



Consultation for the 2023 GEM report on Technology and Education

Access, equity and inclusion for learners

Working Paper #1

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About Us

[The Open University \(OU\)](#) is a global leader in open and distance higher education able to reach every adult in the United Kingdom - and many others across the world. In 1969, this ambition changed the world, giving anyone, anywhere the power to learn. Established by the [Royal Charter](#) and globally recognised, The Open University has pioneered distance learning for over 50 years, delivering exceptional teaching and outstanding support to students across the UK and the world. Our mission is to make learning accessible to all, and together we have already helped over 2 million students to realise their ambitions.



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Section 1 – Background

The 2023 Global Education Monitoring Report

The 2023 UNESCO GEM Report focuses on the role of technology in education, examining the extent to which technology can catalyse the [UN's Sustainable Development Goal for education \(SDG4\)](#): to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

The [Global Education Monitoring \(GEM\) Report](#) is an editorially independent annual report hosted by UNESCO, which, since 2002, holds member states accountable for the progress made on educational commitments, more recently through the [Sustainable Development Goal 4 \(SDG4\)](#). The process of writing a GEM Report begins with the development of [a concept note](#) which is further debated, critiqued, and developed through a series of national and regional consultations, together with a landscape analysis, an evidence review, and a suite of background papers from academics, universities, and organisations from around the world. This working paper is one such contribution. It is informed by a virtual consultation that was held at the Open University in November 2022.

The 2023 GEM Report concept note proposes the following questions as a starting point:

- What do we know about the role of technology in addressing each of the education challenges identified with regards to access, equity and inclusion; quality; technology development; and system management?
- What do we know about the potential negative impacts of technology on education challenges in each of these areas?
- How do countries facilitate access to technology to ensure there are no gaps between different learners and schools?

- How do education systems embed the use of technology through reforming curricula, redesigning learning materials and supporting teachers?
- How can the negative consequences of the use of technology be addressed in education and in the way they impact education?

Given the [Open University's pioneering history in providing open and distance learning](#), and its current position as a global leader in creating opportunities for all to participate in education, the consultation event centred on issues of access, equity and inclusion through reaching disadvantaged learners, reducing barriers and extending access to learning content but also the potential negative impacts of technology-supported programmes. This working paper summarises the key points of interest and recommendations that were raised in the consultation event at the Open University. Further information about the consultation event is provided below.

Background to the virtual consultation at the Open University

On 23 November 2022, over 55 academics who specialise or have an interest in education and technology met online to discuss their research on this topic, offer evidence and recommendations to inform the UNESCO 2023 Global Education Monitoring (GEM) Report. The event convened by the Institute of Educational Technology (IET) and the Centre for the Study of Global Development (CSGD) at The Open University (OU). Examples of good practice, future provocations and recommendations were then discussed, with particular attention given to addressing issues of access, equity, and inclusion in relation to disadvantaged groups and content.

The consultation was facilitated by Dr Charitonos, a Senior Lecturer in IET. Dr Charitonos opened the session by inviting Mr Manos Antoninis, the Director of the Global Education Monitoring report, to present the concept

note for the 2023 GEM report. He emphasised that the report is led by an independent team in UNESCO, set-up in 2002, but since 2015, his team is officially mandated to monitor education as part of the Sustainable Development Goals (SDGs). As a result, particular attention is placed on SDG 4 – ‘Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all’. The report is therefore one mechanism to hold member countries to account.

Professor Akyeampong, the Director of the CSGD, then facilitated a panel discussion amongst five academics, including two from other distance learning institutions in the Global Majority. The panellists and their respective institutions are shown below:

- Professor Agnes Kukulska-Hulme (The Open University, UK)
- Mr Tom Power (The Open University, UK)
- Dr Patrina Law (The Open University, UK)
- Dr Teresa Mwoma (African Council for Distance Education ACDE and Kenyatta University)
- Professor Hamed Al-Awidi (Arab Open University, AOU Jordan)

Professor Akyeampong asked the panellists a range of questions, including:

- What role does mobile technology play in opening up educational opportunities for disadvantaged populations?
- What aspects of teacher professional development can we develop to improve learning outcomes in low-income countries? How can technology support teachers to deliver these?
- What examples of policies and good practices to expand access to quality education and training through open distance learning can be seen in Africa?
- How can our institutions and/or education systems protect learners from the risks of technology?

