eSTEeM International Visiting Scholars Online Seminar

The Open University, UK

Monday 24th November 2025
12.00-14.00 GMT, MS Teams

The Open University

eSTEeM
Centre for Scholarship and Innovation
Science, Technology, Engineering and Maths

Contents

Welcome and Introduction

In 2019, eSTEeM invited fifteen STEM scholars from Open and Distance Learning Universities across the world to visit the UKOU campus for two weeks and to participate in the eSTEeM Annual Conference to mark eSTEeM's 10th anniversary. The key purpose of the visit was to develop a network of practitioners who are passionate about sharing and enhancing their university's teaching and scholarship practices. As the visit was due to take place in 2020, it was cancelled due to the COVID pandemic. Unfortunately, we have not been able to host a face-to-face event due to the current economic climate.

That said, our ambition of creating a network of Scholarship of Teaching and Learning (SoTL) practitioners who are passionate about sharing has not diminished. I am delighted to say that we are hosting an eSTEeM International Visiting Scholars Online Seminar. This seminar is an opportunity for the international scholars to meet, for us to tell the scholars a little about what eSTEeM does and to showcase the eSTEeM Scholarship Projects of the Year for 2025. I am incredibly pleased that you are joining us on this occasion.

I hope you will enjoy the seminar, and I look forward to meeting the international scholars and the presentations!

Daphne Chang

eSTEeM Director and International Visiting Scholars Programme Coordinator

Programme

Time	Session
12:00-12.10	Welcome and introductions
12.10-12.25	Overview of The Open University UK and an introduction to eSTEeM, Centre for Scholarship and Innovation in Science, Technology, Engineering and Maths
12.25-12.50	eSTEeM Projects Presentations 15-minute presentations followed by 5-10 minutes for questions and discussion. *To evaluate the effectiveness of focused staff training in recruitment on specialised modules* – David McDade, Phil Hackett and Anthony Johnston
12.50-13.00	Comfort break
13.00-13.25	*Evaluation and improvement of print packs use for Environmental Science students* – Fiona Aiken and Chris Hutton
13.25-13.50	*Can we reduce anxiety of students sitting online exams? Sharing best practice between SPS (School of Physical Sciences) and LHCS (Life, Health and Chemical Sciences)?* – Fiona Moorman, Gemma Warriner and Becca Whitehead
13.50-14.00	Final remarks and close

Biographies

International Visiting Scholars

Ria Mae Borromeo, University of the Philippines Open University

Ria Mae Borromeo is an Associate Professor at the University of the Philippines Open University (UPOU), where she serves as Program Chair of the Master of Information Systems program and Assistant to the Chancellor for Institutional Analytics and Insights. Her work focuses on data governance, learning analytics, and digital transformation in open and distance e-learning. She leads university-wide initiatives integrating institutional data systems into analytics dashboards to support evidence-informed decision-making and quality assurance. Her research explores crowdsourced data management and the design of transparent and fair human-AI systems for learning. She is also involved in faculty development initiatives that build capacity among higher education institutions in open and distance e-learning, particularly in the use of learning management systems for course design, assessment, and student engagement.

Miriam Chitura, Zimbabwe Open University

Miriam Chitura is a dedicated health professional and academic with over forty years of experience in nursing, public health, and higher education. She currently serves as a Senior Lecturer at the Zimbabwe Open University (ZOU), a position she has held since 2000.

Before joining ZOU, Ms. Chitura worked as a Public Health Officer from 1995 to 2000, contributing to community health promotion and education. Her healthcare career began in 1980 as a General Nurse and Midwife, roles she performed with commitment and compassion for fifteen years.

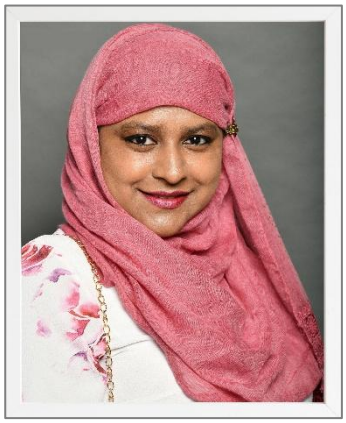
Ms. Chitura has published 36 scholarly works, demonstrating her dedication to research, knowledge sharing, and academic excellence. She is currently pursuing a Doctor of Philosophy (Ph.D.) to enhance her expertise and continue contributing to the development of public health and nursing education in Zimbabwe and beyond.

