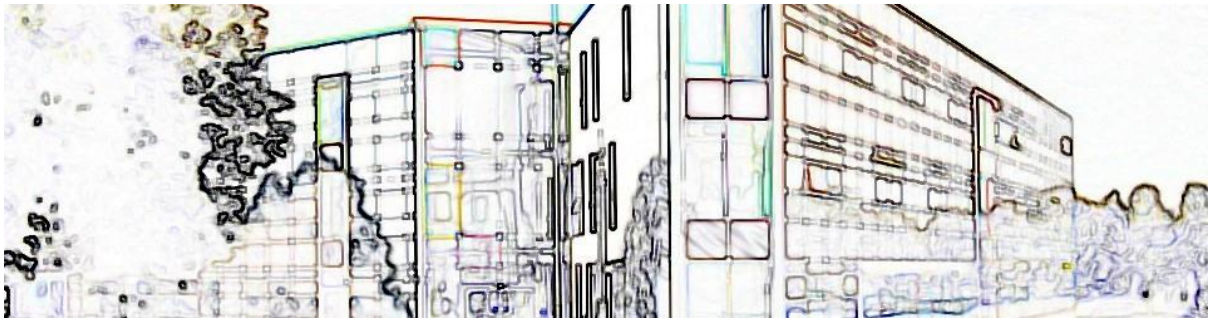

CALRG
Computers and Learning Research Group

The Open University

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CALRG 2020 Conference
15-17 June 2020

Conference Proceedings

The Open University
Milton Keynes, UK

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Conference Schedule: 15-17 June 2020

Computers and Learning Research Group

All sessions of the conference will be held online in Adobe Connect.

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Conference Schedule

Monday 15th June 2020

9:30-9:45	**Informal gathering** - bring your tea and coffee and meet other delegates online	
09:45-10:00	Welcome to CALRG 2020, by Professor Eileen Scanlon	
10:00-11:00	Keynote 1 – Vanessa Evers **Robots and AI with social intelligence**	
11:00-11:30	Online scavenger hunt – Interactive activity with Victoria Murphy	
11:30-12:00	Demo session - Using AI to augment the OU student journey with Selina Griffin	
12:00-13:00	Lunch and book launch	
13:00-14:10	Session 1: Adaptive Technology Enhanced Learning	
	Bart Rienties, Christothea Herodotou & Henrik Kohler	*Defining the boundaries between Artificial Intelligence in Education, Computer-Supported Collaborative Learning, Educational Data Mining, and Learning Analytics: a need for coherence*
	Tim Coughlan, Kate Lister, & Francisco Iniesto	*ADMINS: A virtual assistant for students with accessibility needs*
	Rebecca Ferguson, Leigh-Anne Perryman, & Simon Ball	*Universal design for learning: the importance of offline options for online learners*
14:10-14:20	Coffee	
14:20-15:30	Session 2: Citizen Inquiry	
	Stamatina Anastopoulou	*Science-MINQ: Multimodal Inquiries for learning in informal science settings*
	Maria Aristeidou & Christothea Herodotou	*Young volunteers on Zooniverse: exploring the relationship between participation, characteristics and motivations*
	Paul Mulholland, Enrico Daga & Trevor Collins	*Citizen Curation: Enabling multiple voices within the museum*
15:30-15:45	Coffee	
15:45-16:45	Panel Discussion: **Presence and Eventedness**	
	Panel Chair: Mark Childs (OU, UK) Discussants: Dave Cormier (University of Windsor, Canada), Dave White (University of the Arts, London, UK), Amber Thomas (University of Warwick, UK), Sheila MacNeill (Independent consultant, UK) and Roger Emery (Solent University, UK)	

Tuesday 16th June 2020

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11:00-12.15	Session 3: Responding to COVID-19	
	Mark Gaved, Andrea Berardi, Gareth Davies, Kerese Collins, Tania Hart & Ann Mitchell	*Carrying out Participatory Action Research in a time of global pandemic*
	Asteria Nsamba	*How can Social Networking Applications be Adopted in Learning Environments: Re-imagining the Implementation of Technology-Based Teaching and Learning*
	Mpine Makoe & Ramashego Mphahlele	*Using OERs to upskill educators to pivot to online teaching*
12.15-13.00	Lunch and book launch	
13.00-14.15	Doctoral Consortium 1: Supporting online education	
	Lesley Boyd	*Poster: Using learning networks to drive module improvements in the Open University - a personal and professional journey*
	Shi Min Chua	*Poster: Users' contribution patterns in MOOC online discussions*
	Maina Korir	*Poster: A Mixed Methods Study of Students' Privacy Concerns in Learning Analytics*
	Irina Rets	*What if 'eye' find it too difficult? English L2 users' response to simplification of Open Educational Resources*
	Stephen Foster	*Investigating OpenEssayist 'Rainbow Diagram' Feedback?*
	Discussants: Garron Hillaire (MIT, USA) and Quan Nyugen (University of Michigan, USA)	
14.15-14.30	Coffee	
14.30-15.45	Doctoral Consortium 2: Empowering learners	
	Jo Buxton	*Engaging students with hearing loss in online synchronous collaborative activities*
	Jessica Carr	*Belonging within the 'elite': Transforming from being the excluded to citizen scientist*
	Jake Hilliard, Karen Kear, Helen Donelan, & Caroline Heaney	*Tutors' understanding of students' emotional experiences in assessed, online, collaborative activities*
	Discussants: Garron Hillaire (MIT, USA) and Quan Nyugen (University of Michigan, USA)	

