and accredited online programmes are in themselves becoming conventional, opening the educational door to students who are unable to experience full-time, campus-based study.

The first 'correspondence' course was offered by the University of London in 1858 (University of London, 2018), an institution that has recently announced the launch of one of the first online undergraduate degree programme (Coughlan, 2018). The Open University has been a leader in the distance learning community over the last 50 years, originally augmenting the learning experience by delivering television and radio tuition alongside correspondence and residential courses (Open University, 2018). In more recent times, The University of Leeds is reaching global audiences via its FutureLearn courses and its partnership with Pearson to deliver full online programmes (University of Leeds, 2018), and via a number of smaller, longer-established taught postgraduate (accredited) online programmes offered at school level.

With approximately half of the world's populations having ready access to computers and the internet (Statista, 2017), and with technological and software advances, online distance learning has been truly enabled, resulting in a changing landscape.

2.2 Student Diversity

Taught postgraduate students are often not only academically and culturally diverse but also have very varied experiential backgrounds. A student may be offered a place on a course based on their prior work experience, particularly mature and international students who may bring less traditional academic qualifications but are experienced practitioners of their discipline. Many of these students are returning to education after a period of work in order to re-skill, or to formalise their experience with an academic qualification in order to improve their future employment prospects. Where students have unconventional academic backgrounds, or have been out of formal education for many years, induction and early formative feedback have been found to be vital (Durham and See, 2015).

An ODL course offers students the flexibility to keep many aspects of their lives at a status quo whilst gaining a qualification, but it does come with extra challenges for these students as they adapt to this different approach to study (Talbot, 2016; Wozniak, 2016) and are required to embrace new skills at a distance and often in (physical) isolation from their peers and tutors (Durham, 2017a).

2.3 Teaching Enhancement Project: Justification

The foundational modules of a taught postgraduate course may assume students have no prior knowledge of the principles and concepts underpinning the course but there may well be an expectation that students have the required competencies and skills to engage with the module content from the outset. Where discipline-specific competencies need to be strengthened then methods to support incoming students may need to be put in place (Perkin and Bamforth, 2011) since reaching the baseline skills can be a steep learning curve for some students making the transitional experience overwhelming.

As educators it is our aim to facilitate, enrich and enhance the learning experience of students from the transition stage of a new level of study through to their successful graduation. If there are gaps in the discipline-specific skills of incoming students then it is imperative that these gaps are identified and early support is provided which, in turn, could improve student satisfaction and retention and ultimately contribute to academic success. Identifying these gaps and defining the nature of this 'early' support is therefore the focus of this project and the methodology, development and distribution of a pilot resource and subsequent evaluation process will be outlined in the following sections.

3. Project Methodology

This teaching enhancement project methodology explores how academic staff might enrich and enhance the students' learning journey by investigating whether students recognise that there were gaps in their experience or academic background that could have been better supported in the early days of their study. It considers how students' confidence and competency in skills could have been improved by piloting, and evaluating, a 'transition' resource, consisting of notes and a short practical activity, that students could work through in the pre-sessional period or in module breaks.

3.1 The Survey: Background

Prior to designing and developing a pilot 'transition' resource, existing students were consulted to gain an understanding of their experience of 'stepping up' to a Masters programme and to provide an insight into what would have better prepared them, or set clearer expectations, for their future studies.

A light touch ethical review (LTGEOG-32) was considered appropriate for this survey, which was approved on 25 April 2017. The survey was designed and developed in Bristol Online Surveys and was launched on 2 May 2017 and closed on 31 May 2017.

The survey questions can be found in Appendix A: Table A1.

3.2 The Study Cohort

Geographical Information Systems (GIS) focuses on the scientific and applied basis of handling spatial information to solve problems or inform decision-making. A taught postgraduate degree in GIS will typically have a scientific core requiring skills in the use of information technology and good quantitative data analysis competencies. Due to the applied and varied nature of a GIS course, the students often enroll with a mixture of geographical, science, computing and mathematical backgrounds, but not necessarily experience or competency in all.

The School of Geography offers a campus-based MSc in GIS, which has many of its quantitative methods and technical modules open to students from other programmes, in and beyond the Faculty of Environment. It also offers an MSc in GIS by online distance learning, a collaborative programme with the University of Southampton, that has been running for 15 years and has approximately 100 students (2018) enrolled at various stages of their study.

There are synergies between modules taught online and on-campus including, where possible, content and tutor. Due to different programme dynamics, comparable campus-based and ODL modules are not normally run concurrently, nor are the cohorts combined.

Given this backdrop of two cohorts of students (campus-based and ODL) taking similar modules, these students were chosen as the study cohort to explore the ability and

confidence levels in certain technical and quantitative data handling skills at the point of enrolment.

3.3 The Survey: Overview

Initial findings were obtained via an online questionnaire, seeking students' perceptions of their confidence in a selection of academic skills at the start of their studies and undertaking an audit of students' technical and data handling skills.

The study invited 178 students, comprising 95 campus-based students (across 4 courses, but all with a GIS component) and 83 students enrolled on the GIS distance learning course to complete the survey.

Basic background information on the respondents was obtained, such as their programme of study, mode of study (campus-based or ODL), whether English was their first language, motivation for choosing their programme, prior experience of distance learning.

Recognition by students of their readiness for taught postgraduate studies and the extra support that they might need was explored via a series of questions asking students to rate their confidence level at the point of starting their first taught module and similarly rating their confidence at the current point in their studies. These questions focused on the academic literacy skills (for example, critical thinking and referencing) and institutional systems interfaces (such as the virtual learning environment and the library services). Some institution-wide resources already exist to enhance course-specific induction and orientation processes but feedback may be useful to inform on future developments.

Identifying the technical and quantitative data handling skills of students at point of entry could indicate where additional resources could be prioritised to support the students in their transition to taught postgraduate studies. All students were required to select their course of study before an audit of their skills was carried out to allow comparison between those enrolled on a campus-based course and those on the ODL course. Students were asked to indicate their previous experience and competency in GIS, spreadsheets, databases, statistical software and programming and were asked to suggest other resources that might support their skills baseline.

3.4 The Survey: Results

Of the 178 students invited to complete the survey, 50 responded (response rate = 28%). The respondents were close to an even split across campus-based and distance learning students (48% campus-based; 52% distance learning). Of those 50 respondents:

- 56% stated they were UK students
- 4% European Union students
- 38% international students
- 70% reported that English was their first language.

The most popular reason stated for choosing ODL study was the flexibility of online study with the good reputation of the University being the outstanding reason given for enrolling in the campus-based courses.

Respondents were asked a range of questions to ascertain their confidence in a variety of academic skills, such as critical thinking, referencing, and independent study, both at the start of their ongoing studies and at their current stage of study. Whilst this gave an overview of the students' strengths and weaknesses (and could be evaluated in more depth in the future) the scope of this teaching enhancement project was limited and therefore the immediate follow-up actions were focused on the quantitative data handling and technical skills of the students.

