

Research Project: Digital Inclusion: more than just getting a laptop?

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1 Background

Over the past year, repeated Covid-19 lockdowns have forced academic communities to rapidly shift their traditionally campus-based teaching and learning content to virtual learning platforms. Videoconferencing and platforms like Zoom and Microsoft Teams have been critical tools during this ongoing pandemic, allowing education and many businesses to continue working during the pandemic.

Although the transition to virtual spaces took place rapidly, with relatively little time to prepare, the online switch has subsequently offered exciting opportunities to discuss new practices across different learning communities. This added to the possibility to test future reconfigurations of blended learning (online/offline, synchronous/asynchronous, and active/passive methods) in order to ensure effective and satisfactory students' learning experience.

That said, the complexity and the effectiveness of such transitions are the subject of ongoing, transdisciplinary debates (Sharp *et al.*, 2021). Discussions range from ensuring opportunities to access suitable digital devices and internet connections, to encouraging new skills, motivation and confidence to access educational provision, and develop appropriate pedagogies for distance teaching and learning (Stefanile, 2020). Nevertheless, ongoing analysis is likely to provide important insights to new digital practices both in work and educational environments. Scientists from the University of Stanford (Virtual Human Interaction Lab) have identified the term "Zoom Fatigue" to recognise the ongoing fatigue associated with virtual meetings, constant eye contact and nonverbal overload. As such fatigue might spill over from study/work to our personal lives (Bailenson, 2020 and 2021); such findings will directly inform more contextualised and discipline-based activities. Finding ways to address these will be essential if we aim to create digital learning environments which are sustainable over time.

While international and multi-disciplinary discussions will continue informing academic practices, this proposal aims to specifically investigate the online experience of students enrolled on courses in the School of Engineering and Built Environment (EBE). Such focus is essential in light of improving students' learning experience, shaping the development of online resources as either a response to possible future lockdowns and restricted access to the University campus or to new forms of post-pandemic e-learning. Such experiences could be shaped by the effectiveness of departments' and lecturers' abilities to enthuse and support students through a range of learning activities, practices and technology support (Campbell, 2005; Salmon, 2008), but also, and this is exactly the focus of this research proposal, by more accurately understanding EBE students' specific needs with the aim of answering them and increasing digital inclusion.

On one hand, online learning can be perceived as lowering barriers of time and place to enable students (including non-traditional ones) to access higher education more broadly at a time and place of their choosing (Sims *et al.*, 2008). On the other hand, online learning implementation is more complex (Johnston, 2018). It can show dissonances, particularly in

relation to complex discourses of digital divide¹. Evidence has clearly emerged in a recent survey (OfS, 2020) which highlights that during the COVID-19 pandemic 52% of students said their learning was affected by slow or unreliable internet connection, while 8% was severely affected.

Current coronavirus lockdowns have certainly further unveiled digital exclusion problems as part of a wider range of deep socio-economic inequalities. Digital exclusion is a new form of social deprivation increased by existing inequalities and poverty. Financially, students may not be able to afford technology and broadband access, but they may well also lack the skills and confidence to engage with learning technologies, and some might be culturally less able to benefit from technological enrichment. Therefore, supplying technology may be necessary but not sufficient to inclusively support students' learning.

Online learning can therefore be potentially disenfranchising to some students (over other social groups), with online practices in Higher Education at risk of reinforcing socio-economic, cultural, ethnic and gender divisions/patterns (Sims, 2008). According to recent data from OfS (2020), a great majority of students lack quiet spaces to study, do not have financial resources to live on, have no access to online course materials and to a personal computer. Fig 2 highlights a complex picture of factors limiting students' participation in class activities, in which accessing Information and Communication Technologies (ICTs) is merely a component.