Wednesday 17th June 2020

This workshop is by invite only

9:30-9:45	**Ethics in EdTech Workshop:** Icebreaker
09:45-10:15	**Ethics in EdTech Workshop:** Activity 1 – Ethical themes in EdTech
10:15-10:30	**Ethics in EdTech Workshop:** Feedback from Activity 1
10:30-11:10	**Ethics in EdTech Workshop:** Activity 2- Ethical considerations in EdTech
11:10-11:25	**Ethics in EdTech Workshop:** Feedback from Activity 2
11:25-11:30	**Ethics in EdTech Workshop:** Close

Keynotes

Mon 15th June 2020
10.00-11.00hrs

Dr Vanessa Evers
Professor, School of Computer Science and Engineering Director, Nanyang Technological University's Institute of Science and Technology for Humanity (NISTH)

Robots and AI with Social Intelligence

Abstract
The current expectation is that artificially intelligent systems such as robots or personal voice agents will be integrated into every aspect of our lives be it home-life, work, leisure, healthcare or education. To ensure that this process happens in a responsible and seamless way I pose the theory that robots must be able to learn socially from people. I will argue that social norms, embedded in people and the context of use must be taken into account when designing artificially intelligent technology and must be interpreted automatically.

Biography
Professor Evers is a Professor of Socially Intelligent Systems at the School of Computer Science and Engineering and she is the Founding Director of NTU Institute of Science and Technology for Humanity (NISTH).

She established to study the impact of technology on human society, and to bring industry, government and academia together to find ways to enhance the use of technology for the betterment of humanity. In addition, she is a chair and Professor of Human Media Interaction, University of Twente, the Netherlands. She is also the Scientific Director and founder of the DesignLab in the Netherlands, a centre for multidisciplinary projects with societal impact based on 'Science to Design for Society'.

Prof Evers studied Information Systems at the University of Amsterdam, Business Information Science at UNSW, Sydney and has a PhD from the Open University UK. Previously, she worked for the Boston Consulting Group and was a visiting Scholar at Stanford University.

Prof Evers' work exists at the intersection of Computer Science, Psychology, Design, and Electrical Engineering and focusses on human interaction with artificially intelligent systems and cultural aspects of Human Computer Interaction. It covers design of Artificially Intelligent systems that are able to interpret human social behaviours and respond to people in a socially acceptable way as well as the evaluation of the impact of such technology on people and society. She is a frequent public speaker in the media and at international fora such as the World Economic Forum at Davos.

Tue 16th June 2020
10.00-11.00hrs

Dr Charles Crook
Professor of ICT and Education, Faculty of Social Sciences, The University of Nottingham

The Video Lecture

Abstract
Within the Academy (yet rarely outside), the lecture remains a favoured format for expository practice. Recently, student appetite has encouraged the recording of lectures for later viewing. Very recently, the constraints of social distancing have suggested 'captured' lectures could actually replace the live event – rather than merely being a way to re-visit it. How do we judge what is lost from lecturing in a transformation from live experience to video record? In the present talk, this question will be approached first by noting constraints apparent within the mise-en-scène of video lectures. Then I shall consider how both teachers and learners respond to these video recorded events. To that end, I will report conversations with 20 lecturers who have recently implemented lecture capture - reflecting a range of courses. I also describe how undergraduates utilise recorded lectures as an opportunity to pursue discipline-related conversation and reflection. Findings suggest risks associated with the commodification of the lecture, and also warn against totalising lecturing as an educational practice. However, findings also identify the potential of 'collaborative distance viewing' as a neglected learning resource.