The survey asked respondents to state whether they had experience of a range of software, prior to the start of their current course. If the respondent had experience then they were asked to rate their level of expertise, as either 'Basic', 'Intermediate' or 'Advanced'. Comparing the responses between campus-based and ODL students the biggest difference was to be seen in the percentage who stated that they had not used GIS before; whilst 37.6% of campus-based students were new to using GIS, only 7.6% of ODL had no prior experience. Similarly a greater percentage of ODL students had some experience of database software but conversely, when it came to statistical software, the campus-based students were slightly more experienced. The expertise level for programming skills were similar across both groups and in both cases the majority of students had no prior experience.

The combined responses are illustrated in Figure 1, demonstrating the range of skill levels; the most noteworthy result was that 78% of students had never done any programming prior to their current studies, and of those who had programmed before only 6% rated themselves as intermediate level with none describing themselves as advanced level programmers.

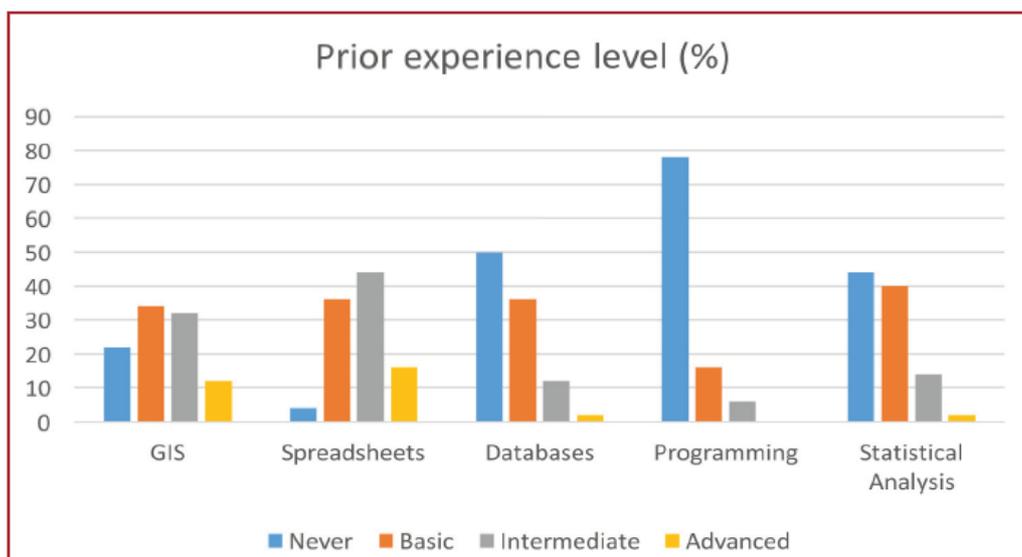


Figure 1. Skills audit of students at the start of their taught postgraduate studies

3.5 Transition Resource and Evaluation

The results determined that pre-session support for students who had no, or limited, programming experience prior to starting their GIS studies should be the priority of this teaching enhancement project.

The next sections will report on the creation of this resource, the distribution to ODL students and the student evaluation process.

4. Development of a Pilot ‘Transition’ Resource: Modelling Disease

The resource piloted in this project introduced programming and Agent Based Modelling (ABM) in the context of modelling how disease spreads and how to slow or stop it altogether and built on the Susceptible-Infected-Recovered (SIR) model as illustrated in Figure 2. It is used in health-related GIS applications to calculate the number of susceptible, infected and recovered people within a population and can be used, for example, to estimate the number of people needing medical attention during an epidemic. The model was first proposed by Kermack and McKendrick (1927).

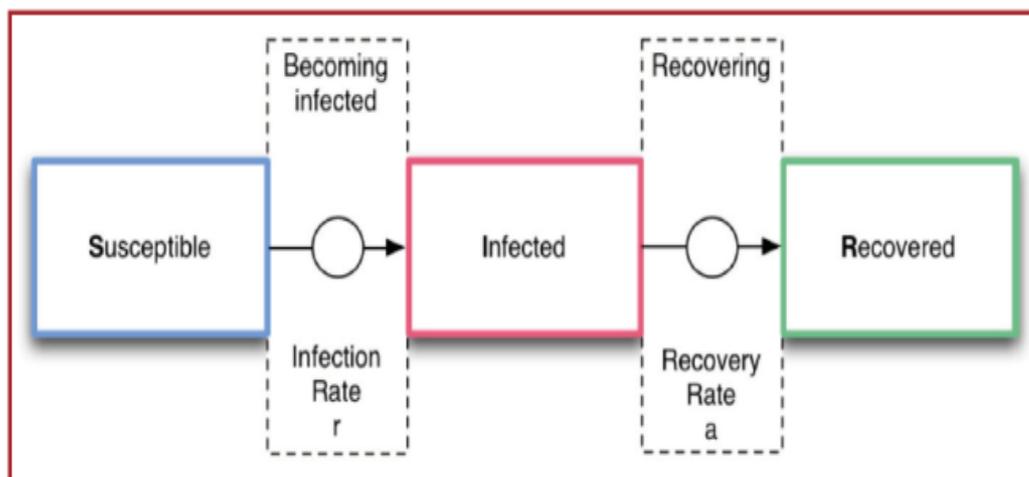


Figure 2: The Susceptible-Infected-Recovered model (adapted from Kermack and McKendrick, 1927)

As a concept, this resource was created for students with no experience of coding in mind (but would be suitable as a refresher course for students with some programming or modelling skills but where the application to topics that have a geographical component is new). It provided a flavour of the type of learning activities that students might encounter throughout their current studies and was designed as a short, non-assessed activity that could help build confidence and broaden experience.

The resource was adapted from existing resources and full credit is due to colleagues in the School of Geography (Dr Andy Evans and Professor Alison Heppenstall) who initially created the notes and practical as part of school outreach activities. In order to meet the requirements of this project, the ‘Notes to Teachers’ document was re-focused to provide the appropriate level background reading (and introduction to wider reading) for students to work through. The practical exercise was left largely unchanged as it walked students through the development of a model. The view was that taught postgraduate students should be able to complete the resources independently whereas the original resource was developed on the premise that more support (from teachers) would be needed for the schoolchildren. No specialist software was required but access to an internet browser, and registration to use the free programming language ‘Scratch’ (developed by MIT at <https://scratch.mit.edu/>) was

needed to undertake the practical. Scratch uses drag-and-drop coding blocks to build up code in an interactive interface. Upon completion of the practical students could compare their model with a 'model answer' to self-check understanding and implementation.

Extracts from the resource deployed in this project can be found in Appendix B: The Resource. It consisted of two PDF documents (a set of notes and a practical) that could be emailed to students wishing to explore and develop their programming skills.

5. Student Evaluation of Transition Resource

A call was put out to all students registered on the MSc in GIS by distance learning for volunteers to complete the resource. In total 30 students volunteered, and all were either students who had completed registration but not yet started their first module, or were current students who were between modules at the point of distribution. Students were given a few weeks to work through the notes and practical instructions, at which point a resource evaluation survey was released to students. This survey consisted of the University of Leeds standard 'module evaluation' questions (Likert Scale and open text) plus a few additional questions to garner information on completion rates and previous programming experience. The resource evaluation questions can be found in Appendix A: Table A2.