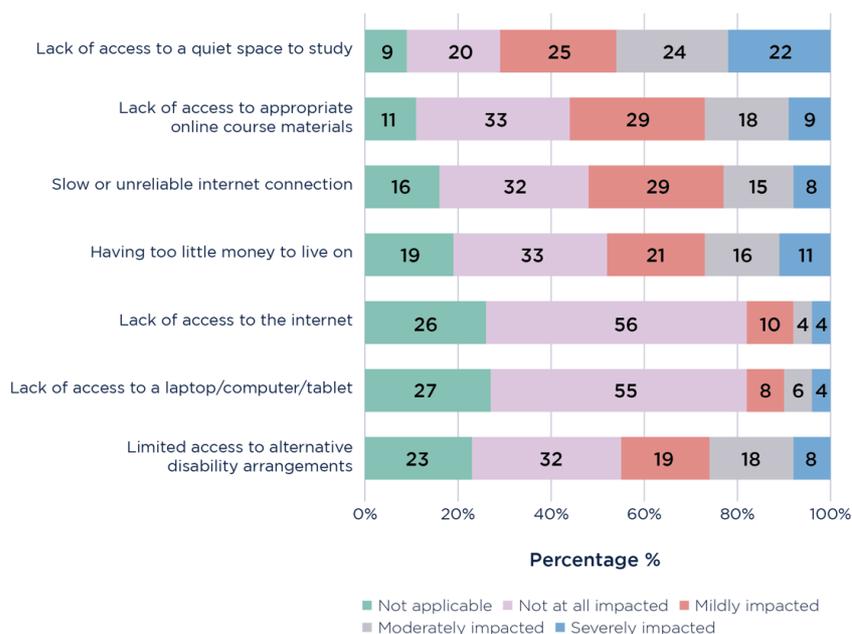


Figure 2: Factors impacting students' ability to participate in their course (%) (OfS, 2020)

¹ For the purpose of this proposal, 'digital divide' refers to different forms of barriers which isolate students who are already at risk of being socially marginalised because their socio-economic, ethnic, gender status. Students might have low education levels or be poor from the advantages of accessing efficient digital technology (Graham, 2002; Servon and Pinkett, 2004). Therefore, digital divide mainly affects disadvantaged communities that tend not to share in the benefits brought by ICTs to the wider community. The main reasons for some people's exclusion can be due firstly to restricted opportunities for them to develop suitable skills and secondly to the lack of possibilities to have access to informatics because of the high cost of communication (Gullino, 2009).

Finally, the spatial context and the demographics of a specific Higher Education institution demand attention: further contextualization in EBE courses is therefore indispensable to identify suitable and tailored support.

2 Research question, aim and objectives

Internal BCU data suggests that 71% of students enrolled on courses at BCU are in the lowest income quartile. Such data indicates that further investigation is needed in order to better understand students' experience and the range of needs while studying online or a form of blended learning approach in the School of Engineering and Built Environment (e.g. internet access, but also confidence, motivation, communication).

Drawing upon two previous research projects investigating the role of digital technology in knowledge production and digital inclusion (Gullino 2009 and Gullino *et al.*, 2020)², and in light of the possible development of future online delivery of courses, this proposal aims to investigate how students enrolled in EBE courses have experienced online teaching delivery and related pressures, the extent to which such experiences have changed since the first lockdown in March 2020 as both the result of the support received at BCU and students' own ability to adapt to such changes.

The proposal will identify a range of academic best practices that can support students towards a culture of digital inclusion at the School level and also provide insights to other schools/faculties.

Three intertwined questions are at the core of this research proposal:

1. what opportunities and challenges have EBE students experienced while required to engage in online learning?
2. what complexities have they encountered and which student groups have felt mostly affected?
3. how can students be more effectively and comprehensively supported by the School in light of developing new courses based on blended learning?

In order to answer these questions, the following objectives are proposed:

- To develop an appropriate methodology to investigate the range of learning opportunities and challenges of EBE students to digital / online learning as experienced during the Covid 19 pandemic;
- To explore contemporary good practices and strategies in Higher Education aiming at students' inclusivity while engaging in online learning;
- To identify suitable priority areas and strategies to enable inclusive digital learning in EBE.

3 Research methods

The research will be carried out through different phases:

- a. Analyse the current state of the art aiming at inclusive digital learning;

² Both projects explored issues of digital divide and inclusion/exclusion. The first investigated the relationship between ICTs and urban regeneration processes in Baltimore (US) through a digital platform called CitiStat. The focus was on exploring patterns of social inclusion/exclusion, knowledge production, and power division between citizens and municipality (Gullino, 2009). The second investigated the use of podcasting in higher education and the extent to which podcasting can enable effective asynchronous learning while, at the same time, encourage digital inclusion (access to teaching and learning using simple technology such as a mobile phone and no need of strong broadband connection) (Gullino *et al.*, 2020).

- b. Develop and conduct an online survey for students across EBE aiming at identifying opportunities, challenges and needs as experienced over the past year;
- c. Set up a series of focus groups across different EBE courses to gauge students' experience and the extent to which this has changed;
- d. Interviewing Course Leaders identified across different subjects represented in EBE to better understand the specific approach to teaching and learning used in their courses during the pandemic;
- e. Interview the Student Success Advisor (SSA) team to discuss data emerging from their engagement with students over the past year and identify possible changes (longitudinal).