Biography
Charles Crook is Professor of ICT and Education. He is a member of the Learning Sciences Research Institute at Nottingham and is a developmental psychologist by background. After research at Cambridge, Brown and Strathclyde Universities, he lectured in Psychology at Durham University and was Reader in Psychology at Loughborough University.

Much of this work implicates new technology. He was a founder member of the European Society for Developmental Psychology and was long time editor of the Journal of Computer Assisted Learning. He is currently Chair of the Education Panel for Research Assessment Exercise, Hong Kong universities.

Panel Discussion

Presence, connectedness, eventedness, facilitation and content are all key elements in engaging students in online education. In this panel event, five expert practitioners in online education will share their ideas about what these five elements are, how they have an impact on student learning, and how these can be implemented in an online course. Delegates will have the opportunity to ask questions and share their own practice with others.

Panel Chair

Mark Childs
Lecturer Microcredentials &Technology Enhanced Learning, The Open University, UK

Panelists:

Dave Cormier
Learning Specialist, Digital Learning Strategy and Special Projects, University of Windsor, Canada

Roger Emery
Learning Technologies Development Manager, Solent University, UK

Sheila MacNeill
Senior Lecturer in Digital Learning, Glasgow Caledonian University, UK

Amber Thomas
Academic Technologies Team Manager, University of Warwick, UK

Dave White
Head of Digital Learning, University of the Arts London, UK

Posters

Poster will be displayed in the Microsoft Teams environment set up for the CALRG conference. Any questions for the presenters can be left asynchronously for the poster authors in the Poster Teams channel. The authors will also make a short presentation about their work at the start of the doctoral consortium, where they will have the chance to address any questions posted in Teams.

Lesley Boyd: ***Using learning networks to drive module improvements in the Open University - a personal and professional journey***

Inspired by the recent CALRG meeting where we discussed the fusion of our professional and personal activities under lockdown, this poster is a personal and informal journey through my PhD research journey, which is nearing completion. The research investigates how learning networks can be used to facilitate a collaborative and equitable problem-solving process inside the OU, promoting joint ownership and integration of views across students, tutors, staff tutors and module teams. The research aims to make an original contribution to the call for actionable knowledge, using an unusual action-oriented and theory building combined approach, which has already achieved measurable impact.

Shi Min Chua: ***Users' contribution patterns in MOOC online discussions***

Previous research in MOOC and online discussions have been focusing on investigating users' social network (Sunar, Abdullah, White, & Davis, 2015), if their contributions are on-topic (Cui & Wise, 2015), or reflective of different levels of learning (Kellogg, Booth, & Oliver, 2014). However, online discussion is not just about whether users post their comments and what the comments are, but also whether they reply, or continue their engagement in a thread. In this poster, a quantitative description of users' contribution in MOOC online discussions is revealed and seven groups of users with distinctive posting behaviours can be identified

Maina Korir: ***A Mixed Methods Study of Students' Privacy Concerns in Learning Analytics***

This work presents preliminary results from a mixed methods study carried out to identify and analyse students' privacy concerns in the collection, use and sharing of their data to improve teaching and learning. Two vignettes of data use in a university and an e-commerce company were used in a laboratory session. The aim was to determine whether students were concerned about their data being collected, used, and shared with third parties, whether they were concerned about their privacy, and whether their concern varied across the two differing contexts. Students' general privacy concerns and behaviour were examined using validated privacy questionnaires, and semi-structured follow-up interviews were conducted to gain insights into the motivation for students' responses. Students in this study indicated that they trusted the university not to use the data to harm students. Additionally, while they were concerned about their data being shared with third parties, they did seem to understand, and even expect, that they would need to provide their data in order to receive services from the university

All abstracts – in alphabetical order of title

Science-MINQ: Multimodal Inquiries for learning in informal science settings

Stamatina Anastopoulou
University of Leicester, UK

When young people go to a science centre as part of their school visit, they can be very engaged with the interactive exhibits and have fun. These are multimodal interactions (e.g., turn a dial, lift a lever, or roll a wheel), and are expected to contribute positively to science engagement. But how much science do they actually learn during the visit? Translating these multimodal interactions into an understanding of the principles of science remains a key challenge (Bell at al. 2009). This research proposes a pedagogical framework (Rapid Inquiry) that could support young visitors during their visit in science centres through the interplay between multimodal ('hands-on') and inquiry ('minds-on') learning.

Science learning can be facilitated through various forms of inquiry learning, where visitors act like scientists (Scanlon et al., 2011) by looking for evidence, understand the underlying principles and communicate them to others. This paper discusses how inquiry learning has been adapted for sciences centres bearing in mind the needs of different stakeholders. Bearing in mind that museum educators and science teachers have not necessarily aligned expectations for success, there is the potential for conflict and missed opportunities (Kiesel, 2014). Eliciting views from science teachers, museum professionals (curators and educators) and young people, this paper will present the different needs and how they could be aligned through rapid inquiries. It will also discuss the framework in terms of a mobile app design to support visitors in their scientific explorations.