There was a 53% response rate (N=16) to the resource evaluation

5.1 Quantitative Feedback

Table 1 reports on the students' responses to the resource evaluation questions, demonstrating that the resource was of a high quality, intellectually engaging and developed skills for the workplace and/or academic studies.

Resource Evaluation Questions (Likert Scale)	Agree %	Neither Agree or Disagree %	Disagree %
Satisfied with the quality of resource	87.5	12.5	0
Fully engaged with resource	87.5	12.5	0
Study materials were of a high standard	87.5	12.5	0
Intellectually stimulating	87.5	12.5	0
Developed skills useful in my career	75	12.5	12.5
Developed skills useful for my GIS studies	75	18.7	6.3

Table 1: Student evaluation of resource (N=16)

Other key findings from the quantitative feedback were:

- 94% of respondents completed or partially completed the resource. Reasons cited for not completing the resource were lack of time, too difficult, too easy
- Most students took 2-5 hours to complete the resource
- 19% of respondents had no previous programming experience
- 43% of respondents planned to take a programming module as part of their current studies
- 6.3% of respondents who had intended taking a programming module in their studies stated that they no longer wished to take one after completing this transition resource.

5.2 Qualitative Feedback

Qualitative feedback suggests that the resource was very well received. Positive responses can be categorised into three types of responses:

1. General interest:

“I really liked the background notes to the practical. I found it very interesting and felt keen to do the practical as I was reading.”

“The whole "game" concept to produce a geographic/scientific results is a great ideas, very stimulating, surprising.”

“Easy to follow the guide. I didn't feel hopelessly stuck at any point. It encouraged a bit of thought about what you were doing and how it relates to the real world. I do like that the code is very interactive and broken down into blocks of different colours, which makes the code easy to review and build once you know what blocks are available and where to find them.”

2. Provides insight and guides students making module choices:

“It will definitely help someone new to programming to understand programming concepts. The exercise is also a very good introduction to programming for GIS students who are interested in the programming modules.”

“I just wanted to say thank you. This type of exercise really helps in getting a glimpse of what a specific module or stream might entail, thus allowing one to have more of an informed perspective when deciding which modules to pursue.”

3. Acknowledgement of experimentation and development of skills:

“It let me generate my own program without the need to actually know the language, which is the intricate part that normally comes along with coding. It also let me to test out different scenarios in order to see how the 'infections' are spreading. This might come handy should one day I need to quickly model certain simple scenarios in my career path”

Areas that students felt could be improved were:

- Task was too difficult
- Lack of clarity in instructions/unexpected results
- Task could be more challenging
- Scratch was too ‘childish’ – a more advanced coding programme should be used

The task being viewed as ‘too difficult’ or ‘too easy’ potentially reflects the prior experiential backgrounds of the students and their aptitude for programming. A model answer was provided for students to check that their application of the code was correct which should have clarified any ambiguous or complex instructions. The decision to use Scratch was due to its ease of application so that students could build a model effortlessly and independently.

For students that had previous programming experience this response that Scratch felt too 'childish' is not unexpected. Whilst the technical aspects may be too easy for some students, working through the resource may have extended their knowledge in a previously non-familiar application area, i.e. modelling the spread of disease that could, in turn, benefit their future career and study opportunities in GIS.

5.3 Future Resources

Indications from the student evaluation supports the development of a suite of transition resources; 87.5% of students said that they would like the opportunity to undertake more resources of this nature and listed topics such as:

- Revision resources on analytical and mathematical concepts;
- An introduction to specific GIS terminology;
- Resources introducing basic data sources;
- Examples of cases studies;
- Remote sensing refresher materials; and
- More coding exercises.

6. Significant Project Outputs

There have been 4 significant outputs from this project which are outlined in the following section, and are presented in Appendix C: The Outputs.

1. The first output was an opinion piece posted on the LITE Blog webpage in the early stages of the project, ["Will online distance learning mean the end of campus-based programmes?"](#). The purpose of this output was to establish the background to the changing landscape of Higher Education, which provided the context for the project. The blog can be viewed in Appendix C: Output 1.
2. A 'work in progress' paper was presented at the 9th International Conference on Education and New Learning Technologies (EDULEARN 2017) in Barcelona, Spain (3-5 July 2017). The conference took place approximately half way through the 2017 Teaching Enhancement Project (TEP) period and attendance was viewed as an opportunity to hear about other education projects and network with an international academic community. It was also an opportunity to share work in progress by presenting the paper "Enhancing the transitional experience of taught postgraduate students: a case study from an online distance learning programme in Geographical Information Systems". The oral presentation had been allocated to an 'online distance learning session'. Each presentation was strictly limited to 15 minutes (including questions). Although a very short presentation time, the aims and objectives of the LITE TEP were established and an indication of initial results was presented. An interesting discussion ensued, raised by a member of the audience, regarding the perception by employers on the credibility of degrees obtained by distance learning. Although not directly relevant to the TEP project, this highlighted a potential barrier in employability for graduates from distance learning courses that needs addressing. The paper was published in the conference proceedings and the [abstract](#) can be found in Appendix C: Output 2.
3. As the project drew towards its conclusion a poster (Appendix C: Output 3) was presented at the London International Conference on Education (LICE-2017) held in Cambridge (11-12 December 2017). This is an international refereed conference dedicated to the advancement of the theory and practices in education. The poster was also presented at the University of Leeds Student Education Conference, which took place in January 2018.
4. The organisers of the LICE-2017 conference (The Infonomics Society) invited the author to submit an extended paper to be published in the International Journal for Infonomics (IJI), Volume 11, Issue 4, ISSN 1742-4712 (Online), <http://infonomics-society.org/iji/>. The paper was submitted on 1 March 2018 and provides a more detailed and complete account of the project, including: the context, aims and objectives, research methodology, development and trial of resource, student evaluation and aspirations for future work.

7. Conclusions: Reflections on Project Impact and Legacy

Throughout the project consideration was given to similar University-funded projects and this teaching enhancement project was adapted from its original proposal to avoid overlap. In terms of project impact and legacy, commonality was identified with several new, ongoing and recently completed University of Leeds projects providing opportunities for a shared approach to supporting transition for taught postgraduate students:

- Megan Kime (LITE Teaching Enhancement Project Leader, *New: 2018*): Pathways to Success for Taught Postgraduate Students – Preparing for Masters Study, building further on her 2013-14 University Student Education Fellowship.
 - *Collaboration is underway to adapt the Pathways to Success resource to make it suitable for adoption by the MSc GIS by ODL and also for other ODL programmes that are not part of the partnership with Pearson.*
- The University of Leeds Language Centre offers campus-based, pre-sessional English courses to new students. As explored by LITE Fellow Bee Bond in her project ‘Understanding the significant role language plays in shaping discipline-specific knowledge and understanding; smoothing international student transitions’ (*Completed 2017*), there is a growing demand for language courses to deliver content-driven activities as a way of introducing students to discipline-specific terminology .
 - *Future collaboration will be explored with the Language Centre as a way of integrating discipline-specific knowledge via transition resources. Initial discussions held for potential collaboration. Resource developed for this TEP may be suitable, as may future resources currently under development.*
- The Mary Morris programme (*Ongoing*). The International Office is developing a suite of new projects and pilot activity aimed at both improving the experience of international students and making an international experience available to all students.
 - *Initial discussions held for potential collaboration – to be followed up.*
- Dan Pullinger, University Student Education Fellow 2015-16. Dan’s project aimed to create high-quality, adaptable content and learning objects for taught postgraduate students on academic and employability skills topics via a range of platforms.
 - *Regular exchange of information to explore future opportunities for collaboration*
- Luke Burns (LITE Teaching Enhancement Project Leader, *Completed 2017*) has been exploring the means to generate more quantitatively skilled graduates and engage more people with data.
 - *Regular exchange of information to explore future opportunities for collaboration*

The research and evaluation undertaken during the project may provide the foundations for future developments, with a remit for the dissemination of the benefits of course-specific, transition resources. Opportunities can be explored to share resources with the wider

academic community, starting with future intakes of campus-based students taking a degree in GIS at the University of Leeds and then widening availability to other courses (offered at School level or via the Leeds-Pearson partnership) requiring similar skills. The timeframe of this TEP limited the focus of this research to quantitative methods and technical skills but, given the evidence that transition resources as a concept were well-received by students, there is potential to develop similar resources across disciplines in the wider academic arena.

This TEP has highlighted that supporting students in developing confidence and competencies in their discipline skills in the early days of study may aid transition and ensure a smoother learning journey. It would be interesting to explore whether the introduction of these transition resources results in an improvement in overall academic attainment. An investigation into the impact of these resources on achievement could be the basis of a follow-on study.

Based on the outcomes of this project the following recommendations are made:

1. As the University expands its taught postgraduate numbers, in particular with its growth into online distance learning, recognition of the diverse nature of the academic, cultural and experiential backgrounds of these incoming taught postgraduate students is vital. This is an area of student education research and innovation that needs continuing support and investment.
2. Based on the outcome of this teaching enhancement project, it is recommended that the inception of a University-wide framework for supporting taught postgraduate students via pre-sessional resources should be explored to enable a smoother transition for students, enhance the student experience and enrich the learning journey.

References

- Coughlan, S. 2018. University offers science degree online for £5,650 per year. *BBC News*. [Online]. 6 March 2018. [Accessed 12 March 2018]. Available from: <http://www.bbc.co.uk/news/education-43288793>
- Durham, H. 2017a. Enhancing the Transitional Experience of Taught Postgraduate Students: A Case Study from an Online Distance Learning Programme in Geographical Information Systems. In: *Proceedings of the 9th International Conference on Education and New Learning Technologies, EDULEARN17, 3/5 July 2017, Barcelona, Spain*: IATED, pp. 5503-5509.
- Durham, H. 2017b. Opinion: Will Online Distance Learning Mean the End of Campus-Based Programmes?. 03 March 2017. *Leeds Institute for Teaching Excellence: Blog* [Online]. [Accessed 12 March 2018]. Available from: <http://teachingexcellence.leeds.ac.uk/>
- Durham, H. and See, L. 2015. Lessons Learned from Distance Learning. In: Kneale, P. ed. *Masters Level Teaching, Learning and Assessment: Issues in Design and Delivery*. London: Palgrave, pp.209-217.
- Kermack, W.O. and McKendrick, A.G. 1927. A Contribution to the Mathematical Theory of Epidemics. In: *Proceedings of the Royal Society of London. Series A, Containing Papers of a Mathematical and Physical Character*. **115** (772), pp700-721.
- Open University, 2018. *Small Screen Heroes: The OU and the BBC*. [Online]. [Accessed 13 March 2018]. Available from: <http://www.open.ac.uk/researchprojects/historyofou/story/small-screen-heroes-the-ou-and-the-bbc>
- Perkin G. and Bamforth, S. 2011. A variety of approaches to the provision of mathematics help for first-year engineering undergraduates. *International Journal of Electrical Engineering Education*. **48** (1), pp. 79-91.
- Statista, 2017. *Number of Internet Users Worldwide from 2005 to 2017 (in millions)*. [Online]. [Accessed 12 March 2017]. Available from: <https://www.statista.com/statistics/273018/number-of-internet-users-worldwide/>
- Talbot, C. 2016. *Studying at a Distance: A Guide for Students*. 4th ed. Open University Press.
- University of Leeds, 2018. *Online Courses*. [Online]. [Accessed 13 March 2018]. Available from: https://www.leeds.ac.uk/info/130503/online_courses
- University of London, 2018. *The Birthplace of Long Distance Learning*. [Online]. [Accessed 12 March 2018]. Available from: <https://london.ac.uk/>
- Wozniak, H. 2016. *Get Ready, Get Learning: Investigating university students' transition to online distance learning in the health sciences*. Ph.D thesis, Charles Darwin University, 346p.

Appendices

Appendix A | Survey and Resource Evaluation Questions

Table A1: Survey Questions

1. In which academic year did you start your current programme of study?
2. Are you a Home, EU or International student?
3. Is English your first language?
4. What is your highest qualification (e.g. BA, BSc) gained prior to starting this programme? Please state qualification and subject.
4.a. In which country did you obtain this academic qualification?
5. What is your current programme of study?
6. What reasons did you have for choosing to study your current degree by online distance learning? Select as many as you like
6.a. If you selected Other, please specify:
7. Have you ever studied by online distance learning before?
7.a. If yes, please specify the type of courses (e.g. MOOC, credit bearing course etc)
8. What reasons did you have for studying a campus based full-time/part-time degree at the University of Leeds? Select as many as you like
8.a. If you selected Other, please specify:
9. At the point that you started your first module/s on your current degree programme, how would you rate your confidence in the following:
9.1. Academic writing - Critical thinking
9.2. Academic writing - Style
9.3. Academic referencing (Harvard referencing style)
9.4. Independent study
9.5. Effective time management
9.6. Adapting to a different academic culture
9.7. Adapting to higher expectations of master's level study
9.8. Adapting to studying in English
10. Now, at this current point on your degree programme, how would you rate your confidence in the following
10.1. Academic writing - Critical thinking
10.2. Academic writing - Style
10.3. Academic referencing (Harvard referencing style)
10.4. Independent study
10.5. Effective time management
10.6. Adapting to a different academic culture
10.7. Adapting to higher expectations of master's level study
10.8. Adapting to studying in English
11. At the point that you started your first module/s on your current degree programme, how would you rate your confidence in using the following University interfaces:
11.1. The Portal to access your teaching timetable (campus based students only)
11.2. The VLE to access your teaching modules
11.3. The VLE to contribute to discussion boards
11.4. The VLE to upload coursework
11.5. The Library (to access online resources such as e-journals and e-books)

