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Exploring preservice physics teachers' development of physics identity through the use of multiple representations (MR): Preliminary findings

Munfaridah, Nuril; Avraamidou, Lucy ; Goedhart, Martin

Link to publication in University of Groningen/UMCG research database

Mapping and making research in shifting landscapes

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Letter from Organisers and Acknowledgements

A very warm welcome to the School of Education's (SoE) first-ever online doctoral conference 2020! The annual doctoral conference is a student-led effort to bring together doctoral researchers and academics to explore, contribute and reflect on key issues in educational research from a broad range of research areas. The conference committees in Bristol and Hong Kong have come together for the first time to host this conference in a virtual and combined format. When we began organising this prestigious annual conference, we could not have predicted all the logistical and technical challenges that it would involve. It very quickly changed from being an innovative and new take on the traditional format to what today is the unique online event with contributions from across the world.

The landscape of global education continues to undergo significant changes and to face the contemporary challenges of expanding diverse student populations and uncertain futures. Moreover, the pandemic has forced the education and research communities to rethink their relationships and ways of working. These constant changes and challenges have inspired this year's theme for the conference: 'mapping and making research in shifting landscapes'.

We are delighted that you have come to present your research, in diversified formats, aligned with the themes of equity, widening access and innovation within the broader themes of 'mapping' and 'making' research in education. A wide range of topics are covered including policy and practice, technologies and education, professional identity and teacher practice, innovative methodologies, science and technology studies and English as foreign language studies.

We are honoured to be joined by two distinguished keynote speakers: Professor Robin Shields, from the University of Bristol, and Dr Liz Jackson, from the University of Hong Kong. Our most sincere appreciation goes to them for their invaluable contributions to our conference.

This conference would not have been possible without the support of many people. Special thanks to Professor Jennifer Rowsell, for her guidance and support throughout the planning of the conference. We are very grateful to Jez Butler for supporting us in adapting the conference to a digital format. We are also grateful to Lucy Backwell and Daisy Perry for their help with promotion and finances. We wish to acknowledge our appreciation for the support and positive energy given by fellow doctoral researchers and academic staff who have volunteered to chair presentation sessions and support us during the conference. The most valuable aspect of SoE's doctoral conference is that it provides a platform for doctoral researchers to present various aspects of their research. Our most profound appreciation goes to all those attending and participating by sharing their ideas and work despite the uncertain circumstances we are facing now. Without your contributions, there would be no conference. We hope that you will enjoy the two days of presentations and interactive workshops and that you will leave feeling inspired and reinvigorated.

Conference organisers 2020

M. Carolina Valladares Celis, Jáfia Naftali Câmara, Jasrael Stokes, Elise Yingting Cui, and Terry Molloy.

Welcome Message for the Inaugural University of Bristol School of Education Online Doctoral Conference

There are a number of exceptional features to the 2020 UoB SoE Online Doctoral Conference. One is the reason for it, which we will never forget in our lifetime: COVID-19 with its loss of lives and lived experiences of lockdown. Two is adapting a conference to a digital environment. Three is combining the wider participation of students from more than 15 institutions around the globe. Four is including an interactive, fun, flowy workshop by designer/makers Harriet Hand and Mark Shillitoe. Five is keynotes by Dr. Liz Jackson in Hong Kong and Professor Robin Shields in Bristol.

In a time of uncertainty and isolation, we have found lightness, joy, and some measure of flexibility/creativity in planning this event. There is variety within the conference with keynotes, poster presentations, interactive and inquiry-based workshops, and doctoral student paper panels. We are grateful to UoB SoE academic staff as experts attending presentations and sessions. We sincerely hope that all attendees and presenters find it thought-provoking and affirming.

The theme of the conference this year is, 'Mapping and Making Research in Shifting Landscapes: Are you building bridges or getting lost?' As you focus on your courses, your fieldwork, and your writing up, the planning committee feels that you need some inspiration and an opportunity to step back from your research to take a landscape view of it. You have had a tough year and deserve a treat. Harriet and Mark will talk about wayfinding, getting lost, then finding your way, and seeing things such as objects in a different light. Zora Neale Hurston once said, 'Research is formalized curiosity. It is poking and prying with a purpose.' You need to give yourself permission to get lost, feel muddled and move through this to find the right way forward, your way forward. Making a map and moving lines, vectors, and nodes in your map and then making a solid, thorough, and precise design takes time and some degree of consternation. So it is that this conference invites you to question, draw, make, think, reflect, pause, think some more, so that you engage with your research from different angles and varied apertures. We sincerely hope that you enjoy the experience.

There are many people to thank, but most of all I would like to acknowledge the hard work and patience of the School of Education PGR Student Representatives and volunteers M. Carolina Valladares Celis, Jáfia Naftali Câmara, Jasrael Stokes, Elise Yingting Cui, and Terry Molloy. As well, I want to acknowledge the incredible help from Jez Butler who went above and beyond the call setting up, designing, and coordinating Blackboard for the event. Dr. Janet Orchard for her energy and efforts connecting the Hong Kong and Bristol Campuses. Dr Liz Jackson and Professor Robin Shields for their keynotes and Harriet Hand and Mark Shillitoe for their workshop dynamism and flair. We should also acknowledge funding from the UoB School of Education to support the event, Rebecca Rose's support with equipment and coordination, and Lucy Backwell's hard work to publicise and market the event. It has truly been a labour of love. Enjoy.

Jennifer Rowsell, Professor and Interim PGR Director

Keynote Speakers

Professor Robin Shields

PhD, BA, Professor of Education, University of Bristol
Email: robin.shields@bristol.ac.uk

Biography

Professor Robin Shields' research and teaching interests focus on applying new forms of quantitative data collection and analysis (e.g. social media datasets, social network analysis) to study global trends and processes in education. He publishes research across several substantive areas, including higher education internationalization, climate change and higher education, international aid to education, technology and education, and education in conflict-affected contexts. Robin is currently principal investigator on an ESRC-funded study of school management, accountability and learning outcomes in Mumbai and Kathmandu. He is also co-editor of the Comparative Education Review and has served on the Executive Committee of the British Association for International and Comparative Education (BAICE). He received his PhD in Education from UCLA in 2008 and is Professor of Education at the University of Bristol.
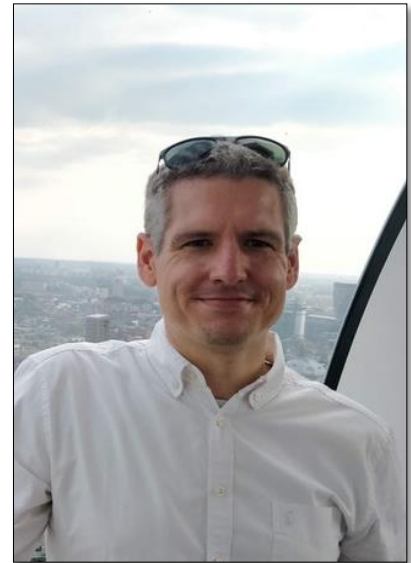
Abstract

Making and Mapping Networks: The Strengths of New Ties in Shifting Landscapes

This presentation will discuss social networks in the process of becoming researchers, both as a methodological perspective on educational research but also as a heuristic to understand our roles as researchers of education. It will introduce key affordances of the network perspective and engage participants in an (anonymous and voluntary) exploration of networks within the doctoral community. As many researchers face social disruption in the present and future challenges looming on the horizon, it urges us to be intentional and proactive in forming networks.

Dr Liz Jackson

PhD, MPhil, Associate Professor, University of Hong Kong
Email: lizjackson@hku.hk

Biography

Liz Jackson is an Associate Professor of Education at the University of Hong Kong and Director of its Comparative Education Research Centre. She is also President of the Philosophy of Education Society of Australasia, one of the largest and most international academic associations of philosophy of education. Liz has worked and/or studied in the United States, United Kingdom, Turkey, South Africa, and the United Arab Emirates. She has worked in Hong Kong for 8 years. Liz has published over 100 journal articles, book chapters, and books in the areas of philosophy of education, global studies in education, and multicultural and civic education. A particular area of interest in her work has been how to deal with controversial issues in education, a theme of her first, award-winning book, Muslims and Islam in US Education: Reconsidering Multiculturalism (Routledge, 2014), and Questioning Allegiance: Resituating Civic Education (Routledge, 2019). She is currently working on her fourth book, Protesting Education and Identity in Hong Kong, which is based on her work over the last 8 years studying curriculum and youth civic engagement in Hong Kong.

Abstract

Ignoring History and Facts: The Ongoing Politicisation of Hong Kong Education

Over the last tumultuous decade in Hong Kong, the topic of education has been in the front and centre stage of controversy and media coverage. As youth in secondary schools led the Umbrella Movement (2014-2015), while universities became battle grounds of the more recent anti-extradition protests (starting in 2019), popular discourse by politicians and others in media blamed the education system, anti-Mainland educators, and Liberal Studies, for radicalising and liberalising youth. While this message is spread time and again, it puts educators in a nearly impossible position. And it flies in the face of best evidence, based on academic research, about education's role, historically and today, in Hong Kong.

In this lecture, Jackson will discuss her experiences of investigating Hong Kong education at multiple levels in relation to its civic and politicising influence. This includes discrete studies of the history of civic education in Hong Kong, student experiences with the Umbrella Movement, and research on the nature of the social studies curriculum in Hong Kong, including Liberal Studies. Offering a historical overview of this topic, Jackson also reflects on the challenges of doing research in a politicised climate. This lecture thus aims to offer both an academic analysis of political and civic education in Hong Kong, in relation to civic engagement—as well as personal reflections and insights, on the role of academic researchers to study important social events, thorns and all.

Workshop series 'Making and Mapping with Mr Benn'

Details of Workshop Leaders

Harriet Hand
Email: harriet.hand.2019@bristol.ac.uk

Harriet is currently enrolled on the MSc Educational Research at School of Education at the University of Bristol and will continue with the PhD programme, funded by the ESRC. She is interested in how thinking skills can be nurtured within secondary education in a way that is meaningful for the individual and contextualised to young peoples' personal experiences. Using mapping as a means of exploring thinking spaces, Harriet's research looks to develop strategies for thinking as part of a pedagogy that supports reflexivity and develops the individual.

Harriet continues to work as an arts and design educator at the University of West of England and has previously taught visual arts at Cotham School in Bristol. She advises and offers consultancy in design thinking and design management. Her original training was in graphic design which led to over fifteen years working on people-centred and multi-disciplinary projects that spanned information design, urbanism, placemaking and wayfinding. She has worked with multiple teams on projects across the UK and US.

Mark Shillitoe
Email: markshillitoe@gmail.com

Mark Shillitoe is an experienced inquiry learning practitioner, researcher and maker currently residing at International School Delft, the Netherlands. His work invites learners to question, be critical and construct understanding through mixed media, material inquiry.

He has practiced throughout Europe, combining his craft as an educator with a recent practice-based research Master at the Piet Zwart Institute, Willem de Kooning Academy in Rotterdam. His research explores how critical making and multimodal inquiry reveals thinking and creates unfolding opportunities to explore the relationship between technology and everyday life. More recently he considers tactical pedagogies

and the role of the educator as critical maker of curriculum and how such approaches foster young learners' making as a living methodology.

He leads workshops & professional learning within diverse international schools and learning communities. He was Maker educator in residence with the MakEY project, an International research project, exploring 'maker' culture in the development of children's digital literacy and creative design skills. Here he designed a led experiential practice-based workshops for researchers and educators from both formal and non-formal settings. His practice is reflected through emerging experimental humanities, inquiry learning, critical making, DIY subcultures and environmental exploration.

Workshop Description

The main aim of the workshop series is to introduce new ways of thinking about your research; do something that is fun and connect together through creating a collective body of work. Harriet Hand and Mark Shillitoe take inspiration and comfort from Mr Benn and his adventures (a character created by David McKee who appears in an animated television series from 1971).