Keywords: Inquiry learning; informal science learning; design requirements

References

Bell, P., Lewenstein, B., Shouse, A., & Feder, M. A. (2009). Learning sciences in informal environments: People, places and pursuits. Washington, DC: National Academies Press.

Scanlon, E., Anastopoulou, S., Kerawalla L., Mulholland P. (2011). How technology resources can be used to represent personal inquiry and support students' understanding of it across contexts. *Journal of Computer Assisted Learning, 27*(6), 516-529.

Kisiel F. J. (2014). Clarifying the complexities of school–museum interactions: perspectives from two communities. *Journal of research in science teaching, vol. 51*(3), pp. 342–367.

Young volunteers on Zooniverse: exploring the relationship between participation, characteristics and motivations

Maria Aristeidou and Christothea Herodotou
The Open University, UK

Online citizen science projects have broadened options for accessing science and enabled different forms of participation in scientific research for adult and young volunteers. Investigating volunteers' motivation and participation can provide us with insights about their level of activity, their engagement duration and contribution periodicity, and their preferences. Previous studies on adult volunteers have identified several patterns of participation, such as 'high' and 'low' (e.g., Eveleigh et al., 2014), and driving motivational factors, such as 'an interest in the topic' and 'a desire to contribute to scientific research' (e.g., Aristeidou, 2017, Curtis, 2015). Although 'motivation' is a prevalent focus of citizen science research in the last years, the motivations of young volunteers have not been reported. This study examines the relationship between young volunteers' participation behaviour and their characteristics and motivations.

The study was conducted with young volunteers on Zooniverse (https://www.zooniverse.org/), as part of the LEARN CitSci project, an international project that is studying how young people (aged 5-19) learn through participating in citizen science. Zooniverse is a citizen science platform that enables crowdsources scientific research in many research disciplines (astronomy, ecology, biology, humanities and climate science). Volunteers contribute by classifying, annotating, drawing and ranking images and illustrations or transcribing diaries and texts. For this study, data were collected from questionnaires (n=64) and Zooniverse contribution log files (n=242), and multiple measures of participation were examined: demographics, science capital information, technology background information, motivations, participation metrics and contribution metrics. Non-parametric tests allowed us to investigate the relationship between young volunteers' participation behaviour and their characteristics and motivations. Findings from our study can inform design considerations for a more engaging environment on Zooniverse that may sustain the volunteers' involvement and retention, and promote young people interest in science and STEM careers.

Keywords: Citizen science; STEM learning; online participation; motivation

References:

Aristeidou, M, Scanlon, E and Sharples, M. (2017). Profiles of engagement in online communities of citizen science participation. *Computers in Human Behavior, 74*, 246–256.

Curtis, V. (2015). Motivation to participate in an online citizen science game: A study of Foldit. *Science Communication, 37*(6), 723-746.

Eveleigh, A, Jennett, C, Blandford, A, Brohan, P and Cox, AL. (2014). Designing for dabblers and deterring drop-outs in citizen science. Proceedings of the 32nd Annual ACM Conference on Human Factors in Computing Systems – CHI, 14, 2985–2994.

Engaging students with hearing loss in online synchronous collaborative activities

Jo Buxton
The Open University, UK

Engaging students in collaborative activities online is often complex and difficult, but students with hearing loss encounter additional barriers making these activities effectively inaccessible.

This presentation will report on research conducted at the Open University into the experiences of students with hearing impairments in synchronous online collaborative activities such as group work and tutorials. It explores the difficulty of providing appropriate 'reasonable adjustments' and the limitations of text-based solutions for students whose primary means of communication are non-verbal.

Research activities were conducted with target groups of both students and staff (online survey, interviews and workshops), and thematic and content analysis was used to identify the main barriers to access and practices used to reduce these barriers.

What emerges from the study is a need to replicate the flexibility and nuances afforded by a face-to-face equivalent to tutorials and group work, and to understand and accommodate the necessity for different simultaneous modes of communication. A model of engagement is envisaged in the final stages of this research which explores the combination of aural and visual cues, with activity design and delivery and control of the learning environment by the tutor or facilitator providing a model whereby conditions can be optimised for engagement and inclusion.