11.6. The Library (to access School subject page)
12. Now, at this current point on your degree programme, how would you rate your confidence in using the following University interfaces:
12.1. The Portal to access your teaching timetable (campus based students only)
12.2. The VLE to access your teaching modules
12.3. The VLE to contribute to discussion boards
12.4. The VLE to upload coursework
12.5. The Library (to access online resources such as e-journals and e-books)
12.6. The Library (to access School subject page)
13. Are you aware of the following platforms that are available to University of Leeds students and can support learning?
13.1.a. Rosetta Stone
13.2.a. iTunesU
13.3.a. FutureLearn
13.4.a. Box of Broadcasts (BoB)
14. Had you used a GIS before starting this degree programme?
14.a. If Yes, state software used
14.b. Indicate whether you would class yourself as a Basic, Intermediate or Advanced user
14.c. Select whether your experience was from a previous degree, work or a combination of both
15. Had you used spreadsheet software (e.g. Excel) before starting this degree programme?
15.a. If Yes, state software used
15.b. Indicate whether you would class yourself as a Basic, Intermediate or Advanced user
15.c. Select whether your experience was from a previous degree, work or a combination of both
16. Had you used database software (e.g. Access, Oracle etc) before starting this degree programme?
16.a. If Yes, state any software used
16.b. Indicate whether you would class yourself as a Basic, Intermediate or Advanced user
16.c. Select whether your experience was from a previous degree, work or a combination of both
17. Had you done any programming before starting this degree programme?
17.a. If Yes, state any programming languages used
17.b. Indicate whether you would class yourself as a Basic, Intermediate or Advanced programmer
17.c. Select whether your experience was from a previous degree, work or a combination of both
18. Had you used statistical software (e.g. SPSS, Minitab, etc) before starting this degree programme?
18.a. If Yes, state any software used
18.b. Indicate whether you would class yourself as a Basic, Intermediate or Advanced user
18.c. Select whether your experience was from a previous degree, work or a combination of both
19. If you have any suggestions for resources that would help a new student to the University of Leeds in their transition to taught postgraduate studies on your programme please state here:

Table A2: Resource Evaluation Questions

1. At what stage of your GIS studies are you?
2. Please state (highest) academic qualifications obtained prior to starting on this Masters level GIS programme (e.g. BA Geography, BSc Environmental Management)
3. Did your previous studies require you to programme (code)?
3.a. If you answered 'Yes - a lot' then please state the programming language/s you were introduced to in these studies.
3.b. If you answered 'Yes - a little' then please state the programming language/s you were introduced to in these studies
4. As part of your current GIS studies by distance learning do you plan to take, or have already completed, either 'Programming for GIS: Core skills' or 'Web-based GIS'?
5. You have recently been sent some notes and a practical on modelling disease. Before working through these materials how much programming (coding) experience did you have?
5.a. Please outline your experience (programming language/s used, how long have you been programming for, what sort of programming projects have you worked on, etc.) . If you answered 'None' then type N/A
6. Did you read the pre-module Notes : 'Disease Modelling: An introduction to coding and agent-based modelling'?
6.a. If your answer was No then please tell us why not.
7. Did you complete the pre-module Practical : 'Modelling disease outbreaks'?
7.a. If your answer was 'Partially', please tell us what prevented you from completing it (e.g. time, too hard, too easy, not interested in topic)
7.b. If your answer was 'No', please tell us what prevented you from attempting it (e.g. time, too hard, too easy, not interested in topic)
8. How did you mainly view/read the materials?
8.a. Please tell us why this was your preferred method of viewing the resources
9. Approximately how long (to the nearest half hour) do you think you spent working through the materials?
10. Overall I am satisfied with the quality of this pre-module resource
11. I was fully engaged with this pre-module resource
12. The materials were of a high standard
13. The resource content was intellectually stimulating
14. This resource has helped me to develop skills that will be useful for my future career
15. This resource has helped me to develop skills that will be useful for my current studies in GIS
16. The best features about this resource are:
17. Aspects that could be improved are:
18. Having attempted/completed this pre-module resource do you think it has changed your view on taking one of the programming modules (Programming for GIS: Core skills or Web-based GIS) offered as part of your GIS studies?
19. Would you like to have access to other pre-module resources?
19.a. What topics might these resources cover?
20. If you have any further comments on any aspects of this project that have not been covered in the above questions please feel free to share here:

Appendix B | The Resource Notes and Practical Instructions

Extract 1 (Resource Notes): Introductory Sections

Disease Modelling: An introduction to coding and agent-based modelling

The aims of this unit are to:

- Introduce coding and agent-based modelling in preparation for programming-based modules contributing to taught postgraduate studies in the School of Geography, University of Leeds
- Develop skills and confidence in programming
- Introduce students to a delivery style (notes plus practical) commonly used in taught postgraduate studies in the School of Geography

On completion of this unit you should:

- Have developed some competency and confidence in coding and agent-based modelling
- Be able to model the spread of disease using 'Scratch'
- Be familiar with delivery style and expectations of MSc courses in the School of Geography

1 Introduction

Welcome to these introductory resources on coding and agent-based modelling. The resources consist of a these notes, accompanied by a practical introducing Agent-Based Modelling (ABM) in Geography, using the modelling of diseases as the scenario. The resources are designed to support students who intend to take programming-based modules as part of their taught postgraduate studies in the School of Geography, University of Leeds.

Whilst developed to introduce programming skills to students who have no, or little, experience of coding this may also be a useful refresher resource to those with some programming or modelling skills but where the application to topics that have a geographical component is new. The resource can also be used to give a flavour of the type of resources that students might encounter throughout their studies.

Students should be able to work through these resources independently but should contact the module tutor in the case of queries or issues. No specialist software is required but access to an internet browser, and registration on the Scratch website will be needed to undertake the practical.

2 Key ideas

Models are a key tool in understanding our world. Models are physical, mathematical, or computer-based reproductions of some part of a natural or human system. Modelling a system allows us to test how well our ideas about how things work actually generate systems that look like they do in the real world (*validation* of our theories). They also allow us to experiment with management plans and predict the future based on our understanding.

Older models tend to be mathematical equations because these deal with lots of things that are individual objects in the real world very efficiently by aggregating them into a single number. However, what these often miss is the importance of geography; space, the time it takes to travel across it, and the position of things within it, has a complicated effect on systems that is lost if we treat everything like it is all lumped together.

Now computers are more powerful, we are starting to see the rise of Agent-Based Models, which treat objects as if they are individual things that can be tracked around a system and interact with each other. These models allow us to put the geography back in, and get more accurate modeling results. These models are of increasing importance in lots of areas of geography worldwide. In the materials, using disease spread as an example, we'll see the extra detail that these models allow by adding geography, and we'll also see that building them is relatively simple.

Extract 2 (Resource Notes): Encouraging Reflection

5 The Model

The model presented in these materials is a very simple replication of the SIR model, but with some added geography and movement.

The geography is very simple (a rectangular space) and the movements are random. However, even with this simple model, students can explore the fundamental issues associated with disease spread and the importance of geography and movements within a geography.