The workshop series, spanning two days, invites you to wander through and navigate your research. Wayfaring together through a series of short activities, a growing collection of gathered artefacts offers moments to unravel our collective threads of thinking. With a fine-tooth comb, we will dwell and overlay the self, the other and our stuff, creating a space in which to map out a collective body of work.
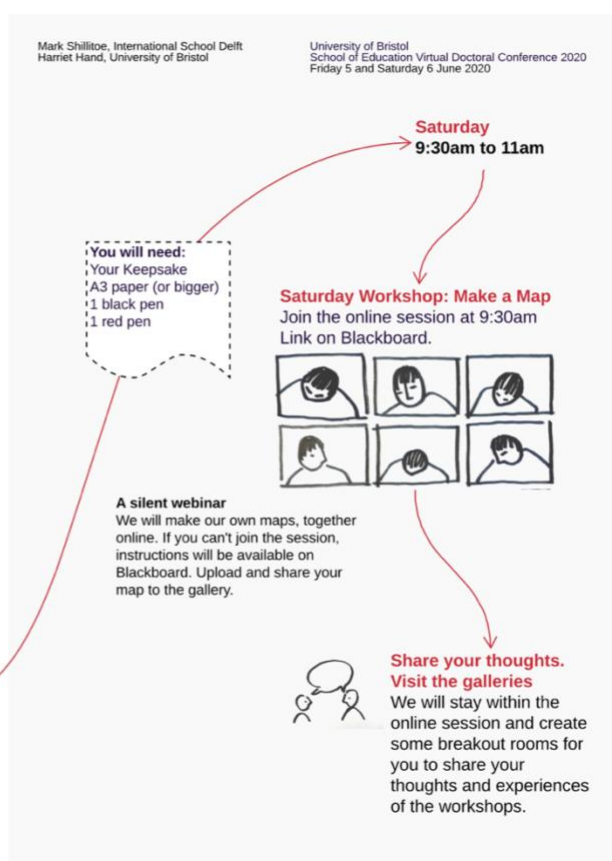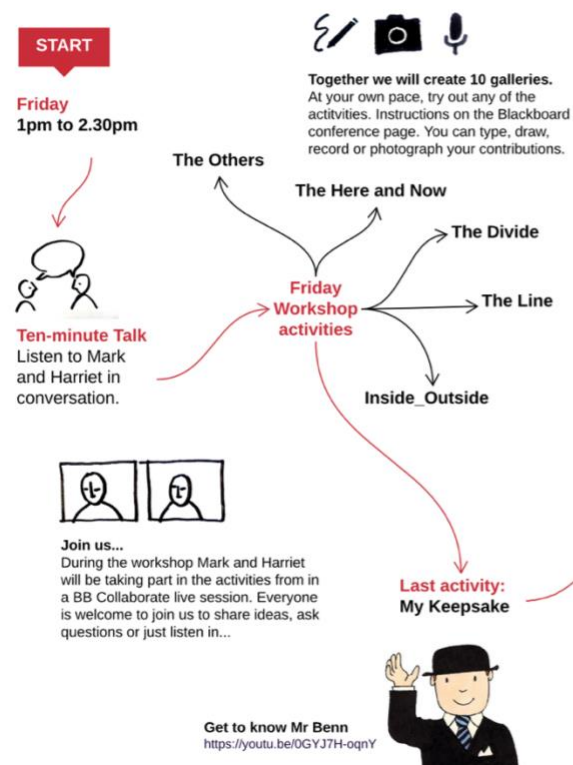
Workshop Friday 1pm to 2.30pm: *Making and mapping with Mr Benn (Part 1)*

Everything you need for the workshop is on the Conference Blackboard page under "*Workshops: Day 1*"

During this 1.5-hour workshop, you are invited to explore the different activities and provocations you will find on Blackboard. You can contribute to the activities directly into the galleries, or create work and photograph it and upload, there are lots of options.

Mark and Harriet will be in the Workshop Room if you have any questions, would like to meet others or share your ideas.

The Workshop room is open from 12:45. Session starts 13:00.

Workshop Saturday 9.30am to 11am: Making and mapping with Mr Benn (Part 2)

This workshop will take place in the workshop room. You will be able to join the main room 15 minutes before the start of the session. The link and all the details are on the Conference Blackboard page under "*Workshops: Day 2*"

You will need

- A3 paper (or bigger)
- 1 black pen
- 1 red pen (or any colour)
- Your keepsake from Friday (if you have one)

The Conference Programme

Please click on the names of each session (in blue) to access the recordings

Day 1 Schedule: Friday, 5th June

Time	
9:00	Warm up & Coffee Lecture Theatre (Main Room)
9:15	Welcome Lecture Theatre (Main Room) Professor Jennifer Rowsell, Interim PGR Director at the School of Education
9:30	Keynote Address Lecture Theatre (Main Room) *'Ignoring History and Facts: The Ongoing Politicisation of Hong Kong Education'* Dr Liz Jackson, The University of Hong Kong Chair: Artemio A Cortez Ochoa
10:30	Morning Break

	Parallel sessions		
	Fifteen-minute presentations		
11:00	**Session 1** Technologies and Education Chair: *Alia Mokhtar*	**Session 2** Teacher Evaluations Chair: *Daniela A Pino Valenzuela*	**Session 3** Professional Identity and Teacher Practice Chair: *David Russell*	**Session 4** Teachers' Studies Chair: *Ran Qi*

'The Use of Mobile Microblogging as a Tool to Foster Vocabulary Learning among EFL Students in Saudi Arabia' **Norah Alsharidi** *University of Exeter*	'The mismatch between the formative and summative components of a teacher evaluation system: mixed-methods research of national teacher assessments in Mexico' **Artemio A. Cortez Ochoa** *University of Bristol*	'Tertiary EFL Practitioners' Beliefs, Knowledge Base and Practices of Assessment Literacy and Test Development – An Exploratory Study' **Muhammad Wasim Latif** *University of Exeter*	'Exploring preservice physics teacher' development of physics identity through the use of multiple representations (MR): Preliminary findings' **Nuril Munafaridah[1, 2]** **Lucy Avraamidou[1]** **Martin Goedhart[1]** *[1]University of Groningen* *[2]University of Negeri Malang*
'Innovation as Practice: how socio-cultural theory informs the pedagogy of radical innovation.' **Mark Neild** *University of Bristol*	'Identifying Good Climate Change Educational Practices Among Civic Education Teachers in Zambian Schools: An Appreciative Inquiry **Collet Mweene** *University of Bristol*	'What does quality classroom teaching and learning mean to the rural Ghanaian teacher? What pedagogical beliefs and practices define quality teaching and learning?' **Ali Ahmed** *University of Bristol*	'Teachers engagement to the curricular reform of school science in Brazil' **Camila Manni Dias do Amaral** *Federal University of Rio De Janeiro*
'Teacher identity struggles in trajectory of activity in digital education: The interplay with students in an institutional MOOC project **Indie Chung** *University of Bristol (Hong Kong)*	Investigating the Employment Motivation and Job Satisfaction of Expatriate Language Teachers **Gareth Morris** *University of Exeter*	'Teacher effectiveness in India: Considering teacher motivation and the 'teacher effect' in the context of a 'learning crisis'' **Rhiannon Moore**, *University of Bristol*	'Curriculum development in Saudi Arabia: Saudi primary EFL teachers' perspective on the implementation of CLT into the English curriculum in State's schools' **Rajaa Fallatah**, *University of Exeter*

12:00	Lunch
13:00	Workshop *'Making and mapping with Mr Ben' (Part 1)* **Mr. Mark Shillitoe,** International School Delft **Ms. Harriet Hand,** University of Bristol
14:30	Break

	Parallel sessions			
	Fifteen-minute presentations			
	Session 5 Policy and Practice **Chair:** *Santiago Ayuso Arcas*	Session 6 English as Foreign Language (EFL) Studies **Chair:** *Wenjun (Elyse) Ding*	Session 7 Innovative Methodologies **Chair:** *Betzabe Torres Olave*	Session 8 Science and Technology Studies **Chair:** *Dulce K Rodriguez Nieto*
15:00	'Visual Art in Reception Classrooms: Exploring the Perspectives of Children and Teachers' **Isobel Traunter** *University College London*	'Word-to-text Integration Processes for L2 Reading Comprehension (assessment)' **Mona Ghurman Alshehri** *University of Exeter*	'Mapping a Vertical Case Study Methodological Approach: An early reflection on a fieldwork deployment' **Martin Preston** *University of Bristol*	'Actually, training to understand how AI works would be useful' - Designing education for those at risk of being left behind during the Fourth Industrial Revolution **Laura Gemmell** **Dr. Lucy Wenham** **Dr. Sabine Haeurt** *University of Bristol*
	'Evidence Use in Education Policy Development: A mixed-method study exploring the extent to which evidence is used in policy development for education programs in Kenya' **Hazel Laura Mugo** *University of East Anglia*	'Designing Meditational Tools to Foster Argumentation Skills in Thai EFL University Students' **Tanyapon Phongphio** *University of Bristol*	'The Room Where It Happens: The Role of Space and Place in Research Encounters and What Does a New Digital World Mean?' **Amanda Ptolomey** **Elizabeth Nelson** *University of Glasgow*	'Can scientific knowledge proficiency represent the ability of doing science and talking science? - An assessment to drive deep learning in Physics' **Jinglu Zhang** *University of Bristol*
	'Global imperatives over teacher' work: Changes to national policy agendas' **Rocío Fernández Ugalde** *University of Cambridge*	'China's University English Teachers' Language Assessment Literacy in the Digital Age' **Jing Zhang**, *University of Bristol*	'Losing sight of the bridges. How might they be reimagined?' **Fiona Sharp** *University of Bristol*	'Creating Opportunities for the Emergence of Intergenerational Communities of Practice Using Place-based Storytelling and Technologies' **Diana Erandi Barrera Moreno** *University of Bristol*
16:00	Day Closure			

Day 2 Schedule: Saturday, 6th June

Day 2 Schedule: Saturday, 6th June

Time	
9:00	Warm up & Coffee
09:30	**Workshop** *'Making and mapping with Mr Benn' (Part 2)* **Mr. Mark Shillitoe,** International School Delft **Ms. Harriet Hand,** University of Bristol
11:00	Morning Break
11:30	**Parallel sessions**

	Fifteen-minute presentations	Quick-Fire 1 Multiple Perspectives on Educational Matters Chair: *Claire Lee*	Quick-Fire 2 Contemporary Issues on School Curriculum, Pedagogies, and Research Chair: *Martin Preston*
	Session 9 Higher Educational Studies Chair: *Mark Neild*		
	'Academic autonomy VS accountability: Is public engagement a threat to research?' **Laurene Cheilan** *University of Bristol*	Selection of public-funded secondary schools by middle-class parents in Hong Kong' **Alice Chui** *University of Bristol (Hong Kong)*	'The significance of *Perezhivanie* within the IB Geography Curriculum' **Noor (Ava) Khalfaoui** *University of Bristol (Hong Kong)*
		'Mapping the position: Exploring programme leaderships in a teaching-focused institution' **Jemma Oeppen Hill** *University of Bristol*	'Integrating 3D Food Printing into Literacy Education' **Yina Liu** *University of Alberta*
	'The value of critical friends and places of dialogue to achieve change and Political Content Knowledge'	'Internationalization of Higher Education: Lecturers' perception of the benefits of studying overseas programs as an internationalization	'Row, Row, Row Your Boat Gently Down The Stream' **Alia Mokhtar** *University of Bristol*