Following on from the panel discussion, the consultation then split into three separate breakout sessions. Each group discussed two guiding questions:

1. How can we provide education to all hard-to-reach learners including students with disabilities, refugees and migrants, rural populations and girls?
2. Technology may contribute to removing cost barriers, but also non-financial barriers such as language and qualification requirements. What role do Open Universities play in breaking down barriers to education through free educational resources?

The discussion was wide ranging, including the need for those using or introducing technology to be cognisant of social practices around their use, and the need to consider and anticipate wider tensions and barriers that might arise in future technology efforts in education. In Section 2 that follows, the five key points of interest that were raised in the discussion are summarised. The five case studies highlighted were included in the examples and evidence that were gathered as part of the consultation process. Underpinning these points of interest is the key question posed in the GEM Report concept note: What conditions need to be met for technology to support education?

Section 2 – Key points of interest

Relationship between technology and pedagogy: moving past a persistent dichotomy

The discussion during the consultation event at the OU, as in any discussions of technology and education, included positions that highlighted a persistent dichotomy: pedagogy-led approaches versus technology-led approaches to teaching and learning. Panel members, and particularly Mr Tom Power, were critical of the latter. This is because it tends to emphasise views of technological determinism, namely that technology is a transparent neutral instrument designed to bring certain desirable effects such as 'improvement' and 'enhancement' of educational practices. The discussion emphasised that within a technology-led perspective there are 'vested interests' related to the development, distribution and application of educational technologies, particularly from the EdTech industry. It was also argued that such perspective gives rise to great concerns among educators. The panellists noted that many technological tools are developed, selected or imposed upon educators (e.g. by their institutions) without adequate consideration of their needs, the context, practices and the complex relationships and processes associated with teaching and learning.

To counter a 'technology-led' approach and associated worries, common advice given to teachers has been to put pedagogy before the technology. The mantra of 'pedagogy first' (Fawns, 2022) was thus raised in the discussion. This often refers to teachers being encouraged to maintain robust pedagogical considerations and strong appreciation of the context (e.g. their own and students' practices and values) in designing and engaging in educational activity with technology. Whereas it is hard to argue against this advice, what the panel discussion highlighted was that

introducing a novel technology into a setting like a classroom, can greatly affect the context itself – either positively or negatively – and bring in additional complexity and alter relationships and pedagogic practices. Rightly Fawns (2022) argues that the dichotomy of pedagogy versus technology “leaves educators susceptible to an inadequate appreciation of complexity relating to how [technology] is entangled in educational activity” (p.712).

Panellists offered examples where technology and pedagogy were interconnected – elements of the educational activity and the learning environment, alongside other elements including the educators, the students, the curriculum, the material/physical environment, the political environment all mattered. These are part of networks of humans and materials through which learning is enacted (Zukas & Malcom, 2019). The panel discussion relates to current work in the field of digital education around the notion of ‘entanglement’ and ‘entangled pedagogy’ (Fawns, 2022; Kukulska-Hulme et al., 2022). What we take away is the idea that the education community should move away from such dichotomy and instead consider how technology and pedagogy are part of networks which are acting upon one another in ways that mutually transform their characteristics and activity and thus enriching possibilities for learning to take place (Fawns, 2022; Fenwick & Nerland, 2014; Orlikowski, 2010).

OpenLearn platform

OpenLearn is designed to be accessible by all, and to date over 100 million visitors from around the world have visited the platform since its launch in 2006 in support of its mission to reach everyone that needs free access to higher education. The free online learning platform hosts around 35,000 pages of high-quality resources, including about 1,000 courses totalling 13,000 study hours, thousands of articles, educational activities, videos and courses. All courses carry free certificates and some, digital badges. OpenLearn data show that such a platform is highly capable of reaching learners in low socio-economic groups. Compared with UK data overall, OpenLearn appears to be reaching a significantly greater proportion of those in low-income households (see OpenLearn survey data 2020).

