The 14th eSTEeM Annual Conference 2025

Conference Booklet

30th April – 1st May 2025
www.open.ac.uk/esteem

Contents

Acknowledgements

We gratefully acknowledge the support of the following people who helped with various aspects of this conference:

Nick Braithwaite, Emeritus Professor, STEM Faculty

Daphne Chang, eSTEeM Deputy Director, STEM Faculty

Diane Ford, Senior Manager, Scholarship, STEM Faculty

Victoria Nicholas, Associate Dean, Faculty & Strategy, STEM Faculty

Sue Pawley, eSTEeM Director, STEM Faculty

Rachel Redford, eSTEeM Centre Support Assistant, STEM Faculty

Open University colleagues and students who have contributed and participated in the conference.

Programme – Day 1

Wednesday 30th April 2025

Time	Session		Online Room
10.00-10.15	**Welcome and Introduction** Sue Pawley and Daphne Chang, eSTEeM Directors		**Main Room**
10.15-10.30	**Welcome Address** Victoria Nicholas, Associate Dean, Faculty & Strategy		**Main Room**
10.30-11.15	**Parallel Session A: Access, Participation and Success**		**Room 1**
Chair: Andrew Potter	Chris Corcoran	Barriers and enablers to higher education: the experiences of disabled students from minority cultural backgrounds	
10.30-11.15	**Parallel Session B: Continuation and Completion**		**Room 2**
Chair: Nigel Gibson	Adam Freeman and Anne-Katrin Klehe	Evaluating students' experience of tuition in S217	
10.30-11.15	**Parallel Session C: Access, Participation and Success**		**Room 3**

Chair: Cath Brown	Janette Wallace, Lucy Anderson, Sarah Daniell and Trevor Collins	Using virtual reality tutorials with Stage 3 Health Sciences students	
10.30-11.15	**Parallel Session D: Student Support**		**Room 4**
Chair: Jenny Duckworth	Fiona Aiken and Christopher Hutton	Evaluation and improvement of print packs use for Environmental Science students	
11.15-11.30	**Break**		
11.30-12.15	**Parallel Session E: Access, Participation and Success**		**Room 1**
Chair: Darren Gray	Jim Gillen, Soraya Kouadri Mostéfaoui, Shailey Minocha, Guanzi Shen and Jason Clarke	The Role of Scholarship in addressing awarding gaps	
11.30-12.15	**Parallel Session F: AL Development**		**Room 2**
Chair: Sally Crighton	Rupesh Shah, Janet Haresnape, Nirvana Wynn and Heather Fraser	Singing the songs of AL-led professional development	

11.30-12.15	**Parallel Session G: Student Community and Sense of Belonging**		**Room 3**
Chair: Scott Harvey-Whittle	Cath Brown, Sue Pawley, Fi Moorman, Karen New, Anne-Katrin Klehe, Adam Freeman and Nicole Lotz	How can we promote student community? Exploring options and generating ideas	
11.30-12.15	**Parallel Session H: Student Support**		**Room 4**
Chair: Susan Bryan	Dhouha Kbaier and Andrew Mason	Enhancing Online STEM Education Through AI-Driven Anomaly Detection in Remote Laboratories	
11.30-12.15	**Parallel Session I: Access, Participation and Success**		**Room 5**
Chair: Daphne Chang	Louise MacBrayne and Zoë Chapman	Is the cost of home experiments a potential barrier to learning?	
12.15-13.30	**Lunch**		
13.30-14.30	**Teaching Innovation Talks** A series of short, 5-minute talks discussing module/programme level initiatives,		**Main Room**

	concentrating on what works and how it has improved the student experience, followed by Q&A.	
Chair: Sue Pawley/ Daphne Chang	Judith Croston	Embedding coding activities in physical sciences modules via the Open Computing Lab
	Jon Golding	The Mystery disease – A whodunnit approach to learning
	Jenny Duckworth and Sarah Davies	Exploring hidden worlds: soil invertebrates through a virtual lens
	Jotham Gaudoin	Developments in Teaching in Mathematics and Statistics
	Derek Jones, Christian Nold, Alessandra Campoli, Vera Hale, Georgie Holden, Nicole Lotz and Emma Dewberry	Applying a Novel Tuition Strategy as a Studio Pedagogy in Distance Design Education
	Daniel Payne	Lightboards – A more engaging approach to produce STEM module content?

	Daniel Gooch and Mark Hall	Duck-supported debugging	
14.30-14.45	**Break**		
14.45-15.30	**Parallel Session J: Sustainability in the STEM Curriculum**		**Room 1**
Chair: Martin Braun	Hanne Bown	Helping the students to discover the meaning of global citizenship and explore sustainability within their curriculum	
14.45-15.30	**Parallel Session K: Access, Participation and Success**		**Room 2**
Chair: Trevor Collins	Linda Moore, Vic Pearson, Maria Velasco and Mandy Bailey	Understanding passive withdrawals on an introductory level 1 module	
14.45-15.30	**Parallel Session L: Continuation and Completion**		**Room 3**
Chair: Chris Hughes	Emma Champion and Rosie Boltryk	How does it feel to have an extension? Experiences of Stage 1 engineering students	
14.45-15.30	**Parallel Session M: Innovations in STEM Teaching and Learning**		**Room 4**

Chair: **Cathy** **Smith**	Elouise Huxor and Theodora Philcox	Combating isolation one postcard at a time…
15.30	**Formal Close of Day One**	
15.45-16.30	**Crochet Taster Session**	**Craft Room 1**
	eSTEeM Knowledge Makers	**Craft Room 2**
16.30-17.30	**Pub Style Quiz**	**Main Room**

Programme – Day 2

Thursday 1st May 2025

Time	Session		Online Room
9.30-10.15	**Virtual Yoga**		**Wellness Room**
	SoTL Speed Dating		**SoTL Speed Dating Room**
10.30-11.15	**Parallel Session N: Access, Participation and Success**		**Room 1**
Chair: Andrew Potter	Andrew Smith, David McDade, Amaninder Singh, Martin Rothwell, Andy Reed, Phil Hackett and Amel Bennaceur	External Impact: finding your allies within Silicon Valley and working with a multitude of external stakeholders	
10.30-11.15	**Parallel Session O: Innovations in STEM Teaching and Learning**		**Room 2**
Chair: Sue Pawley	Janette Wallace and Zoë Chapman	Experiencing co-creation of digital assets with LHCS Student Interns	
10.30-11.15	**Parallel Session P: Progression**		**Room 3**

Chair: Daphne Chang	Alice Fraser-McDonald, Sally Jordan, David Sharp and Teresa Sides	Exploring factors influencing progression from taught study to postgraduate research at the OU	
10.30-11.15	**Parallel Session Q: Sustainability in the STEM Curriculum**		**Room 4**
Chair: Sarah Daniell	Sarah Davies, Volker Patent, Fiona Aiken, Elaine McPherson, Maria Townsend and Trudi Macagnino	Digital storytelling for sustainability education: A design workshop	
10.30-11.15	**Parallel Session R: Employability**		**Room 5**
Chair: Louise MacBrayne	Ruth Neal and Kellee Patterson	Is group work "a necessary evil"?	
11.15-11.30	**Break**		
11.30-12.30	**Poster Presentations**		**Main Room**
	Chris Corcoran, Suz Corcoran, Catherine Comfort and Giorgio Zampirolo	Pan University Project: Enablers and Barriers for students with mental health difficulties	

	Louise MacBrayne, Jennie Bellamy, Isabella Henman and Kate Gibson	Postcode Inequity: Closing the Awarding Gap for Stage 1 STEM Students residing in our most deprived UK postcodes	
	Silvia Varagnolo, Zahra Golrokhi, Colum McKenna, James Openshaw, Shawndra Hayes-Budgen	Gamification to increase participation in maths practice quizzes in Level 1 Engineering modules	
	Gareth Neighbour, Sarel Marais and Russ Lewis	Employer-Facing Education – What Does It Mean to You?	
	Lorraine Waters, Karen New and Sarah Daniell	Exploring student perception of laboratory workbooks: authentic learning or missed opportunity?	
	Amaninder Singh, David McDade, Andy Reed, Andrew Smith and Eliz Hartnett	Investigate the integration of vendor certifications within Computing modules	
12.30-13.45	**Lunch**		
13.45-14.30	**Parallel Session S: Access, Participation and Success**		**Room 1**

Chair: Nicole Lotz	Fiona Gleed and Claudia Eckert	Making space for women in Engineering	
13.45-14.30	**Parallel Session T: Student Support**		**Room 2**
Chair: Nick Chatterton	Cath Brown and Sue Pawley	Tutorials - One Size Doesn't Fit All! How can we provide tutorials to enhance the learning of all our students?	
13.45-14.30	**Parallel Session U: Assessment and Feedback**		**Room 3**
Chair: Gemma Warriner	Stuart Auton and Soraya Kouadri Mostéfaoui	Towards GenAI Proof Assessments	
13.45-14.30	**Parallel Session V: Innovations in STEM Teaching and Learning**		**Room 4**
Chair: Fiona Aiken	Trevor Collins, James Smith and Ben Hawkridge	The OpenXR Studios Showcase: Immersive methods for STEM education at a distance	
13.45-14.30	**Parallel Session W: Access, Participation and Success**		**Room 5**
Chair: Lorraine Waters	Jenny Duckworth, Harriet Marshall and Jennie Bellamy	Does sharing slides in advance of online learning events impact student attendance?	

14.30-14.45	**Break**	
14.45-15.30	**Nick Braithwaite Valedictory Lecture**	**Main Room**
15.30-15.45	**eSTEeM Scholarship Projects of the Year, Best Poster Presentation, Most Immersive and Engaging Session Awards followed by Closing Remarks**	**Main Room**
15.45	**Conference Close**	

Welcome and Introduction

Sue Pawley and Daphne Chang, eSTEeM Directors

Welcome to the 14th eSTEeM Annual Conference, titled "Innovations in Impact." This year, we are excited to present a conference with a difference. Held online, we have challenged our presenters to find innovative and engaging methods to disseminate their scholarship. Say goodbye to boring presentations and prepare yourself for two days of immersive and engaging experiences, with ample room for discussion and debate. We have incorporated regular breaks to give you time away from the conference, so close down all other windows on your computer, sit back, and get ready to immerse yourself in STEM-based scholarship.

In addition to a range of immersive workshops, we have organized a series of teaching innovation talks, which were incredibly popular last year. There will also be an interactive poster session where you can engage with all the poster authors, and plenty of wind down fun to allow you to spend some virtual social time with other attendees. Our keynote speaker is our very own Professor Nick Braithwaite, who will reflect on the OpenSTEM Labs, which started from scholarly seeds (innovation) and matured to pedagogic harvest (impact). As in previous

years, we will award a best poster prize based on your votes. However, this year, we will also award a prize for the most engaging and immersive session of each day. The conference will close with the awarding of the Scholarship Projects of the Year prizes and news of a prize that will be added in 2026 for the most impactful project.

In what is quickly becoming an annual tradition, we are excited to launch the call for our conference proceedings. The aim of the publication is to allow authors to publish short papers related to eSTEeM scholarship in a supportive environment. We will offer authors assistance in writing their papers, enabling those new to scholarship to gain valuable experience.