	Betzabe Torres Olave *University of Bristol* **Paulina Bravo Gonzalez** *University College London*	strategy to Universitas Negeri Semarang, Indonesia' **Agung Nugroho** *University of Bristol*	
		'Perceptions of school climate among Polish migrant children in the post-Brexit Britain' **Thiago Bogossian** *University of Surrey*	'Mindfulness of Education: A research study to investigate mindfulness practices in a Hong Kong higher education-based teacher education programme' **Samman Hang-lai Lee** *University of Bristol (Hong Kong)*
		What Makes Initial Teacher Education Effective? Exploring stakeholders' views of pre-service English teacher education in urban areas in Indonesia' **Pipit Novita** *University of Bristol*	'Exploring College Student Leadership Experience of Peer Learning **Yui-yip Joseph Lau**[1,2] **YM Tang**[2] **Jieqi Guan**[3] *University of Bristol (Hong Kong)*[1] *The Hong Kong Polytechnic University*[2] *Macao Institute for Tourism Studies*[3]
	'Widening Participation, hot knowledge, neoliberal practices and the marketisation of higher education' **Craig Lennox** *University of the West of England*	'Catering for Learner Diversity through Grouping in Economics classes in Hong Kong' **Grace Wong Kam Fung** *University of Bristol (Hong Kong)*	Rethinking technology use in higher education business studies teaching: Applying the 3D model to understand teachers' experience' **Gentiana Cheung** *University of Bristol (Hong Kong)*
		'Integrating Corpus Based Task in Learning Second Language Vocabulary: Saudi Learners' Perception and Use' **Rahman Alshamrani** *University of Exeter*	The unexpected switch – an analysis of the use of educational technology during COVID-19 pandemic in Hong Kong K-12 schools' **Hamlet Lin** *University of Bristol (Hong Kong)*
		'Foreign Language Listening Anxiety in Saudi EFL Classrooms' **Nora Hamad Alhendi** *University of Exeter*	'Doing" the knowledge-rich curriculum: an ethnographic study of a secondary school English department **Andrew Carr** *University of Bristol*
12:30	Lunch		

13:30	**Keynote Address** **Lecture Theatre (Main Room)** *'Making and Mapping Networks: The Strengths of New Ties in Shifting Landscapes'* *Link to part 1* – *Link to part 2* **Professor Robin Shields,** University of Bristol Chair: M. Carolina Valladares Celis
14:30	**Break**
	Parallel Sessions

	Fifteen-minute presentations	Poster Presentations (Located in 'Poster Blog' Tab within Blackboard) **Chair**: *Dulce K Rodriguez Nieto*
15:00	**Session 10** **Informal Educational Studies** **Chair:** *Saba Arshad*	
	'Critical pedagogy and a transdisciplinary approach in the learning of science outside the classroom' **Gonzalo R. Guerrero** *University College London*	'Students' Expectations of higher education study in self-financing institutions in Hong Kong' **Nora Cheung** *TungWah College*
	'A PLACE FOR EVERYTHING: Material Objects and Public Places Entwined in Adults' Informal Learning' **Stephanie Mason** *Mount Saint Vincent University*	'Enhancing students' interests in science and STEM-related careers: The role of career-based scenarios and students' self-view in relation to science and STEM-career aspirations' **Irene Drymiotou** *University of Cyprus*
	'Family-school engagement in Middle School: how is it underpinned by school leaders in IB schools?' **Elisabeth Neiada** *University of Bath*	'First-year Success – Is academic performance important in students' perception in the first year of university? A case-study at a university in Hong Kong **Kannass Ching-Man Chan** *University of Bristol (Hong Kong)*
16:00	**Conference Closure**	

Friday Abstracts

Morning sessions

15-minutes presentations
Friday 5th June 11:00-12:00

Session 1: Technologies and Education

The Use of Mobile Microblogging as a Tool to Foster Vocabulary Learning among EFL Students in Saudi Arabia

Norah Alsharidi, University of Exeter

Email: na471@exeter.ac.uk

The process nature of learning vocabulary is complex and gradual wherein exposure to words in different times and contexts is a critical prerequisite to increased knowledge. Learning vocabulary is considered to be a common issue among many EFL learners due to the lack of encountering target words. However, the popularity of Web 2.0 technologies can figure essentially in the repeated exposure of students to target words outside the classroom at different times, thereby consolidating learning and elaborating on word meaning and use (Webb, 2007). To benefit more of mobile technology using among young generation, this study will be utilized. The study addresses two main questions for the aims of assessing the impact of using mobile microblogging as a tool for enhancing the depth of vocabulary knowledge, investigating learners' attitudes and opinions regarding the effectiveness of mobile microblogging as a tool for learning English in general and for vocabulary learning development in particular , and exploring learners' experiences of such use in supporting vocabulary learning. The study takes a mixed methods design which combines both quantitative and qualitative strategies. The study will be based on an intervention that will be held for over a 7-week period using non-equivalent pre-and-post-tests control group design where students will be assigned randomly into experimental and control groups. Data will be collected through pre-and post-vocabulary measurement tests, post-intervention questionnaire, and post-intervention interview. The present study will target EFL students of the Preparatory Year Programme in Saudi university. Findings of this study will help in providing significant contributions to theory and practice as this present work is an attempt to bridge the gap between the effective role of social interaction in language learning through mobile technology and the depth of vocabulary knowledge.

Innovation as Practice: how socio-cultural theory informs the pedagogy of radical innovation

Mark Neild, University of Bristol

Email: mark.neild@bristol.ac.uk

Why is that typically 4 out of every 10 new products / services fail? (Castellion & Markham, 2013). This paper draws on Cultural Psychology (Cole, 1996) and the General Genetic Law of Cultural Development (Vygotsky, 1929/ 1989) to suggest potential answers. It advances the theory that because much of human behaviour resides in the sub-conscious or Habitus (Bordieu, 1977), people rarely understand their own behaviour and seriously struggle to rationalise the behaviour of others. It follows that a positivist approach to innovation based on scientific or economic principles of rational choice provides a poor predictor of new product success. Instead, a better understanding of social learning based on Vygotsky scholars Wertsch, Cole and Daniels offers a far better model. Replacing focus groups and customer surveys with tools to gain intersubjectivity between creator and customer helps coproduce new product concepts through mutual mediation. Radical innovation in communities of practice is stifled by situated cognition (Bereiter, 1997); entreaties to "Think outside the box' while theoretically sound are too cognitively challenging in practice. To overcome "situatedness" requires transcendent solutions, scientific concepts (Vygotsky) or knowledge objects (Popper) which provide a bridge between different practices. Support for the model is provided by the case of NEC 2020 student winners Kaedim, who used the approach outlined to develop new AI inspired animation technology with Aardman.

Teacher identity struggles in trajectory of activity in digital education: The interplay with students in an institutional MOOC project

Indie Chung, University of Bristol (HK)

Email: indiechung@gmail.com

Since 2012, the attention on Massive Open Online Course (MOOC) from higher education is changing globally and locally. This doctoral study investigates how a MOOC course was integrated into a campus-based course through the flipped learning approach in an institutional project. The MOOC course was produced and integrated in a university in Hong Kong. The Cultural Historical Activity Theory (CHAT) is employed to analyze the social, historical and cultural development of these activities with the potential changes (and contradictions) of teachers' identities. Qualitative methods were employed to study a Human Anatomy undergraduate course. These included documentation analysis, student interviews, teacher interviews, and in-class observation in 2016/2017 academic year. This presentation will focus on some challenges in theoretical applications and data analysis using CHAT:

- CHAT constructed a holistic framework encompassing mind and behaviour, ideal and material. What is the unit of analysis in the present research?
- There are three generations in CHAT. Each of the generations has different focuses. How can I determine which generation or (generations) to be used in my research?
- The dialectical method is used to examine the subject and object relationship. Where is the starting point when adopting an iterative analysis?
- Identity is a key topic in the present study. It is a question whether using CHAT is sufficient in addressing the topic. While considering to use Social Practice Theory together with CHAT, I may be building a bridge, or I may be getting lost…
- Finally, how I do consider reflexivity for the above?

Session 2: Teachers' Evaluation

The mismatch between the formative and summative components of a teacher evaluation system: mixed-methods research of national teacher assessments in Mexico

Artemio Arturo Cortez Ochoa, University of Bristol

Email: artemio.cortezochoa@bristol.ac.uk

A growing number of countries have opted to enact and enforce teacher evaluation systems (TES) to improve indicators of quality, as well as for hiring, retaining and rewarding suitable teachers (Isoré, 2009; Marzano, 2012; OECD, 2013). One critical debate in this field relates to whether the use of formative and summative consequences in the same TES is the best approach for improvement (Callahan & Sadeghi, 2015; Darling-Hammond, 2001; Guerra & Serrato, 2015; Marzano, 2010; Popham, 1988; Tucker & Stronge, 2005). A new TES in Mexico was set to improve the quality of education in this country by integrating rewards, punishment, and opportunities for Continuing Professional Development (CPD) as a result of the evaluations. This combination of consequences of TES for teachers poses some problems, as this PhD research found among teachers evaluated in 2015 and 2016. Survey data (n=367) and semi-structured interviews with teachers, headteachers and policymakers in Mexico (n=13) revealed that some individuals appreciated the formative side of the TES, e.g. opportunities for CPD. However, other participants gave more importance to the summative consequences of the evaluation, e.g. avoiding dismissal. These findings indicated instances of what Ball (2003) calls fabrication, that is, deliberate actions to show compliance to the TES to avoid punishment, and gain rewards. By drawing on these data and a critical review of the historical and political context around the Mexican teacher evaluation, this research suggests that separating the formative and summative consequences of TES might be a better approach to teaching improvement in Mexico.

Identifying Good Climate Change Educational Practices Among Civic Education Teachers in Zambian Schools: An Appreciative inquiry

Collet Mweene, University of Bristol

Email: hy19449@bristol.ac.uk

Although the government of Zambia introduced climate change education to the national curriculum in 2013, studies indicate limited change in terms of schools equipping learners with knowledge, skills, values and attitudes that would help them understand and adapt to climate change (Kamukwamba and Nachiyunde, 2018). This study aims to identify good practices for climate change education among teachers of Civic Education in Zambia whose main role is imparting civic values and knowledge in future citizens. The study addresses the following questions:
   a) How do Zambian Civic Education Teachers perceive their responsibilities in relation to climate change education?
   b) How do they enact these responsibilities in their practice within and beyond the formal school curriculum?

The research is a form of appreciative inquiry which seeks to facilitate change based on the actual experiences of best practice and is positioned within the interpretive constructionist philosophical approach (Guiles and Anderson, 2008: 465). 20 teachers of Civic Education will be targeted and contacted through the Association of Social Science Teachers Association. Data will be collected using online interviews and analysis will be done thematically. In documenting the findings, this study will offer insights on possible indigenous knowledge and solutions with implications for teacher education and further curriculum development. This presentation will also highlight some of the challenges associated with conducting online research such as marginalising qualifying participants unknown to the Teacher's Association and those without internet connectivity whose experiences are necessary for the study.

Investigating the Employment Motivation and Job Satisfaction of Expatriate Language Teachers

Gareth Morris, University of Exeter

Email: grm202@exeter.ac.uk

Opened in 2006, Xi'an Jiao Tong-Liverpool University (XJTLU), the largest joint venture in China, has grown rapidly in the intervening period. As an English Medium of Institution (EMI) educational provider, English clearly plays a paramount role at this institution, and its teaching is provided at one of the largest language centres in Asia. The English Language Centre (ELC), formerly the Language Centre (LC), therefore has to employ a considerable number of staff, a high proportion of whom are expatriates. Unfortunately, the ELC has experienced a prolonged period of upheaval, uncertainty and discontinuity. Against this background and in the hope of providing insightful understanding of expatriate teachers' lived experience this research project considers the employment motives and job satisfaction of expatriate ELC teachers. This research has a strong significance for teacher development in a globalized HE sector as employment motivation and subsequent job satisfaction are core determinants to job retention and academic well-being. Through adopting an exploratory interpretive research design, and drawing on the insights of 20 practitioners, through administering semi-structured interviews, this study seeks to better understand staff feelings and their perceptions of working experiences. The results suggest that while the institution has a number of appealing points for prospective and current staff attention is needed in other areas as positive features were being overshadowed by negative aspects, which had tilted the equilibrium for the worse and led to a number of staff either considering departing or actually leaving.

