AIB REVIEW
BY THE AUSTRALIAN INSTITUTE OF BUSINESS

AUSTRALIAN INSTITUTE of BUSINESS

Futureproofing Online Learning in Higher Education

Associate Professor Diane Kalendra, Assistant Academic Dean, Australian Institute of Business.

AIB Review, Issue 10

Online learning has its origins in distance education, which now dates back over 150 years to early correspondence courses. Since then, with the advent of personal computers and the internet, the potential to reach students, regardless of location, has increased greatly.

Today, online learning offers a wealth of educational resources in various formats and enables both real-time and asynchronous communication between educators and students, as well as among students. While higher education institutions started adopting online learning in the late 20th century, the COVID-19 pandemic accelerated its growth as physical distancing measures made face-to-face instruction unfeasible, leading to a significant increase in enrolment in online learning courses. This trend is likely to continue in the coming years.

However, the future of online learning is not just about continuing to increase enrolment numbers. It's also about the changing nature and practice of online learning. Higher education institutions must stay relevant and provide the education needed by students in the future as the world continues to change.

So, how can higher education institutions futureproof online learning? This article identifies and outlines four useful strategies for institutions to adopt.

1. Embrace New Technologies

Online learning is being revolutionised continuously by technology—it's changing what's possible, and students' expectations are growing accordingly. As technology continues to advance, exciting new avenues are being opened to enhance online learning and offer a personalised experience to students. In particular, White (2023) identifies six key technologies to embrace:

- Video-based learning is becoming more engaging for students, with embedded questions, keywords, pointer phrases and navigation menus. It's also more interactive, allowing students to watch videos and post responses in real-time.
- Microlearning (delivered to mobile phones in short, focused units) is becoming increasingly popular due to the need for personal, on-demand learning.
- Gamification (using games to teach) has shown positive results in relation to students' soft skills, emotional intelligence and motivation, leading to greater student success and higher retention rates.
- Artificial intelligence (AI) is being integrated into online learning to personalise education and improve accessibility. For example, Georgia Tech's virtual assistant, Jill Watson, started taking some of the administrative burdens off teachers by answering students' questions about content, assignments and tech issues in 2016. Today, it offers much more, including research assistance, a

socialisation tool and simulations for teaching and learning. Further, AI-driven analytics can gather data on student learning, identify knowledge gaps and assist in improving retention. AI is changing the game in ways we can't yet imagine. For example, the recent release of open-access generative AI, such as ChatGPT, highlights challenges and opportunities for higher education related to possible threats to student learning and academic integrity and excitement about its potential to support and enhance learning and teaching.

- The use of virtual reality (VR) and/or augmented reality (AR)—together known as extended reality (XR)—in education is growing due to its immersive and interactive nature, which can increase student engagement and retention of learning by being a stand-in for experiential learning—making students believe they've experienced something. Higher education institutions are using VR in various ways, such as recreating a real courtroom, investigating virtual crime scenes and running virtual spacewalks. The widespread adoption of XR in online education may be hindered to an extent by its cost and limited software, but this is beginning to change with affordable innovations such as Google Cardboard.
- Big data is also a major factor in changing education as it allows for monitoring student performance to predict success and intervene in real-time to improve student outcomes. It's also assisting in improving university and program performance, such as retention rates, student recruitment and admissions. However, big data also raises concerns about student privacy and the difficulties in utilising it effectively. Other related challenges include outdated data storage infrastructure and a lack of resources for staff training and analyst employment. Despite these challenges, big data has the potential to advance education significantly if these hurdles are overcome.

2. Provide Support Services

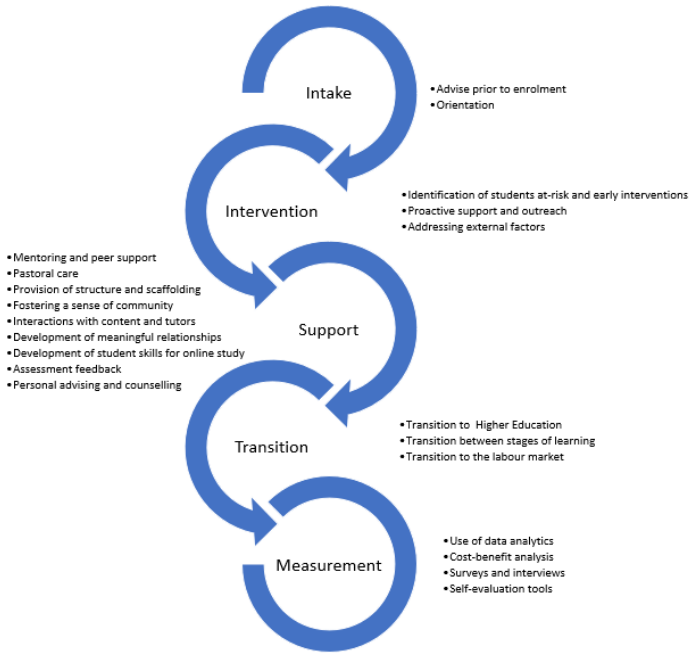
As online learning becomes more prevalent, there is an increasing need for high-quality academic and non-academic support services to help and guide learners during independent study and improve their enthusiasm for learning.

Online learning success requires specific student skills and attributes, such as maturity, motivation, multi-tasking ability, goal-directedness, and the ability to work independently and cooperatively. Students must also be able to plan their studies, manage their time, communicate effectively in writing, access and use learning resources, and read and synthesise efficiently. In group-based programs, they must collaborate well with peers, while self-paced students are expected to form their own learning networks.