Kwang Sik Chung, Korea National Open University

Kwang Sik Chung received a BS degree (1992), a MS degree (1995), and a PhD (2000) in Computer Science and Engineering from Korea University. From September 2002 to November 2003, he was a research fellow of the Department of Computer Science at University College London. He was a lecturer in the Department of Computer Science of Korea National Open University from 2005. He

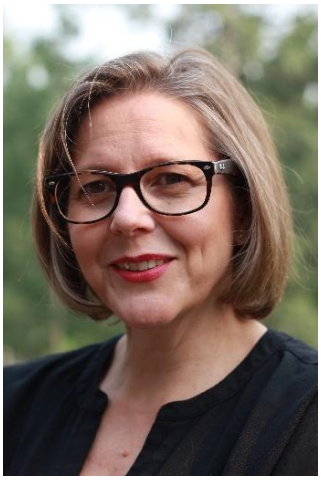
has been conducting various research in the fields related to learning analytics, virtual experiments/practice learning contents system development, and learning cloud construction as an international cooperative researcher and a visiting researcher at various universities for about 20 years since the beginning of 2000. Currently, he is the Korea Information Processing Society (Vice President/Fellow), the Korean Association of Computer Education (Fellow), the Society of e-Learning (Fellow), Telecommunications Technology Association PG608 (Committee Member) and Telecommunications Technology Association PG415 (Committee Member).

Rubeena Doomun, Open University of Mauritius



Dr Bibi Rubeena Doomun is a Senior Lecturer in Information Technology at the Open University of Mauritius where she is responsible for designing and delivering IT programmes in blended, open and distance learning mode. She graduated in BSc Computer Science & Engineering with First Class Honours in 2009 from the University of Mauritius. In 2010, she was awarded a commonwealth scholarship to complete a master's in Computer Science at the University of Westminster, UK. She later earned her PhD in Information Technology at the Open University of Mauritius. Dr Doomun's primary research areas include gamification in education and pedagogical innovation, alongside interests in AI and healthcare research. She has successfully led and collaborated on several funded research projects supported by the Higher Education Commission Mauritius (HEC) and the Commonwealth of Learning (COL). She is a Fellow of Advanced Higher Education (FHEA) in the UK and a Blackboard-certified practitioner.

Stella George, Athabasca University



Stella George, BSc. (hons), Ph.D. is an Associate Professor in the School of Computing and Information Systems at Athabasca University whom she joined in 2019. Dr George's research focusses on the impact of AI on society and education and the use of digital technologies in education. Her other interests include cross-disciplinary education and public education about technology.

Patricia Gouws, University of South Africa

Prof. Patricia M Gouws is a Senior Lecturer in the School of Computing (Department of Information Systems) in the College of Science Engineering. Patricia is also the Manager of the Unisa Science Engagement Centre (USEC). At USEC the focus is on robotics education through engagement. Content is presented on the Unisa Massive Open Online Courses (MOOCs) on the Unisa portal and Short Learning Programmes (SLP) through Unisa Centre for Lifelong Learning. For engagement, Practical Workshops are hosted at the USEC Centre, as well as at Unisa regional offices. To ensure greater access and reach, sessions are hosted one week per month, and the recordings are provided on the I-SET Unisa YouTube channel. The engaged research is ongoing in pursuit of knowledge mobilization of robotics education for learner, educators and the general public, ensuring engagement and impact through reciprocity.

Barileng L Mogoje, University of South Africa

Barileng is a Senior Lecturer in the Department of Agriculture and Animal Health at the University of South Africa where he lecturers Animal production subjects in three programmes (BSc Animal Production, National Diploma, and Advance Diploma Agricultural Management). Barileng supervises the postgraduate students' master's degree and PhD and serves as member of the transformation committee within the College of Agriculture and Environmental Science to facilitate transformation of education towards African epistemology. Barileng's research interests are integrated poultry production (covering production system, nutrition, disease and poultry breeding) and research on teaching and learning under comprehensive open distance e-learning in agricultural fields (impact of AI and digitalization in in agricultural courses).

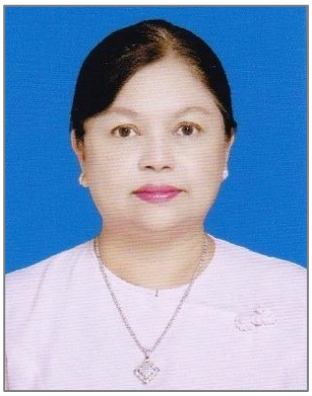
Jeetendra Pande, Uttarakhand Open University

Prof. Jeetendra Pande is Professor and Director in the School of Computer Science & IT at Uttarakhand Open University, India. His research focuses on open and online learning, gamification, game-based learning, optimization in educational design, and data-driven approaches to learner engagement.