The model has three options:

- 1) The ratio of susceptible to immune people at the start, essentially replicating S, above.
- 2) The length of time infectious, which is also taken as the infected period.
- 3) The result of the infections (death vs. immunity), which isn't so important for the spread in SIR models, but becomes important for harm calculations and for diseases where victims don't become immune).

6 Practical and questions

Now work through the practical activity associated with this resource. The activity requires you to consider various questions. As you work through the activity make notes on the following:

1. *What kinds of things are important in controlling the spreading rate in the model?*
2. *What kinds of things might be important in the real world?*
3. *How does this relate to, for example, how the government deals with potentially deadly diseases in cattle like Foot and Mouth?*
4. *How does the speed to death affect the spread of the disease?*
5. *Are real-world diseases (like Ebola) that spread very rapidly and kill all their victims likely to be the most dangerous kinds of diseases in terms of most deaths?*
6. *What kinds of effects do these different options have?*
7. *What settings would you give these options for the following diseases:*
8. *Given the people here move randomly and real people don't, do you think immunity will be more or less important in the real world?*
9. *Say each infected person infects another at a rate of one a second, and newly infected people can infect other people as well, what kind of graph might we expect for such a model?*
10. *Why don't we get this graph in practice?*
11. *How might this be reflected in the infection rate in a real disease, and how might we control real diseases?*
12. *What else could be added to this model to make it more realistic?*
13. *How could scientists use this model?*

7 Acknowledgements

This resource was adapted (with permission) from resources developed by Dr Andy Evans and Professor Alison Heppenstall, School of Geography, University of Leeds.

Extract 3 (Practical Instructions): Building the Basic Disease Model

2.4 Build the basic Zombie-bite model (as follows):

The simplest disease model is the "Zombie Bite" model. It starts with a bunch of healthy people and one ill person. They all start in random places and move around, but when the ill person meets a healthy person they bite them, giving them the disease. They can then bite other healthy people.

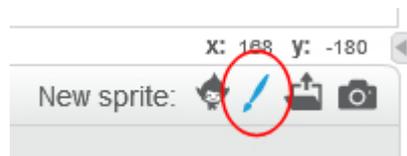
When building a model it is always good to break it down into simple bits you can make sure work. We'll break this simple model down into five bits (***Make sure you save your work as you go along***):

2.4.1 Making one person who starts somewhere random.

- 1) Open up a fresh Scratch project (**File** menu, then **New**) and name it "DiseaseModel" (this mix of upper and lower case without spaces is called "CamelCase", and is quite common in programming, as is "snake_case"). Type the name in the projectname box at the top left:

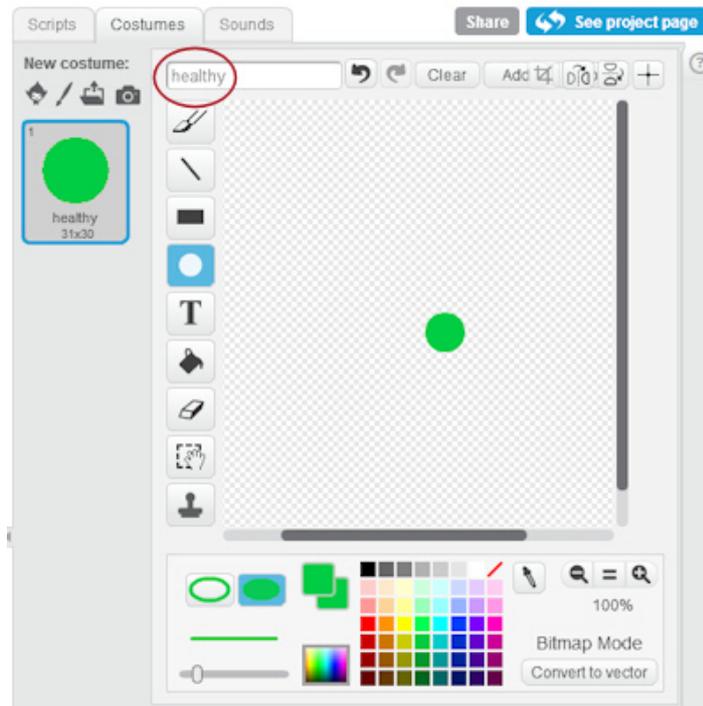


- 2) Right click on the Cat Sprite and delete it.
- 3) Click on the "Paint New Sprite" icon:



This will take you to the costume tab where you can draw a new sprite.

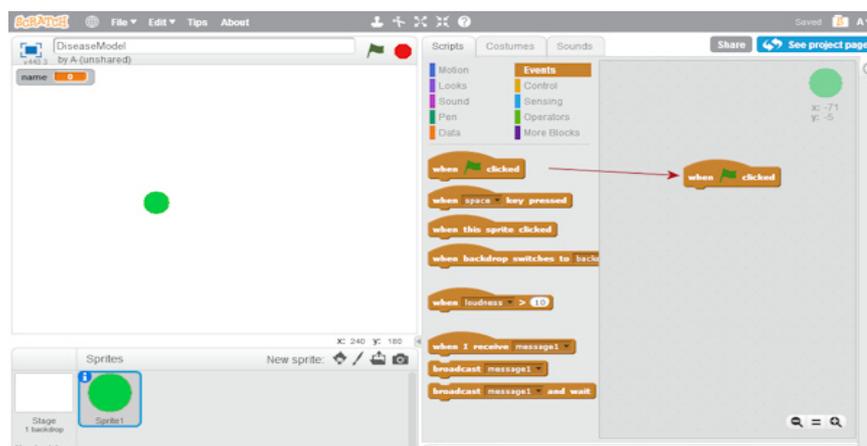
- 4) Paint a new green sprite to represent our healthy person. Make it a circle not too large and not too small (Tip: if you hold the **Shift** key while drawing ovals they'll come out as perfect circles). Make sure it is some kind of green colour. Something like this:



Note: if you are colour blind in any way, feel free to use whatever colours or shapes you like; we'll be using green for healthy, red for infected, and black for dead, but substitute for whatever you like. We'll always mention colours used in images in the text where a substitution is important.

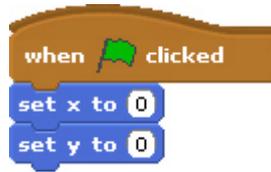
Using the naming box at the top of the drawing area (circled above), rename the new costume to "healthy". Then click the [Scripts](#) tab to go back the main editor screen.

5) Now we need to add the code to start the person somewhere on the screen. First, we need to add a start block. You can find these under "Events". Click on one and drag it into the script area:



At the moment, although the program will run, nothing will happen. Let's add code to put the sprite somewhere random. Each sprite has an x-coordinate which controls its left-right position, and a y-coordinate that controls its up-down

position. You can find blocks to set these under "Motion". Drag a  and  into the script and clip them to the start block:



Now, we want to put them somewhere random on the screen. To do this we don't want x and y set to zero, but some random position. You can find a  random number maker under "Operators". Drag two of these into the spaces in "set x to 0" and "set y to 0" where the zeros are:



These random number makers make numbers between 0 and 10 randomly. However, the left-right directions run from $x = 240$ to -240 and $y = 180$ to -180 , with zero in the middle of the screen. Click on the numbers in the random number makers and set them to these numbers.