Session 3: Professional Identity and Teacher Professionalism

Tertiary EFL Practitioners' Beliefs, Knowledge base and Practices of Assessment Literacy and Test Development—An Exploratory Study

Muhammad Wasim Latif, Graduate School of Education, University of Exeter

Email: ml463@exeter.ac.uk

Assessment serves as the backbone of any educational system; however, without the services of appropriately trained assessment literate educators, no educational system can achieve the goals of equipping students with lifelong learning skills necessary to meet the challenges of the modern era (Popham, 2009; Pellegrino & Hilton, 2012). Taking into consideration the importance of teacher assessment literacy, this study pursued the goal of further knowledge and understanding regarding the concept of teacher assessment literacy from various perspectives in the context of Saudi Arabia through exploring tertiary EFL practitioners' assessment knowledge base, beliefs and practices. Based on sociocultural theory as theoretical background and informed by pragmatism philosophical underpinnings, this mixed method study comprised two phases following explanatory sequential research design. Data were collected and analyzed employing both quantitative and qualitative methods.

The findings of the study revealed that tertiary EFL teachers' current assessment knowledge base was very limited and not consistent with the contemporary trends and approaches to educational assessment in terms of their preparation and readiness for the continuously mounting challenges posed by classroom-based assessments. Also, the findings indicated somewhat complexity of interconnection among the different aspects of tertiary EFL practitioners' assessment literacy, i.e., their assessment-related knowledge base, beliefs and practices These findings indicating gaps and inadequacies in various aspects of tertiary EFL practitioners' assessment literacy have strong implications for teacher development in the area of assessment and testing at the level of policy, practice and professional development programs.

What does quality classroom teaching and learning mean to the rural Ghanaian teacher? What pedagogical beliefs and practices define quality teaching and learning?

Ali Ahmed University of Bristol, MSc Education (policy and international development)

Email: kb18661@bristol.ac.uk

In 2018, the Ghanaian government introduced a national curriculum framework calling on teachers to adopt constructivist pedagogical practices. Research from this context tends to show the prevalence of formalistic teaching methods (Harber, 2017), indicating that this reform would entail a significant attitudinal and behavioural shift for many teachers. This study seeks to understand the extent of this shift, by eliciting the views of teachers in rural settings, whose perspectives and practices tend to be overlooked in national reform efforts. A survey (n = 100) and follow-up interviews (n = 15) will be conducted to address the questions:

1) What are Ghanaian rural teachers' perceptions of teaching and learning with respect to their classroom practice?
2) What models of teaching and learning are conveyed (explicitly or implicitly) in the 2018 pre-tertiary curriculum framework of Ghana?
3) To what extent are teachers' perceptions and practices consistent with the 2018 pre-tertiary curriculum framework of Ghana?

In this paper, I discuss some of the affordances and challenges of collecting data remotely in rural settings. Its impact on data quality and reliability, access to participants and lack of observational data. What measures can we use to mitigate against challenges such as those caused by technological divide for example. These are the concerns of this paper.

Teacher effectiveness in India: considering teacher motivation and the 'teacher effect' in the context of a 'learning crisis'

Rhiannon Moore, University of Bristol

Email: rm17714@bristol.ac.uk

Teachers in India work on the frontline of a complex and challenging educational environment. With the expansion of the education system, the expectations they face have changed: teachers are the public face of the system in the community; expected to address issues of equity and access to schooling; provide 'quality' teaching in the face of a 'learning crisis'; and ensure success in high stakes exams. Yet the policy environment is contradictory, simultaneously venerating and critiquing the competencies of the teacher workforce.

With the vast majority of literature on 'teacher effectiveness' emerging from higher income contexts, this presentation introduces newly developing research on India which begins to consider whether the same trends and associations can be found within a lower/ middle income country and what the implications are for efforts to improve student outcomes. In particular, it focuses on the latent trait of teacher motivation: an issue of particular policy focus in India. The presentation uses preliminary quantitative analysis of data from two Indian states to explore how the realities of the Indian classroom can be mapped against existing frameworks of teacher effectiveness, and to begin to consider the role which different dimensions of teacher motivation may play in better understanding this.

Session 4: Teachers' Studies

Exploring preservice physics teachers' development of physics identity through the use of multiple representations (MR): Preliminary findings

Nuril Munfaridah[1,2*], Lucy Avraamidou[1], Martin Goedhart[1]

[1]University of Groningen, The Netherlands

[2]University of Negeri Malang, Indonesia

*Email: ml463@exeter.ac.uk

This study is situated in the research area of physics identity, which is conceptualized as consisting of the following dimensions: performance, competence, interest, and recognition. The aim of this mixed-methods case study is to explore how preservice physics teachers develop their physics identities over a specially designed course incorporating the use of multiple representations (MR) approach. In addition, this study also aims to explore how preservice physics teachers perceive their experiences in learning with this approach and how these perceptions of experiences influence their physics identities. The rationale

for this study is rooted within empirical evidence that the use of specific representations, especially the use of graphs and tables, might influence the development of students' interest, competence, and self-identification with science. By using MR in the context of an introductory physics course, quantitative data were collected from 61 preservice physics teachers through a pre and post- questionnaire measuring physics identity. Statistical analysis was performed to find a significant difference between pre- and post-test of students' scores. Qualitative data were collected from 21 purposefully selected preservice physics teachers through semi-structured interviews carried out at two different points in time (before and after the course). These interviews will be analyzed through constant comparative analysis and by means of in-vivo coding techniques. The findings of this study will contribute to the increasing knowledge base of physics identity by offering insights into how the development of strong/positive physics identities might be scaffolded with the use of MR in the context of science teacher preparation.

Teachers engagement to the curricular reform of school science in Brazil

Camila Manni Dias do Amaral, Federal University of Rio de Janeiro

Email: camilamanni@gmail.com

The goal of this research is to analyze the relations between sciences school teachers' perceptions of an externally driven school science curriculum reform and its implementation. I gathered data from key moments in the elaboration of the curriculum guidelines as well as its reception among teachers. The criterion of inclusion is to be a teacher in the public school system of the city of Rio de Janeiro, and teachers' identity, agency, and the interplay between them are useful lenses to the analysis, as previous studies indicated (Vähäsantanen, 2015; Avraamidou, 2014; Datnow, 2012; Lasky, 2005). I grouped the emerging categories into three main groups: a) what teachers think and how they feel about the reform b) How teachers perceive themselves and what they think they can do versus what others think of them and what others expect them to do; c) How teachers recognize their students and what they believe their students can accomplish.

Teachers positioning themselves against the reform are the majority, and they share the following characteristics: a) lack the confidence to teach new subjects in physics, what becomes a serious problem because the education secretary did not propose any professional development program to support teachers; b) The lack of confidence in the public schools' students ability to learn new subjects ; c) the belief that the goal of the reform is to increase the results of Brazilian students in the Programme for International Student Assessment (PISA); d) the perception that they are losing autonomy; and e) bad experiences or references of previous reforms.

Curriculum development in Saudi Arabia: Saudi primary EFL teachers' perspectives on the implementation of CLT into the English curriculum in State's schools

Rajaa Fallatah, University of Exeter

Email: rf357@exeter.ac.uk

Over the last two decades – in what could be called the post 9/11 era – the primary level English language curriculum in Saudi Arabia went through a number of major changes including the introduction of the communicative approach as the national ELT pedagogy.

This change shifted the roles of EFL teachers and their students in the learning/teaching process. This study explored teachers' perspectives on the challenges they face while implementing the communicative approach into the English curriculum of the primary level in state-schools in Saudi Arabia. Through a questionnaire, a series of classroom observations and semi-structured interviews, Saudi EFL primary state-schools teachers revealed their perspectives on numerous aspects of the macro-curriculum, meso-curriculum, and micro-curriculum. The findings indicated that EFL teachers face challenges that fall under six main aspects of the curriculum. Namely, those challenges are related to CLT as a pedagogical approach, students, syllabi, classroom processes, the learning environment in schools, as well as teachers' limited role in the process of decision making with regards to curricular change. The implications of the findings extend to aspects related to considering the ramifications of issues such as accountability and performativity – as by-products of the Saudi government's and educational system – by extension – tendency to operate the framework of neoliberalism. In addition, the findings prompted the discussion of the issue of contesting the idea of CLT as the best method in ELT, and called for shifting towards the adoption the post-method pedagogical approach as a basis for improving ELT in Saudi Arabia.

Afternoon sessions

15-minutes presentations
Friday 5th June 15:00-16:00

Session 5: Policy and Practice

Visual Art in Reception Classrooms: Exploring the Perspectives of Children and Teachers

Isobel Traunter, University College London

Email: isobel.traunter,18@ucl.ac.uk

Visual art education in early childhood has been shown to have an especially significant impact on children living with high levels of disadvantage (Hancock & Wright, 2017). Yet, evidence also indicates that the curriculum in the reception year of school is narrowing, with an increased focus on literacy and numeracy, to the detriment of children from disadvantaged backgrounds in particular (Pascal et al., 2017). Concerns have been voiced from across the sector that these changes will have a negative effect on the status afforded to visual art in the classroom (Cooper, 2019). A lack of research evidence regarding this phenomenon suggests a pressing need to better understand the place of visual art in the early years.

A qualitative dual-phase design is currently being implemented to explore the status of visual art from the perspectives of children and teachers. The first phase is using semi-structured interviews with teachers currently practicing in reception classrooms with

cohorts of above average levels of economic disadvantage to understand the value they place on the subject, how they conceive of visual art in relation to their pedagogy and their personal and professional experience of visual art. A second phase will use participatory methods to explore visual art from the perspective of reception children themselves. Due to the impact of the Covid-19 pandemic, the second phase has had to be postponed until further notice. As a result, the paper will focus on the results and preliminary analysis of the first phase of the study.

Evidence Use in Education Policy Development: A mixed-method study exploring the extent to which evidence is used in policy development for education programs in Kenya

Hazel Laura Mugo, University of East Anglia

Email: H.Mugo@uea.ac.uk

My PhD seeks to contribute to knowledge on the research on evidence based policy making in developing countries. I seek to explore the extent to which evidence is used in education policy development in Kenya, with a specific focus on the current educational reforms that saw a change in the Kenyan curriculum policy.

The evidence based policy (EBP) discourse has become popular among a range of policy communities, those within government departments, research organisations and think tanks (Court & Maxwell, 2005; Dhaliwal & Tulloch, 2012; Solesbury, 2001). Although EBP originated in the medical field, it was adopted by the UK Labor government in the 1990's to inform social programming and has since been replicated in varying degrees, worldwide (Bonnie, 2007; Court & Maxwell, 2005; Sutcliffe & Court, 2005).

It has been shown that policy decisions do not automatically follow from evidence and for example, evidence from evaluation findings and recommendations (Lilienfeld, Ritschel, Lynn, Cautin & Latzman, 2013; English, Irimu, Nyamai, Were, Garner, Opiyo, 2017; Spring, 2007; Valovirta, 2002). Through my research so far, I have found that although evidence plays some role in policy development, political will precedes it. My initial findings also point towards evidence use that is both instrumental but also symbolic (Christie, 2007). I have found that stakeholder involvement is an important part of the policy making cycle and that there are varying degrees of influence that each stakeholder holds. Finally, public participation or the appearance of participation is central in the Kenyan policy making process.

Global imperatives over teachers' work: Changes to national policy agendas

Rocío Fernández Ugalde, University of Cambridge

Email: Raf64@cam.ac.uk

Within a climate dominated by human capital and knowledge economic theories, teachers are widely seen by powerful international organisations as the key factor of the 'educational chain' influencing students' achievement, and consequently boosting the knowledge economy (Robertson, 2014). Therefore, we have witnessed the large implementation of global and national policy devices aimed to control the work of teachers which have had detrimental effects for teachers' autonomy (Holloway, 2017).

Chile represents a distinct case study on educational policies given the extent and the premature mode in which the country has implemented global initiatives (Verger, 2016) and

control mechanisms for the teaching profession (Assael, 2018). Nevertheless, there is a scarcity of research that aims for better understandings about the relationship between the global governance and Chilean teacher policies. What seems to be missing from previous literature is further studies which provide explanations about how this connection has and is being mediated by the institutions, projects, and actors involved.