He has developed several national-level MOOCs on cybersecurity and digital forensics on the SWAYAM platform, enrolling more than 130,000 learners worldwide. Prof. Pande's current work explores how lightweight games and AI-

driven optimization can improve motivation and retention in large-scale online courses. He also leads initiatives to integrate skill-based education through collaborations with Sector Skill Councils and international open universities.

Khin Thant Sin, Mandalay University of Distance Education



Khin Thant Sin serves as the Rector of Mandalay University of Distance Education. Her expertise in distance education in Myanmar is extensive, dating back to 2001. She possesses considerable knowledge concerning innovative and unconventional distance learning systems.

Her current research is entitled, “Empowering Digital Developments towards AI Learning: Case Study of Online courses of Yangon University of Distance Education”. This study is anticipated to encompass several key areas, including:

- Introduction to Myanmar Distance Education
- E-learning Development Process
- Application of Moodle Tools for Online Courses at Yangon University of Distance Education (YUDE)
- Future Trends of E-learning
- Evidence of Adult Learners' Engagement in Lifelong Learning

Lorna Truter, University of South Africa

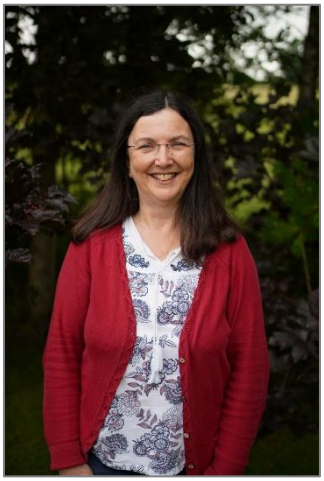
Lorna is a Senior Lecturer at the University of South Africa (UNISA) who's mission is to get people to further their education and become life-long learners through providing quality teaching and learning experiences that gets people excited about furthering their education. Lorna's overall aim is to allow students the freedom and empowerment of education to become active participants in a global society through their contributions and thereby impacting on their lives in a positive manner.

Lorna's research focus is on conscientious consumption, specifically regarding sustainability. Although the phrase 'sustainable consumption' has lost some of its urgency, Lorna focuses on educating consumers regarding this concept. The aim of sustainable consumption, and or conscientious consumption is to try to minimise our ecological footprint, while improving our well-being. Lorna hopes to achieve some consumer awareness regarding this throughout her work.

Lorna has a PhD in Consumer Science and a master's degree in Distance Education.

The Open University, UK

Fiona Aiken, The Open University



Fiona is a Senior Lecturer and Staff Tutor in the School of Environment, Earth and Ecosystem Sciences. Fiona has a BSc in Chemistry, an MSc in Physical Chemistry and a DPhil in Physical Organic Chemistry. Fiona joined the OU in 1993 as an Associate Lecturer and became a Staff Tutor in her current role in 2018.

Since 2005, Fiona has been involved in scholarship projects in the OU. Recently Fiona completed an eSTEeM project which evaluated the effectiveness of printed materials as alternative module materials for students who can't access the online resources. Currently her scholarship is focussed on making improvements for students as they transition from stage 1 to stage 2 and from stage 2 to stage 3. Since August 2025, Fiona has been the Deputy Director of eSTEeM.

Daphne Chang, The Open University

Daphne is a Senior Lecturer and Staff Tutor in the School of Engineering and Innovation. Daphne has an MA and a PhD in Social Anthropology from University of London. Daphne joined the OU in 2000 as an Associate Lecturer and became a Staff Tutor in 2009. She has undertaken research in East and West Africa on pastoralism, ethnic identities and the impact of Chinese migrants on Africa's development. Daphne's current scholarship interests include the impact of

international scholarship exchange, inclusive curriculum and professional development of Open and Distance Learning practitioners.

Phil Hackett, The Open University

Phil is a Staff Tutor and Lecturer in the School of Computing and Communications (C&C), where he is Deputy Lead Staff Tutor, helping to support ~30 colleagues. Phil is also an Associate Lecturer, tutoring on a Level 2 Algorithms & Data Structures module (M269).

Phil's background is in Computer Science and Education, having spent 10+ years as an IT Manager and 12+ years as a Secondary School Teacher, Curriculum Leader and Teacher Trainer.

