THE IMPACT OF THE PANDEMIC ON HIGHER EDUCATION LEARNERS:

Why institutions need to focus on "designing *for* learning" and "learner experience design"

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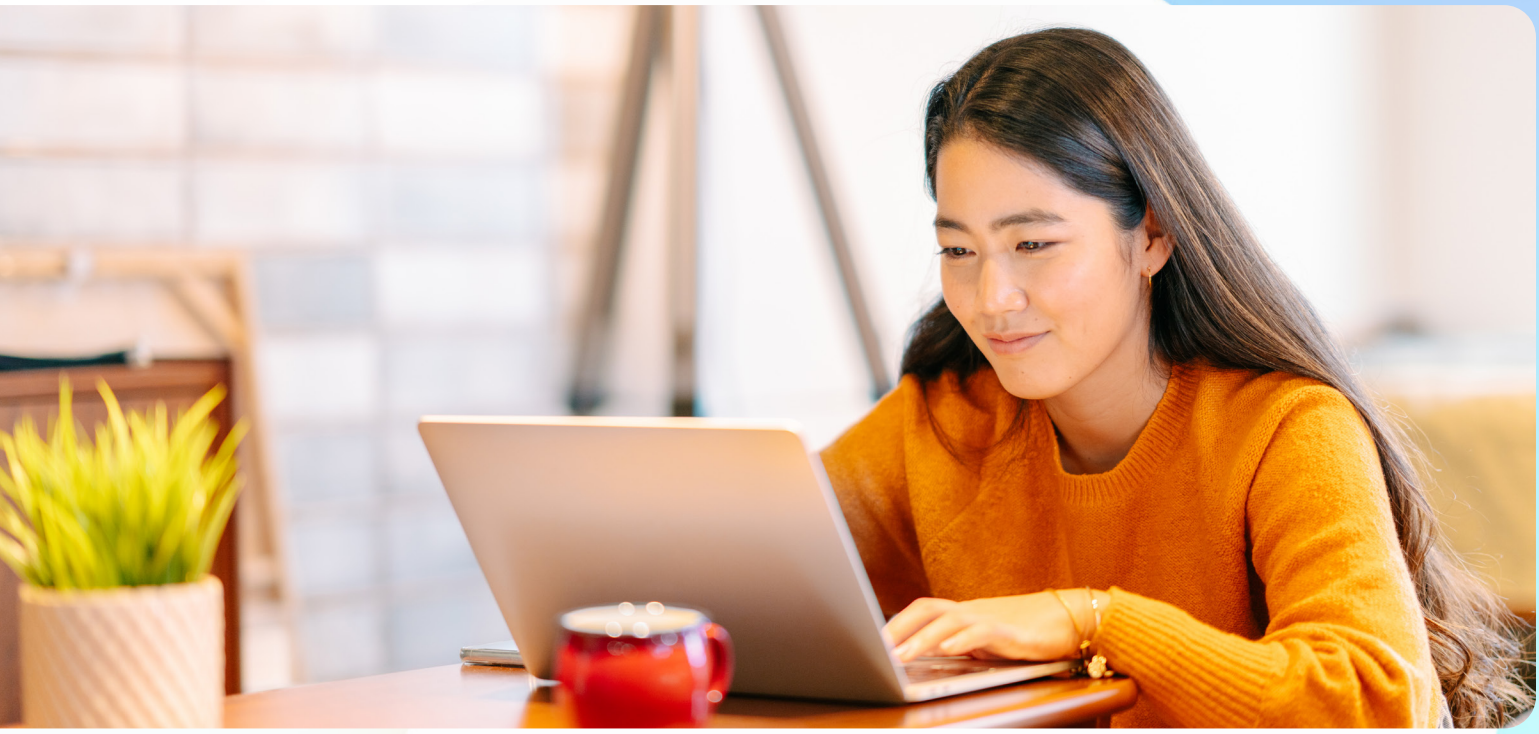