6) Now click the start flag and see where the sprite appears. Click the stop button and the start flag to check it appears somewhere else.

Appendix C | The Project Outputs

Output 1: Blog on LITE website, posted Friday 3 March 2017

Opinion: Will online distance learning mean the end of campus-based programmes?

<http://teachingexcellence.leeds.ac.uk/opinion-will-online-distance-learning-mean-the-end-of-campus-based-programmes/>

DIGITAL AND distance-learning courses are on the rise in higher education but are our students ready for the challenges that lie ahead? LITE Teaching Enhancement Project Leader, Helen Durham, explores here the changing landscape and some of the future issues and opportunities.

What was once viewed as an unconventional route to study in higher education is fast moving towards the conventional. Whether we like it, or not, Massive Open Online Courses (MOOCs), accredited MOOCs, and Online Distance Learning (ODL) are all methods of student education that are shifting the traditional parameters of university study.

Not that long ago the main option for someone wishing to broaden their knowledge and acquire qualifications would be to enroll as a campus-based student at a university on a full or part-time basis.

Correspondence courses have existed for many years but with limited interactivity they were aimed at a more niche market. They provided opportunities for those who had slipped through the rungs of conventional education systems but were not necessarily providing an equivalent experience that campus-based students might expect.

Early shift

In 1964, the Open University improved the student experience for distance learners by delivering television and radio tuition combined with correspondence courses and residential courses.

But in the early days the broadcasts were often at very unsociable hours and this was in the days before technology supported recording and playback.

How times have changed in a relatively short period of time. Approximately half of the world's population now have ready access to computers and the internet.

And with technological and software advances giving us virtual learning environments, video streaming and interactive study experiences, such as discussion boards and web conferencing, the world of online distance learning is opening up.

Changing world

There is much conjecture about whether this changing landscape will take us to a point where students no longer 'go to University'.

In years to come will we still have excited Freshers crossing this hallowed portal, with their new duvet and pots and pans in tow, ready for their first step into an independent world?

Or international students leaving behind jobs and families but with high aspirations to obtain a postgraduate qualification at an internationally respected institution of learning?

More and more universities are seeing the potential of ODL as a means to broaden their teaching portfolio and expand student numbers, even when the infrastructure that makes up the physical university is full to capacity.

Pioneering

The [University of Leeds](#) is one such institution that has an ongoing commitment to ODL.

The University's [School of Geography](#) is certainly no stranger to distance learning having delivered an [MSc in Geographical Information Systems \(GIS\)](#), in collaboration with the University of Southampton, for just short of 15 years.

The first University of Leeds MOOC on the UK-based [FutureLearn](#) platform ([When Worlds Collide](#)) was delivered by the School of Geography.

The School of Geography also offers one of the first [MOOCs that comes with accreditation](#) that could be traded in as prior learning for those wishing to pursue a degree in Geography further down the line.

Compromise

The ODL community brings with it new challenges. An ODL programme provides the flexibility for a student to keep many aspects of their life at a status quo whilst gaining a qualification. This will be considered a 'win-win' situation for many. But some students may yearn for the social and interactive aspects of studying on campus, finding studying in isolation and maintaining motivation difficult.

There are challenges for the educators too. Guiding the student through their learning experience whilst getting to know a student, their capacities, their enthusiasms and their weaknesses is tricky when a student potentially never steps foot in the UK, Leeds or the University.

The question is can the 'cradle to grave' experience all be done online?

The [MSc GIS ODL](#) programme certainly tries to achieve this by delivering quality education in a more personalised setting and nurturing the student from the moment they commence their studies.

Too early?

But should our nurturing start even earlier? Perhaps we should be addressing the needs of the students before they even register on the programme, when they are in the metaphorical 'womb'?

Admission to the MSc in GIS ODL is not assessed on academic qualifications alone. Prior work experience can tip the balance in favour of a student who is not considered a 'standard entry'.

The diverse academic, cultural and experiential backgrounds of our students means that the transition to Master's level study can be a gentle incline or a more uneven step.

Studying online and at a distance is still a new concept to most students and sometimes more early nurturing is required.

Providing pre-sessional resources may be a way to help these students on their first step towards a postgraduate degree.

Institute research

This **LITE project** aims to research the gaps that exist between the actual and desired digital literacy skills and basic data and information systems handling capabilities of students starting on a Master's programme with large science and technical elements.

It seeks to develop a series of discrete online resources that can be made available to the students before they step onto the standard induction and orientation activities of the programme.

ODL is a developing feature on the higher education landscape and may well start to dominate. But whether campus-based programmes will be a diminishing feature is still unknown.

Without a crystal ball we cannot know for certain. But, for now, we need to continue to provide all of our students, whether campus-based or part of this growing online community, a rich, interactive, stimulating and rewarding student experience and education with the recognition that this may need to start in that metaphorical 'womb'.

For more reading on this subject:

Durham, H. and See, L. (2015). Lessons learned from distance learning. In P. Kneale (Ed) *Masters Level Teaching, Learning and Assessment: Issues in Design and Delivery*. Palgrave, London, pp209-217

<https://he.palgrave.com/page/detail/masters-level-teaching-learning-and-assessment-pauline-kneale/?sf1=barcode&st1=9781137399366>

Output 2: ABSTRACT: Conference Proceedings, EDULEARN 2017
ENHANCING THE TRANSITIONAL EXPERIENCE OF TAUGHT POSTGRADUATE STUDENTS: A CASE STUDY FROM AN ONLINE DISTANCE LEARNING PROGRAMME IN GEOGRAPHICAL INFORMATION SYSTEMS <https://library.iated.org/view/DURHAM2017ENH>

Digital and distance-learning courses are on the rise in higher education but are students ready for the challenges that lie ahead? This paper will report on research undertaken to identify perceived gaps that exist between the actual, and desired, digital literacy skills and quantitative data handling capabilities of students starting on a taught postgraduate programme in a Science, Technology, Engineering and Mathematics (STEM) subject – Geographical Information Systems (GIS). The research is exploring some of the challenges of distance learning, focusing particularly on the transitional stage of ‘stepping up’ to a distance learning Master of Science (MSc) course. Drawing on the author’s experience of delivering and managing a successful and internationally-recognized distance learning programme for over 10 years, and on new data collected from an ongoing teaching enhancement project led by the author, the objective of this research is to design, and ultimately develop, a series of discrete online resources that could be made available to the students before they step onto the standard induction and orientation activities of a STEM programme.

What was once viewed as an unconventional route to study in higher education is fast moving towards the conventional. Whether we like it, or not, Massive Open Online Courses (MOOCs), accredited MOOCs, and online distance learning are all methods of student education that are shifting the traditional parameters of university study. More and more universities are seeing the potential of distance learning as a means to broaden their teaching portfolio and expand student numbers, even when the infrastructure that makes up the physical university is full to capacity. The University of Leeds is one such institution that has an ongoing commitment to distance learning and the University’s School of Geography is certainly no stranger to distance learning as a mode of delivery having offered an MSc in GIS, in collaboration with the University of Southampton, for almost 15 years.