Phil has a BSc and MSc in Computer Science incorporating software development, cyber security & networking and project management.

A key part of the Staff Tutor role is to support and develop our 400+ C&C Associate Lecturers. Phil does this by working with Staff Tutor colleagues to develop best practice and clear policies. He also signposts and produces relevant training materials that empower colleagues to upskill themselves so that they are able to teach our new and emerging curriculum areas.

Chris Hutton, The Open University

Dr Chris Hutton is a Senior Lecturer in Environmental Science in the School of Environment, Earth and Ecosystem Sciences. Chris' pedagogic research interests have previously included helping students to prepare effectively for study through preparatory websites, and evaluation of sustainable peer mentoring at scale for distance learning students. Chris is also interested in supporting students' skills development and progression: his research activity in this area has encompassed analysis of students' self-perceptions of skills development, and he has a current project with colleagues examining the skills needed to progress between different stages of study. Finally, Chris has a keen interest in accessibility and EDIA, having recently completed a project with a colleague on the evaluation and improvement of printed materials for students unable to access online resources in distance learning.

Anthony Johnston, The Open University

Anthony is a Senior Lecturer in the School of Computing and Communication and an Associate Lecturer on the module “Cyber Security” (TM256).

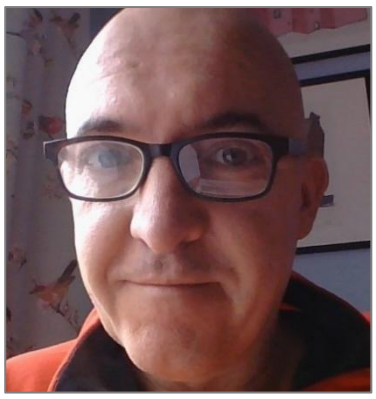
Anthony has worked in education for many years; his previous job was as Deputy Head of the School of Computing in a further and higher education college. Anthony has a B.Eng in Electrical and Electronic Engineering and a PhD in Technology.

Anthony's research focuses on using technology to enhance accessibility in education and communication. During his doctorate, he looked at helping people with visual impairment navigate difficult urban environments with the aid of machine vision. Anthony is currently involved in research to help children with cerebral palsy to communicate.

In a scholarship study, he is looking at levels of active engagement in online tutorials and postulating the existence of student typologies.

Anthony is in the production team for the development of the two new Stage 1 computer modules.

David McDade, The Open University



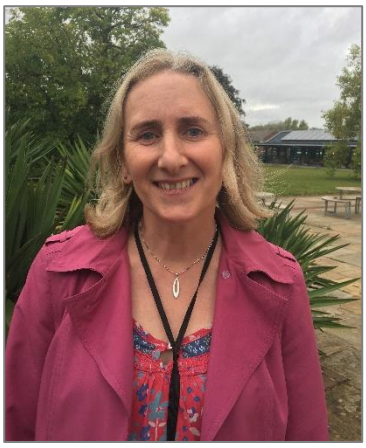
David McDade works as a Staff Tutor and Senior Lecturer in the School of Computing and Communications at The Open University. He is Qualification Lead for the R60 Cyber Security qualification and is Module Team Chair for Postgraduate module T828: Network Security.

David is currently completing a Professional Doctorate in Education (Ed D.) and has research interests in the use of low-cost computing devices in programming education with level 1 students at the OU. Recent scholarly interests include OU staff development in specialist subjects (cyber security).

Outside the OU, David works as a consultant for the Scottish Qualifications Authority (SQA). This sees him working with schools, college and employers across Scotland on the development of national computing qualification

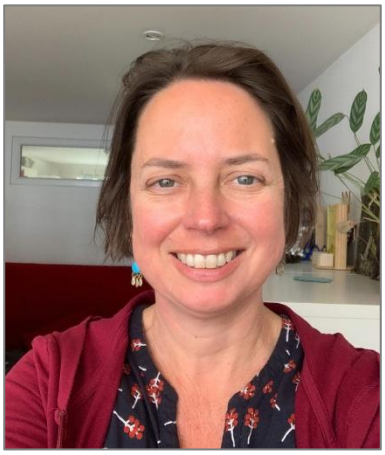
frameworks. In his spare time, David likes to volunteer to local primary schools (ages 9 - 12) to provide workshops around responsible use of generative AI and online safety.