Keywords: Accessibility; barriers to access; hearing loss; collaborative learning

Belonging within the 'elite': Transforming from being the excluded to citizen scientist

Jessica Carr
The Open University, UK

One of the oft-cited aims of citizen science is to involve non-scientists in scientific inquiry drawing on their collective community knowledge to inform scientific practices. The relative value of citizen science is still debated by some in the scientific community, however, who believe 'science is an unashamedly elitist activity' (Durodie, 2003). These contradictory ideas can create confusion around the values and motivations associated with a citizen scientist with significant implications for identity. At what point can a citizen claim to have transformed into a scientist, and is this a unique category that sits between what it means to be a professional or an amateur?

Citizen science has the power to transform our understanding of the world, but also to create new communities. It is important, therefore, to acknowledge that certain communities aren't actively engaged. One of these is the learning-disabled community, removing their voices from this decision influencing practice. A large part of identity is the feeling of belonging within a community (Strnadova, 2018). Have those initiating citizen science initiatives ignored people with learning disability and therefore denied their membership of a specific community in the past?

My PhD research explores the extent to which people with learning disabilities themselves identify as citizen scientists and have opportunities to meaningfully engage.

In this talk I will present the methodology used with the study with a local self-advocacy group to build capacity in conducting citizen science. I will present the two key themes of the data and the initial findings from the study, including any suggestions for the citizen science community when engaging with the learning-disabled community.

Keywords: Inclusive Research; learning disabilities; citizen science; creative methods

ADMINS: A virtual assistant for students with accessibility needs

Tim Coughlan, Kate Lister, and Francisco Iniesto
The Open University, UK

Assistants to the Disclosure and Management of Information about Needs and Support (ADMINS) explores the potential for virtual assistants to reduce administrative burden and improve outcomes by replacing static forms with dialogue. Disabled students often face excessive administrative burden, and virtual assistant could be beneficial in this space, if designed to be accessible to all. At the same time, we recognise the broader potential to develop virtual assistant for these types of processes, and the project aims to understand the multiple opportunities and challenges.

Therefore in the ADMINS project, we are creating an AI-powered virtual assistant that guides students through the disability disclosure process at the Open University, obtaining more nuanced and relevant data from the student, and offering advice and guidance – the aim is for the student to receive guidance and suggestions adapted according to the information they provide. This will both improve the student's experience of disclosing a disability and will ensure the university has a better picture of the student's situation and needs. The information generated through the discussion can be output as a summary for use when staff talk to and support the student. For that purpose, ADMINS is following a participatory-design approach, which involves both understanding our students' needs and preferences, and understanding the advisor experiences as experts in the conversations that we intend the virtual assistant to be able to hold. The design provides multiple communication modalities and alternative media options. Offering that personalisation allows students to adapt their experience when interacting with the virtual assistant and supports accessibility.

Keywords: Virtual assistant; accessibility; participatory research

Investigating OpenEssayist 'Rainbow Diagram' Feedback

Stephen Foster
The Open University, UK

OpenEssayist is an automated writing evaluation (AWE) system designed to provide immediate textual and graphical feedback to help students draft their academic writing. One of the graphical visualisations within OpenEssayist is named a 'rainbow diagram'. The 'rainbow diagram' was subject to research by Whitelock, Field, et al., (2014) who determined that participants could identify the diagrams which corresponded to essays awarded low-grade or high-grade marks by tutors. This current research is a follow-on study to determine how participants might use the 'rainbow diagram' to improve their academic writing. Thirteen (n=13) PhD students were interviewed face-to-face whilst an eye tracker recorded their gaze on 'rainbow diagram' feedback from an example of their own writing. This study revealed that students could, as before (ibid), identify 'rainbow diagrams' which corresponded to high-grade and low-grade essays. However, it went a step further and demonstrated that the 'rainbow diagram' can provide students with an understanding of the coherence and structure of their academic writing and facilitate reflection on what actions should be taken to improve that writing. Students demonstrated that interpreting this type of visual feedback can increase confidence in both their writing ability and the ways in which they can improve their academic writing skills. Additionally, students whose first language was not English found the visualisations could increase confidence in their English language writing. However, in order to make full use of the 'rainbow diagram' feedback students do initially need some training in the form of a guide to interpretation. The presentation will discuss some of the issues raised by the students about the role of visual digital feedback.

Keywords: Automated writing evaluation; OpenEssayist; Rainbow diagram; Feedback; Immediate feedback; Graphical feedback; Visual digital feedback

Reference:

Whitelock, D., Field, D., Pulman, S., Richardson, J. T. and Van Labeke, N. (2014) 'Designing and testing visual representations of draft essays for higher education students', In: 2nd International Workshop on Discourse-Centric Learning Analytics, 4th Conference on Learning Analytics and Knowledge (LAK2014).