The project will employ a few Research Partners (RPs) (postgraduate students) from CEBE courses. The rationale is multifold. A research partnership with students will be pivotal in this project, as on the one hand, it is important to have students' perspectives on this specific issue and, on the other, it will be easier for students to discuss their own experience with other students. Furthermore, for the RPs this approach would enhance opportunities for research-led learning.

The project, which will also require support from Digital Champions as identified/recruited at Faculty level, will make use of a qualitative research approach. After a few training sessions with the two Co-Investigators (CIs), the RPs and Digital Champions will be at the core of this project: they will help identify participants, prepare the ethics submission, design and deliver the online survey, organise focus groups which will be co-run with the CIs, co-design new ideas/practices to be considered for implementation in EBE, and draft the final report.

The final report will be circulated to the Faculty and outcomes of the project discussed for implementation.

4 Multiple benefits

1. **School** – understand how EBE students could be more effectively supported through a range of practices. The School could develop inclusive strategies aimed at improving the digital learning experience of its students and further developing its courses and portfolio.
2. **Students working on the project as RPs** – through research-led learning, RPs will gain a number of relevant transferable skills which will enhance their academic experience and employability: research/analytical, being ethical, written and verbal communication, effective listening, leadership, teamworking, time management and problem solving.
3. **Students recruited in the project (primary data)** – by responding to the online survey and taking part in focus groups, students would be able to voice their experiences and aspirations, increase their visibility and achieve better tailored support.
4. **Advancing academic knowledge** – the output from this project would include a report that would cover the following areas:
 - A clear and focused understanding of the scale of the digital exclusion problem for EBE students;
 - An understanding of the challenges of EBE students working in the Covid 19 pandemic
 - Key areas to address in multiple strategies to increase the digital inclusion of students in their learning.

5. **Underlying benefits** – learning to work collaboratively in a relationship of trust, equality and mutual respect

Findings from this project will be (1) discussed in internal seminars and (2) published in a suitable peer-reviewed journal.

5 Expected outcomes

EBE will be able to obtain an accurate picture of students' experience of digital / online learning and how and why it has changed, address students' needs and complexities in order to (1) increase digital inclusion within the school and (2) support future decisions on course delivery based on students' experiences.

6 Project time-scale

Items	March	April	May	June	July	August
Proposal submission						
Selection of RPs						
Ethics preparation						
Ethics consent						
Secondary literature review						
Primary data						
Analysis						
Report writing						
Seminar presentation						
Dissemination						

7 Main references

Bailenson, J.N., 2020, Why Zoom Meetings Can Exhaust Us <https://www.wsj.com/articles/why-zoom-meetings-can-exhaust-us-11585953336?page=1> (last accessed 1/03/2021)

Bailenson, J.N., 2021. Nonverbal Overload: A Theoretical Argument for the Causes of Zoom Fatigue. *Technology, Mind, and Behavior*, 2(1).

Graham, S. (2002) Bridging urban digital divides? Urban polarisation and information and communications technologies (ICTs). *Urban Studies* 39, pp.3–56.

Gullino, S. (2009) Urban regeneration and democratization of information access: CitiStat experience in Baltimore. *Journal of Environmental Management*, 90(6), pp.2012-2019.

Gullino S., Wakerley E., Shtebunaev S., Wootton A., and Matthews C. (2020), 'Podcasting: supporting students' learning experience and enabling innovative practices among academic staff', Faculty of Computing, Engineering and Built Environment, Birmingham City University.

Johnston, N., 2019. Digital inclusion in Higher Education. *Incite*, 40(11/12), p.31.

Office for Students (2020) 'Digital poverty' risks leaving students behind. Available at: <https://www.officeforstudents.org.uk/news-blog-and-events/press-and-media/digital-poverty-risks-leaving-students-behind/> (last accessed 23/02/2020).

Sharp, E.A., Norman, M.K., Spagnoletti, C.L. and Miller, B.G., 2021. Optimizing Synchronous Online Teaching Sessions: A Guide to the "New Normal" in Medical Education. *Academic Pediatrics*, 21(1), pp.11-15.

Servon, L., Pinkett, D. (2004) Narrowing the Digital Divide: the Potential and Limits of the US Community Technology Movement. In: Castells, M. (Ed.), *The Network*

Society A Cross Cultural Perspective. Edward Elgar Publishing, Northampton, MA, pp. 319–338.

Sims, J., Vidgen, R., and Powell, P (2008) E-learning and the digital divide: perpetuating cultural and socio-economic elitism in higher education. *Communications of the Association for Information Systems* 22 (1).

Stefanile, A., 2020. The Transition from Classroom to Zoom and How it Has Changed Education. *Journal of Social Science Research*, 16, pp.33-40.