Introduction

The global pandemic has accelerated change in many sectors. In higher education, the rapid change to emergency remote delivery triggered an unprecedented world-wide experiment in online learning. In 2020, most university leaders considered this rapid move to online successful (Farnell, Skledar & Šćukanec, 2021). While many students appreciated the great efforts of their higher education providers to deliver learning continuity, the quality of students learning experiences was affected. We are now starting to see some alarming declines in student enrollment (e.g., National Student Clearinghouse Research Centre, 2021), declining student persistence (e.g., Torpey-Saboe, 2021), and a decline in student satisfaction (e.g., UK Office for Students, 2021). Clearly, the honeymoon is over, and we need to listen carefully to the challenges that learners have been experiencing and re-think what learners need and value in higher education going forward.

Student satisfaction is an important indicator of how higher education faired in the global experiment in online learning. It is also important because it typically has a direct relationship with student persistence and enrollment. In the UK, the 2021 National Student survey showed that overall student satisfaction with the quality of courses dropped to 75% in 2021 compared to 83% in 2020 (UK Office for Students, 2021). In Australia, 2020 data from the Quality Indicators for Learning and Teaching survey found only 68.4% of undergraduate students were satisfied during the first year of the pandemic. This was down 10% and is the lowest since the national survey began in 2012. The areas of the survey most impacted were learner engagement (down 16 percentage points), followed by learning resources and, to a lesser extent, teaching quality and skills development.

In the US, Foerderer and colleagues (2021) found that, while the learning modality had little impact on student satisfaction, instructional support was the most significant predictor. Influential factors associated with "instructional support" included:

- Levels of interaction with faculty
- Provision of transparency and guidance on what students needed to be academically successful (clear goals and expectations, steps to be taken, clear assessment criteria)
- Constructive and timely feedback

In fact, we have known for some time that direct student feedback is one of the most important factors influencing student academic achievement (Hattie, 2008). Foerderer et al., (2021) explain that students also put high value on opportunities for peer interaction and were concerned about changes to assessment. Class sizes online were a predictor too – with students being most satisfied with smaller classes online (Means & Neisler et al., 2020).

Similar findings were reported by the Teaching Education Quality Standards Agency (TEQSA) in Australia. Students felt isolated, disengaged, and experienced lower levels of motivation. A Hong Kong study across 11 universities found that learning design and levels of peer interaction were most impactful on student satisfaction levels (Chu, Liu, So, & Lam, 2021). Mental anguish and depression amongst university students were linked to lower student satisfaction rates with the sudden shift to online learning in a Lebanese study (Fawaz and Samaha, 2020). Students' mental wellbeing was, in turn, impacted by concerns around assessment, expectations, technical difficulties and workload online.

Despite many decades of research, scholarship, and innovation in online learning, it appears that much was overlooked in the rush to transfer programs online. So, it was perhaps not surprising that this global experiment exposed some critical frailties in the learning experiences offered to many students. At the heart of these issues was little focus on design for learners, for learning, and for a compelling learning experience.

Simply transferring face-to-face learning to online without significant re-design is a serious mistake. However, in 2020, when many institutions were in "triage mode," there was little time to design and build online courses based on scholarly practices for effective online learning (Means, Neisler et al, 2020). Consequently, simple transference to online was the modus operandi by many. However, a year or more into the pandemic, this practice still dominates.

This whitepaper argues that institutional leaders need to take on board the lessons learned from the great pandemic experiment in online learning. They need to listen deeply and carefully to students and make a real commitment to offering all students the highest quality educational experiences. That is, well designed, compelling experiences that set them up to successfully meet their future goals. We argue that this commitment will require a laser focus on "design" to remediate some of the key challenges that learners reported during their experiences of the pandemic. In particular, "designing *for* learning" and the relatively new field of learner experience design (LXD) (Foors, 2017).

Let's take a look at these design approaches before exploring some of the common challenges experienced by learners across the globe during the pivot to online, and how a new focus on "design" can transform the quality, value and relevance of higher education students' learning during and beyond the pandemic.