Universal design for learning: The importance of offline options for online learners

Rebecca Ferguson, Leigh-Anne Perryman, and Simon Ball
The Open University, UK

The flexibility of online and distributed learning has prompted many educational providers to move towards an approach that privileges online resources, sometimes without the option to access resources offline or in printed form. This can be a problem for disabled learners who are either unable to access online resources or who cannot do so for extended periods of time and therefore require other options. Universal Design principles suggest that adding facilities to support disabled learners increases accessibility for all users. This presentation addresses the question: 'What are the benefits to students of offering downloadable versions of online study materials and supporting offline study?' It focuses on the experience of 100 postgraduate learners on an online course run by The Open University on the FutureLearn platform. Two datasets were used – the students' postings in course discussion (N=17,158), and a student survey carried out once the course had been completed (respondents = 30). Analysis showed that students' need for and use of different formats varies according to context and learning design, with assimilative and creative tasks approached in different ways. Students associated physical and digital resources with different cognitive opportunities and with a variety of emotional states. This worked example of universal design for learning in practice in a TEL context shows that online resources have many advantages, but learners benefit if they also have access to downloadable materials.

Keywords: accessibility; disability; offline study; online study; printed material; universal design for learning

Carrying out Participatory Action Research in a time of global pandemic

Mark Gaved[1], Andrea Berardi[1], Gareth Davies[1], Kerese Collins[2], Tania Hart[3], and Ann Mitchell[1]
[1]*The Open University, UK*
[2]*Colly Counselling, Guyana*
[3]*De Montfort University, UK*

The COVID-19 pandemic has greatly impacted projects using research methods that expect researchers to work closely alongside participants. Some contexts enable substitution or support through alternative techniques that enable remote engagement, such as videoconferencing instead of face-to-face interviews. However, for some approaches, such as participatory action research (PAR), where a central requirement is to build trust with participants and nurture close collaborations, remote engagement can lead to a sense of emotional as well as physical distance, risking a failure of partnerships and less equitable processes and outcomes. Alternative methods must ensure that key methodological principles are upheld.

This is particularly problematic when engaging in low resource settings, where reliable or affordable access to network-based alternative techniques dependent on internet or mobile phone connectivity cannot be assured and where other environmental factors may come into play (e.g. political instability, movement restrictions).

In this presentation we explore the particular challenges around undertaking PAR in a time of pandemic. We reflect on the key principles of PAR and how these might be supported or undermined by the use of technology mediated substitutes for face to face collaborations. Specifically, we report on the ongoing responses being developed in the ARCLIGHT project, an investigation into community mental health resilience in Guyana, that is being investigated by an academic team based in the UK. The emergence of the pandemic half way through the project has put a stop to planned fieldwork, requiring the research team to rethink how final evaluation might take place and how to maintain and sustain relationships with participants who have to manage heightened personal and community vulnerability due to the pandemic. We describe the approaches being explored and welcome discussion with attendees.

Keywords: participatory action research; digital methods; pandemic; fieldwork

Using AI to augment the OU student journey

Selina Griffin
The Open University, UK

Students often need ad-hoc advice and guidance to support their studies, ranging from advice on how to perform basic functions such as how to book a tutorial, to being signposted to specific course content and supplementary material that could help them revise topics (such as an OpenLearn material). When questions occur to a student during the time they have set aside to study, having to search for information across our platforms or write an email to their tutor and wait for the response can slow the pace of their study and break their focus. They also can represent additional workload for tutors, and pressure to respond quickly to relatively minor queries that can be straightforward, or may have already been answered or no longer of interest to the student by the time the tutor is able to respond.

AI can supply instantaneous answers to support students 24:7 with the answers to simple queries relating to their journey (such as when TMAs are due, what the week's schedule is or how to convert a file to pdf format). It can also respond to simple questions about content covered in the course and sign-post them directly to where that content is covered in the VLE that they may otherwise lose in the wealth of materials available to them. This AI could provide real-time responses to students when they have a query that is preventing them from making progress, and needs an instant response. The AI can also help students to navigate additional material provided by the OU (including on OpenLearn) that may be relevant to them, whether this is directly related to their course or to assist with study skills or academic writing in the run-up to a TMA submission.

Our session will present attendees with the output from a Proof of Concept (PoC) and a demonstration of the AI functionality that we envisage could bring this experience to life for OU students in the future. It will introduce attendees to the AI concepts used to support this PoC, and showcase some of the scenarios that the AI could deal with. We will also highlight parts of the student journey where we believe AI could assist with module choice, preparation for study, and signposting, providing them with an accessible, non-judgemental, friendly and available companion who can persist between modules throughout their journey with the OU.