A wide range of topics are covered, including popular factual content related to current affairs. For example:

- How women changed the world - an interactive activity exploring extraordinary women in history
- Brexit Hub - a collection containing analysis and expert commentary on Britain's changing relationship with the European Union and the global world
- Race and Ethnicity Hub - a collection that celebrates diversity and promotes racial justice and equity.
- David Bowie: identity is creativity - articles about gender identity and creativity, in relation to the death of David Bowie
- Open Sanctuary Hub - an online space of welcome for refugees and people in the asylum system and wider communities

Links: OpenLearn <https://www.open.edu/openlearn/>.

Widening access and participation to open education: ‘Who benefits?’ and ‘Whose voice is valued and heard?’

Questions of how to widen access to Higher Education (HE) for people from less privileged backgrounds (e.g. economically disadvantaged, ethnic minority students, forcibly displaced people), how to create sustainable pathways to lifelong learning and address social exclusion in education are pressing concerns and were also raised in the consultation event.

Although the participants acknowledged the important role that Open Universities play in widening access and participation for all and the effort that went in the UK and other countries to achieve this, stark inequalities in HE participation remain firmly entrenched (for UK context, see e.g. Universities UK, 2022). Alternative modes to study offered through open and distance learning appear to offer more choice and flexibility to learners compared to provision by traditional ‘brick and mortar’ universities.

Examples provided illustrated pathways to formal and informal learning experiences through specially designed courses and programmes, and also through access to educational materials such as Open Educational Resources (OER), that are primarily seen as an aid in widening participation agendas. The discussion pointed that access to a combination of formal, non-formal and informal learning can potentially offer a richer educational provision and can advance our thinking and practice in learning and teaching in Higher Education Institutions (HEIs). However, considerations across several areas such as accreditation, certification, economic cost, and content, result in this provision still not being applied broadly across Open Universities and other HEIs.

Choice and flexibility were raised persistently during the discussion and were often presented as mostly beneficial. Examples offered by participants included the development of Massive Open Online Courses (MOOCs) and OER, which are both associated with claims of providing equitable forms of online education to address global widening

participation agendas. However, MOOCs tend to reflect the expansion of commercial interests in education reform, whereas other well-documented issues related to MOOCs are reported, including low completion rates (Jordan, 2015) and lack of diversity in enrolment (Greene et al., 2015). MOOCs have also been described as maintaining a form of 'digital colonialism' in sub-Saharan Africa (Adam 2019). Although OER are also "often espoused as enabling educational equity, the reality is not always the case" (Willems & Bossu, 2012, p. 185). Much of OER is produced in high-income countries and the Open University UK is itself leading many of these developments. There remains a question whether the abundance of OER from culturally privileged regions may lead to even greater inequalities in the global education and strengthening of cultural hegemonies, also raised by Hodgkinson-Williams and Trotter (2019). For students and educators "in contexts of severe infrastructural constraint, OER do not appear capable of overcoming the challenges of those constraints" (ibid, p. 218) and may in fact reinforce them.

As an education community, it is therefore critical to consider that technology that is used to make learning more flexible, may also reinforce social inequalities. It is also necessary to ask critical questions such as 'Who benefits?' from access to such programmes and OER. Additional questions such as 'Whose voice is valued and heard?' and 'Who should have a say?' in the design and development of programmes, resources and technological tools were posed in the smaller group discussions we had during the event. By asking such questions we become more aware that most hard-to-reach learners remain largely absent from key conversations and decision-making spaces when it comes to technology and education. It is only by recognising the lack of access and 'parity of participation' (Fraser, 2010) in certain spaces by individuals and communities, that we may start calling out and naming the hidden power relations in systemic inequalities and oppression that amplify the disadvantages of certain groups even further.