We hope you will enjoy this novel take on an online conference and fully embrace the spirit of the event. Throw caution to the wind and immerse yourself in the ideas and activities of each workshop. Above all, we hope you engage in conversations about the Scholarship of Teaching and Learning and be inspired to try new things that will contribute to impactful scholarship over these two days.

Enjoy the conference!

Conference Information

Joining the conference

To join the online conference, which will take place in Microsoft Teams, please visit the eSTEeM & Co website at https://learn1.open.ac.uk/course/view.php?id=100174 to find all the links you need. You will need to sign in using your OU credentials to access the site. It may be useful to bookmark this page as this is the link you will need throughout the conference. If you become disconnected from a MS Teams call at any time, make your way back to the eSTEeM & Co website. Please click on the conference programme for the relevant day and select the link for the required session.

If you do not already have the Teams app installed on your computer, upon clicking the link you will be asked whether you wish to 'Download the Windows app' or 'Join on the web instead', we would recommend that you install and use the app version which will allow you access to all of the features within Teams.

It is advisable to sign-in to MS Teams using your OU credentials – OUCU@open.ac.uk followed by your network password, otherwise you will appear as a 'Guest' and may experience issues accessing some of the features or viewing the content.

Conference sessions

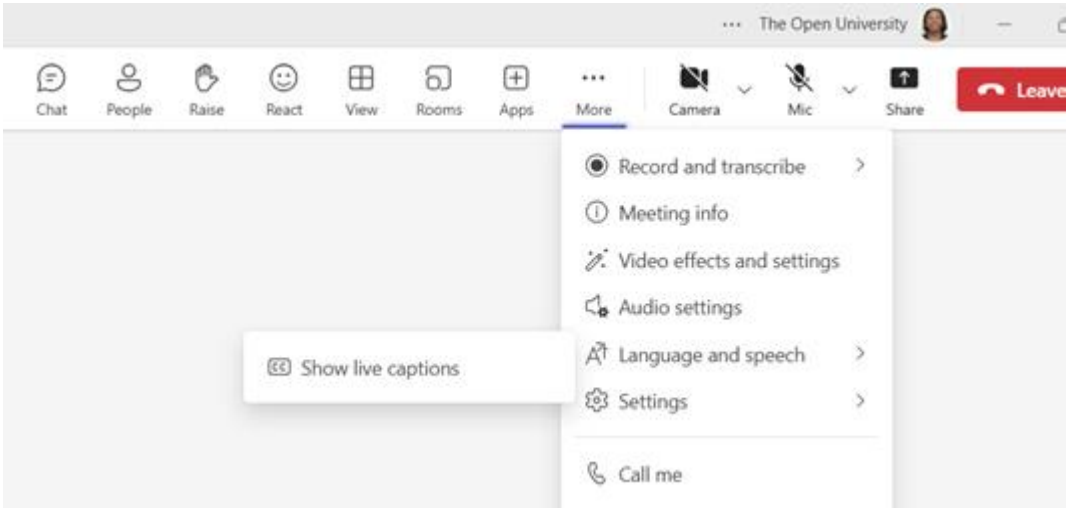
A final programme is now available via the conference website. Due to the immersive and interactive nature of this year's event, we are not planning to

record the parallel sessions. However, presenters may wish to do so after seeking approval from session participants.

We really hope that you will fully immerse yourself in the sessions; therefore, you may wish to set your status to 'Do not disturb' to avoid distractions or interruptions by email notifications/phone calls. Please try to use the breaks to check your emails.

We do intend to capture screenshots from the sessions for further dissemination via the eSTEeM website and social media channels. If you have any concerns regarding these processes, then please contact a member of eSTEeM by emailing esteem@open.ac.uk.

If required, participants can enable the closed captions feature within MS Teams. To enable, click 'More' on the toolbar, select 'Language and speech' then select 'Show live captions'



Social Media

You can get involved with the discussions throughout the conference via *@OU_eSTEeM* using *#eSTEeMConf25*

Poster Presentations

A poster presentation session will take place on Thursday 1st May, 11.30-12.30 and has been devised to give the feel of a traditional face-to-face poster presentation with delegates being able to drop in and out of the various posters to talk to presenters about their work. In order to do so, we will be using the breakout rooms feature within MS Teams with delegates able to choose their own rooms. In addition, presenters were invited to pre-record a poster presentation of up to a maximum of 2 minutes. Recordings will be available to watch from w/c 28th April via the eSTEeM & Co website. Conference delegates are invited to vote for the best poster presentation, details will be available on the eSTEeM & Co website. Voting will close **on Thursday 1st May at 15.00**. The winning poster will be announced at the end of the conference on Thursday 1st May between 15.30-15.45.

Most Engaging and Immersive Sessions

This year we are also inviting conference delegates to vote for their favourite engaging and immersive session for day one and day two. Details will be available via the eSTEeM & Co website. Voting will close **on Thursday 1st May at 15.00**. The winners will be announced at the end of the conference between 15.30-15.45 on Thursday 1st May.

eSTEeM Scholarship Projects of the Year Awards

We will be announcing the 8th eSTEeM Scholarship Project of the Year Awards which celebrate excellence in eSTEeM projects. The winners will be announced at the end of the conference between 15.30-15.45 on Thursday 1st May.

Session changes

We will try to keep session changes to a minimum but inevitably there may be some last-minute changes or cancellations. Any information about changed or cancelled sessions will be posted on the programme on the eSTEeM & Co website.

Helpdesk

eSTEeM staff will be available in the helpdesk throughout the conference to help you with any queries that you may have. You may also use this space to informally network and chat to other colleagues during the refreshment breaks.

Crochet

A first for an eSTEeM conference, we're inviting delegates to showcase their crafty side! Everyone is welcome to join this taster session. If you're a beginner, then you will require a crochet hook (anything above 3.5mm) and some yarn. For those who are more experienced, then feel free to bring along your existing projects to share and discuss. If you have any queries, then please contact Alice Fraser-McDonald alice.fraser-mcdonald@open.ac.uk

Virtual yoga

Another first for an eSTEeM conference, we are delighted to welcome qualified yoga teacher, Elli Flitton from FASS, to run this virtual session. Yoga is a great way to boost your energy, release tension, reduce stress levels and move your body. No equipment necessary as the session will be chair-based and include some standing yoga. Please just wear comfortable clothes that you can move in.

Feedback or any queries

If you have any queries, concerns or would like to provide some feedback, then please get in touch with us by emailing esteem@open.ac.uk.

Book of Abstracts

Parallel Session A

Barriers and enablers to higher education: the experiences of disabled students from minority cultural backgrounds

Chris Corcoran, STEM Faculty

The aim of this project was to look at processes and experiences that were either a barrier to students to joining the University or an enabler – another way of looking at this is what helped and what stopped students registering and joining their course. Rather than focus on one descriptor of research participants, this project took an intersectional approach to examine the student experience from the combined perspectives of social and cultural background and disability – this would give a broader overview of the student experience. The aim of the project was to investigate the challenges faced by student who fell into these categories within STEM focusing specifically on registration to the end of the first year of study. The research approach taken was to use both quantitative and qualitative data from students in two different courses, i.e. T192 and U116; the aim was to identify what were the key barriers and enablers to the pursuit of their studies with the Open University. The research approach adopted was that of an on-line survey using both closed and open-ended questions to ensure that students had the opportunity to expand on their experiences.

The primary aim was to investigate what processes supported the student to negotiate registration and how they used the Student Support Team and their tutors to help them navigate their learning journey. Following due ethical process, student in these modules were approached to take part in the survey. Although the response rate was not as high as hoped, the results were positive and demonstrated the supportive role that the Student Support Team and tutors played to help students join the university. The challenges that some students found harder was accessing the on-line material as unfamiliarity with OU systems made this challenging to navigate. That said, respondents were positive about support received from the Student Support Team and their tutors.

The findings of this research have demonstrated that there are some areas that could be improved and others where there is an extremely high standards of good practice. These findings have been used to inform research into further projects to map how student's use different support mechanisms and in a pan university project about the barriers and enablers experienced by students with mental health difficulties (see Patel at al 2024 and Comfort, Corcoran (S) and Corcoran (C) 2024).

Parallel Session B

Evaluating students' experience of tuition in S217

Adam Freeman and Anne-Katrin Klehe, STEM Faculty

Student retention on a module and student progression in their studies is of critical importance as the OU adapts to changes and pressures in the Higher Education sector. A sense of belonging is known to be one of the most significant factors in student success and retention (Kuh et al, 2010). While ALs aim to offer the students the best support in their journey through their degree, many students do not feel that they are part of a community of learners (NSS, 2022).

Both authors have previously attempted to foster a greater sense of being part of a community of learners within our own tutor groups, by running different styles of interventions to facilitate regular informal contact between students in the group and between student and tutor. In the 22J presentation of S217, A-K Klehe held regular online meetings with her tutor groups (A-K Klehe, 2024), and A Freeman offered informal online writing retreats to his tutor groups.

While we feel such interventions are worthwhile, we decided that we should get a clearer picture of the tuition from the students' perspective, to make recommendations for an improved tuition strategy that are based on what our students want.

We invited S217-23J students to take part in a survey (43 students responded out of the 250 invited, from a cohort of about 400) and ran two focus groups, each with 5 or 6 students, to glean a deeper understanding of student experiences and opinions. We were particularly interested in attitudes and experiences of tutorials, forums, interaction, any sense of belonging, and interactions between students.

There was a clear message: students found there are insufficient opportunities to make connections with peers. While there will always be a proportion of students who don't wish for this and are happy studying independently, those who do wish for it highlighted this as a problem. We emphasise that students did not wish merely for social interaction but articulated that they strongly valued the sense of being part of a community of learners.

Some salient findings of this project have already been useful in making some easily applied recommendations for the final presentation of S217, and our analysis of the data will be used to help the design of the tuition strategy on its successor module S227.

These findings have relevance beyond these modules. While the feedback is of course pertinent to the students' experiences on S217, we have identified themes that are important to be aware of for the provision and design of learning events as the OU develops and updates its guidance and policies for tuition (The Open University, 2025).

In this online session we will outline the main results of our investigation as well as our recommendations. We will run discussion breakouts to ask participants about the requests they have heard from students and ideas of how to follow up on those requests.

References:

A-K Klehe, eSTEeM project, Building a sense of community in a core 2nd level Physics module (S217) and investigating qualitatively its effect on retention (completed 2024). Available at: https://www5.open.ac.uk/scholarship-and-

innovation/esteem/projects/themes/supporting-students/building-sense-community-core-2nd-level-physics-module-s217-and

Kuh, G. D., Kinzie, J., Schuh, J. H., & Whitt, E. J. (2010). Student success in college: Creating conditions that matter. John Wiley & Sons

The Open University (2025), Specification for the Delivery of Group Tuition (from 25J) Tuition & Assessment. Available at: https://openuniv.sharepoint.com/sites/intranet-tuition-and-assessment/Pages/Tuition-Programme-resources.aspx

NSS survey (2022) National Student Survey 2022 results - Office for Students (accessed 14/02/2025)

Parallel Session C

Using virtual reality tutorials with Stage 3 Health Sciences students

Janette Wallace, Lucy Anderson, Sarah Daniell and Trevor Collins, STEM Faculty

Building on findings from a previous eSTEeM project [1] that piloted the use of a Virtual Reality (VR) platform for tutorials on a stage two Biology module (S296), a series of six tutorials have been introduced on a stage three Health Sciences module (SD329 – "Signals and perception: the science of the senses"). This project aims to improve student engagement in synchronous tuition events, which contributes to module results and student retention. The previous study demonstrated the benefit of using a VR platform alongside their other online

Adobe Connect tutorials, providing an exciting and stimulating environment. Students on S296 viewed the VR platform as a more social bel space, conducive to interaction with tutors and other students, and most importantly, somewhere they felt more at ease talking (rather than text chatting).