Keywords:
AI; artificial intelligence; support; virtual assistant; open university; student support

Tutors' understanding of students' emotional experiences in assessed, online, collaborative activities

Jake Hilliard, Karen Kear, Helen Donelan, and Caroline Heaney
The Open University, UK

Research is increasingly highlighting the importance of students' emotions in online learning contexts. For instance, emotions in these settings have been found to impact student engagement, learning, and academic achievement. Despite these advances, few studies have investigated how tutors perceive and understand the emotional experiences of the students they teach and support in these learning contexts. Gaining such a perspective would not only allow for a comparison with students' views, and therefore the extent to which their perspectives align, but also help explore the challenges faced by tutors when attempting to understand students' emotions in learning settings which can often lack emotional richness (e.g., lack of body language, facial expressions, and gestures). This was thought to be particularly important as previous literature in both face to face settings (Hargreaves, 2000; Hargreaves, 2001) and online learning environments (Cleveland-Innes, 2020; Cleveland-Innes et al, 2019; Lehman, 2006) has highlighted that high-quality teaching and learning depends on basic forms of emotional understanding and awareness between teachers and students. In this study, a qualitative research methodology was used to explore the perspectives of tutors from the UK Open University regarding how they understood students' emotional experiences when undertaking assessed, online, collaborative activities. Such activities are often found to be highly emotionally charged with students experiencing a diverse range of pleasant and unpleasant emotions (Hilliard et al, 2020; Hilliard et al, 2019). In this presentation, preliminary findings from the study will be reported and practical implications and areas for future research will be discussed.

Keywords: emotional experiences; tutor perspectives; online collaborative learning; distance learning; qualitative research

Using OERs to upskill educators to pivot to online teaching

Mpine Makoe and Ramashego Mphahlele
University of South Africa, South Africa

Due to the current crisis created by the COVID-19, many governments in developing countries are now looking at ways of ensuring that education takes place even when students are at home. As a result, there is a massive scramble to get courses that were developed for face-to-face provision to online environments. Widely overlooked by institutions that have to move online very quickly, is the need to invest in tools, resources, and training of teachers to ensure that they provide quality online teaching. Since there is very little time to design and develop learning materials for online teaching, Open Education Resources (OERs) were used to speed up the process of training and development of online course content. The selected OER courses are free, offer a certificate of completion, and provide a foundational understanding of online teaching and navigating the digital space. To provide support for students who are new in using online space for teaching purposes, WhatsApp, a mobile based application, that enables synchronous communication by way of text, audio and video, was used to enhance peer support. Through this application, 7-8 students were grouped together so that they can communicate with one another, readily share information and assist each other as go through the study material. Students were also supported by the e-tutor who is assigned to approximately 6-7 small groups and her role is to gauge learning by providing an overall level of support to maintain motivation and connectivity. The initial finding of the first phase of the pilot has shown that more than 60 percent of students completed the course. The peer-to-peer network supplemented by the e-support tutor strengthened the network augmenting course completion.

Keywords: OER; COVID-19; teacher training

Citizen Curation: Enabling multiple voices within the museum

Paul Mulholland, Enrico Daga, and Trevor Collins
The Open University, UK

There is a growing trend for museums, rather than providing an authoritative view, to present multiple voices related to their collection and exhibitions. Most museums use social media platforms to engage the public. However, such platforms are not well suited to collecting and sharing visitor responses to the collection. In practice, opportunities for visitor contribution are largely limited to commenting on or liking content shared by the museum. Visitors are not provided with the methods and tools to develop and share their own interpretations. Social media platforms also create challenges for the museum in how they can control the use made of their content online and acquire the rights to make use of citizen contributions.

Citizen Curation is proposed as a way of supporting citizens to share their own interpretations of museum objects and reflect on the variety of interpretations contributed by others. Unlike citizen science initiatives in museums, the primary aim of Citizen Curation is not to apply objective scientific methods, for example to the classification of archaeological objects, but rather support citizens in sharing and reflecting on their subjective, personal interpretations of cultural objects.

Tools and methods to support Citizen Curation are being developed as part of the EC supported SPICE project that began in May 2020. The research activities of SPICE include the development of methods and online tools to help museum visitors interpret museum objects for themselves and reflect upon the interpretations of others. The resulting technical infrastructure will enable citizens and museums to create, share, find and reuse contributions across communities.

In order to capture multiple voices, beyond those who normally engage in cultural activities, tools and methods will be co-designed with user groups at risk of social exclusion including older people, asylum seekers, young people living with illness, Deaf people and minority religious communities.