Reaching out to Marginalised Populations in under-resourced countries (ReMaLic)

The ReMaLIC project is collecting accounts in order to reflect on the roles of the English language and technology in reinforcing or reducing marginalisation. Those who are marginalised in society based on factors such as poverty, race, ethnicity, language, religion, disability, gender or forced displacement, often experience inequitable access to technology and digital learning resources. Limited or inconsistent access then means that there are fewer opportunities to develop the language skills (e.g. English language, official language) and digital literacies that are needed to access a wide range of quality learning resources on the internet. Furthermore, principles or policies that should regulate activity may be at odds with actual practices. For example, teachers and parents have sometimes stated that girls have access to technology in the same way as boys do, whereas our research shows that in practice girls often have time-consuming domestic duties that take priority; their parents prohibit their use of technology through fear of inappropriate content/social encounters or through lack of awareness of educational uses; and one device such as a smartphone may be shared among several family members who make decisions about when, where and for how long the girl may use it. Key messages:

- Access to technology is a gateway to vital skills and knowledge that can alleviate some of the effects of marginalisation by extending and supplementing the education opportunities and resources that are locally on offer
- Policies and practices (both written and unwritten) around technology use for both formal education/homework and informal learning need to be monitored and reflected upon regularly, giving a voice to those who are impacted by them and creating opportunities to broaden understanding of evolving economic situations as well as social and cultural factors
- Progress and success in education can be improved by harnessing learners' wider linguistic resources and digital skills, which includes valuing the languages they know and use (e.g. indigenous language), and valuing the skills they are acquiring through their informal digital play and learning

Links: [ReMaLic https://iet.open.ac.uk/projects/remalic](https://iet.open.ac.uk/projects/remalic)

Mobilising resources and developing alternative relations between learners and their environments by leveraging hi-tech, low-tech and no-tech approaches

For open and higher education institutions to deliver content and credentials flexibly through technologies, there is an over-reliance on platforms and availability of educational materials, such as those provided in institutional platforms and OER repositories (see e.g. the OU's [OpenLearn](#) and [OpenLearnCreate](#) platforms). One of the panellists, Dr Patrina Law, referred to the OpenLearn platform that provides access to learning materials by regularly updating and offering new content, which will not only sustain engagement and bring learners back to the platforms but will also attract new visitors/learners. Due to the high numbers of learners visiting such platforms, there is as a result a significant rise in – and consequently reliance on – the availability of learner data that feeds back to what is provided on such platforms. There may be recommendation systems that shape further study decisions and potential paths taken in the platforms, learning analytics that may shed light on aspects of design that may be problematic, predictive analytics that may identify learners at risk, systems that may offer feedback on learning, and so on.

In line with broader discussions in the field (see e.g. Vanermen et al., 2022), the discussion also noted that such platforms (and broadly digital tools and systems) are not passive tools for facilitating education. They instead play an active role in enabling, shaping and/or constraining socio-technical practices, connections and relations that may arise not only in platforms/online programmes and courses but also in spaces beyond these. The focus for us as an education community should be to situate the technology in relation to one's environment and processes – with other networks of humans, non-humans and materials – and consider additional questions such as: 'How does technology create new relations and alternative interactions of learners, educators and their

environments?’ and ‘What matters and what is appropriate and relevant for learners, teachers and other communities in specific situations and circumstances?’.

There was a consensus that the opportunities for educational practitioners and other communities “to make judgments in a way that is sensitive to and relevant for their own contextualized settings” (Biesta, 2007, p.5) should be heightened. If we are looking to make education more open, more personalized, contextual, or better differentiated, then it is about fostering such relations and exploring alternative interactions that can be created with (or without) technology. For this to happen we need to draw on a mix of technology and community-based approaches, depending on local contexts. Several examples were provided during the discussion. A few highlighted bringing together educators, learners, researchers, and tech developers in a space to address connectivity, content or privacy challenges and to consider “possible lines of action” (ibid: p.16) in relation to problems that they together have defined. Another example (see case below) focused on creating new roles and recognising issues of trust and distrust that are present in a professional setting and looking to address those. One of the panellists, Prof Kukulska-Hulme, noted that it may also be about recognising the important role that parental and community involvement plays in children’s or young people’s education and thus looking to foster such interactions. What we take away through the discussion is to recognise that technology is entangled in a web of other relations and materials, and to look closely at the relations and matters that arise from, and are mobilised through, the use of technology.