This study introduced VR tutorial as part of the tutorial programme offered on SD329. This is an ongoing project in which tutorials are being presented using the FrameVR platform. The tutorials are being designed and run by SD329 Associate Lecturers (ALs) using 3D modules of cells and sensory organs to guide learning around each of the senses. Student feedback is being gathered after each tutorial using a short online questionnaire, accessed from a link or QR code posted in the VR room. Students' experiences will be evaluated more fully by a questionnaire and focus group at the end of the series of tutorials. Evidence from the evaluation will be used to inform further use of VR within LHCS at stage one. In addition, valuable feedback will be gained from the ALs leading the VR sessions to further help the incorporation of VR into the tuition strategy for other modules.

Initial findings have shown that students have come along to the tutorials with few accessibility problems, although bandwidth can still be an issue. They present with human or android avatars, with many students using their own names. Initial feedback from the ALs indicates that some students still prefer to use the chat function, whilst other students are happy to participate using their microphones. At the time of writing, initial data from the short survey suggests that most respondents enjoyed the sessions and found communicating with the

tutor and interacting with the 3D models in the VR environment useful for their learning. This suggest that there are clear benefits to the use of VR as a learning platform in Health Sciences.

In this session we will present the initial findings from this study and invite delegates to join us for a short interactive session in the FrameVR environment. This will provide an opportunity for delegates to try the VR room for themselves and discuss how it can be used for teaching.

[1] https://www5.open.ac.uk/scholarship-and-innovation/esteem/projects/themes/technologies-stem-learning/exploring-impact-virtual-reality-engagement-and

Parallel Session D

Evaluation and improvement of print packs use for Environmental Science students

Fiona Aiken and Christopher Hutton, STEM Faculty

There is a legal requirement to provide students who have declared disabilities with reasonable adjustments which address their learning needs. An Advance HE report on this (Falsinger & Bryford, 2010) includes 'resources available' as a reasonable adjustment to address. However, even when following accessible design principles, Virtual Learning Environments are not necessarily accessible to students with certain disabilities, e.g., students with specific learning

challenges such as dyslexia can struggle to study on screen. Also, reading on a screen can lead to difficulties focusing especially if the text is interspersed with images and links (Habib et al., 2012). Books and print resources can be preferential to on-screen text; having the 'whole text in front' helps with comprehension and identifying important sections (Habib et al., 2012). One way that accessibility can be improved for students with barriers to studying on screen-only materials is through producing printed version of the materials, so called "print packs" in the Open University. The aim of this research was to evaluate the efficacy of print packs as a way of providing reasonable adjustments to some disabled students and those in secure environments on Earth and Environmental Science modules.

Initially we investigated (in the academic year 21/22) how students used print packs and the problems and benefits associated with them, through a student survey (43 invitations, 13 responses, 30% response rate) and scrutiny of institutional data.

The survey highlighted that most student use print packs for over half of their study time with comments revealing that students blended study of the printed materials with shorter periods of access to interactive online content and synchronous (tutorials) and asynchronous (forums) tuition. Only 23% reported having received any advice on how to make best use of print packs. Focus groups were conducted with Associate Lecturers and student support team staff, the results triangulated with the student survey. Based on the analysis of our results and the merging themes, we designed an intervention for the

academic year 22/23. This involved recruiting and training two Associate Lecturer champions, one on each or our large year 1 and year 2 modules S112 (Science: concepts and practice) and S(XF)206 (Environmental Sciences). They provided support and advice to fellow Associate Lecturers through an synchronous tutor forum and carried out their own evaluation of the effectiveness of the print pack materials on the effect modules.

Following this intervention, we re-surveyed the students using print packs and expanded the Associate Lecturer champions roles to cover most of the modules in Earth and Environmental Sciences for the academic year 23/24.
From our student surveys and focus groups we established that students need advice on how to use print packs effectively, we would recommend the appointments of AL print pack champions across qualifications. They can provide advice to students and ALs and run effective staff development sessions for ALs and module teams. We would also recommend that module teams make print packs easily available to ALs so that they can see what students are receiving in print packs and therefore better support the students using them.

In this session we will present the findings and our recommendations and will provide participants with an opportunity to discuss how they could utilise print pack champions and AL access to print packs in their modules.

References:

Felsinger A., & Byford K., (2010), Making reasonable adjustments in Higher Education, Advance HE report, [online] Available at file:///C:/Users/fja2/Work%20Folders/Documents/ESTEEM/Print%20pack%20project/managing-reasonable-adjustments-in-higher-education_1578587125.pdf (Accessed 23/02/2023)

Habib, L., Berget, G., Sandnes, F.E., Sanderson, N., Kahn, P. Fagerness, S. and Olcay, A. (2012). Dyslexic students in higher education and virtual learning environments: an exploratory study

Parallel Session E

The Role of Scholarship in addressing awarding gaps

Jim Gillen[1], Soraya Kouadri Mostéfaoui[1], Shailey Minocha[1], Guanzi Shen[2] and Jason Clarke[1], STEM Faculty[1], The OU in Wales[2]

The School of Computing and Communications established in late 2022 the Awarding Gaps Implementation Group (AGIG) to identify, pilot, implement and evaluate staff and student initiatives to close awarding gaps for students with characteristics as outlined in the APP and to support the School in championing activities to close awarding gaps and create evidence informed approaches on closing awarding gaps.

The AGIG formed a number of working groups including the Scholarship working

group which aims to review and fully understand the existing scholarship projects and use any lessons learned to answer our broad questions about C&C awarding gaps and raise awareness on the barriers/challenges of doing scholarship involving ethnic minority students and in the future develop a dedicated AGIG scholarship exchange platform.

Interactive symposium – A chaired panel discussion between Scholarship Project Leads who have worked on projects addressing the awarding gap across the Faculty.

The Chair will initially invite each member of the panel to outline how their scholarship was conducted, the outcomes and insights gained from the project that would not have been known otherwise in the domain of addressing our awarding gaps in STEM.

The panel will reflect and debate;

a) the aspects of support provided to their scholarship projects to enable their success, and
b) share the challenges experienced in doing scholarship to support the efforts of trying to address the awarding gaps and how these challenges were managed.

The panel discussion will conclude by saying what others can learn from and how they can contribute to this area of Scholarship on awarding gaps.

Finally, the audience will be invited to interact with the panel asking their own questions on the topic of the role of scholarship in addressing the awarding gaps and any relevant questions generated by the panel discussion.
Improving and evaluating inclusivity in group project work for distance-learning engineering students.

Parallel Session F

Singing the songs of AL-led professional development

Rupesh Shah, Janet Haresnape, Nirvana Wynn and Heather Fraser, STEM Faculty

STEM-ByALs-forALs is a programme of staff development that is led by Associate Lecturers in STEM for the benefit of all ALs in STEM. It is an example of community-led professional development, in which those professionals for whom the development is intended are involved in design and delivery. The programme draws on a range of ideas in participatory, active and situated learning (Pretty, et al 1995; Lave and Wenger 1991).

In 2025 the programme will have been running for 10 years (Haresnape et al 2020) and this year we have embarked on developmental evaluation of the programme with a view to mapping out future directions for AL-led professional development in STEM. In the first phase of the evaluation, a survey of ALs in STEM was conducted at the end of 2024 to ascertain views of the programme and its impact. ALs were then invited to contribute further to the evaluation and focus group discussions are planned for Spring 2025.

In line with our values and aspirations for learning, the evaluation has been designed to involve current and former participants in the programme. In this session we will enact these values by engaging session attendees in the sense-making stage of this participatory research (Reason and Rowan, 1981; Rowan, 2001) and by drawing on an extended epistemology (Heron and Reason, 2005; Coghlan and Brydon-Miller 2014).

Attendees will help us to make sense of research findings through the use of presentational knowing (Heron and Reason, 1997), a way of integrating knowing, doing and being through creative expression. The approach in the session extends ideas about metaphor work (Krippendorff 1993; Lakoff and Johnson, 1980) into the territory of music and song and draws on futures thinking (Sharpe 2020).

The session will start by sharing some of the emerging issues and themes from the first phase of our research. Attendees will then contribute to a co-curated playlist of songs that could accompany these themes – the "songs of AL-led development". Then we will try to probe these curated songs, to find insights into the emerging paradigms, ideas and innovations that can help appreciate the future of AL-led development.

This is an experimental approach to enhancing the impact of programme evaluation by engaging people creatively in conversations associated with the research. Shaw (2003) argues that conversations in organisations are a way of breaking away from patterns of response that are habitual and overly

determined by efficiency-focused instrumental rationality (i.e. drawing only on questions of efficiency to choose the means for achieving ends). In this session we want to see what happens when a space is opened for people to enter into conversation with research through presentational knowing (Heron and Reason, 1997). In the midst of major organisational change and environmental turbulence, which seems to elicit narratives about managerial control, how might opportunities to contribute to conversations in community-centred and playful ways affect the future of practitioner-led development in STEM, the University and beyond?

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Parallel Session G

How can we promote student community? Exploring options and generating ideas

Cath Brown, Sue Pawley, Fi Moorman, Karen New, Anne-Katrin Klehe, Adam Freeman and Nicole Lotz, STEM Faculty

Communities are very important within education, and this is particularly marked in online and distance learning environments (Kaufmann and Vallade, 2020; Kear 2011). A supportive community has been found to assist the development of academic resilience, (Barber et al, 2019), promote retention (Crosling et al, 2009) and improve attainment (Cançado et al, 2018).

In the OU's distance learning environment, there are fewer opportunities for community interactions to arise spontaneously (Chang and Smith, 2008), but we would argue there is a greater need for the support communities offer, given our high proportions of non-traditional students.

This workshop has been developed by the leaders of a range of eSTEeM projects focused on community. (Building a sense of community in a core 2nd level Physics module (S217) and investigating qualitatively its effect on retention; Online journal clubs in distance higher education: an opportunity to develop

skills and community?; Developing a sense of community through cross-level engagement between staff and students in creative industries subjects; Creating a community of support through social activities).

Our projects have involved creating community in a variety of ways, and analysis of students' perceptions of it. The main aims of the session are to enable participants to develop practical, easy to implement ideas for promotion of student community within modules and beyond.

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Parallel Session H

Enhancing Online STEM Education Through AI-Driven Anomaly Detection in Remote Laboratories

Dhouha Kbaier and Andrew Mason, STEM Faculty

In the evolving landscape of online STEM education, ensuring student engagement and success in remote laboratory environments remains a challenge. The OELAssist project integrates AI-powered anomaly detection within the Open Engineering Lab (OEL) to provide timely and adaptive learning support.