Fiona Moorman, The Open University



Dr Fiona Moorman started her journey with The Open University in 2005 as an Associate Lecturer/tutor teaching on interdisciplinary science and biological modules at all levels of undergraduate study. She has been working as a faculty manager in the School of Life, Health and Chemical Sciences (LHCS) since 2018, supporting over 30 Associate Lecturers to deliver effective tuition to hundreds of distance learners as well as being Chair of a stage 3 Biological science module. Fiona is passionate about building academic community, and assessment, leading on initiatives such as providing opportunities for development of online confidence and skills of our students via Online Journal Club (OJC) and exploring innovative forms of assessment.

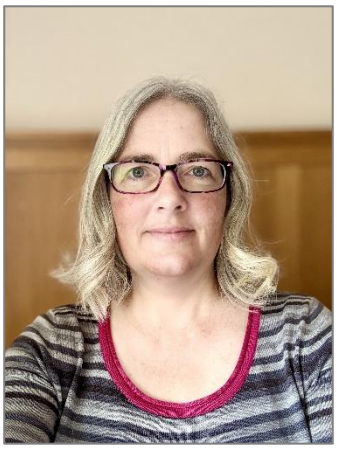
Gemma Warriner, The Open University



Gemma is Senior Lecturer at the Open University in the School of Physical Sciences (SPS). Gemma has worked in education for over 30 years and has worked at the Open University since 2000. Initially teaching on a range of modules at all stages, she became a Staff Tutor in 2019. Since then, Gemma has worked to support the hundred or more Associate Lecturers in

SPS and has written student facing material for Stage 2 and Stage 3 students, including the new 60-point stage 2 module “Core Physics”. Gemma has completed research into the student experience of learning Python on SPS modules. She is interested in designing assessment so that all students can perform effectively and has led on projects to reduce exam anxiety. Her current interest is in how to design. robust assessment in the context of Generative AI.

Becca Whitehead, The Open University



Becca is a Staff Tutor and Associate Lecturer at the Open University in the School of Physical Sciences and is a Senior Fellow of the Higher Education Academy. Since 2011 she has taught on a variety of Stage 1 and 2 modules including SM123 Physics and Space, S283 Planetary Science and S282/4 Astronomy. She has an MPhys in Physics with Cosmology and an experimental PhD in Ultra-Low Temperature Physics from Lancaster University.

Prior to working with the OU, Becca worked at Lancaster University with the Centre for Enhancement of Learning and Teaching. Becca’s research interest is Physics Education Research and Scholarship of Teaching and Learning. She is currently working on projects involving online exam anxiety, maths anxiety and the use of plug-in tablet technology for robust online assessment.

eSTEeM Project Presentations

To evaluate the effectiveness of focused staff training in recruitment on specialised modules

David McDade, Phil Hackett and Anthony Johnston

Highly Commended - eSTEeM Scholarship Projects of the Year Awards 2025.

Skills shortages outlined by the Department for Digital, Culture, Media & Sport (DCMS) and the Department for Science, Innovation and Technology (DSIT), determined the backdrop for the development of the BSc Cyber Security R60 qualification.

Within the School of Computing and Communications (C&C), recent updates to the curriculum have also highlighted issues around 'skills gaps' and the impact this is having on tutor recruitment. Examples of this are the introduction of new specialist modules TM256: Cyber Security and TM359: Systems Penetration Testing, both of which have been introduced as part of the new R60 BSc (Hons) Cyber Security qualification[1] both of which have proved hard to recruit to.

The school has sought to address this by offering training in specialist areas in a bid to increase the expertise of the tutor community. This training has taken

[1] R60 BSc (Hons) Cyber Security

place through offering specialist cyber security training courses available from Cisco and The International Council of E-Commerce Consultants (EC-Council).

This has allowed tutors to upskill into areas of cyber security and to develop confidence in applying for cyber security related modules, whilst gaining industry recognised professional certification. It has also allowed the school to meet (and extend) the quotas for high demand modules.

An investigation took place into how recruitment of tutors on specialised modules could be assisted by the provision of focused staff training. The objectives for the project were to determine:

- To what extent is focused staff training effective in the recruitment of tutors?
- What approaches and resources are required to upskill tutors?

A survey was distributed to 110 tutors who had enrolled on CPD training. There was a 40% return rate.

The majority of the tutors surveyed would have been willing to do the CPD training in their own time and would not have applied to tutor on the specialist module without completing the CPD. The strong mapping between the information taught and the content on the module helped the tutor to feel confident to apply for a position. The fact that the CPD on offer was supplied by a vendor was also important for the tutors in going on to apply to teach on the module and may also have been influential in the tutors agreeing to do the CPD. The training increased confidence regarding the subject matter.