In that sense, this research proposal aims to examine the relationship between the global imperatives over teachers' work and teacher policies in Chile with a focus on the processes of policy formation and implementation in the last 40 years. This research is based on a Cultural Political Economy (Jessop, 2013) and Critical Realist approach, and therefore it implies detailed attention to structural and agency elements (Archer, 2007). Particular focus is being paid to the role of the state as the space through which global projects operate by creating and transforming domestic institutions to serve global priorities (Hameiri & Jones, 2016).

Session 6: English as a Foreign language (EFL) studies

Word-to-text Integration Processes for L2 Reading Comprehension

Mona Ghurman Alshehri, University of Exeter

Email: Ma589@exeter.ac.uk

Recognition of individual words serves as an initial basis for the comprehension of a written text; yet there are complex word-to-text integration processes for comprehension to be successful. This study focused on two components of word-to-text integration, that is, syntactic integration and semantic association, and assessed how learners' syntactic and semantic network knowledge relatively predicted two types of text comprehension (literal vs. inferential) in second language readers. Participants were 229 adult learners of English language as a foreign language in a Saudi University. A battery of tasks was administrated to measure their reading comprehension, semantic network knowledge (semantic association), and syntactic knowledge (grammatical error correction), together with working memory and written vocabulary size. Multiple regression analyses showed that both semantic network knowledge and syntactic knowledge were significant, unique predictors of reading comprehension (regardless of the type of comprehension), after controlling for working memory and vocabulary size. Yet, for literal comprehension, syntactic knowledge seemed to have a greater effect whereas for inferential comprehension, the effect of semantic network knowledge seemed greater.

Designing Mediational Tools to Foster Argumentation Skills in Thai EFL University Students

Tanyapon Phongphio, University of Bristol

Email: tp14113@bristol.ac.uk

The Thai government prescribes the development of students' critical thinking (CT) in all domains, including English as a Foreign Language (EFL). This research aims at developing principles underpinned by pedagogical techniques that explicitly foster thinking skills that

are appropriate to Thai EFL classrooms in higher education. Supported by the sociocultural theory (SCT) of learning which highlights that social interactions play a role in the development of an individual's higher mental functions (HMFs), this research regarded argumentation as crucial for developing CT. Additionally, the concepts of the zone of proximal development (ZPD) and mediation in SCT highlighted the importance of providing scaffolding tools for explicitly teaching argumentation in an EFL classroom. Supported by the design-based research (DBR), the debate and scaffolding tasks were developed, tested and refined through three cyclic iterations. Forty-two, third-year Thai students who were enrolled into the BA in an EFL programme at a Thai university voluntarily participated in this research. The analysis of the observational data and the interview data generated an understanding of the participants' mediated actions when performing the tasks and their historical, cultural and institutional contexts. The themes were also useful for the researchers' reflection in the final stage to generate the principles of teaching argumentation skills in a Thai context. Key findings to emerge from the study include the importance of anxiety in contributing to impeded learning, the difficulties of the participants in dealing with making spontaneous rebuttals, and challenges associated with the 'perspective-taking' of students in debating.

China's University English Teachers' Language Assessment Literacy in the Digital Age

Jing Zhang, University of Bristol

Email: Jing.zhang@bristol.ac.uk

The importance of teachers' language assessment literacy (LAL) is widely acknowledged.However, due to the multi-faceted (Fulcher, 2012), contextually situated (Xu & Brown, 2016), all-inclusive (Giraldo & Murcia, 2019) and developing nature (Taylor, 2013) of LAL, there still lacks a widely-received framework for teachers' LAL (Stabler-Havener, 2018), a specification of what LAL encompasses and how language assessment literate teachers should be (Inbar-Lourie, 2013). China's university English teachers teach the largest group of English adult learners in the world (Xu, 2017) and undertake challenging assessment responsibilities in daily practice (Jin, 2018). Their LAL is underexplored (Lin & Wu, 2014) especially during the Covid-19 pandemic when they are required to conduct assessment online. This study aims to explore China's university English teachers' LAL in the digital age.

First, a bespoke LAL framework for China's university English teachers will be constructed from their perspective, which delineates what core components are included in LAL, what each component entails, and what standards or proficiency levels teachers are required to achieve in each component. Taking the framework as the blueprint, Teachers' Language Assessment Literacy Test will be developed and administered to a representative group of China's university English teachers to explore their LAL competence. Follow-up interviews will be conducted to delve deeper about teachers' LAL conception, practice, development and their interaction with personal and contextual factors. The more comprehensive and intricate picture about teachers' LAL will help optimize and revise the LAL framework produced, adding more complementary information about the complex nature of teachers' LAL.

Mapping a Vertical Case Study Methodological Approach: An early reflection on a fieldwork deployment

Martin Preston, University of Bristol

Email: martin.preston@bristol.ac.uk

This presentation will provide a reflection on the fieldwork deployment of a Vertical Case Study approach to researching the enactment of a current global policy within one national context and a specific local setting.

Drawing on Bartlett and Vavrus' (2015) Comparative Case Study (CCS) the research sought to deploy a methodological approach which would enable exploration of the relevance of education for refugees within a specific context. The research was carried out with a non-governmental organisation that provides education to the refugee community and with refugees themselves in Addis Ababa, Ethiopia. Other participants included a range of actors within this context. The ethical, epistemological and social justice implications of such a task are significant as will be briefly discussed. A methodology which was therefore able to operate at a policy level, to account for enactment and which included refugees voices, was necessary to fulfil the aims of the research.

The presentation will briefly explore the CCS approach and some of the key implications for the research. With the aid of a visual map, the process of deploying the methodology over time will be explored. This reflection will include a discussion of political, context specific and practical factors I navigated as a PhD researcher. In doing so, it will focus on some of the opportunities and limitations of working within this methodological approach. Finally, the fieldwork was cut short due to a rapid lockdown of Ethiopia and the UK due to the Coronavirus pandemic. I will consider the implications of the current lockdown and the ways in which the research is changing to meet such a challenge.

The Room Where It Happens: The Role of Space and Place in Research Encounters and What Does A New Digital World Mean?

Amanda Ptolomey, University of Glasgow

Email: a.ptolomey.1@research.gla.ac.uk

Elizabeth Nelson, University of Glasgow

Email: e.nelson.1@research.gla.ac.uk

This paper draws on two doctoral projects using innovative research methods with young people. The authors, both in their final months of write-up, reflect on the importance of being in the space of the research generation with the participants and the affect of bodies, environment and people on their research journeys. Both projects worked to develop innovative methods of interaction with the participants basing their research in creative maker spaces of digital filmmaking and zines. The practice of doing and being together in the space with the participants lead the researchers and their research into unforeseen directions where the richness of the qualitative encounter was tied inextricably to being in

"the room where it happens". In this paper, the researchers will each give an example from their two research encounters and theorise the meanings made in the space and the moments of encounter.

Recognising the importance of current debates around logistics and ethics in a new digital world, we engage in productive re-imaginings of our methods to question 'what can methods do?' (Coffey and Cahill 2019) and what can't they do, in the wake of COVID-19.

We will then look forward towards the possible research trajectories online and what creative, qualitative research can and will look like in the future.

Losing sight of the bridges. How might they be reimagined?

Fiona Sharpe, University of Bristol

Email: gw18359@bristol.ac.uk

In the UK education continues to be subject based and exam driven (OECD, 2016). In mathematics, classroom experiences have been shown to be wanting and success to be poor (Boaler, 2016).

Lockhart (2009) said the way we teach mathematics is akin to teaching music through notation only, without allowing learners to listen to, or play music. What does it really mean to do mathematics? What can mathematics be? Are students given the opportunity to have a rich deep experience of mathematics or are they more likely expected to ape a series of disconnected, instructed procedures?

Through experiencing mathematical tasks which promote engagement, enjoyment, and deep understanding, teachers can change their relationship to mathematics. In my research as a facilitator of workshops for teachers, I intend to provide this opportunity for change by using Mason's (2002) discipline of noticing to choose mathematical tasks that best represent the rich and connected nature of mathematics.

By doing the tasks myself, observing myself doing the tasks, and asking what I might have done differently I educate my mathematical awareness. I reimagine my actions, and through so doing aim to increase my possibilities for action in future moments, as well as heighten my awareness to notice those moments. I will also use elements of the discipline of noticing with the teachers to encourage them to educate their own awareness. Might this doing and noticing of the mathematical reveal the inherent connectedness in mathematics as well as that existing between learners?

Session 8: Science and Technology Studies

"Actually training to understand how AI works would be useful" - designing education for those at risk of being left behind during the Fourth Industrial Revolution

Laura Gemmell, University of Bristol

Dr Lucy Wenham, University of Bristol

Dr Sabine Hae, University of Bristol

Email: lg17706@bristol.ac.uk

Technologies, such as Robotics and Artificial Intelligence (RAI), are advancing rapidly (Schwab, 2017). These advances risk exacerbating existing inequalities unless the benefits are shared across society. Those who have more knowledge of these technologies are less likely to worry about losing their jobs (KPMG, 2018). Education about RAI is often aimed at business leaders and students (Gov, 2019). While education designed for these groups is needed, it is not accessible by everyone and there is potential for people to be left behind. To understand the barriers and needs of designing a RAI educational scheme for those often missed by other initiatives, a pilot study was conducted. Twenty-one semi-structured interviews (Kvale, 1996) were conducted with Thought-Leaders, Industry, Adult Educators and Members of the Public. Thematic analysis (Braun, 2006) was used to allow themes not previously thought of to arise.

Looking at the findings through the lens of leaving no one behind presented three themes which need to be addressed for any education to be successful. Firstly, as well as education for those designing / building RAI and education for everyday life, there needs to be education for those working with RAI. Secondly, work needs to be done to overcome preconceptions and biases. The views of learners on RAI influenced by their individual lives, potential "gatekeeping" of experts and attitudes to training from industry could create barriers to education. Finally, co-designing with communities to ensure the education is relevant to the learners' needs and lives is paramount to create a meaningful education.

Can scientific knowledge proficiency represent the ability of doing science and talking science? An assessment to drive deep learning in Physics

Jinglu Zhang, University of Bristol

Email: Jinglu.zhang@bristol.ac.uk

With the emphasis of science education shifting from the products and outcomes of learning to learning processes and practices, the significant role argumentation plays in science learning and research has been widely realized (R. A. Duschl & Grandy, 2013; Fishman et al., 2017). Learning science not only aims to learn scientific knowledge, but to engage in scientific practice. Meanwhile, learning does not only include memorizing, but also thinking, doing and talking, which are all involved in the activity of scientific argumentation (SA).

Despite the shifting of goals in science education, there do not have much change in the science classroom. So, how to achieve these goals in science education? How much do we know about students' ability of doing and talking science? A focus on assessment would help drive the reform of the teaching and learning of science.

A mixed-method design will be applied in this study to obtain Chinese high school students' current level of SA competence (SAC) and to gain broader understanding of SAC and its assessment in Chinese high schools. This study aims to develop and validate a SAC assessment in the context of Physics. Three aspects of information will be obtained from the assessment: whether students know SA, whether they know what high quality SA is and whether they can generate their own argument. The relationship between students' content knowledge proficiency, item features and students' SAC will be explored, and students' perspectives toward the SAC and their own performance will be investigated.

Creating Opportunities for the Emergence of Intergenerational Communities of Practice Using Place-based Storytelling and Technologies

Diana Erandi Barrera Moreno, University of Bristol

Email: db12354@bristol.ac.uk

In the context of demographic and sociotechnical advancements there is a need to explore whether, how and in what ways we might make the best use of technological resources to encourage intergenerational activities, relations and understandings, which might in turn, generate more promising intergenerational futures and a more reflexive society. This study enquires into the processes of creating intergenerational spaces using place-based storytelling and technology with older and younger adults living in Bristol. I attempted to include participants' voices as much as possible following an Action Research design. I designed for intergenerational groups in two different settings: a secondary school and an extra care home.