However, not all students possess these skills to the same degree, and some may face challenges in online learning. To overcome these barriers, student support is crucial for maintaining engagement, motivation and success in online learning. As Zhao et al. (2022) found in a study of over 450 undergraduate and graduate students during the pandemic, high-quality online support services can help to improve the effectiveness of online learning and satisfaction rates to better meet students' education requirements in online learning environments.

To assist higher education institutions, Rotar (2022) offers a framework for support strategies that can be offered to online students at different phases of the learning process based on a review of relevant literature from 2010 to 2020 (Figure 1).

Figure 1: Online student support framework



Source: Modified from Rotar (2022, p.4) licensed under CC BY-SA 4.0.

3. Reach More People

For many higher education institutions, the COVID-19 pandemic highlighted the positive potential of online learning. Benefits ranged from being able to cost-effectively reach higher numbers of students, regardless of location, to potentially increasing adult lifelong learning opportunities by addressing issues of lack of time due to work commitments and family responsibilities, lack of financial resources and inconvenience of time and place associated with attending face-to-face learning. Online learning is well suited to allowing students flexibility to learn at their own pace and from any place (with internet access), which is attractive to diverse student populations, including traditionally underrepresented groups of students.

It is, therefore, critical to ensure online learning is inclusive and accessible to all learners, regardless of their backgrounds or abilities. However, higher education institutions must consider the needs of traditionally underrepresented groups as they attempt to engage in online learning, including indigenous populations, low socio-economic groups, first-generation students, single parents, disabled learners, recent immigrants, students in remote communities and members of minority language groups. This includes providing alternative formats for content, such as audio or video, and using mobile-friendly learning platforms. It's also crucial to ensure that the needs of students studying

remotely and potentially across multiple time zones are addressed, such as with 24-hour virtual classroom designs, as well as identifying and addressing any other barriers to engagement.

Incorporating the seven principles of Universal Design, Burgstahler (2021) has created a Universal Design in Higher Education (UDHE) Framework for guiding all aspects of online learning and service offerings. The framework considers the technology used, the formal and informal courses taught, the services delivered, and the physical spaces created to ensure online learning is inclusive and accessible to all. It guides it to meet its civil rights obligations and goals for its diversity, equity and inclusion initiatives.

4. Protect Personal Information

In their Global Cybersecurity Outlook 2023 report, the World Economic Forum and Accenture found that 86% of business leaders and 93% of cyber leaders believe that global geopolitical instability is likely to cause a catastrophic cyber event in the next two years. In response, organisations are re-evaluating the countries where they do business, building cybersecurity skills and embedding cyber risk discussions into decision-making structures. This indicates a belief that cybersecurity is as much an organisational challenge as a technical one.

As the numbers of students and educators using online platforms increase, the need to protect personal information and data privacy becomes ever more critical. Online learning providers must incorporate security measures to protect and instil trust in their users.

However, many higher educational institutions do not currently have robust cybersecurity measures in place, putting students and institutions at risk. Indeed, in February 2023, Microsoft Security Intelligence reported that the education industry accounted for 80 per cent of the 7.3 million global malware encounters experienced by all enterprises in the previous 30 days—this is significantly more than any other sector.

In addition to malware encounters specifically designed to disrupt, damage or gain unauthorised access to a computer system, educational institutions are at increased risk of data breaches and violations of student privacy. Recently, 'Zoombombing' entered the general lexicon, with online classrooms reportedly being interrupted by pranksters and ill-intentioned individuals taking advantage of Zoom's security weaknesses to break into private meetings. Other threats identified by Kaspersky in 2020 include phishing pages and emails disguised under the names of online learning platforms and video conferencing applications and distributed denial of service (DDoS) attacks.

In responding to cybersecurity risks such as these, Tomar and Ewart (2023) recommend higher education institutions protect themselves by managing user privileges, vetting third-party providers, conducting effective staff training, providing risk education to students, ensuring end-to-end encryption and keeping content filters updated. In addition, blockchain technology can be used to create secure and tamper-proof records of student achievements, which could be used to create more accurate and portable records of credentials.

Conclusion

The future of online learning in higher education concerns far more than simply increasing enrolment numbers—various strategies should be adopted to futureproof online learning offerings. To keep up with the shifting landscape, online learning providers must adapt to and capitalise on new technologies, such as video-based learning, microlearning, gamification, AI, virtual reality and big data. It is also crucial to help students succeed in online learning by offering academic and non-academic support services through all phases of the learning process. All aspects of online teaching, including relevant support measures, should be designed to ensure online learning is inclusive and accessible to all learners. Finally, in an age of higher cybersecurity risk than ever before, it is imperative to protect students and staff and their information. The COVID-19 pandemic has shown the benefits of online learning in reaching students regardless of location, and it's crucial for higher education institutions to continue to evolve and adapt to the changing nature of online learning to stay relevant in the future.

Associate Professor Diane Kalendra

Assistant Academic Dean, Australian Institute of Business

Diane has 25+ years of experience as a professional marketer contributing to the success of major brands, including Bristol-Myers Squibb, Faulding Pharmaceuticals, SOLA Optical and Australia Post. Diane also has entrepreneurial experience building multi-million-dollar businesses and Board experience with not-for-profits. In 2017, Diane completed a PhD on the topic of developing a market orientation using an action research approach while working full-time in industry.

Cite this article:

Kalendra, D 2023, 'Futureproofing Online Learning in Higher Education', *AIB Review*, Issue 10.

Explore more articles from AIB Review