By applying isolation forest models, OELAssist analyses real-time experimental interactions to identify atypical student behaviours indicative of struggles

during practical activities. By detecting deviations from expected experimental workflows, the system enables proactive interventions, reducing attainment gaps and enhancing retention. Initial findings suggest that students exhibiting multiple anomalous interactions (such as prolonged motor activation or inconsistent parameter adjustments) may benefit from additional guidance.

This session will offer an interactive exploration of OELAssist, demonstrating how AI models analyse student engagement in online laboratories. We will demonstrate the experiment and the collection of real-time data. Then, through a hands-on exploration of the data and analysis, attendees will experience how AI flags anomalies and recommends interventions. The discussion will highlight the broader impact of AI-driven learning support and its potential applications across STEM disciplines.

Parallel Session I

Is the cost of home experiments a potential barrier to learning?

Louise MacBrayne and Zoë Chapman, STEM Faculty

Practical work in the form of home experiments forms an integral part of the science curriculum for teaching and assessment at the Open University.

Previously students were sent a practical kit, containing the materials and equipment required to perform such experiments. However, the current stage

one curriculum now has the expectation that students will be able to purchase and have ready access to materials and equipment, which may be relatively costly and/or inaccessible to some students. Furthermore, there is an assumption that students will have access to household equipment such as fridges.

The presentation will report findings and recommendations from a recently completed eSTEeM project with four research questions:

- Are financially impoverished students being disadvantaged by the expectation to purchase materials needed for home experiments in core science modules?
- Are financially impoverished students being disadvantaged by the expectation to use facilities assumed to be in the home?
- Is the expectation to use facilities assumed to be in the home and the requirement to purchase equipment for home experiments a barrier to achieving the learning outcomes associated with practical work?
- Is cost the only barrier to achieving learning outcomes associated with home experiment practical work?

The presentation will demonstrate how students are experiencing issues in addition to cost, and how factors such as availability of consumables and environmental impact are also impacting on students being able, or willing, to conduct home experiments as part of core study. The importance of alternative resources as a viable alternative to home experiments will also be considered

together with a set of recommendations for modules to take into account when designing new activities within assessed module content.

Teaching Innovation Talks

Embedding coding activities in physical sciences modules via the Open Computing Lab

Judith Croston, STEM Faculty

Programming is an essential employability skill for physical sciences graduates, and coding activities and demonstrations enable hands-on exploration of complex and/or non-intuitive physics concepts and of authentic data analysis tasks. The Open Computing Lab (OCL) is now helping us to remove barriers to student success in learning and engaging with programming activities. I will summarise new approaches we are taking to embed Python-based OCL activities across our physics and astronomy modules, to support students to engage with them, and to streamline student experience in an area of skills development that many find challenging.

The Mystery disease – A whodunnit approach to learning

Jon Golding, STEM Faculty

In a new module (SK297 – Infection, Immunity and Public Health), a disease outbreak scenario is revealed to students at intervals over 4 weeks.
Students take the role of a public health investigator, receiving various pieces of

health information, which they use to build up a picture of the outbreak; allowing them to: identify the infectious agent, how it is being transmitted and propose interventions to prevent the spread of infection.

The scenario is semi-realistic, in that it drip-feeds information to students as a series of health alerts. There are various twists and turns in the information and students also must assess the validity of a newspaper article (which gets many facts wrong) and a social media post (which proposes a potentially dangerous 'cure'). Students also receive a spreadsheet of patient samples to analyse and discover the identity of the infectious agent. Each of these activities are released to students in a timed manner. These various activities contribute to a TMA and are spread throughout the scenario. The pacing of the information is designed to fit within the module workload. The main purposes of the Mystery disease are to maintain retention and interest (who doesn't love a whodunnit?) and to provide practical reinforcement of the module information.

Exploring hidden worlds: soil invertebrates through a virtual lens

Jenny Duckworth and Sarah Davies, STEM Faculty

Soil invertebrates, such as mites and springtails, play a key role in maintaining healthy soils and thus supporting life on Earth. However, these organisms are often overlooked as they are mainly underground and invisible to the naked eye. The virtual microscope that we are developing will help students explore this hidden world.

In STEM teaching at the OU, we have excellent examples of virtual microscopes in Biology and Earth science that enable students to view slides of plant and animal tissues and slices through rock specimens. Building on this experience, we aim to fill a gap in student learning by developing a virtual microscope that will use video as well as still images, enabling students to observe soil invertebrates in motion and identify a range of species.

In this brief talk, we will explain how we have been capturing both video and still images of soil invertebrates and how the virtual microscope will work. As our students do not have access to laboratory facilities, we aim to provide as close an experience as possible to using a 'real' microscope. This will enable them to view soil invertebrates 'live' and learn how to identify some of them using a biological key, a vital skill for aspiring environmental scientists. We would like to make this virtual microscope more widely available, so that others can use it to add more specimens and enable more students to explore these hidden worlds.

Developments in Teaching in Mathematics and Statistics

Jotham Gaudoin, STEM Faculty

This presentation will give a necessarily brief overview of some current projects within the School of Mathematics and Statistics. In particular, we will consider how we are continuing to widen our use of the OpenSTEMLabs in several of our modules. We will also report on the expansion of the use of rapid response fora for TMA-related questions, as well as our continued integration of employability within the M&S curriculum.

Applying a Novel Tuition Strategy as a Studio Pedagogy in Distance Design Education

Derek Jones, Christian Nold, Alessandra Campoli, Vera Hale, Georgie Holden, Nicole Lotz and Emma Dewberry, STEM Faculty

Studio is a key pedagogy in all creative disciplines as well as many applied subject areas. But it has an obvious challenge in a distance setting, where the proximity of students and educators is very different to a traditional physical, face-to-face environment. Proximity, however, is not just a matter of physical nearness. By making planned (curricular) use of active tuition opportunities, proximity can be achieved through habits, presence, and identity building.

T190: Design Practices makes use of these new ideas of proximity in distance education and applies a very different tuition strategy to other modules. Central to this strategy is aligning tuition with disciplinary behaviours, structuring tuition opportunities in the curriculum, and the idea of 'tuition budget' coupled with tutor agency.

An outline of the tuition strategy of T190 will be given, describing its main features and interactions with OU systems. Interim results from this innovative tuition model will be shared, including the barriers and benefits observed by students, tutors, and the module team to date. The position of tuition as part of the longitudinal development and student journey in the new BDes qualification is also explored.

Lightboards – A more engaging approach to produce STEM module content?

Daniel Payne, STEM Faculty

In two recently produced modules (S296 (23J) – Cell and molecular biology and S218 (24J) – Concepts in chemistry), LHCS have been using author-produced lightboard videos to support tricky topics in module content.

A lightboard is a transparent glass board that is internally lit, allowing you to write on it with fluorescent markers. The writing glows brightly, making it highly visible on video recordings and the unique feature of a lightboard is that it enables the presenter to face the audience while writing, creating a more engaging and natural presentation experience for students.

Recent developments in lightboard technology, and the software that support them, allow videos to be produced by the author independently, with minimal training, which allows a module team to rapidly adapt and develop new module materials. With current trials on-going in LHCS for new ways to use this technology, including in the delivery of live tutorials and the use of a digital lightboard equivalents, there is plenty of space for teaching innovations.

Duck-supported debugging

Daniel Gooch and Mark Hall, STEM Faculty

TM113 is a new module on the CS and AI qualification. Due for launch in 26J, our remit was to provide students with greater programming and software engineering experience before starting level 2.

Programmers often find that their programs do not work as expected due to bugs. Rubber duck debugging is a standard technique in the software engineering industry that helps programmers find these bugs. It works by encouraging coders to explain what the code achieves line-by-line to a rubber duck. By articulating the code without any interference from an audience, the programmer has to think through the logic of the code. The technique has been around for 30 years.

The £7 cost of shipping a branded rubber duck to each student was deemed too expensive by scrutiny group; our response has been to integrate the instructions for making an origami duck into the module materials. In addition to provide a duck for each student, we are developing the origami instructions as a metaphor for programming – if the steps aren't followed exactly, if the logic is flawed, then the end result will not work.

We will be monitoring the utility of the ducks through standard OU feedback mechanisms including forum posts, tutor feedback, TMA scores and the internal student survey.

Parallel Session J

Helping the students to discover the meaning of global citizenship and explore sustainability within their curriculum

Hanne Brown, STEM Faculty

Global citizenship is one of the Open University's employability framework skills. However, when completing their skills assessment, students often fail to see the link between global citizenship and sustainability and tend to associate global citizenship with travelling the world instead.

To help the students discover the true meaning of global citizenship, a workshop was conducted as part of the School of Life, Health, and Chemical Sciences Online Enrichment series in August 2023. This session aimed to help the students to explore the concept of global citizenship and identify examples of sustainability they had seen within their curriculum using the United Nations (UN) Sustainable Development Goals (SDG) framework.

This session will replicate the interactive workshop, utilising breakout room discussions, Mentimeter, and internet searches amongst other things. These activities will, first of all, facilitate the participants' reflection on the meaning of global citizenship. Secondly, the participants are invited to identify SDGs that are relevant to their interests and encouraged to reflect on the contents of the modules they have either studied, tutored, written, managed or been involved with in another way to find concrete examples of sustainability within the curriculum. Everyone is encouraged to share their chosen SDG and the related

module topic with the rest of the participants. By the end of the workshop, the participants are expected to have a clearer understanding of how global citizenship and sustainability are interconnected and be able to describe how their modules are addressing the big questions on the future of the Planet Earth.

Parallel Session K

Understanding passive withdrawals on an introductory level 1 module

Linda Moore, Vic Pearson, Maria Velasco and Mandy Bailey, STEM Faculty

“Passive withdrawals” (as defined within this project) are where students remain registered until the end of the module but have had limited or sometimes even no engagement with the module content and assessment. It is not a new or unique problem to any one module as it is a challenge on most/all modules, but it is a recognised issue on level 1 modules across faculties. They are particularly visible on modules that have a single component assessment strategy; while these students may officially become de-registered by the university following Module Results Panel, the students are included in the final statistics for the module, resulting in a higher proportion of ‘fails’.

Although passive withdrawals are recognised and reluctantly accepted, it is not necessarily understood what the reasons or triggers might be for these behaviours. This session will discuss our findings, including data analysis and insights from VOICE, as we try to gain a greater understanding of the study

behaviours, circumstances and motivations that lead to passive withdrawals, using the introductory science module, S111 Questions in Science as our case study.

Parallel Session L

How does it feel to have an extension? Experiences of Stage 1 engineering students

Emma Champion and Rosie Boltryk, STEM Faculty

Previous scholarship has shown that students with extensions are more likely to withdraw or achieve lower grades and that extensions are used by a higher proportion of students within EDIA groups. Whilst this work has shown correlations between extensions and student outcomes, the actual student experience is not well understood. In addition, the equitability of extensions remains unclear.