WHAT DO WE MEAN BY "DESIGNING FOR LEARNING" AND LEARNER EXPERIENCE DESIGN?

Designing *for* Learning

As many institutions moved into emergency remote teaching (ERT), the focus was more on learning continuity than learning or instructional design. The urgency of continuity called for a rapid improvisation of existing face-to-face or hybrid learning in less-than-ideal circumstances (Hodges et al., 2020).

> ***The point here is that purposefully designed online subjects and programs are typically learner-focused and based on well-established learning or instructional design principles and theories. In fact, well designed online learning is far more easily adapted to offer high quality face-to-face or hybrid subjects and programs than the converse.***

That is, designing *for* learning; it goes well beyond the delivery mode and what teachers do. The design effort is centred on what the learner does and how they are supported and equipped to grow their knowledge and capabilities in alignment with the intended learning outcomes. It involves elements such as learner orientations, communication strategies, learner guidance and support, opportunities for collaboration and interaction, strategies for accessibility Universal Design for learning (UDL) and inclusive learning, the structure and organisation of course information and content, the selection of technology tools, and the use of visual design and layout elements to enhance usability and learning.

Designing for learning also encompasses several different views of assessment. It includes "assessment *for* learning," whereby formative assessment is designed as part of the learning process to clarify and improve student learning and performance. "Assessment *as* learning," whereby learning is designed to motivate learners to self-monitor and self-regulate their learning to help them understand what they know, can do, and need to do to be successful. And "assessment *of* learning," which involves the design of assessment tasks that align to learning outcomes and gather evidence that can be used to grade students according to transparent criteria (often articulated in assessment rubrics).

Learner Experience Design

Outside of higher education, there has been a growing focus on human-centered or user experience (UX) design. UX has offered many industries a different lens to think about how they can design products that are meaningful and relevant to the experiences of users. Often drawing on methodologies like "Design Thinking," user experience designers explore how an experience or collection of experiences (user journey) makes a user feel, think and act – including identifying pain points and enabling aspects. Users are often involved in a participative co-design approach to design for their needs and optimal experiences.

The relatively new field of learner experience design (LXD) blends elements from several fields, including UX, visual design, learning design (LD) or Instructional Design (ID), cognitive psychology, learning sciences, interaction design, and experiential learning. Dutch LXD pioneer, Niels Floor, describes LXD as a "process of creating learning experiences that enable the learner to achieve the desired learning outcome in a human-centered and goal-oriented way." LXD explores the types of experiences that learners want in order to learn and how these kinds of experiences can be designed.

LXD has a great deal to offer higher education institutions who are willing to change their focus toward the needs and experiences of their learners. Designers use design principles, methods, prototypes, and iterative design processes to design optimal learning experiences. The focus is on the learner and on designing experiences that are enjoyable, engaging, relevant, informative, and meet the needs of learners to motivate achievement of learning outcomes. In other words, LXD is about a human-centered, intentional design process focused on the realities of our learners. LXD has enormous potential to address the challenges that surfaced during the pandemic and to help improve future learning, whether it occurs online, in hybrid modes, or face-to-face.

The next section details some of the challenges that students in higher education institutions across the globe experienced over 2020 – 2021 and some of the ways that designing for learning and LXD can mitigate these challenges if institutions choose to focus on design.

STUDENT CHALLENGES LEARNING IN COVID-19

As students made the transition to remote emergency learning, their work and life routines were deeply disrupted. Many campuses closed which meant that many students had to return to their family homes or stay in often small and crowded accommodation. Finding a quiet and comfortable place to study was often challenging. For students starting higher education for the first time, the opportunity to connect socially with other students and enjoy the social aspects of campus life made it even more difficult to adjust and to find their way around the immense complexities of higher education.