I proposed to co-create with participants a digital version of their stories to sustain the archive of an existing interactive online mapping tool. Later I incorporated different tools to digitize the place-based stories. I used the framework of Communities of Practice to study the possibilities of enabling intergenerational encounters, relations and understandings with a focus on intergenerational practice.

The data collected through observations, focus groups, interviews and the creation of digital stories has been analysed using thematic analysis. I found that place-based storytelling is one way to design for intergenerational relationships to emerge. Additionally, a more participative design better encouraged and engaged the older and younger adults. Institutional boundaries can be both an obstacle to overcome or a welcomed safeguarding measure. Finally, intergenerational relationships are not free from tensions, but it is through negotiation that more reciprocal relations between different generations can emerge.

Saturday Abstracts

Morning sessions

15-minutes and Quick-Fire presentations
Saturday 6th June 11:30-12:30

Session 9: Higher Educational Studies

Academic autonomy VS accountability: is public engagement a threat to research?

Laurene Cheilan, University of Bristol

Email: lc17359@bristol.ac.uk

In Europah, a European science research network hosting 16 PhD students in 6 countries, sharing aspects of the research with non-academic publics has been made compulsory. This

decision is in line with the public engagement agenda (Burchell, 2017), the institutional will of integrating public engagement as one of the "normal" tasks of research. This attempted change of culture is usually acknowledged to go with a general evolution of academia towards more accountability and transparency (Strathern, 2000).

Is the integration of public engagement as a full part of science research a threat to academic freedom and autonomy? Is it a supplementary load that will weight more and wrongly impact the most precarious and underprivileged academics? But also, should we oppose the defence of academic autonomy and values of social responsibility and transparency, as if they were incompatible?

Newson and Polster (2001) have made a case for rooting the notion of academic autonomy into the service of public interest rather than opposing them, with the idea of revisiting the resources offered by universities in order to facilitate exchanges and accountability towards non-academic publics. Europah made a small scale attempt in this direction. If the compulsory dimension granted to public engagement was met with mixed reactions, it was also acknowledged as part of the students process of producing academic identities while bearing a dimension of social awareness.

The value of critical friends and places of dialogue to achieve change and Political Content Knowledge

Betzabe Torres Olave, University of Bristol

Email: b.torresolave@bristol.ac.uk

Paulina Bravo Gonzalez, University College London

Email: p.gonzalez@ucl.ac.uk

In this presentation, we would like to share our experience working as critical friends in the process of our PhD research in science education and how this has challenged us by catalysing evaluation processes of our ideas, convictions, and duties.

Taking into account that both education and research are political (Freire, 1985), we believe that generating a network of critical friends is necessary for qualitative studies in education if we are committed to social justice. Having critical friends allows us not only to challenge what we take for granted, in dialogue with others, but also to value what dialogical spaces (Burbules, 1993) offer themselves to move towards transformation of the hegemonic ideology (Carter, 2014), neoliberalism. Dialogical spaces imply understanding ourselves as unfinished and also in need of others to achieve change (Freire, 1970).

Here we will share an experience of teachers´ collaboration in Valparaiso, Chile, that have shaped our identity development as qualitative researchers in science education. This process of identity development has a dialectical relationship with our experiences in collaboration, and in the construction of our relationship as critical friends since it informs and is informed by these experiences (Avraamidou, 2019).

We would also like to share our conceptualisation and the role we give to dialogue with critical friends, and how this process should trigger what we call Political Content Knowledge (inspired by Shulman 1987): a critical exploration of the content we are related to, in our case, science education and its role to challenge neoliberalism and its values.

Widening Participation, hot knowledge, neoliberal practices and the marketisation of higher education

Craig Lennox, UWE Bristol

Email: craig2.lennox@live.uwe.ac.uk

Neoliberal practices and marketisation has led to the UK Higher Education sector experiencing mass-participation with widening participation policies present in various guises. However, attempts have not changed the fact that the percentage of students from affluent backgrounds and those students who fall under the widening participation umbrella attending university remains practically unchanged.

Bourdieu's institutional capital could be one reason widening participation, where statistics have failed to improve, has remained a focus for universities. Universities, traditional institutions in particular, appear powerful and through traditional rituals they maintain a distance from society. Access to appropriate knowledge closes this distance enabling particular societal demographics to access elite institutions.

The grouping of universities presents inequality through prevalent expected characteristics and referring to student choice obscures inequalities as decisions are formed through gender, class and ethnic habitus (Ball et al, 2000). Bourdieu's earlier work shows that education aims to recreate social inequality (Murphy, 2013). Government mechanisms aim to provide students with knowledge to help their choice of where and what to study. But not all information is equal and students from different backgrounds, social class and ethnicities may have access to different sources of information, especially personal connections with a higher education experience.

This presentation will further explore widening participation, "hot knowledge" and "the grapevine" (Ball & Vincent, 1998). This information was key to my decision to pursue a higher education where I "fit in" (Reay et al, 2010) as a student from a widening participation lower income working class background.

Quick-Fire 1: Multiple perspectives on educational matters

Selection of public-funded secondary schools by middle-class parents in Hong Kong

Alice Chui, University of Bristol (HK)

Email: Alicestudent@gmail.com

The Hong Kong (HK) Government endeavors to improve the quality of education and nurture talent by devoting substantial resources to education. Continuous improvement is necessary by catering to the needs of parents and students. Middle-class parents with abundant capital have a variety of school choices, including public-funded and private schools.

The study aims to identify, from the perspective of middle-class parents, the constructs of quality of education, school choice factors, their sources of information, and strategies during the secondary school application process. This could provide the Government with insights into improving the quality and equity of education when reviewing education

policies since this research provides a more comprehensive view of parental choice in different public-funded secondary schools contribute around 89 percent of all HK secondary schools. However, most studies only focus on one sector such as private or DSS schools. Furthermore, it is crucial to understand why middle-class parents choose different school types and why they pay for their children's education in DSS schools despite there being free education in HK.

In this qualitative research, 18 middle-class parents from different public-funded secondary schools are selected for online in-depth semi-structured interviews using Skype. Participants with pre-selected criteria are identified and selected by snowball sampling. The theory that guides the study is Pierre Bourdieu's concept on Habitus, Capital, and Field. Bourdieu's concepts are useful for analyzing

Mapping the position: Exploring programme leadership in a teaching-focused institution

Jemma Oeppen Hill, University of Bristol

Email: Jo16449@bristol.ac.uk

A Programme Leader's (PL) position is a complex one, with a large amount of responsibilities including curriculum development, recruitment, student support and pastoral care. It is a pivotal role, being the primary connection between the department, or school and the student (Vikinas and Ladyshewsky, 2012). As such, PLs must balance conflicting demands of various stakeholders, requiring 'political delicacy' (Robinson Self, 2020). The ambivalence of the position, coupled with the amount of 'unseen work' and lack of institutional visibility can have negative impacts on professional identity (Robinson Self, 2020). Some call the role 'unwelcome' and a distraction from activities more likely to advance an academic career (Senior, 2018). One area of concern is the lack of clear expectations, training and support for the role in much extant research (Mitchell, 2015; Senior, 2019). Despite the challenges of the role, research has shown a large amount of job satisfaction for those who undertake them, along with an intimate relationship between the role and the individuals' academic and professional identities (Aitkin and O'Carroll, 2019).

This paper reports the emergent design of my doctoral research of PL-ship at a teaching focused university. I will use a portraiture approach, crafting portraits of 5 PLs through interviews and observation, across the institution to understand their experiences of their roles within the institutional context. As a PL, I will also undertake a self-portrait to locate myself within the research. The overarching themes

Internationalization of Higher Education: Lecturers' perception of the benefits of studying overseas programs as an internationalization strategy to Universitas Negeri Semarang, Indonesia

Agung Nugroho, University of Bristol

Email: an17204@bristol.ac.uk

This research will be focused on the benefits of study overseas programs as the internationalization strategy of a university in Indonesia as perceived by its lecturers. This research will be a single case study employing focused interviews and focus groups as the data collection methods. These two methods will also be used as the triangulation process to conduct the cross-checking of the data. The context of the research will be one of the Indonesian Higher Education institutions under the name of Universitas Negeri Semarang.

Meanwhile, the sample will be the lecturers working in the university with previous or current experience of study overseas. 20 participants from various faculties within the university will be selected using stratified purposive sampling technique in order to make sure that the uniqueness of the participants (the experience of study abroad or overseas) can assure the suitable data. The data will be analysed using theoretical thematic analysis under certain themes such as research networks, enhanced communication skills, international cooperation, and quality of teaching with possible additional themes which might be found during the analysis. This research is expected to provide additional literature and knowledge of the field of study overseas in its relation to university internationalization.

Perceptions of school climate among Polish migrant children in the post-Brexit Britain

Thiago Bogossian, University of Surrey

Email: tb00708@surrey.ac.uk

Many migrant communities have reported increase of discrimination and hate crime after the EU referendum, which have undoubtedly impacted the lives of both adults and young people. Within this new context, research on the school experiences of migrant and ethnic minority children has largely focused on extremely vulnerable groups such as refugees and asylum seekers, albeit the significant legal impact on the situation of European migrants. Embryonic studies on White European communities have explored how adults started to cover their language or nationality as their skin colour is no longer perceived as a mask of protection (Botterill and Burrell, 2019) and how children experienced higher levels of anxiety regarding their future and growing xenophobic bullying in their schools (Sime et al., 2017). Drawing from literature on school climate and critical whiteness studies and considering this context, my research plans to address the following question: how do Polish migrant children experience their current school climate? I will conduct ethnographic research in a suburban primary school in the South East of England, where ethnic diversity may be less pronounced. Research methods will include participant observation, ethnographic interviews and a palette of child-centred research methods: photo-elicitation, drawing and storytelling, where children will be invited to take part according to their own desires and interests. This study plans to bring the perspectives of an overlooked migrant children group to the foreground by highlighting their struggles and joys in navigating a new school environment in a new political context.

What Makes Initial Teacher Education Effective? Exploring stakeholders' views of pre-service English teacher education in urban areas in Indonesia

Pipit Novita, University of Bristol

Email: Pipit.novita@bristol.ac.uk

Teacher quality has long become a growing and competitive area of research to improve the quality of education. In Indonesia, several attempts have been made to enhance the quality of teachers, such as certification policy and professional development program. However, these efforts do not show significant results because students' achievement for the last two decades at an international standard test like PISA (Program for International Student Assessment) is still low. The reviews of national policies for education in 2015 called for more effective teacher education to improve the quality of teachers. However, it is still

unclear what makes Initial Teacher Education effective in Indonesia. So, this research aims to explore the perceptions of stakeholders on the quality of teacher education in urban areas in Indonesia regarding the effectiveness, strengths, weaknesses, and possibilities for improving teacher education and teaching practices of new teachers in the first year of teaching.

Mixed-methods sequential design is used to explore the perspectives of stakeholders at two pre-service English teacher education (private and state) in two different cities. First, quantitative data was collected from 409 student teachers using the existing questionnaire by Kleete and Hammerness, followed by interviewing some student teachers to triangulate the findings. After that, qualitative data is also collected by interviewing educators, head of English department, dean of Faculty of education, English teacher graduates and their principals to explore other quality issues in teacher education. The study findings are hoped to have implications on practice, policy and further research in teacher education.

Catering for Learner Diversity through Grouping in Economics classes in Hong Kong

Wong Kam Fung, Grace, University of Bristol (HK)

Email: gracewkf@gmail.com

This study aims to explore how economics teacher's perspective learner diversity, how they organise collaborative group working in class in response to the diversity as well as the essential factors affecting such arrangements in Hong Kong economics classes. The research questions are:
1. How do economics teachers perceive learner diversity in their economics classes?
2. To what extent do teachers arrange groups to work collaboratively in Hong Kong economics classes?
3. How do teachers and students evaluate the effects of collaborative grouping on catering for learner diversity?

To me reality is subjective and differs from person to person (Guba & Lincoln, 1994). People act intentionally and make meanings in and through their activities (Blumer in Cohen et al.). This is, therefore, also the case for the impact of collaborative grouping arrangements on students' learning. Epistemologically, I believe that knowledge of the social world is constructed through interactions between individuals. Under this light, I am undertaking qualitative research using case studies in three secondary schools of different bandings. The research methods are class observations, interviews with teachers and focus group interviews with students.