Keywords: Citizen Curation; Interpretation; Reflection; Codesign; Museums

How can Social Networking Applications be Adopted in Learning Environments: Re-imagining the Implementation of Technology-Based Teaching and Learning

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A 2011 study by Richard Shambare and Althea Mvula predicted that 2 billion young adult cell-phone users would use their phones to interact with instructors, peers and content by the end of 2011. A decade later this prediction seems to have come to pass, as schools all over the globe make efforts to move from classroom teaching to online learning, in response to their governments' orders to contain the spread of COVID 19. In South Africa, online learning has been used as an add-on to supplement face-to-face teaching, until the outbreak of COVID 19. Now that South Africa is under lockdown, higher education institutions are compelled to implement online or e-learning for continuity. This means that some form of technology should be adopted for this purpose. This paper proposes social networking tools and applications to support students' learning.

Social networking applications and tools refer to a variety of social media platforms which include Facebook, Twitter WhatsApp, blogs and Wikis. These tools have become compelling platforms for generating and sharing knowledge across the world. The most popular of these are: Facebook, with 2.41 billion active users on a monthly basis, followed by WhatsApp with 1.6 billion users and then Twitter with 330 million users. These communication platforms, which have impacted social lives, can offer students and lecturers the platform on which to create and share knowledge, increase interactions, reduce isolation and loneliness, and form learning collaborations.

As a rule, online and e-learning adoption requires knowledge of appropriate pedagogical approaches. However, research conducted in an open distance learning (ODL) university in South Africa indicated that some facilitators do not use pedagogies related to the technologies adopted for teaching. Using technological, pedagogical content knowledge (TPCK) model, this paper addresses that gap. In addition, quality theory and Bloom's Taxonomy are used as lenses, to assess the quality of three social media applications: Facebook, Twitter and WhatsApp, and determine the extent to which they are suitable for teaching and learning, in terms of content generation, information sharing and learning collaborations. Finally, it will demonstrate the application of teaching, learning and assessment using Bloom's Taxonomy.

Keywords:
Social networking platforms; E-learning; TPCK model

What if *eye* find it too difficult? English L2 users' response to simplification of Open Educational Resources

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Open Educational Resources (OER) aim to provide equal access to education. Yet, the language level used in OER in English was found to require native or advanced proficiency in English. There is a call to make these resources more comprehensible. This study combined eye-tracking methodology and comprehension assessment to explore the effect of text simplification on English second language (L2) users, while also accounting for text organisational structure, and individual predispositions. A total of 37 adult English L2 users took part in the study. They had to read either an authentic narrative, authentic expository OER, or their linguistically simplified versions. The analysis showed that simplification led to better text comprehension, and text narrativity facilitated text recall, particularly at lower English proficiency levels. Eye-tracking measures revealed that text simplification led to an increase in processing time during initial reading of the text, and a decrease in processing time during text reinspection. These findings have strong practical applications for online teaching with OER.

Keywords: text simplification; Open Educational Resources; eye-tracking; reading comprehension

Defining the boundaries between Artificial Intelligence in Education, Computer-Supported Collaborative Learning, Educational Data Mining, and Learning Analytics: a need for coherence

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This review aims to define the boundaries of four distinct research fields of Artificial Intelligence and EDucation (AIED), Computer-Supported Collaborative Learning (CSCL), Educational Data Mining (EDM), and Learning Analytics (LA). While all four fields are focused on understanding learning and teaching using technology, each field has a relatively unique or common perspective on which theoretical frameworks, methods, and ontologies might be appropriate. In this review we argue that researchers should be encouraged to cross the boundaries of their respective field and work together to address the complex challenges in education.

In particular with the rise of availability of big data in education and artificial intelligence, substantial leaps in both conceptual, theoretical, and evidence-based understanding of learning and teaching have been made in the fields of AIED, CSCL, EDM, and LA. However, as highlighted by a range of reviews, most of these innovations have been localised in small lab studies, or in a single module, course, or specific context, with limited large-scale adoption within and across institutions (Viberg et al., 2018;Rienties, 2020).

In order to truly make substantial leaps in the actual adoption of technology in large educational settings, achieve wide-spread uptake in educational institutions, and improve our understanding of the complexities of learning that can advance our theoretical models, we argue that the four research fields need to break down some of the artificial barriers between the respective communities, and jointly work together as one interdisciplinary research field. This can be achieved via a web of inter-related activities. At CALRG we aim to present our latest insights from this ongoing review, which in part is sponsored by the EU Horizon 2020 project Artificial Intelligence in Higher Education.

Keywords: artificial intelligence in education; computer-supported collaborative learning; learning analytics; educational data mining; review