While some students have managed reasonably well during the pandemic, the realities for others highlight the frailties of learning in an emergency remote mode. While emergency remote learning was both critical and necessary, it was not quality online education. Consequently, for some students, academic performance slipped, academic workloads increased, digital literacy and connectivity issues were exposed, students felt isolated, and were unable to attain the levels of human connectiveness they craved. They felt communication and interactivity could be improved, and, consequently, they felt more and more disengaged as their motivation levels dwindled. Students became concerned about how they were doing, what was expected, and particularly worried about their assessment. Simultaneously, they were juggling family life, experiencing changes to or loss of work, financial and familial stress, and, subsequently, they needed more flexibility. This was particularly impactful on students representing the most disadvantaged equity groups.

Many of these challenges can be mitigated by purposefully designing online learning that takes into account the vast research of many decades on how students learn, the common standards of quality online courses, and the array of technology tools available. Additionally, Learner Experience Design helps us to empathize more with students' lives and experiences to help us address their challenges through thoughtful design.

> ***Clearly, a thoughtful and purposeful design process was absent in the rush to online.***

In the sections below, we consider some of the challenges that negatively impacted learners and how a focus on designing for learning and LXD can improve the quality of learning – whether it be online, hybrid, or in face-to-face modalities.

Academic Performance

At the heart of learning is academic performance. According to a large European report, almost 50% of students felt that their academic performance slipped during the pandemic (Farnell, 2021). Another European study claims this slippage can often be a consequence of students not having an adequate and quiet place to study, lack of access to course materials, insufficient digital literacies and/or internet connection, lack of social support, and issues related to well-being (Doolan et al, 2020). Meanwhile in the US, only 17% of students (from a random national sample of 1,008 undergraduates taking college courses for credit) were highly satisfied with their academic performance after their course went online (Means & Neisler et al., 2020).

50%

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Examples of Design Approaches

Designing *for* learning means that the design needs to take into account where learners are with their learning. This can involve designing regular opportunities for students to self-check and monitor the achievement of learning outcomes, to get support (embedded or through support services), and to take more control of their learning. Students often benefit from faculty care and compassion. So, personal messages to check in and feedback to guide students on their progress - what they have learned and still need to learn - typically increases student satisfaction (Means & Neisler et al., 2020). Additionally, finding out about students' digital capabilities and internet connectivity before a course can ensure one can set them up for success from the beginning. That is, ensuring instructors have videos that orient students to the course and how to use the technologies needed. Having options to download materials and work offline.

Taking an LXD approach means taking a human-centered approach to understanding some of the motivations and behaviours of learners and problem-solving the issues at hand to make learning less challenging. For example, the problem of learning at home and feeling socially isolated. This could involve conducting research with students about what works and what doesn't and co-designing creative strategies that can be shared with students across the institution and via social media channels.

Workload

During the pandemic, managing workloads became a real challenge for many students. Over 50% of students reported an increase in their workloads with the move to online (Doolan et al, 2020). Around the globe, students claimed that the transition to online had led to an increase in assignments, time challenges, and task management (TEQSA, 2020, Chan 2021). In some cases, rather than re-design for remote learning, educators added additional assignments. Scheduling, which is a common problem on-campus as well, saw students often attending long online virtual sessions without adequate time for study breaks. From an educational perspective, we need to be more cognisant of the unintended challenges students may be facing around learning and assessment, not only within subjects but across multiple subjects they are studying. Student workload, attention-span and cognitive load are different for online and face-to-face modalities. Badly organised and structured online courses can mean that students spend more time clicking around than learning. Also, reading volumes of content takes longer than consuming it through video or audio. These are all important aspects of calculating student workloads. Even then, we need to think about how we can help students self-monitor their progress. A global study conducted by Salesforce revealed that 34% of students wanted more help managing their course work loads.