The study's findings will inform me, as a curriculum development officers, how to bridge the gap between the central curriculum and classroom practice when training teachers. Given that there is very little similar research in Hong Kong, there is significant potential for contributing to knowledge in the context.

Integrating Corpus Based Task in Learning Second Language Vocabulary: Saudi Learners 'Perception and Use

Rahmah Alshamrani, University of Exeter

Email: ra504@exeter.ac.uk

Corpus-based tasks (CBT), using corpus linguistics tools directly as tasks in classroom to learn second language vocabulary, appear to have great potential as a means of second language (SL) vocabulary teaching. Because this task provides learners with the authentic language that can raise their awareness toward the actual use of the language. Moreover, this method fosters a more student-centered learning approach than many traditional methods of teaching.

This study aims to explore Saudi learners 'perceptions, suggestions and 。 achievement toward using CBT in learning SL vocabulary. It also aims to explore the acceptance and beneficial of integrating CBT in learning vocabulary in the classroom. It also aims to explore what the word types and lexical features that learners use CBT and learners' development use in corpus to learn SL vocabulary.

The participants are intermediate level Saudi females who are in their first university year in English departments and are studying vocabulary through a separate module. To achieve this aim, mixed methods will be used. The methods that are expecting to use for qualitative are focus groups, students' journals, interviews and. Quantitative data are questionnaires, proficiency test. Although it is difficult to predict findings at this stage, based on the literature, it is assumed that CBT has positive impact on Saudi learners. Study finding can contribute by underlining the significance of using CBT in SL classroom. It may also contribute in developing CBT in terms of its design and use. Finally, because it is still not clear to what extent CBT can be effective in SL vocabulary learning (Vyatkina, 2016), this study could contribute in building literature of integrating corpus linguistics in SL classroom.

Foreign Language Listening Anxiety in Saudi EFL Classrooms

Nora Hamad Alhendi, School of Education, the University of Exeter

Email: na386@exeter.ac.uk

Introduction:
Research indicated that foreign language anxiety is a phenomenon that interferes with the process of second language learning. Foreign language anxiety in relation to listening skill is found to be an obstacle that impedes learners' success in English as a Foreign Language (EFL) classrooms. There are only limited number of studies on foreign language listening anxiety (Kim, 2000; Elkhafaifi, 2005; kimura, 2008; Chang, 2008; Zhang, 2013; Wang, 2010, Chow et al., 2017). In the Saudi context, little is also known about the nature of foreign language anxiety specific to listening skill and its effects on listening performance.

The aim of the study:
The main objective of this study is to investigate the nature of foreign language listening anxiety among Saudi female EFL learners. The study has two aims: (1) to investigate the relationship between foreign language listening anxiety and listening performance in Saudi EFL classrooms, (2) to explore the factors that provoke foreign language listening anxiety from the perspective of Saudi female undergraduate EFL leaners.

The design of the study:
The study employs a sequential explanatory design which consists of two phases. The first phase, the quantitative phase, includes the administration of the Foreign Language Listening Anxiety Scale to Saudi female undergraduate EFL students. The second phase, the qualitative phase, includes the collection of data through semistructured interviews and weekly diaries. Students' achievement scores on listening skill were also collected to resemble listening comprehension performance.

The participants of the study were 268 Saudi female undergraduate students majoring in English Language and Applied Linguistics at the College of Languages, Princess Noura University, Riyadh, Saudi Arabia. The participants of the first phase, the quantitative phase, includes students from two academic levels: Level one and Level two in their first year who were registered in two courses: 'Listening and Speaking Course' or 'Advanced Listening and Speaking'. They were asked to complete the Foreign Language Listening Anxiety scale questionnaire. The participants of the second phase, the qualitative phase, were 12 students for the semi-structured interviews and 6 students for the weekly diaries for one month.

The instrumentations:

To fulfil the aims of the study, the researcher collected data using a questionnaire, semi-structured interviews, weekly diaries. In addition, students' achievement scores on listening were obtained from their instructors.

Analysis of Data:

Quantitative data are analysed using the SPSS program. Qualitative data are analysed using thematic analysis approach. Data analysis from both phases will be combined to address the research questions.

Quick-Fire 2: Contemporary issues on school curriculum, pedagogies and research

The significance of Perezhivanie within the IB Geography Curriculum.

Noor (Ava) Khalfaoui, University of Bristol (HK)

Email: Uq18398@bristol.ac.uk

The aim of this research is to scrutinise one of Vygotsky's lesser-known sociocultural approaches, that of Perezhivanie and its significance within the IB Geography DP course. Veresov (2016) amongst others, noted that "it has received increasing attention in recent years" (p.1). Gonzalez-Rey (2016), Kozulin (2016) and Mahn & John-Steiner (2002) acknowledge the difficulty in framing this culminating theory of Vygotsky, but it was chosen because it is a theory of social constructivism which links well with experiential learning and "personal geographies", (Roberts 2013 p.8) and is closely associated with field-work and practical elements that are central to the IB Geography syllabus. The IB Diploma Programme (DP) Geography course is a popular choice amongst students with 8892 taking the examination in May 2018 worldwide (IB Diploma statistics bulletin May 2018 p.21) Perezhivanie is an interesting theoretical construct that can challenge archaic models of teaching where the source of geographical knowledge traditionally comes from the teacher and dispatches this knowledge to students. Teacher's geographical expertise, of course, is essential but so too is the students higher mental function, problem-solving, thinking and inner dialogue, all of which are linked to Perezhivanie. This research sets out to consider the significance of Perezhivanie in the IB Geography curriculum and this is achieved through consideration of the many elements that represent the IB DP Geography curriculum such

as the explicit taught elements, the essential skills and other important components such as the IB learner profile, CAS and TOK elements.

Integrating 3D Food Printing into Literacy Education

Yina Liu, University of Alberta, Canada

Email: yina@ualberta.ca

Understandings of literacy has shifted dramatically over the past several decades (Leu, Kinzer, Cairo, Castek, & Henry, 2019) Children's communication practices are viewed as complex, often involving multiple modes, and are shifting into the digital age (e.g. Gilles et al., 2018; O'Mara & Laidlaw, 2011). Literacy is now conceptualized not only as competency in using language system and literacy tools, but also as meaning making in and for specific sociocultural contexts (Gee, 1989; Street, 2014). 3D food printing technology also known as additive manufacturing, has expanded to the food sector, enabling customized food design and personalized nutrition while controlling the food waste (Sun et al., 2015). The visual appeal of 3D printed food could increase children's willingness to consume fruits and vegetables (Derossi et al., 2018). Children or their guardians could create or select a design on a 3D modeling program, such as Tinkercad, to create their 3D printed food. In addition to the benefit of eating healthily, 3D food printing could also be an activity for children's literacy learning. In the process of designing 3D printed food, children will employ their literacy competency to make meaning through their design. I will draw on the concepts of available designs, designing, and the redesigned (New London Group, 1996) to explore children's design experience in my presentation.

Row, Row, Row Your Boat Gently Down the Stream

Alia Mokhtar, University of Bristol

Email: fm17870@bristol.ac.uk

An exploratory case study was selected for the Blended Learning research that aims to explore the context in situ at a public university in Malaysia (Stark & Torrance, 2005: Stake, 1995). This is driven by paucity in research concerning the Malaysian government-imposed Blended Learning framework (Roslina, Nur Shaminah and Sian-Hooi, 2013), emphasis that should be placed on identifying 'ingredients' in Blended Learning (Bonk and Graham, 2005), and interactions as the embedded aspect within Blended Learning studies that do not receive sufficient scholarly exploration (Lamping, 2004; Graham, 2005). Adapting to changes in fieldwork, modifications were made by adding another group of sample size, adjusting the timeline to complement tasks observed with interviews, and amending protocols for interviews and observations. Fast forward to almost two months later, the novel coronavirus outbreak has caused two prominent alterations to the landscape of the research, involving rethinking of the research questions and research methods. I have to include measures taken to curb the pandemic as part of the research design. The research will have the 'before lock down' and 'during lock down' situations, which will benefit from a comparative case study design while abandoning the initial plan of a single case study. As of today, the ongoing research is continually revised, in aspects including but not limited to methodology, methods of interviewing, and analysis. Circling back to the title, its meaning

is to not quit; fellow researchers should keep going and persevere with research efforts in the face of adversity.

Mindfulness of education: a research study to investigate mindfulness practices in a Hong Kong Higher Education-based teacher education programme

Samman, Hang-lai,, University of Bristol (HK)

Email: hanglai.lee@bristol.ac.uk

This research project embraces a holistic orientation and advocates mindfulness as a curricular-pedagogical countermovement to the existing knowledge-led, outcome-based curriculum as a "quiet pedagogical revolution" (Miller, 2006; Owen-Smith, 2017; Zajonc 2013; Davidson et. al, 2012; Ergas, 2019). This study takes a phenomenological perspective to examine the inner curriculum (Ergas, 2016; 2017; 2019), which addresses how one's inner resources may nurture and transform one through mindfulness practices (Ergas, 2017; Immordino-Yang et al, 2012). More specifically, the project enquires the "self-generative mind" (Ergas, 2019) which refers to the phenomenon of the mind which can generate thoughts deliberately and non-deliberately. It seeks to understand participants' inner experience during mindfulness practice; it particularly enquires the content of the thoughts generated during the mindfulness practice and explore its meaning and potential educational values to the participants. Hence, it seeks to understand the phenomenology of the self-generative mind during mindfulness practices.

Exploring College Student Leadership Experience of Peer Learning

Yui-yip Lau, Hong Kong Polytechnic University & University of Bristol (HK)

Email: yuiyip.lau@cpce-polyu.edu.hk

YM Tang, Hong Kong Polytechnic University

Email: yukming.tang@polyu.edu.hk

Jieqi Guan, Macao Institute for Tourism Studies

Email: jenny@ift.edu.mo

Since the early 2020, the coronavirus spread quickly and widely in 213 countries. Until the end of April, there are over 2.6 million coronavirus cases confirmed and around 182,100 confirmed deaths. With the effect on the coronavirus, the teaching pedagogy has been transformed from traditional classroom learning to innovative virtual learning. In a context of higher education, the student academic performance and psychological well-being will be adversely affected. As such, peer learning provides a learning support in the chaotic learning environment. Concerning about peer learning, we illustrate two case studies in our study. In the first case, Hong Kong Community College (HKCC) designs and implements the Revision Centre. HKCC graduates whose had outstanding academic performance are recruited as peer mentors while the current students of HD/AD programmes in Business and Hospitality discipline are assigned as peer mentees. In the second case, Macao Institute for Tourism Studies organizes the Study Group. The current senior year students are selected as group leaders as well as the current junior year students of undergraduate programmes in Tourism and Hospitality discipline are assigned as group members. Both

Revision Centre and Study Group are used the new and innovative communication technologies to give student instant learning support. In the study, we aim to explore the main research questions: (1) What are the main challenges for student leaders when managing the virtual peer learning? (2) What student leadership styles are the most appropriate to overcome these challenges? To answer the research questions, we carry out a qualitative research study through in-depth and semi-structured interview with academic staff, current students and graduates. Content analysis will be adopted to examine qualitative data.

Rethinking technology use in higher education business studies teaching: Applying the 3D model to understand teachers' experience

Gentiana Cheung, University of Bristol (HK)

Email: gentiana@baf.cuhk.edu.hk

The fast emergence of technology has presented challenges for educators who need to create different learning experiences for students to cope with the needs of a diverse society. It draws to our attention that the technology has changed the entire learning landscape and teachers should be aware of the interplay of multiple modalities (Kress & Rowsell, 2019). How learners experience new learning through multimodal resources therefore become an interesting area that have been well researched over the past years. Major scholars have conducted extensive research in understanding multiliteracies practices from learners' perspective (Lankshear & Knobel 2014, Kress & Rowsell 2019, Cope & Kalantzis 2000). In what ways has technology changed the landscape of teaching approach and how the adoption of technology has impacted the overall learning experience is worth further explored.