Fleming Fund – Tackling Antimicrobial Resistance Project

The Fleming Fund is the UK Government's investment to help low- and middle-income countries (LMICs) fight against antimicrobial resistance (AMR). It is managed by the management agency, Mott MacDonald. Within the Fleming Fund there is a particular focus on professionals in AMR-surveillance networks, recognising that there is an urgent need for those professionals to develop AMR-related work practice. Through two grants to the OU by UK Aid (2018-2021), a major study was undertaken to identify ways AMR surveillance work could be supported by professional learning and development. Key recommendations were made to support the design of online modules and pathways alongside important considerations to support contextualisation of the curriculum in the workplace through other resources (see Charitonos et al., 2021). These led to the development of: i. an AMR Global Curriculum with 25 modules that can be accessed via 10 pathways; and ii. the AMR Toolkit with 3 tools to support the impact of the learning from these pathways within the workplace.

The AMR Toolkit was designed with the primary objective to support professionals to relate to people in diverse job roles and negotiate the objectives of joint professional action. It aimed at providing opportunities for communication and contextualisation of knowledge in areas of work that are associated with the surveillance of AMR. It also aimed at touching upon issues of trust, power and work-in-silos that may characterise work in this field. The AMR Toolkit was drafted iteratively using participatory co-design methodology across 12 health facilities in two LMICs. Its development was facilitated by educational researchers and technical experts working closely with members of staff at each participating site who led group activities in their local settings. The designed activities led to participants organising informal spaces and gatherings that offered opportunity for connections and contributions to discussions about their practice. Engagement in these activities helped form relationships that evolved as forms of trusted valued connections that were needed to recognise areas of change that were required in their organisations and anticipate and imagine future AMR work activities.

Links: [Tackling Antimicrobial Resistance online collection](#)

Taking a 'local' turn to critically engage with open, distance and online education

The discussion highlighted several examples that prominently feature a 'local turn' and 'local dimensions' of technology use and experience. These mark a growing interest in 'the local' in the development of digital technologies and provision of digital education and can be viewed as part of a wider critical turn in the field associated with wider discussions on participation, decolonisation and sustainability. In our smaller group discussions, there was a criticism of the tendency followed for years whereby those working in organisations in high-income countries (HICs) (e.g. in the UK) to make decisions on what is to be done about a specific issue (e.g. technologies used in national systems) by engaging with a few local elites who may or may not represent local interests / constituencies. There was a consensus that such an approach is increasingly unsustainable. The 'local' turn emphasises for example the need to refocus on everyday needs and experiences of the use of technology and to consider and listen to oppressed voices and highlight their agency in technology use and development. In such a conceptualisation, the local (e.g., person, organisation) is often seen as a constructive, empowered agent in support of technology developments in education. The local turn is also conceptualised as resistance to 'global tech imaginaries', the EdTech industry and its dominance in the field. Although this is a much-needed undertaking to advance research and practice in the field of education and technology, there remain several tensions and contradictions that may limit its relevance.

A key issue concerns the construction of an oppositional binary 'local' vs 'global' when it comes to the development and provision of digital education, including for example the idea that researchers in institutions in HICs are almost always on the side of 'global' developments and organisations, while learners and end-users residing in resource-poor environments are situated in the 'local'. Shuayb (2022) writes that

“localisation often implies this reductionist understanding of who is local.”. There has been an excessive focus on Western actors (e.g. HEIs) and Eurocentric systems of knowledge production within the ‘global’; an emphasis on tech ‘blueprints’ coming from the Global North to be taken on and/or adapted in the Global South; a normalisation of the educational cultures and practices from which these technologies have been developed; and not adequate attention paid to the dominant role of the EdTech industry and its influence on local education systems. All these practices are detriment of local ways of knowing.