Therefore, this project aims to investigate the link between the use of extensions, the experience of students on the module, and retention. It will also investigate the AL experience and how extensions affect protected characteristic groups. To achieve this, a series of student surveys has collected date from T192 and T194 students on their experiences around extension and catching up, where the use of extensions is 9% and 20% of TMAs, respectively. Student interviews have been conducted to explore their experiences more deeply and with the involvement of SST colleagues. Data has also been collected from ALs on T192 and T194 via a survey and reflective diary activity. A thematic analysis to examine the

information collected is now in progress. Ultimately, the findings from this project will be used to inform future scholarship, with the ultimate outcome being to help E&I ALs improve their support to students with extensions, improve the outcomes for those students and improve retention.

During the conference session, the audience will be invited to share any of their own questions about the use of and experience of students using extensions. Then facilitating an open and broad discussion, we will outline which questions our project aims to address and demonstrate the potential outcomes and impact of the project.

This session will also invite participants to empathise with students who request extensions, and articulate and share what they feel students are experiencing both before and after TMA submission. Preliminary quantitative and quantitative data will be shared and an informal comparison drawn against the audiences own reflections and contributions.

The purpose of this activity is to engage the audience with the emotions and concerns of students, the themes that are likely to emerge from the data collected as part of the project and, in turn, the outcomes of this project. Contributions from participants will also feed back into the project by shaping the themes explored during the analysis phase.

Parallel Session M

Combating isolation one postcard at a time...

Elouise Huxor and Theodora Philcox, STEM Faculty

Recognising the impact of isolation in distance learning (Edward & Hardy, 2024), as module team leaders on U101, we developed the Postcard Project – a simple yet effective way for tutors to maintain weekly contact with students.

The Postcard Project was initially piloted in 22J and the positive impact led to its full implementation across the module in 23J and 24B. We created 31 visually engaging digital postcards, each aligned with a study week and highlighting key learning points and upcoming module-aide lectures. Crucially, the postcards are sent by the student's own tutor with personalised, encouraging message, helping students feel supported, connected, and have a greater sense of belonging on the module.

The project had two key aims: to improve retention on a module with students from diverse degree pathways by encouraging early tutor contact, and to foster a sense of belonging, particularly post-pandemic, by stimulating personal communication. Results have been significant, with retention increasing by up to 10.6% and average assessment grades rising by up to 7.5%. Feedback from both students and tutors has reinforced the value of the Postcard Project, with many describing the postcards as a motivational boost. Beyond this, the project has helped combat isolation in distance learning, strengthening the connection between tutors and students and reinforcing a sense of belonging within the

module. This session will explore how the project was implemented, share examples of the postcards, and discuss the role of light-touch but regular communication in improving student engagement and outcomes.

Parallel Session N

External Impact: finding your allies within Silicon Valley and working with a multitude of external stakeholders

Andrew Smith, David McDade, Amaninder Singh, Martin Rothwell, Andy Reed, Phil Hackett and Amel Bennaceur, STEM Faculty

Recognising that there was a trackable downturn in module numbers as well as nationally within the digital technologies sector, which was pivotal by 2014. The Computing & Communications 'Cisco Networking' team have been working with Cisco amongst other external stakeholders to improve opportunities for both the OU Associate Lecturer community as well as other external education organisations. Leveraging external funding from Cisco, the Institute of Coding, UFI-Trust, Click Start (Nominet) as well as regional and national develop agencies. The team developed an extensive community of practice, raising standards, improving engagement within the domains of Network Engineering, CyberSecurity, Coding and more recently Generative AI.

The OU Cisco Networking team explored how to extrapolate the content of Wenger's Communities of Practice (1999) and tap into an established community, reshape it and create a new experiential paradigm for all participants. This has now branched into several domains, where we support

diversity and inclusion, focusing on disability, neurodiversity and gender equality. As well as employability, working with awarding organisations, national standards bodies and training providers within the apprenticeship's domain. Also, supporting the development of educators, reaching/teaching 18K+ and supporting STEM Learning and Computing at School among others.

We have seen our own students increase over time and continue to retain/train and develop the associate lecturer workforce that make the difference and utilise industry applicable content.

The programme continues to grow, evolve and ensure that the Open University is both a national and international leader within the sector. Where we support in excess of 400+ education organisations – all teaching content, that has enabled the broader UK community to grow from 22K in 204, to 90K in 2024. Which has meant direct work in the nations, and with several validation partners and allied academic organisations.

This session will explore experiences, the good, the potentially bad and probably indifferent experiences of, working with an external stakeholder to make a difference for our own students and external stakeholders. The team will discuss the impact, giving some short internal and external micro-case studies and debate why – after twenty years of successfully working with an external organisation – the university still presents this as a risk!

Attendees will learn from the experience of an established team and explore how they may consider adapting these experiences into their own professional/academic practice.

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Parallel Session O

Experiencing co-creation of digital assets with LHCS Student Interns

Janette Wallace and Zoë Chapman, STEM Faculty

LHCS APS colleagues, Janette Wallace and Zoë Chapman and Janette Wallace, have been working with APP-funded student interns on a scholarship project to support student sense of belonging and student community.

In the first phase of the project, student intern Aasiyah Nana created a series of 12 digital postcards currently being disseminated monthly as part of the school's year long 'Celebration of Science' event[1]. Initial outcomes were previously presented[2].

In the second phase of the project, student interns Beth Cooper and Kay Hawthorne have created the first LHCS Student Magazine. The magazine comprises of engaging features which include but are not limited to the following:

"A Day in the Life" which highlights a typical day in a particular job that students

might find interesting.

“School Spotlight” in which a member of the LHCS team answers some questions that students might be interested to know such as the role of climate change in infectious disease.

“Wellness Corner” highlights the importance of wellbeing and provides information and guidance to support students in a time of need.

The magazine also makes use of interactive elements such as polls for readers to decide future content, videos to watch, audio clips from the interns themselves, and both sub-pages and links where readers can click and find out more information.

Staff can also access this magazine however, as engagement is being collected via data analytics, they are requested to use a different link[3]. By being able to differentiate staff and student visitors to the magazine, as far as reasonably practicable, there can be a better understanding of the features students engage most with. More in-depth student feedback will be collected towards the end of the project via a questionnaire and potentially a focus group.

In this interactive session Zoë, Janette, Beth and Kay will showcase the digital assets produced so far, discuss working as co-creators on the project and provide initial student engagement data. We also invite delegates to experience co-creation of mini student magazine via a breakout room activity.

[1]https://learn2.open.ac.uk/course/view.php?id=206818&cmid=2406987

[2]https://www5.open.ac.uk/scholarship-and-innovation/esteem/events/13th-esteem-annual-conference-2024-sharing-scholarship-and-best-practice-%E2%80%93-implementing-what

[3]https://eur01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.canva.com%2Fdesign%2FDAGc0yx1iCo%2FS3kAgMLzVvy44hTalLGWww%2Fview%3Futm_content%3DDAGc0yx1iCo%26utm_campaign%3Ddesignshare%26utm_medium%3Dlink2%26utm_source%3Duniquelinks%26utlId%3Dhc9c6992bf3&data=05%7C02%7Cjanette.wallace%40open.ac.uk%7Cfe9c0ec5b08548f265a108dd4a7369f4%7C0e2ed45596af4100bed3a8e5fd981685%7C0%7C0%7C638748581755955816%7CUnknown%7CTWFpbGZsb3d8eyJFbXB0eU1hcGkiOnRydWUsIlYiOiIwLjAuMDAwMCIsIlAiOiJXaW4zMiIsIkFOIjoiTWFpbCIsIldUIjoyfQ%3D%3D%7C0%7C%7C%7C&sdata=0HuQ2KOllycCfG04mwJGFzHo6yn%2BbgETD47WwNyJKYg%3D&reserved=0

Parallel Session P

Exploring factors influencing progression from taught study to postgraduate research at the OU

Alice Fraser-McDonald, Sally Jordan, David Sharp and Teresa Sides, STEM Faculty

In the conventional HE sector, there is often an established pathway for the progression of undergraduate and taught postgraduate students to postgraduate research within the same institution. However, generally, within

the OU STEM faculty, the proportion of PhD students who have previously completed a taught qualification with the OU is low. We are investigating the current progression of OU STEM students from taught courses to postgraduate research (including any variation across the faculty and/or by mode of study) and the reasons for pursuing or not pursuing this pathway.

To date, we have gathered data on the number of postgraduate research students in the STEM faculty who have previously completed taught courses with the OU. These data have enabled an analysis of the current progression rates for the STEM faculty and within each School. We have also surveyed graduates of OU taught courses to obtain information about whether they considered postgraduate research, the reasons for their decisions and any barriers they faced.

This session will begin by outlining the context of the project and summarising the progress of our investigation. We will share some preliminary results via an interactive comparison of data on the proportion of PhD students who have previously completed taught courses with the university. This will include comparisons between the different Schools and modes of study (part-time or full-time). We will consider the factors that may influence this pipeline and how we plan to discover more about this in relation to student experiences. This session will also include a discussion about the possible barriers for progression from taught courses to postgraduate research at the OU, considering potential ways of mitigating these barriers and further areas of investigation.

By the end of the session, participants will understand the current rates of progression from taught courses to postgraduate research at the OU and how this compares in different Schools and for varying modes of study. Participants will also be able to contribute by sharing their views about the potential barriers for students who want to pursue this pathway, as well as possible improvements. The project findings will be used to improve understanding of the current situation and determine whether follow-on actions/projects would be appropriate.

Parallel Session Q

Digital storytelling for sustainability education: A design workshop

Sarah Davies[1], Volker Patent[2], Fiona Aiken[1], Elaine McPherson[1], Maria Townsend[1] and Trudi Macagnino[2], STEM Faculty[1], FASS[2]

There are increasing requirements for sustainability and climate change to be addressed in the curriculum and assessment in all HE disciplines to develop the skills and understanding needed by graduates to engage in a world facing a human-made ecological crisis (QAA, 2021). As this area of teaching and learning expands, there are questions about how to engage our students supportively in the face of climate and ecological crises.

Many students, researchers and educators are feeling distress related to the

climate and ecological crises; such distress is often referred to as ecoanxiety. Whilst it is, perhaps, a rational reaction to climate change, biodiversity loss and other environmental issues, ecoanxiety is often connected to negative emotions of grief, guilt and hopelessness. But it can also be linked, more positively, to adaptive or 'practical' responses.

In this context, engaging with our own and our student's ecoanxiety may be used to support developments in how sustainability and related topics are taught, in line with a review of the purpose of the wider discipline landscape; for example, via transformative knowledge (Davidson et al., 2023), utilising new forms of assessment tasks (Skilling et al., 2022; and adoption of new pedagogies, such as co-creation and regenerative pedagogies (Bexell et al., 2023).

Over the last two decades digital media have become increasingly prominent in many areas of Higher education delivery including teaching materials and assessment (for example digital forms of presentation delivery). In parallel to the trend of increased digitisation of teaching, digital story telling (DST) has emerged as an approach for addressing Higher education goals. DST employs digital media for supporting narrative approaches for personalised or collective story telling. Story telling has a rich tradition of supporting social change and social transformation suggesting a good fit with sustainability teaching. There are a variety of use cases for digital story telling in Higher education including engagement (Gubrium et al, 2010) and addressing emotional and student-centred aspects of curriculum and learning (Riberio et al, 2016). More recently

DST has been used in sustainability teaching (VEsala-Varttsls, 2024) suggesting that this approach has potential for adoption in addressing emotional, motivational impacts of studying the climate crisis. DST approaches dovetail well with findings from our research (Davies, et al, 2022; Patent, et al, 2024) regarding the need for self-care, constructive action, and emotional engagement. Specifically, DST has potential for supporting students (and tutors) in navigating a topic that may produce distress, as well as inspire action.