When exploring how technology related to a particular subject teaching in higher education, science (Kaya 2017), English (Xu 2019, Xuefeng 2018), mathematics (Higgins 2019), health care (Fontaine 2019) were widely covered. There are however limited studies conducted on business subjects. This study will investigate how teachers teach business subjects in higher education develop pedagogies through technological multimodalities. To better understand what multimodal devices and resources are involved, this paper aims at answering the following questions:

1. Why do teachers consider adaptation of certain digital means?
2. How do they design their teaching using such tools?

Green's 3D Model (Green & Beavis, 2000) will be used to understand teachers' experience. Interview questions will be framed based on the three major strands of "operational", "critical" and "cultural".

The unexpected switch- an analysis of the use of educational technology during COVID-19 pandemic in Hong Kong K-12 schools

Hamlet Lin, University of Bristol (HK)

Email: hamlet.lin@bristol.ac.uk

The COVID-19 pandemic caused a lot of schools to change the mode of teaching and learning worldwide. Many schools had to switch to remote learning mode by modifying their pedagogical approach and almost overnight adoption of education technology tools.

What are some of the challenges faced by school administrators, teachers, and students? How were the decisions of shifting practices made during this period of time? How did the community, individuals, sociocultural settings and available tools and artefact interplay in this unprecedented event? Did the experience of SARS in 2003 helped the schools to chart the map? The proposed research aimed at studying the decision-making process in some of the secondary schools in Hong Kong during this period of time.

Activity theory will be used as an analytical framework to study how different actors in the activity systems interact and shape the actions. Due to the nature of the pandemic and school suspension, critical instance case study is chosen to be the research methodology for an in-depth investigation of the situation.

'Doing' the knowledge-rich curriculum: an ethnographic study of a secondary school English department

Andrew Carr, University of Bristol

Email: ac16440@britsol.ac.uk

My doctoral thesis asks the question: How has the government's focus on knowledge in England's Key Stage 3-4 curriculum informed the way that teachers teach subject English?

In 2014, a new National Curriculum was introduced in England that was designed to refocus learning on knowledge, as this was perceived by politicians to be limited in the previous curriculum. It was stated that knowledge would be the key to opening up more complex conceptual thinking, but critics were concerned about how knowledge was being defined and who was making the decisions about what knowledge would be included.

I contend that subject English is bounded around the relationship between educational structures (Archer, 1995) and the potential agency of secondary school English teachers (Priestley, Biesta and Robinson, 2015). Within the context of the National Curriculum change, I wish to consider what knowledge means to English teachers and how they interpret and enact a subject English curriculum.

Through an ethnographic methodology and single-case study method, I intend to explore the impact of a knowledge-rich curriculum on English teacher agency, how this agency is used to enact the curriculum and the pedagogic choices that are made in Key Stage 3-4 English classrooms. Formal and informal interviews focus group discussions, lesson observations and artefact/document analysis will form much of the data collection process, exploring the way in which educational structures are being reproduced and/or elaborated. What is navigating the choices that English teachers make within a single English department in a comprehensive secondary school?

Session 10: Informal Educational Studies

Critical pedagogy and a transdisciplinary approach in the learning of science outside the classroom

Gonzalo R. Guerrero, University College London & Universidad de Santiago de Chile

Email: gonzalo.guerrero@usach.cl

> This proposal presents an overview of the contribution of critical pedagogy (Freire, 1972; Giroux, 1988) to the learning of science outside the classroom, developing and applying concepts from critical theory and transdisciplinarity in relation to two themes. The first theme offers insights into how we can promote critical pedagogy using socio-environmental conflicts. The second theme offers applications of theoretical and methodological approaches of inter- and transdisciplinarity into the understanding of socio-environmental conflicts beyond disciplinary boundaries, taking advantage of the opportunity offered by scenarios outside the classroom to tackle the complexity of real-world problems and socio-scientific issues (Behrendt & Franklin, 2014; King & Glackin, 2010). To develop the first theme, I consider an example of the application of critical theory in the learning of science outside the classroom using a map and a platform of socio-environmental conflicts in Chile which has been developed by the Institute of Human Rights, a public Institution part of the Chilean Government. The map reports a total of 116 socio-environmental conflicts in Chile (63 ongoing, 30 emergent and 23 closed). The platform gathers information that allows a description of the circumstances in which the conflicts were triggered, the parties involved, the territories where they occur, any infringements of human rights' and its trajectories that they are taking over time. I propose these conflicts be considered as scenarios for the development of outdoors science activities, applying critical theory as a keyway of recognising connections between individual problems and experiences, socio-scientific issues and the social contexts in which they are embedded. To develop the second theme, I propose an inter- and transdisciplinary approach that provides an opportunity to address contemporary environmental problems by applying theoretical and methodological transdisciplinarity from multiple perspectives and ways of thinking (Klein, 2017; You, 2017).

A place for everything: material objects and public places entwined in adults' informal learning

Stephanie Mason, Mount Saint Vincent University, Canada

Email: stephanie.mason2@msvu.ca

> I set out in my doctoral research on adults' informal learning to explore material objects in public places whose interactions promoted learning; I believed material objects to deliver information on various topics in shared public spaces. The arts-informed methodology I

adopted allowed for colourful and dynamic methods and representations to portray these understandings in artfully-inspired forms.

I discovered that material objects and public places were contested and entwined. The easily purposeful objects I assumed supported adults' informal learning in public places lost their easy interpretations. I came to see material objects as situated knowledge repositories, generated by "assemblages where actions are the outcome of contingent collaborations" (Lieto, 2017, p.574), and therefore tied to socially-politically-culturally-etc.-as-well-as-physically constructed space.

Public places were even more entangled, even as I provided literal maps to envision participants' objects recall. Doreen Massey's understanding of places as nodes of production, labour, location, and political outlook reconfigure our world as simultaneously here and not here, local and distant, onsite and remote; beneath these, she writes, lies rupture and contestation: "the very notion of 'landscape' has on occasions worked to suture any underlying constitutive jarrings and discontinuities" (Massey, 2006, p.46). If public places are only fabricated, then their material objects are doubly illusory.

I wanted to display material objects' and public places' contradictions. The convoluted ephemera of object and place proved to be apt: forms that could point to paradox were meaningful and liberatory. The release of object materiality and the emancipation of public place richly re-enmapped this research.

Family-school engagement in Middle School: how is it underpinned by school leaders in IB schools?

Elisabeth Neiada, University of Bath

Email: een26@bath.ac.uk

Parental engagement in childrens' school experience plays a vital role in supporting student learning and securing positive school-family relations. Existing literature recognizes different levels and forms of family-school involvement, determined by cultural context, school leadership models, parenting practices and types of schools. In this presentation, I attempt to examine the relationship between parental engagement and school leadership in a comparative context of IB schools.

The study will be an ethnography, to gain insight to the insiders' views, experiences and perspectives of parents and school leaders. A mixed methods approach will be employed, using contextual large-scale questionnaires, interviews and observations with parents and school leaders. This study is original, as it explores family-school relationships and leadership practices in private IB schools. These schools are currently understudied, as are families of higher socio-economic status that constitute the schools' parent community. Furthermore, the study focuses on Middle School ages (11-16 years old) where there is a gap in research. Literature shows a sudden drop of parental engagement in Middle School, while there is scientific evidence that Middle School students need equal or more parental support than Primary School students (Hayden & Thompson, 2013).

It is hoped that this research will contribute to a deeper understanding of international schools and international education, two driving forces of educational change on a national and global scale.

Students' expectations of higher education study in self-financing institutions in Hong Kong

Nora CHEUNG, Tung Wah College, Hong Kong

Email: noracheung@twc.edu.hk

This paper shares the design of my doctoral research which aims to develop a comprehensive understanding of students' expectations from self-financing (SF) higher education institutions (HEIs) in Hong Kong. The study, which is informed by research and practice in the 'student voice' tradition, addresses the following research questions:
1. What are students' expectations of SF HEIs in HK?
2. To what extent are these expectations being met from students' perspectives?
3. What are students' ideas and priorities for institutional improvement?

The study will be conducted in two sequential phases. For phase one, which is currently being piloted, in-depth semi-structured interviews will be conducted with 20 full-time undergraduate students of year 2 or above in one of the target institutions. Purposive and snowball sampling techniques have been used to invite students to participate in the interviews, and thematic analysis of the transcripts is being undertaken to identify themes relevant to the research questions. For phase two, a follow-on questionnaire survey will be conducted across all 13 institutions in the SF sector in HK.

As the expectations of students in the SF higher education sector is largely unexplored in this context, the study will address this knowledge gap, and the findings may help inform the institutions' management on the strategies for improving their education provisions, and the government decision makers on the policy and directions for further development of the SF higher education sector in HK.

Enhancing students' interests in science and STEM-related careers: The role of career-based scenarios and students' self -view in relation to science and STEM-career aspirations

Irene Drymiotou, University of Cyprus

Email: drymiotou.irene@gmail.com

Increasing students' interest in science remains a critical issue in efforts to address the mismatch between demand and supply for professionals in Science, Technology, Engineering and Mathematics (STEM) (OECD, 2018, 2019). This study aims to explore the impact of career-based scenarios, on students' situational interest in science and understanding of STEM related careers and, investigate the ways in which the students view themselves in relation to science and STEM-careers. Career-based scenarios are teaching innovations which when integrated in science classroom can enhance the potential to influence students' future study choices and career aspirations. This case study involved 17 students who participated in a career-based scenario intervention for two consecutive years (13 to 15 years old). Data collection methods included one questionnaire and semi-structured interviews with the students at the end of each scenario session and for two years after the end of the intervention. The analysis used a combination of descriptive statistics and content analysis. Initial findings from the data analysis of the classroom-based

study, illustrated that career-based scenarios succeeded in enhancing students' interest and improving their understanding of STEM-related careers when active engagement was promoted and connections between theory and practice were established fostering meaningful interaction with experts. These findings hold important implications for educational practice in science education as they offer insights into how to design career-oriented instructional material in order to have an impact on students' interest and STEM-related careers and also enable young people making informed career-related decisions thus addressing the need for scientists.

First-year Success – Is academic performance important in students' perception in the first year of university? A case-study at a university in Hong Kong

Kannass Ching-Man Chan, University of Bristol **(HK)**

Email: kannass.chan@polyu.edu.hk

Academic performance has been showed predominantly in the literatures as a measure of student success. While much research used grade-point-average or subject grades to indicate student success in the first-year of university study (e.g. York, Gibson, & Rankin, 2015), this study attempted to investigate students' definitions of first-year success in a more holistic manner, including other dimensions of success that are of important in students' perspectives. Student focus groups were conducted, among over first-year students from multiple study disciplines at a government-funded university in Hong Kong. Results showed that, while academic performance is important to many first-year students, other aspects of success are as equally important. These aspects of success included multiple dimensions in social and personal, which were particularly important for first-year students to transitioning into their first-year studies and beyond.

Organising Committee Contact Details

BRISTOL

Professor Jennifer Rowsell, Interim PGR director
Email: jennifer.rowsell@bristol.ac.uk

M Carolina Valladares Celis, PhD Candidate
Email: carolina.valladares@bristol.ac.uk

Jasrael Stokes, PhD student
Email: js17378@bristol.ac.uk

Jafia Naftali Camara, PhD Candidate
Email: jafia.camara@bristol.ac.uk

Elise Yingting Cui, PhD student
Emial: hb19957@bristol.ac.uk

Terry Molloy, EdD student
Email: fm17177@bristol.ac.uk

Jez Butler, IT support
Email: Jez.Butler@bristol.ac.uk

HONG KONG

Dr Janet Orchard, Director of the School of Education's EdD programme in Hong Kong
Email: janet.orchard@bristol.ac.uk

Alice Chui, EdD student
Email: ac17088@bristol.ac.uk

Samman Lee, EdD student
Email: hanglai.lee@bristol.ac.uk