Gallagher and Knox (2019) stress the need to amplify the work that regional organisations are doing. For example, the African Council for Distance Education (ACDE) was established in 2002 and comprises African HEIs, which are committed to expanding access to quality education and training through Open and Distance Learning (ODL) and to inform policy and interventions in digital education. Another key player in the Middle East and North Africa region is the Arab Open University (AOU), which was established in 2002, and since then, and through a global partnership with the OU UK, continues to provide high-quality blended education in nine Arab countries (AOU’s Fifth Strategic plan 2022 – 2027). The GEM consultation event at the OU itself offered an opportunity to promote these two organisations that work with local, national and international frameworks, structures and developments. It also encouraged reflection on the nature of research and its organisation, the role of national and overseas organisations and institutions in producing and delivering technologies or providing digital education, and how knowledge is created as well as the nature of knowledge itself. If this ‘turn to the local’ is to be anything more than just a buzzword, then, as Shuayb (2022) argues, it requires “breaking the moulds in the current structures that limit “local” actors [...] to the margins [...] These structures remain biased and colonial, and they limit the will, vision, voices, and participation of those who are disadvantaged by the system”.

Mobile Learning for Empowerment of Marginalised Mathematics Educators – 3MPower

3MPower is a large EdTech Hub-funded research project on technology-enhanced teacher education for marginalised mathematics educators. The project is a partnership between the Open University UK, the Government of Bangladesh, the Institute of Education and Research at Dhaka University and teachers in rural communities in Bangladesh. It addresses a key challenge where worldwide many children reach the end of primary education without being confident in foundation numeracy skills. Children from lower-income households and marginalised communities, particularly girls and those in rural communities and ethnic and linguistic minorities, are most affected.

The project is strengthening evidence on how e-learning solutions are working on the ground for teachers and learners in marginalised communities, and the impact they are having on teaching quality and learning outcomes. 3MPower focuses on the use of professional development courses, made available to users at low-cost or no-cost, on a government-led Bangla-language e-learning platform. A first round of studies explored the processes of teacher development—teachers' access to mobile learning, the relevance of the content to teachers' needs in supporting children's learning, how school communities support changes in teaching, and the cost-effectiveness of these approaches. These included peer-research by rural teachers, examining such issues with other teachers in their area. A second round of research will evaluate the outcomes of the professional development programme on teaching practices and student learning outcomes in numeracy, using quantitative and qualitative methods.

Link: [3MPower project](#)

Exclusions, harms, and barriers: considering negative impacts of technology

Digital technologies have never been more important. At the same time, as the panellists emphasised, we are increasingly becoming more aware of the ways digital technologies have had some negative impacts on people's lives – “the ways in which the digital simultaneously produces exclusions and barriers” (Gallagher & Knox, 2019, p.227). Inequalities in access and participation to education came to the fore more sharply following the outbreak of the COVID-19 pandemic. Many of the participants could share their own experiences related to this, including a recent study conducted in Jordan's refugee settings that illustrated an *amplified disadvantage* experienced by teachers in refugee settings during the pandemic (Charitonos et al., in press). The study showed that inequalities associated with the digital realm such as limited access to technology and costs of mobile data are embedded in and interact with wider kinds of disadvantage that exist offline, which may have prevented meaningful participation and advancement in learning through digitally mediated learning opportunities. Such co-existence of digital and structural inequalities encouraged the participants to reflect on the widespread notion of ‘digital divides’ that tends to privilege access to technology and assumes that educational issues will be resolved by making devices and other hardware available. Rather than simply looking at the distribution of technologies, the attention should be on educational practices ‘on the ground’ and enriching understanding of digital education in context.

Further to what has been learnt from the pandemic, we are increasingly becoming aware of the ways automation and applications of AI bring exciting opportunities but can also discriminate. A successful example included in the discussion was of the OU Analyse, a system developed at the Open University powered by machine learning methods for early identification of students at risk of failing and offering alerts to students, tutors and student support teams to consider appropriate support. At the

same time, various reported cases (see e.g., Kolkman, 2020; Shin, 2020) illustrate examples of AI algorithms demonstrating bias and prejudice. These issues will only become more relevant as automated systems and reliance on data generated through these systems will become more pervasive in public sector organisations (including HEIs) and at policy / government level and will be used to inform or make decisions and form opinions. The impact of datafication is particularly noticeable in the education sector (see e.g. Jarke & Breiter, 2019; Williamson, 2018) where capabilities for analytics are promoted as a powerful tool to better support students, educators and the processes of teaching and learning.

