# EDUCATIONAL TECHNOLOGY (EDTECH)

# Technology-Enhanced Learning: a Solution or a New Wicked Problem?

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**When the COVID-19 pandemic closed campuses around the world, universities had to rapidly move their teaching online. Some, such as the UK's Open University, the University of the South Pacific and the University of the West Indies, who were used to delivering for remote populations, had considerable expertise to use and share. For others, the learning curve was steep. Now that many of us are nearly out the other side, what have we learned?**

The first lesson is that technology-enhanced learning is here to stay. In a world where more and more students fit their education around work and caring responsibilities, it enables universities to offer students a more personalised higher education experience where they can study in their own time, at their own pace and without needing to commute. This is often supported by course materials being placed in a virtual learning environment (VLE) which students can access easily at any time – removing frustrations about finding out what resources are available and locating them. Many students also find that regular quizzes help them understand their progress, and real-time feedback keeps them motivated.

For some students, particularly those studying in a second language or from cultures where speaking up is not encouraged, asynchronous provision can give them time to think through and check their contributions. It also removes the need to participate as quickly as students who are more comfortable speaking up. Hearing from everybody makes the discussions richer.

It also improves access as students based in remote locations can participate. This is increasingly true even of Science, Technology, Engineering and Mathematics courses, as augmented reality (AR) and virtual reality (VR) technologies enable students to participate in virtual experiments even if they are not close to a laboratory. AR and VR can, of course, also offer enriching, immersive learning experiences to students studying the Arts and Humanities and have been doing so for some time.

Remote delivery can also support the sharing of resources in areas where there is a shortage of teachers and

facilities. A relatively small number of highly qualified teachers can develop and produce high-quality modules that can be used online by many universities. Similarly, a small number of universities can be funded to build capacity in technology-enhanced learning with the expectation that they will share this knowledge more widely within the sector. This was trialled through the Partnership of Enhanced and Blended Learning (PEBL) initiative in East Africa, with the knowledge built up by the participating universities proving extremely useful during the pandemic.

Finally, university leaders recognise that the outside world is increasingly technology-enabled and that they would be failing in their duty if they did not help the students to engage effectively – and critically – with tools that will

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become essential for them to succeed as members of society both within and outside of their professional lives.

Although the case, including the equity case, for technology-enhanced learning is strong, there are still huge challenges. The digital divide is real. Many potential students live in areas with poor connectivity and do not have access to sophisticated devices or quiet places to study. Not all students are "digital natives". Many do not have the skills to get the most out of a digitally-delivered education. Equally, some teachers are not skilled in designing and developing digital courses and fall back on filming their lectures and putting them online.

While universities cannot solve connectivity problems alone, they can think about how to design courses that will still work where it is poor. For example, if the internet is patchy, courses can use audio files which are smaller than video files and easier to stream. It may also help if learners can download material at the beginning of a session so interruptions like power cuts will not feel so disruptive. Discussions can be set up to work effectively asynchronously so that students can contribute whenever they can get connected.

Where students are unlikely to have access to sophisticated laptops and tablets, universities can design courses that will work on a basic smartphone. Equally, if students are unlikely to be able to study at home, universities can establish remote hubs which, while not providing everything a full campus might, can at least provide physical spaces within which to learn, and informal spaces to congregate and connect with peers. These approaches were tried with some success during the Partnership for Digital Learning and Increased Access (PADILEIA) project working with Syrian refugees in Lebanon and Jordan.

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University leaders will also need to think about how to support their staff to develop their digital skills at every stage of their careers. This includes thinking through incentives that reward improvement in this area and a culture that allows them to experiment, make mistakes, and adapt.

None of this is cheap. For digitally delivered courses to be recognised as being as effective as face-to-face, their quality must be assured. Developing high-quality e-learning modules is expensive and takes time. Adding to this challenge is the fact that many students still want the benefits of a campus environment, including the opportunity to learn with and from others, socialise, and access facilities that they do not have at home. This means that most people see a hybrid rather than a fully online model developing over the short to medium term. In the longer term, campus costs may be reduced while ways to deliver these benefits online are developed, but in the short-term, university leaders may have to manage the cost of both face-to-face and digital delivery. This comes on top of the perennial issue of how to maintain quality when seeking to educate more students while keeping the amount spent on higher education affordable within government budgets.

The challenge of digital delivery sits alongside, and interacts with, the other wicked problems with which university leaders must grapple. How to manage scarce resources? How to ensure higher education drives towards a fairer and more inclusive society? How to meet the needs of both a changing and unpredictable labour market and evolving student expectations? These are not easy problems and underline the need for the many brilliant university leaders from across the Commonwealth to share knowledge and expertise to tackle them together. ■

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