In this workshop we introduce DST as an educational approach for engaging students, and explore the elements needed to ensure that such work supports assessment and learning, wellbeing, and the development of communicative and self-regulatory competences supporting practical and constructive sustainability action. The workshop aims to engage the participants interactively, thinking through the opportunities and challenges of adopting DST in sustainability teaching across subjects, while also ensuring that curriculum and the university ensure relevance in the context of the ongoing ecological crisis. Questions about the scope, scale and application of DST will be addressed.

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Parallel Session R

Is group work "a necessary evil"?

Ruth Neal and Kellee Patterson, STEM Faculty

It is generally considered that group work affords invaluable opportunities for students to develop their collaborative skills and this, in turn, is a key employability skill. We define 'group work' as collaboration and cooperatively working with others to complete a task or project. Students have varying

feelings towards group work, many of which are negative, but many students do say they enjoy it after participating.

Our students currently work online and there is no formal requirement for students to engage with others on most modules. The aim of our project is to encourage more student-centred learning through student interaction by way of collaborating and communicating in an online environment for our module.

Our project involved the introduction of group work in a forum on a first-year statistics module. We asked for student volunteers to take part in this activity. After conducting an experiment involving growing seedlings in light and dark conditions, students uploaded their data to a combined database. In the group work component, students were asked to download and analyse this combined dataset. Students were then asked to upload their findings to an online forum and discuss these with the other students in the group, facilitated by a tutor. Students were surveyed before and after the forum discussion to assess their feelings towards group work.

In this workshop we will introduce our project and set up the session in a similar manner to our group work activity that students experienced.

Participants will be grouped to conduct simple activities, about which we will ask for feedback. The level of involvement in the activity can be chosen by the participant.

The intended learning outcomes for workshop participants are:

- Experience working with others with whom you may be unfamiliar and therefore get a feeling of how students might feel in a similar situation.
- Appreciate the challenges and opportunities in extending knowledge to a new situation and the impact this may have on learning and developing skills.
- Develop an understanding of what is required for participants to work successfully in a group.

Poster Presentations

Pan University Project: Enablers and Barriers for students with mental health difficulties

Chris Corcoran[1], Suz Corcoran[2], Catherine Comfort[2] and Giorgio Zampirolo[3], STEM Faculty[1] FBL[2], FASS[3]

This project will examine the student experience of those who have mental health difficulties, focusing on the barriers and enablers to study, and looking at why students may not disclose mental health needs. In distance learning institutions, more students disclose mental health issues than those studying at 'Brick universities' (Lister 2022). In 2023 13.6% of students at the OU declared a mental health issue (Hunter 2024). The mental health of students has developed into being a priority for education (Evans et al., 2018; Hughes and

Spanner, 2019) and is becoming more prevalent amongst academic research (Ribeiro et al., 2018). However, this research does not always focus on the difficulties faced or provide consideration on how to address and support students who make mental health disclosures.

Literature and Awarding Gap data suggests that students with mental health declarations are at particular risk of not achieving their potential in their studies. One study suggests that whilst students with mental health declarations are less likely to complete a module or to continue with their studies, those who do complete achieve similar grades than those without such difficulties (Richardson, 2015). This demonstrates the wasted potential of students with mental health difficulties for whom the barriers to study become insurmountable.

More recent OU data looking at the 23/24 presentations demonstrate a difference in completion rates between those with mental health declarations and those with no disabilities of 14.5%. The gap for good module pass rates, although still present, is 4.1%.

The purpose and objectives of this project are based around four key questions:

1. why students may not make mental health declarations,
2. why the awarding gap exists,
3. how we can reduce the awarding gap,
4. how can we implement changes that retain students with mental health difficulties and support them through their learning journey.

See page 90 for poster.

Postcode Inequity: Closing the Awarding Gap for Stage 1 STEM Students residing in our most deprived UK postcodes from taught courses to postgraduate research

Louise MacBrayne, Jennie Bellamy, Isabella Henman and Kate Gibson, STEM Faculty

The STEM faculty has identified the awarding gap between IMDQ1 and IMDQ5 (most and least deprived) UK postcodes as a priority under APS (Access Participation and Success) criteria. We have identified that Gateway STEM modules in Science (S111 and SDK100) Environment (U116), Design (U101) and Engineering (T192 and T193) have awarding gaps between10% and over 25% depending on module and presentation. We will share early findings from surveys of students in IMDQ1 and IMDQ5 areas across these STEM Gateway modules where we have asked students about their study experiences and the impact of socio-economic factors like employment, living and study space, caring responsibilities and finances; and also share our plans for follow-up focus groups. We will also report on the early findings of a parallel intersectional study of institutional data of IMD category with factors like gender, disability and ethnicity. These findings are timely because of the planned redevelopment of parts of the Faculty's Gateway offering.

See page 91 for poster.

Gamification to increase participation in maths practice quizzes in Level 1 Engineering modules

Silvia Varagnolo[1], Zahra Golrokhi[1], Colum McKenna[2], James Openshaw[3], Shawndra Hayes-Budgen[3], STEM Faculty[1], Digital Services[2], LDS[3],

The aim of our project is to improve students' engagement with maths exercise through the gamification of existing practice quizzes. The specific context is T192 (the first module in the Engineering Qualification) which already features weekly maths practice quizzes. However, the proposed intervention is meant to be easily applicable with limited resources to any module that embeds Moodle quizzes not necessarily based on maths questions.

Students' engagement with the T192 practice quizzes decays in time while maths concepts essential for the study progression are covered in the later parts of the module. Hence, we are looking to gamify the quizzes to maintain the initial level of practice through the module. Furthermore, the gamification would prompt students who do not achieve a satisfactory outcome to repeat the quiz, which they can do without any detriment.

The gamification is based on three small interventions: 1) a modification of the way the practice quiz is presented, 2) a modification of the feedback and 3) the introduction of rewards.

Students will be told that they will gain a digital badge if they complete 6 practice quizzes with a score above a certain threshold. For each completed

quiz they will get a token.

The quizzes' introductory webpage will be more eye-catching, and the gamified quizzes will be 'advertised' through different channels, like forums, news items and postcards sent by tutors.

The feedback will become conditional: it will praise students who achieved the threshold to get the badge and will encourage students to repeat the quiz if the threshold was not achieved, possibly after revising the corresponding maths contents. In both cases, the feedback will encourage students to undertake another quiz (either the following gamified quiz or the same one) to keep them practicing maths to obtain the final badge.

See page 92 for poster.

Employer-Facing Education – What Does It Mean to You?

Gareth Neighbour, Sarel Marais and Russ Lewis, STEM Faculty

Since its founding, the Open University (OU) has been committed to social justice and providing the opportunity of higher education to all, regardless of background, location or any other barrier. In recent years, there has been a shift in higher education from education for education's sake to including broader factors such as employability and increasing pressure to ensure economic benefit to both the individual and society, as well as including both industry and employers in shaping curricula. Around 70% of students at the Open University work while studying (more in STEM). In the STEM faculty, the Graduate Outcomes

2024 report (on graduates in year 21/22) finds 69% of graduates in paid work, with 11% in further study. Of those in work, 79% classify themselves as 'highly skilled'. In response to the question, 'Did you need the qualification that you completed 15 months ago to get that job?', 70% agreed. This raises several questions about whether our pedagogy and our approach to teaching are appropriately employer-focused and, if so, effective in delivery. For example, what are the measures by which practitioners can be self-reflective in this regard? This is more than just vocational training or apprenticeships, and it is essential for educators to have a perspective on employer-facing education that allows consideration of a range of factors whilst engaging with students. This poster explores what employer-facing education means in practice, highlighting collaborative curriculum design, apprenticeship programmes, and tailored professional development pathways. It examines how OU's innovative, scalable, and distance-learning model can support workforce upskilling while maintaining academic rigour. By engaging employers in co-creating learning experiences, the OU can maximise its reach and ensure that education remains relevant, applied, and impactful. This paper invites discussion on best practices, challenges, and future directions for employer-responsive higher education and what it means for the Open University, especially in STEM subjects.

See page 93 for poster.

Exploring student perception of laboratory workbooks: authentic learning or missed opportunity?

Lorraine Waters, Karen New and Sarah Daniell, STEM Faculty

Accurate record keeping is an important employability skill that students need to develop in any scientific discipline. Additionally, good laboratory practice is a key requirement for many accreditation bodies. The consistent and competent use of workbooks for laboratory records is an essential component of this.

Currently, in some Health/Biomedical Sciences and Biology modules at Stage 1 and Stage 2, accurate record keeping is supported using workbooks to develop this throughout complex online investigations. For those modules using workbooks, the specific use of them and the format presented to students differs.

This study therefore aims to determine how students perceive and use workbooks on their modules, whether they are an important adjunct to their learning and how they could be improved and potentially implemented on other STEM modules.

The approach taken will be to evaluate students' use and perception of workbooks available on SK190, S290, and S296, by sending a questionnaire to students currently studying those modules towards the end of the 24J presentation and will gather a more in-depth perspective through focus group discussion. Given the unique profile of the modules involved in this study, (i.e. that all three modules have recently come out of production) we will also gain insight into the production of workbooks by round table discussions with staff

involved. Finally, we will also survey students completing their capstone module (SXH390/SXB390) where there is no formal workbook provided, to understand any impact of using workbooks earlier in their learning journey.

This project will highlight the preferred format for workbooks and what students find most useful, so this can be taken forward on other modules. By collecting the experiences from members of staff associated with the production and use of workbooks, and students who use them, we can inform the implementation of workbooks more widely.

See page 94 for poster.

Investigate the integration of vendor certifications within Computing modules

Amaninder Singh, David McDade, Andy Reed, Andrew Smith and Eliz Hartnett, STEM Faculty

This project aims to investigate how integrating vendor certifications within Computing modules affect student motivation, engagement and employability prospects. This will involve looking at the impact of this integration and evaluate if it motivates and encourages students to study these modules in the first instance and to what extent. The project will also evaluate student perceived value and industry recognition for completing these specific modules and explore the potential effect of vendor elements on promotion and employability prospects.

The following issues are explored in the research:

- Does the use of vendor certifications in Computing modules improve student motivation?
- What is the effect of vendor content on student participation and achievement?
- What is the effect of vendor certifications on student employability and promotion prospects?
- How are the other UK HEIs utilising vendor resources in their qualifications?

The work initially focussed on doing desk research to explore the courses offered with vendor qualifications within UK higher education institutes within comparable programmes. An OU student survey within selected Computing modules was completed to find effect on student motivation, engagement and employability prospects and student interviews are in progress.

It will be a Q&A session on the poster.

Participants will have a better understanding of the use of vendor qualifications within UK HE sector and their effect on student motivation, engagement and employability prospects.