Participants expressed concerns with regards to surveillance and control, privacy issues, power relations, and emerging inequalities, to name a few. The smaller group discussions reflected considerations of promoting ethical use of technology in educational settings. In line with wider discussions in the field (see e.g. Atenas et al., 2023; Raffaghelli & Stewart, 2020), a suggestion was to focus attention on how to work with educators and support them to critically engage with data and algorithms that impact our daily lives. This is because an understanding that any possibilities created by, and around, data in educational settings depends strongly on abilities to critically interpret data because otherwise this may generate, reinforce or even exacerbate existing social and educational inequalities. Such critical approaches become more significant in our work in education and thus more research is needed to understand the continuously emerging practices around educational data and the implications of how data may be used. Treating data as a 'solution' or a 'quick fix' for education research and practice and viewing it as a "natural by-product of social actions" (Jarke & Breiter, 2019: 5) or disconnected from wider socio-cultural and political contexts are inherently problematic. Our focus instead should be on using these tools "to empower, support, and facilitate practice and critical research" (Eynon, 2013: 237) otherwise we will increasingly witness the negative impacts that digital technologies will have on people's lives.

Keeping connected and staying well: the role of technology in supporting people with learning disabilities during the coronavirus pandemic

Research by academics at the Open University explored the impact of technology on people with learning disabilities during the pandemic. The research was conducted between July and September 2020, when, during a period of national 'lock-down', people with learning disabilities, like everyone else, were self-isolating or shielding and thus disconnected from their usual support systems, regular social interactions, and activities. The focus of this research was whether and how people with learning disabilities have been supported to use technology to keep well and stay connected during the Covid-19 pandemic. The research highlighted digital exclusion of adults with learning disabilities and barriers to digital inclusion, and offered insights on digitally inclusive practices that support people with learning disabilities to access and use technologies (Seale, 2020).

Link to project report: <https://oro.open.ac.uk/75127/>

Section 3 – Recommendations – Future Directions

As the 2023 GEM Report team continues its consultation on technology and education, we offer the following concluding points for consideration.

Toward equitable forms of partnership for research and development in education and technology

There is a need to rethink what is understood by partnerships in the field. While there was a consensus around the importance of joint / collaborative approaches for solving real-life problems and to achieve genuinely impactful research, the discussion also revealed a tendency to foreground research on developing ‘better’, more advanced, and more efficient tools and on scaling-up applications by reaching out to larger groups of people. Such tendency is sometimes driven by an ‘impact agenda’, especially in the UK, that looks for evidence to demonstrate increase in the participation of non-academic actors or people who are hard-to-reach in research processes. Commercial interests also drive such research but also advancements of technology itself as research tends to respond to such developments.

In recent years much effort has gone into increasing international partnerships, especially between researchers in HICs and LMICs to tackle major societal challenges. Whereas there is some evidence of taking steps towards supporting equity in research partnerships, more remains to be done especially around identifying remaining barriers to, and enablers of, equitable research partnerships. For example, Fransman et al. (2019) write about ‘unspoken hierarchies of evidence’ which marginalise Southern hemisphere academics and practitioners’ knowledge and experiences and

may confine them to the role of data collectors. They reflect on how these hierarchies play out in research partnerships and their wider implications of how research is designed and implemented. It is further important to understand how the research and/or a particular tool / technology might 'land' in the broader context; those designing and implementing the research must have a strong understanding of the actors, processes, and interventions already at play, and of the wider political, cultural and social spheres - to understand how their research integrates into existing systems and contexts. Attention should be paid to who is setting the research questions; who is participating in the research and whose voices are included (or excluded); who the researchers are, where are they located and what motivations they have; who holds the funding and what power dynamics are at play; and importantly, what types of knowledge are prioritised and valued, and what preferences are there for the different types of evidence and knowledges that may be available. Even more importantly, attention should be focused on building relationships and connections and creating spaces for communicating, listening, and understanding multiple perspectives within a research partnership. Although we acknowledge that this is not always straightforward, it is something we should strive for in research activities and collaborations.