An online distance learning programme offers students the flexibility to keep many aspects of their lives at a status quo whilst gaining a qualification, but it does come with challenges for students as they adapt to this different approach to study. But there are hurdles and lessons to be learnt for the educators too; guiding the student through their learning experience whilst getting to know a student, their capacities, their enthusiasms and their weaknesses is more tricky when a student potentially never steps foot in the UK, Leeds or the University.

Admission to a taught postgraduate programme is not necessarily based on academic qualifications alone. Prior work experience can sometimes tip the balance in favour of a student who is not considered a ‘standard entry’. As a result, the diverse academic, cultural and experiential backgrounds of incoming students means that the transition to master’s level study can be a gentle incline or a more uneven step. For those choosing to study online, and at a distance, experience has shown that the transition can be quite a rocky step and sometimes more early nurturing is required. Experience, and initial findings from the teaching enhancement project, would suggest that providing pre-sessional resources may be a way to help these students on their first step towards a successful postgraduate degree.

Reference:

Durham, H. 2017a. Enhancing the Transitional Experience of Taught Postgraduate Students: A Case Study from an Online Distance Learning Programme in Geographical Information Systems. In: *Proceedings of the 9th International Conference on Education and New Learning Technologies, EDULEARN17, 3/5 July 2017, Barcelona, Spain*: IATED, pp. 5503-5509.

Output 3: Poster displayed at LICE-2017 and SEC2018

Exploring a framework for supporting new postgraduate students in their transition to online distance learning in a science-based discipline

Helen Durham, LITE

1 Overview

Distance learning courses are on the rise in higher education but new students wonder what this means for them. This poster explores the challenges of supporting new students in their transition to online distance learning in a science-based discipline. It discusses the importance of providing support and resources to help students succeed in this new learning environment. The poster outlines the framework for supporting new postgraduate students in their transition to online distance learning in a science-based discipline, highlighting the key components and the role of the LITE team.

2 The problem

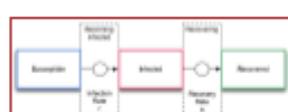
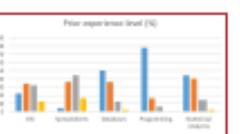
The online distance learning environment offers students flexibility to learn at their own pace and in their own time. However, it also presents unique challenges for students, particularly in a science-based discipline. The poster discusses the challenges of supporting new students in their transition to online distance learning in a science-based discipline, highlighting the key components and the role of the LITE team.



The online distance learning environment offers students flexibility to learn at their own pace and in their own time. However, it also presents unique challenges for students, particularly in a science-based discipline. The poster discusses the challenges of supporting new students in their transition to online distance learning in a science-based discipline, highlighting the key components and the role of the LITE team.

3 Case Study – learning through discovery and experimentation

To explore whether additional (free) time was necessary for the learning experience of students taking a CE module and course, the data of student course usage, a list of new user accounts and feedback was subsequently obtained. This case study focuses on the experience of a student taking a CE module and course, highlighting the challenges and the support provided by the LITE team.


The case study focuses on the experience of a student taking a CE module and course, highlighting the challenges and the support provided by the LITE team. The student's journey is detailed, from initial enrollment to course completion, and the role of the LITE team in providing support and resources throughout the process.

4 Student feedback

Students who completed the course were asked to provide feedback on their experience. The feedback was collected and analyzed to identify key areas for improvement. The poster highlights the student feedback and the actions taken by the LITE team to address the identified issues.



Students who completed the course were asked to provide feedback on their experience. The feedback was collected and analyzed to identify key areas for improvement. The poster highlights the student feedback and the actions taken by the LITE team to address the identified issues.

5 Future plans

Based on student feedback and the current state of the course, the LITE team has developed a plan for future improvements. The poster outlines the key areas for improvement and the actions taken by the LITE team to address these areas.

Based on student feedback and the current state of the course, the LITE team has developed a plan for future improvements. The poster outlines the key areas for improvement and the actions taken by the LITE team to address these areas.

6 References

- 1. [Reference 1]
- 2. [Reference 2]
- 3. [Reference 3]
- 4. [Reference 4]
- 5. [Reference 5]
- 6. [Reference 6]
- 7. [Reference 7]
- 8. [Reference 8]
- 9. [Reference 9]
- 10. [Reference 10]

About the author and acknowledgements

About the author

Helen is a Lecturer (Teaching & Scholarship) in Geographical Information Systems (GIS) in the School of Geography at the University of Leeds. She started working in the School as a Research Officer in 1993 and has gradually metamorphosed into a student education-focussed member of academic staff in the intervening years. Undertaking her MSc in GIS in the early 1990s by 'correspondence' distance learning (in the days when 'online' distance learning was still rare), distance learning is a mode of delivery that has always resonated with Helen. In 2010 Helen was given the opportunity to take on the role of Programme Leader of the MSc in GIS by online distance learning, a collaborative programme offered by the University of Leeds and the University of Southampton. This is a role that Helen still holds, and has underpinned her research and scholarship direction in the last few years. With her personal experience of studying by distance learning whilst also maintaining a full time job and bringing up a young family, she is particularly conscious of the complexities of studying at a distance whilst balancing equally demanding aspects of life. For the last 3.5 years she has also been the Academic Integrity Lead in the School of Geography and it has been her mission to ensure that all students, undergraduate and postgraduate, are supported in those first weeks to understand good academic practice and encouraged to apply those good practices throughout their studies. As a result, supporting the transition and induction to postgraduate study has been a long-standing priority to Helen.

The launch of the Leeds Institute for Teaching Excellence (LITE) and the creation of Teaching Enhancements Project Leader (TEPL) roles, which provided successful applicants a part-time secondment to devote to the advancement of high quality student education at the University of Leeds, was an opportunity that could not be missed. Helen applied to the first round of recruitment and was successfully appointed as a LITE TEPL on a 0.2FTE basis, running from 1 January -31 December 2017. The focus of her LITE project was, not unexpectedly, supporting transition to taught postgraduate studies, with particular emphasis on the distance learning community!

Acknowledgements

The author is very grateful to the Leeds Institute for Teaching Excellence (LITE) for funding this teaching enhancement project and to the School of Geography for facilitating this opportunity. In particular, thanks go to Rafe Hallet and David Gardner for their belief in this project from the outset and their sage advice throughout, and to Stephanie Stones, Leigh Dowd and Rekha Parmar whose day-to-day help and ready willingness to support my varied requests has ensured the successful completion of this project.

The modelling disease resource was adapted with kind permission from content developed by Dr Andy Evans and Professor Alison Heppenstall, University of Leeds. The author is very grateful for their generosity in sharing this resource to enable perceptions of 'readiness' for taught postgraduate studies to be tested within a limited time frame.

h.p.durham@leeds.ac.uk



Join the community:
@leedsteaching
teachingexcellence.leeds.ac.uk



Join the conversation:
teachingexcellence.leeds.ac.uk
[@leedsteaching](https://twitter.com/leedsteaching)