See page 95 for poster.

Parallel Session S

Making space for women in Engineering

Fiona Gleed and Claudia Eckert, STEM Faculty

In 2016, the first of a series of Women in Engineering conferences for students was run at Walton Hall in Milton Keynes. The conference was one of a number of initiatives arising from the eSTEeM project 'Engineering qualifications at the OU – what motivates women to study?' (Morris and Organ, 2019) and further in-person events were run annually through until 2019. A variety of events focused on Women In Engineering have been held since, but it is not obvious how these should evolve for current cohorts, a presumption that learning events are all online, and with progress on gender representation in the Engineering profession.

Making space for Women in Engineering revisits and extends the previous investigation to understand current motivations and needs. Early findings suggest that navigation of the opportunities on offer may be one of the barriers to engagement and interaction. The authors' experience re-establishing events for Women In Engineering also highlights how fragile institutional memory can be, with knowledge and habits lost as previous champions are redirected or retire. The eSTEeM conferences have played an important role in passing on enthusiasm and awareness of previous research and we are suggesting a workshop format to facilitate and encourage sharing on-line.

The workshop is therefore proposed as a collaborative exploration, to map the landscape of extra-curricular events, including their purpose, format and target audience. The mapping will provide a shared tool to better publicise existing events to students across STEM and to understand gaps and intersections that could be addressed, for example as the focus of a school face-to-face event.

Parallel Session T

Tutorials - One Size Doesn't Fit All! How can we provide tutorials to enhance the learning of all our students?

Cath Brown and Sue Pawley, STEM Faculty

The OU probably has the widest variety of student of any UK HEI; despite this, traditionally, we have assumed that our tutorial programme can meet the needs of all the students on our module. Whilst HE has not generally taken up the differentiated approach that is routine in schools, we in the OU have the potential to pioneer this through our scale, and it gives us the opportunity to improve the student experience and maximise the success of our exceptionally varied cohort.

The OU probably has the widest variety of students of any UK HEI; despite this, traditionally, we have assumed that our tutorial programme can meet the needs of all the students on our module. Whilst HE has not generally taken up the differentiated approach that is routine in schools, we in the OU have the potential to pioneer this through our scale, and it gives us the opportunity to improve the student experience and maximise the success of our exceptionally

varied cohort.

A differentiated approach is partly about student attainment; anecdotally, students have reported being frustrated that the basics they wanted were not covered, and conversely that the whole tutorial was aimed at students who hadn't read the material and didn't cover any of the demanding parts. But there is also a need to accommodate student preferences; whilst many students prefer "lecture style" tutorials (Butler et al), there is also a demand from some students for more active engagement and opportunities to work with others. (Campbell et al). Similarly, whilst some students prefer an almost exclusive assessment focus, others wish to see applications and context.

The innovative tutorial programme we introduced on MST224 resulted in a 68% increase in tutorials attended per student, a 33% increase in recording views per student and a 3-percentage point increase in first time completion rates to its highest level other than the pandemic year.

In this session, we will briefly outline our approach and then move into a workshop session in which participants will have the opportunity to develop creative ideas to enhance their own tutorial programme.

References:

Butler, D., Cook, L., Haley-Mirnar, V., Halliwell, C. and MacBrayne, L. (2018), Achieving student centred facilitation in online synchronous tutorials, completed eSTEeM project, available online: Investigating factors which affect

active student participation during tutorials in online rooms.

Campbell, A., Gallen, A-M. and Jones, M. H. (2023), Perceptions, Expectations and Experience of Group Tuition: towards a shared understanding amongst stakeholders (part II: the student perspective), Open University Scholarship Exchange. eSTEeM Final Report.

Parallel Session U

Towards GenAI Proof Assessments

Stuart Auton and Soraya Kouadri Mostéfaoui, STEM Faculty

In response to the rising prevalence of Generative AI (GenAI) in academic settings, the TT284/TM252 Web Technologies Module Team proactively identified strategies to modify existing assessments that remain authentic and challenging. The strategies sought to improve the assessments' resistance to GenAI-based shortcutting, and deepen learning opportunities through critical thinking, reflection, and independent research rather than the mere generation of AI content.

The emphasis was on framing the questions within the context of case studies and literature searches. This required students to scour through academic material, weigh different perspectives, and consider the findings of diverse sources in the context of case studies. Focusing on literature analysis, the assessments require students to conduct real-world research into specific

issues related to details of the case studies that GenAI cannot easily or correctly address. Indeed, the specificity and complexity of the case studies present challenges for GenAI to provide coherent and accurate responses requiring detailed, context-dependent reasoning and an appreciation for module content. Additionally, the Module Team developed assessment questions to encourage reflection among students. These questions prompt the students to think about how they approached certain programming tasks, relate theory to practice, and reflect on how their understanding of the taught concepts changed as the module progressed. By making reflection part of the assessments, students need to reflect their personal thought processes, thereby preventing AI systems from generating easy answers.

Taken together, these strategies enabled the Module Team to ensure the integrity of assessments and to encourage students into genuine engagement with the study materials, effectively reducing the chances of GenAI-produced content from compromising their submissions.

The overall impact of these strategies was a much-reduced number of academic conduct cases in the 2023J presentation.

The aim of this interactive oral presentation is to reflect on the above outline, present the TT284 assessment model in more details, how it informed the design of the new Web technologies module TM252, share the lessons learned, and to discuss other STEM initiatives aiming at proofing the assessments.

Parallel Session V

The OpenXR Studios Showcase: Immersive methods for STEM education at a distance

Trevor Collins, James Smith and Ben Hawkridge, STEM Faculty

In this showcase session we will demonstrate the facilities of the OpenXR Studios and discuss how eXtended Reality (XR) can enhance STEM education and the opportunities for embedding these methods within OU teaching. XR refers to technologies that blur the boundaries between digital and physical experiences, such as Virtual Reality, Augmented Reality and Mixed Reality. These can be used to visualise and interact with 3D models and environments, create a sense of immersion through authentic simulations, and facilitate student engagement and discussion.

The rapid development and relatively short lifespan of technology can make it feel like pedagogy is catching up with rather than informing our use of educational technology. However, by collectively focusing on how supported open learning pedagogy and scholarship informs our choice and use of these technologies, we will ensure they are introduced and used effectively for distance learning at the OU. As well as showcasing the facilities, we will explain the process of developing the virtual production, volumetric capture and motion capture studios, and how you can use them for teaching.

Parallel Session W

Does sharing slides in advance of online learning events impact student attendance?

Jenny Duckworth, Harriet Marshall and Jennie Bellamy, STEM Faculty

Participating in online learning events is of key importance to distance learners and provides an opportunity for interaction between students and with their tutors, thus reducing isolation. Access to slides in advance of online learning events is thought to benefit many students, including those with disabilities, mental health challenges and English as a second language. But does it affect attendance?

Alongside discussion about the use of PowerPoint in HE teaching settings questions arose about whether the slides should be available to students before or after each teaching session, or indeed at all (Babb and Ross, 2009). Enhancement of 'note taking' by students is used to justify the 'before' argument along with accessibility for students with disabilities, mental health challenges and those for whom English is an additional language (Fichten et al., 2019). The main argument against students having access to the slides prior to a tutorial is one of attendance: if students already have the slides, will they bother with the learning event (Worthington and Levasseur, 2015)?

So far, the literature has dealt with the use of PowerPoint, and the before-, after-, or not at all arguments in a conventional, full time, mainly face-to-face,

undergraduate setting so this recently completed, eSTEeM-funded, study aims to contextualise the arguments for a distance learning educational environment, ensuring inclusivity for all students, and increasing student engagement.

In this workshop, after hearing about the study's main findings, participants will have the opportunity to discuss their own relevant experiences, as if participating in the study as students. How did participants prepare for the session? How did they feel about participating? Were any barriers removed? What were the benefits? Does this approach create any challenges?

By the end of the session participants be able to compare experience of the sharing and use of slides for learning events following the different models of slide sharing, and consider application of slide sharing in their own practice.

References:

Babb, K.A. and Ross, C. (2009) 'The timing of online lecture slide availability and its effects on attendance, participation and exam performance', Computers and Education, 52, 868-881.

Fichten, C.S. et al., (2019) 'More than meets the eye: a Canadian comparative study on PowerPoint use among post-secondary students with and without disabilities', International Research in Higher Education, 4, 25-36.

Worthington, D. L. and Levasseur, D. G., (2015) To provide or not to provide course

PowerPoint slides? The impact of instructor-provided slides upon student attendance and performance, Computers and education, 85, 14-22.

Valedictory Lecture

The OpenSTEM Labs story from scholarly seeds (innovation) to pedagogic harvest (impact)

Nick Braithwaite, STEM Faculty

The OpenSTEM Labs aim to connect distance learners to real data through authentic interfaces with labs, observatories, workshops and field-sites. This talk will trace the origins of the OpenSTEM Labs back to the curiosity of colleagues in the nationally funded Physics Innovation Centre of Excellence in Teaching & Learning and to the innovation triggered by financial models that undermined the viability of residential schools.

The rationale for practical work is that: (i) 'hand-on' experience allows students to better understand complex concepts; (ii) practical work develops employability skills in problem-solving, critical thinking, technical ability (iii) motivation and interest are enhanced by active engagement; (iv) practical work prepares students for their future careers.

There are many opportunities to use practical work in distance learning with varying degrees of sophistication including 'sink-top' explorations, home-grown plants, home experiment kits, interactive screen experiments (using pre-

recorded data), remote experiments (controlled over the internet) and interactive engagements with staff and students in remote technical spaces. The OpenSTEM Labs provide a scalable and impactful means of delivering these last three classes of activity.

Poster 1

Enablers and Barriers for students with mental health difficulties:

Chris Corcoran, Catherine Comfort, Suz Corcoran and Giorgio Zampirolo

The Open University

Aim: to examine the learning experience of students with mental health difficulties

- Why students may not make mental health declarations
- Why the awarding gap exists
- How to reduce the awarding gap
- How to implement changes that retain and support students

Research focus

1.What interventions have/ have not worked
2.understand the barriers and enablers
3. Review gaps in supporting students

Research Strategy

- Literature Review
- surveys
- Focus groups
- Semi structured interviews

Outputs and Aims

- Share findings with teaching and student facing teams
- Creation of practical resources
- Inform pedagogy

Lit review overview by G Zampirolo

Early findings from Literature Review:

Intervention Type	Evidence Strength	Target Group	Measured Outcomes
Proactive tutor contact	High	All students, especially with MH needs	Retention, satisfaction, engagement
Curriculum and assessment design	High	Students with anxiety, trauma, PTSD	Retention, wellbeing, confidence
Culturally competent support	High	Black students, minoritised groups	Retention, disclosure rates
Peer mentoring and belonging	Medium	Distance learners, isolated students	Engagement, sense of community
AL training and resources	Medium	All staff	Staff confidence, student satisfaction
Co-created resources	Emerging	Students with lived MH experiences	Empowerment, engagement

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Poster 2

Postcode Inequity: Closing the Awarding Gap for Stage 1 Science Students residing in our most deprived UK postcodes

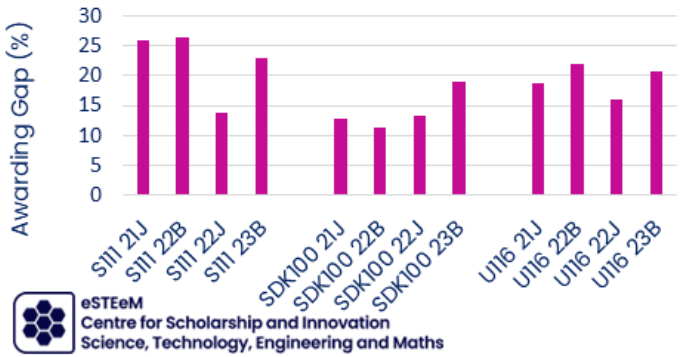
The Open University

Louise MacBrayne, Jennie Bellamy

The STEM faculty has identified the awarding gap between **IMDQ1 and IMDQ5** (most and least deprived) UK postcodes as a priority under APS (Access Participation and Success) criteria.