Engaging with the political in learning: education, technology and social change

Research in education and technology is not neutral; as such it should be able to engage with the ethical and political dimensions of learning. As we continue to face growing and acute crises, disasters and injustices on both global and local scales that intensify the challenges of education, the only way forward for research and practice in education and technology is to be actively engaged with such issues. Such engagement is crucial and necessitates a commitment to change, required at all levels of our professional and everyday lives as we are "developing new ways of learning and being in relation to each other, our institutions, and our

planet” (Jurow and Jhang, 2021, p.10). The political dimension refers to attention to issues of power, hierarchies, inequity and injustice, and to the roots of those issues. Technology co-exists and interacts with those issues. Change will only be possible with explicit attention to both such issues and to certain current ways of doing things in our research and practice that may be reinforcing or leading to the production of new issues and challenges. One of the key aspects of transformational learning is to foster deep engagement with, and reflection on our taken-for-granted ways of viewing the world, resulting in fundamental shifts in how we see, act upon and make meanings of the world around us (Jornet et al., 2021).

The discussion in the consultation event touched upon the current domination of Western-oriented epistemic perspectives and particularly of the hegemony of the English language in most OER. Due to such hegemonies, educators and students in more disadvantaged contexts may be excluded from participation in curriculum and pedagogic practices. A transformative approach in response to this issue, would be for example to create, adapt, re-mix or redistribute OER in preferred languages, from alternative epistemic viewpoints and by acknowledging different types of knowledge but also by inviting critique of existing hegemonic positions. A key point discussed in the event as a way forward is to create and offer access to content in multiple languages, as well as the role of translation technology. Two examples of multilingual OERs were mentioned: [Teacher Education in Sub-Saharan Africa \(TESSA\)](#) and [Teacher Education through School-based support \(TESS-India\)](#). Dr Patrina Law referred to future priorities related to the OpenLearn platform that will include translation of content into languages other than English (e.g., resources in Ukrainian, Welsh). This could include opportunities to improve language learning; hear and experience something ‘through the ears and eyes’ of another language/culture; enable learners to switch between languages when completing a task; enable teachers to assess tasks completed in more than one language. Advances in technology could facilitate translation (e.g., through new wearable devices like watches,

earphones). Such an approach will signify the value of local languages and the value of alternative knowledges and perspectives. That said, translation should be undertaken critically because it “may unintentionally reinforce epistemological and linguistic inequalities [...] reinforcing dominant viewpoints” (Cox & Trotter, 2017, p.218).

Expanding methodological approaches in research and development in education and technology

This final point engages with an important and much needed conversation in the field regarding methodological considerations that will offer a counter-perspective to “technosolutionist narratives” (Veletsianos, 2022; Morozov, 2022) and will shift attention away from ‘What works?’ (Biesta, 2007; 2010) that has been a dominant perspective in the field. Such considerations will expand approaches used to date and will bring attention to indigenous perspectives and knowledge practices; decolonizing methodologies; feminist approaches (e.g. Atenas et al., 2022); a range of ethnographic, socio-material (Fenwick & Nerland, 2014), participatory and transformative approaches to teaching and learning using interventions such as ChangeLabs (e.g. Engeström, 2007; Bligh & Flood, 2015; Jornet et al., 2021) and social design experiments (Gutiérrez & Jurow, 2016; Gutiérrez & Vossoughi, 2010; Gutierrez et al., 2016); and ‘speculative’ research methods (e.g. Ross, 2017; Houlden & Veletsianos, 2022). These methodological approaches are particularly apt for responding to major current societal issues, which require considerations of multiple factors and relationships and multiple forms of knowledge and practices which cannot be resourced by focusing on one area or domain. They also require consideration of methodological frameworks that support collaboration with other community members in co-designing solutions, frameworks, approaches or tools that concern shared interests

and aspirations and are aimed at social change and transformation. It is our view that the field requires 'a new sensibility' (Gutiérrez et al., 2016) and collective responsibility around what it means to do research and development of technology when working 'with and alongside' (ibid) hard-to-reach learners and non-dominant communities. Addressing such questions will extend current approaches that are prominent in the field (e.g. design-based research) to develop a new generation of methods that will foreground principles about knowledge production, valuing different knowledge systems and ethical ways of working. Such approaches will privilege equitable forms of partnership, respond to a demand for different 'ways of knowing' worldwide and make visible the critical role that learners and their communities can have in the digital transformation of education.

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