Having to pay for training oneself would have been a barrier for the vast majority (94%) of the tutors. Tutors found working to a deadline to complete the training off-putting, but it is hard to see how this could be avoided.

Tutors who started the training in Spring or Autumn were nearly twice as likely to complete the training than those who started in July and this should be considered in the timing of any future CPD.

Future work included the development of multiple packages of CPD for different curriculum areas within the School and the approach of offering CPD to existing tutors in specialist areas such as AI and machine learning is now a high priority.

Recommendations

It would be useful for other faculties to create 'specialist' resources within the MyLearning Centre space to support their own curriculum areas.

There are resources already available within the C&C MyLearning Centre space that other curriculum areas my find useful (e.g. programming resources).

Consideration should be given to the timing of future CPD events.

Please visit the eSTEeM website for more information and to read the final report.

Evaluation and improvement of print packs use for Environmental Science students

Fiona Aiken and Chris Hutton

Winner - eSTEeM Scholarship Projects of the Year Awards 2025.

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). This can result in studying taking longer, which itself can be a barrier due to the impact on workloads which can negatively affect quality of life and lead to stress and anxiety (Lambert & Dryer, 2018). 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 versions of the materials, so-called "print packs" in the Open University. The aim of this research is 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 students 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 emerging themes, we designed an intervention for the academic year 22/23. This involved recruiting and training two Associate Lecturer champions, one on each of our large year 1 and year 2 modules S112 (Science: concepts and practice) and S(XF)206 (Environmental Science). They provided support and advice to fellow Associate Lecturers through an asynchronous tutor forum and carried out their own evaluation of the effectiveness of the print pack materials on the two 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.

Recomendations

From our student surveys and focus groups we established that students need advice on how to use print packs effectively, we would recommend the appointment 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.

Please visit the eSTEeM website for more information.

Can we reduce anxiety of students sitting online exams? Sharing best practice between SPS (School of Physical Sciences) and LHCS (Life Health and Chemical Sciences)

Fiona Moorman, Gemma Warriner and Becca Whitehead

Winner - eSTEeM Scholarship Projects of the Year Awards 2025.

Our project was a cross-school collaboration between the School of Physical Sciences (SPS) and the Life, Health and Chemical Sciences (LHCS).

Rationale for our approach

In response to reports of student anxiety and performance concerns, enhanced proactive support was provided to SPS and LHCS students to de-mystify the remote exams processes, to facilitate them to take ownership of problem solving, and to attempt to increase their self-efficacy concerning their upcoming remote exam. This support was provided in a series of one-to-many exam preparation sessions offered to all SPS and LHCS students.

Scholarship methods

After the 21J exam period (June 2022), a survey was disseminated to 2500 students across both schools, 349 of whom completed the survey. Following a preliminary analysis of survey findings, e-mail interviews and focus group analysis was conducted the following Spring to facilitate in-depth exploration of some of the issues raised in the survey and to evaluate student perspectives about their exam experience after they had obtained their exam results.

Findings

Survey data shows that the exam preparation sessions reduced anxiety. It was apparent that some students experienced technical issues and time pressures which had a disproportionately negative effect on their overall their exam experience. In the interviews there was variation in feedback on the specific issues around the remote setting of their most recent exam, but overall there was a strong preference for the continuation of online exams. The focus group drew out the diversity of how students used their time during the exam Impact Anecdotal evidence from colleagues in the SST and on module teams suggests that the exam preparation sessions reduced the volume of student queries during the exam period. Feedback to module teams enabled them to improve support provided to students taking remote exams. The project leads contributed to pan-University guidance provided by Assessment, Credit and Qualifications (ACQ) for students sitting remote exams in 2022/23. Furthermore, our findings informed the practice of other colleagues who implemented similar initiatives in their schools. Additionally, an ongoing scholarship project exploring student completion of remote exams has built upon our project findings.

Recommendations

We believe that our project feedback has helped to improve remote exams and hence we hope has also reduced sources of student anxiety. Our initial findings were disseminated within our schools, the wider STEM community and to ACQ colleagues. Findings from this eSTEeM project were used to inform FAQ guidance for SPS students. Disaggregated survey findings were also provided to individual module chairs in both schools to support 22J (October 2022) exam

preparation. The project leads attended the exam assessment workshop and contributed to preparation of ACQ student-facing remote exams guidance. We continue to run the remote exam prep sessions with updated guidance based upon issues identified in our survey.

Please visit the eSTEeM website for more information and to read the final report.