The gateway Science (S111 and SDK100) and Environment (U116) modules have pass rate awarding gaps between 10% and over 25% depending on module and presentation.

Awarding Gaps for IMD1 vs IMD5 Students on Gateway Stage 1 Science modules



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Research questions

- **What are the needs of students studying gateway stage 1 science modules**, who reside in the most deprived 4 Nation UK postcodes?
- **What are the possible barriers to their study?** For example: Do IMD1 students prefer online or printed (books) study materials (e.g. digital poverty)? Do IMD1 students have access to a suitable study space?
- **What overarching reasons could be influencing awarding gaps** for students residing in IMD1 postcodes in comparison to students in IMD5 postcodes?

Research Methodology

- **Survey IMDQ1 vs IMDQ5** students on S111, SDK100 and U116 about their experiences and offer follow-up interviews to develop a better understanding of the barriers faced by the students.
- A parallel **intersectional study** for IMDQ1 students with other characteristics such as ethnicity.
- Furthermore, we are particularly interested in those who are studying full time and/or are carers and/or are in full-time or multiple employment.

It is anticipated that as students with other APS identified priorities very often reside in the most deprived postcode areas (for example Black students, students with declared mental health conditions), the outcomes of this research will encapsulate other APS identified priorities for awarding gaps.

Poster 3

Gamification to increase participation in maths practice quizzes in Level 1 Engineering modules

The Open University

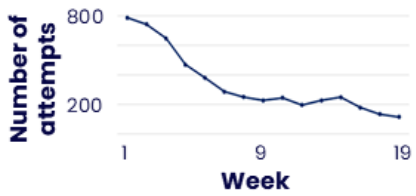
S. Varagnolo, Z. Golrokhi, C. McKenna, J. Openshaw, S. Hayes-Budgen, E. Mathews

What?

The broad aim of the project is to improve **progression and retention** of students in the Engineering Qualifications by strengthening their **maths preparation** by fostering their **practice**.

Context

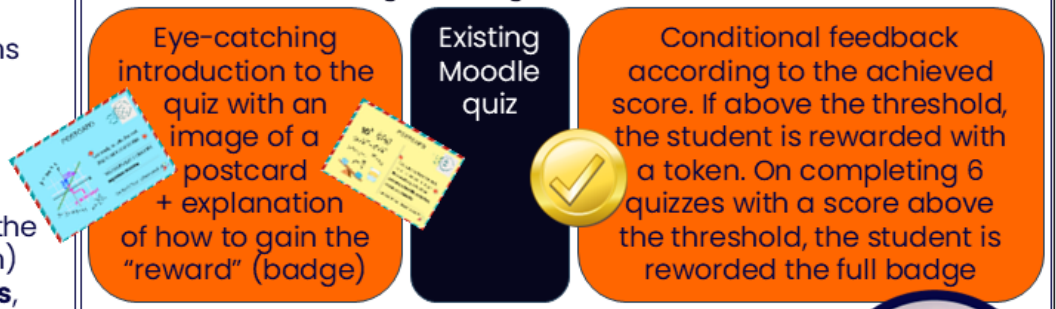
T192 (the first module in the Engineering Qualification) includes **practice quizzes**, but students' engagement with them decays in time:



How?

1) Gamification

Gamification applies **game elements** or a game framework to **existing learning activities**:



2) Evaluation

- **Engagement** with the quizzes (number of clicks)
- Comparison of the **outcomes** (iCMAs and overall course grades) achieved by students who took part in the gamified quiz and students who did not
- **Survey**
- In-depths **interviews**

Where are we now?

- The gamification has been applied to T192-25D which has just started in April 2025
- We are looking forward to collecting data

Expected outcome

- To devise an effective approach for students' success in maths through **practice**

Further developments

- To extend the same approach to other **Level 1 Engineering modules**
- To inform other **OU modules that embeds any Moodle quizzes** about this approach

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Poster 4

Employer-Facing Education – What Does it Mean to You?

The Open University

Gareth Neighbour, Sarel Marais, Russ Lewis

Our work exposes tensions between higher education providers and learners who are in employment, asking,

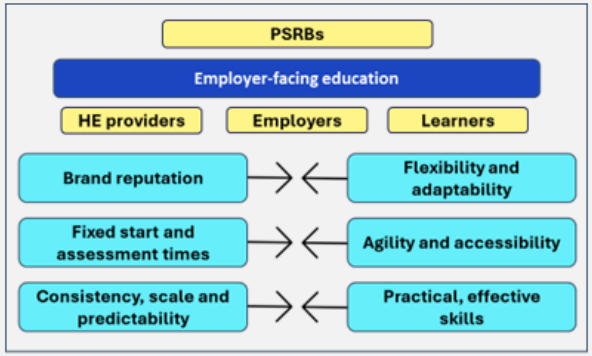
- Does the balance between learner and provider need to shift for teachers to include the requirements of today's employers?

The concept of employer-facing education is presented with a definition[1] and requirements from provider and learner perspectives.

The authors invite practitioners to reflect on macro vs micro tensions:

- Do we teachers appreciate, understand, facilitate and embrace the experience of learners in employment?
- How is the employer's perspective included in your teaching?
- What impact measures of teaching employed students are available?

[1] An agile provider delivering a flexible experience to enhance knowledge, up-skill and demonstrate competencies for learners embedded in an employment context relevant to the discipline and recognised as proving authentic learning to the employee and value to the employer.



Extract from our impact map

Requirements

1. Co-creation and Industry Relevance
2. Work-Integrated Learning
3. Flexibility and Accessibility
4. Skills Development
5. Lifelong Learning and Upskilling
6. Authentic and/or Work-Based Assessment
7. Scalability and Inclusivity

Requirements identified for employer-facing education

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Poster 5

Exploring student perception of laboratory workbooks: authentic learning or missed opportunity?

The Open University

Karen New, Lorraine Waters & Sarah Daniell

Why Workbooks?

- Evidence that workbooks enhance student learning in all stages of compulsory education
- Authentic learning and builds discipline literacy
- Good laboratory practice is a key requirement for many accreditation bodies
- Limited research on the use of workbooks in undergraduate, and particularly distance learning environments

Workbook formats

SK190
- Printed; non-interactive version on the VLE; Word and/or PDF on the VLE
- Multi-use: step towards the 'more formal' use as a laboratory record; a personalised primer for basic concepts

S290
- Printed; PDF
- Permanent record of investigations
- Basis of experimental reports
- Instructions for on-screen experiments

S296
- Word version (electronic lab book); pdf
- Instructions for online investigations and use of digital microscopes
- Recordkeeping

Project to determine how students perceive and use workbooks on their modules, whether they are an important adjunct to their learning and how they could be improved and potentially implemented on other STEM modules

Using questionnaires and focus groups for students using workbooks and round table discussion for staff involved in production of workbooks, we will assess:

- The preferred format of workbooks
- What students find most useful about workbooks
- The best design of workbooks

To inform implementation of workbooks more widely in STEM

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Poster 6

Investigate the integration of vendor certifications within Computing modules

Amaninder Singh, Andy Reed, David McDade, Andrew Smith, Liz Hartnett

The Open University

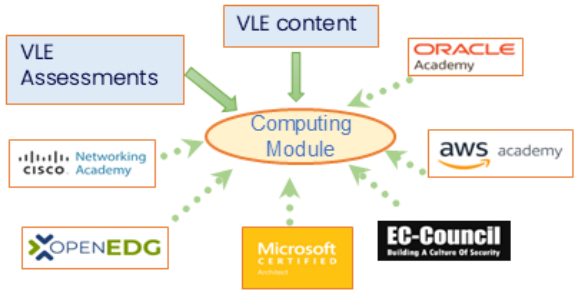
What?

Evaluate how vendor certifications within Computing modules affect student motivation, engagement and employability prospects

How?

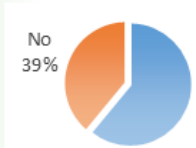
- Student survey – 72 responses 56% current & 44% alumni
- Student interviews – 12
- Desk research on competing UK HEIs & Universities

OU Module Focus: TM129, TMXY130, TM257, TM357, TM359, T828, T829 and Microcredentials

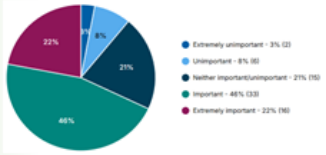


Outcomes!

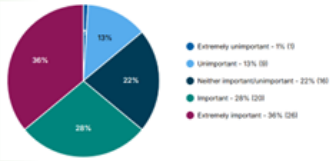
1. Would you like to have vendor certifications in any other modules?



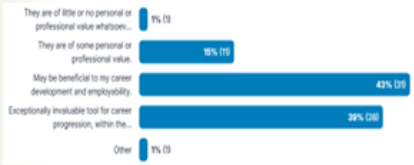
2. Is Cisco certification a reason for choosing to study a module?



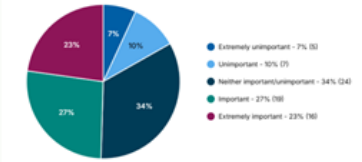
3. Was aim to gain certification a reason to select a module



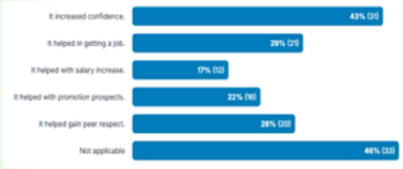
4. Feelings about Employability, promotion and career value of vendor certs?



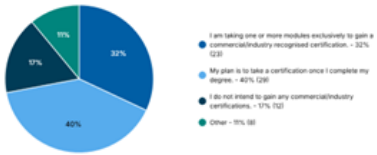
5. My earlier experiences on Cisco modules encouraged me to select future vendor modules



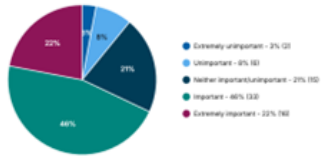
6. How completing a vendor certification, affected me



7. Future commercial certification ambitions



8. Do badges offer value to my resume?



Student quotes

"Having vendor qualifications, adds weight to when I'm doing things like bids or proposals."

"I've been able to add it to my CV and therefore when I'm in an interview, I'm able to recall or recount what it meant to get that certification"

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