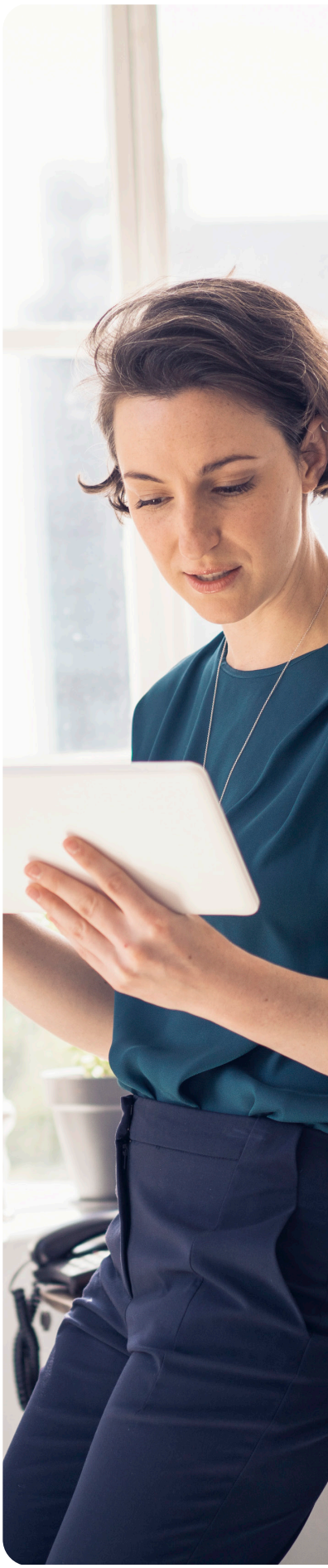
Examples of Design Approaches

From a designing for learning perspective, we need to design courses that are easy and intuitive to navigate and understand with signposts that help learners estimate the required time commitment. Consistency is helpful here, so using course templates with consistent menus and defined navigation pathways are key.

When students see a familiar interface at that high level, they are better placed to use it intuitively without having to guess where things are located.

Course content needs to be designed so it is "chunked" into manageable segments. Signpost these segments to let students know how long it will take and why it is important (e.g., which learning outcomes are being addressed here and how does it relate to assessment?). Make it easier for learners to focus on the main point – learning.

Taking an LXD approach means analysing the current state so that we can come up with strategies for how we address the problems at hand. In relation to workload, learning analytics offers potential. For example, in a recent study (Ginder, Richey, Cousino & Börner, 2019) the difference between estimates for completing course materials and other course elements were visually compared to the average time taken by learners. This kind of research can help designers to produce for appropriate workloads more accurately. The same study also illustrated the "nested hierarchical organisation, the composition of course materials, activities and assessments, and temporal ordering of learning modules of the course" (p. 10). This information can be used to conceptualise course structures at a more granular level and, again, inform design decisions that influence learner experiences.



Access and Digital Literacies

> ***With higher than usual dependencies on technologies and the internet, our assumptions about learners being "digital natives" and about access to the internet were also tested. In Australian higher education, IT issues were the most reported challenges – this included accessing computers, learning new software, slow internet speeds, audio quality, etc (TEQSA, 2020).***

There were also concerns about how to manage home privacy when on video calls and incidences of some students acting inappropriately during video calls. In Europe students' access to technologies and internet, as well as their digital skills, were reportedly a barrier for some (Farnell, 2021). In a European survey, while 89.3 % of students have their own computer, and 80.7% felt confident with using online platforms, only 41 % always have a good internet connection (Doolan et al, 2020). Internet connections were also an issue for the US (Means & Neisler et al., 2020), with 23% of students reporting hardware or software issues impacted their ability to participate. Similar findings were reported for Egyptian students (Basuony et al 2020).

Examples of Design Approaches

From a designing for learning perspective, we need to think about how we can design learning that builds students digital capabilities. Jisc in the UK defines digital capabilities for individuals as "those capabilities which equip someone to live, learn and work in a digital society." More recent digital capability frameworks, such as the one from HOLONIQ, offer great opportunities to think about how

we grow these capabilities across different domains, such as through learning design, learner experience design, and for work and lifelong learning (see https://www.digitalcapability.org/).

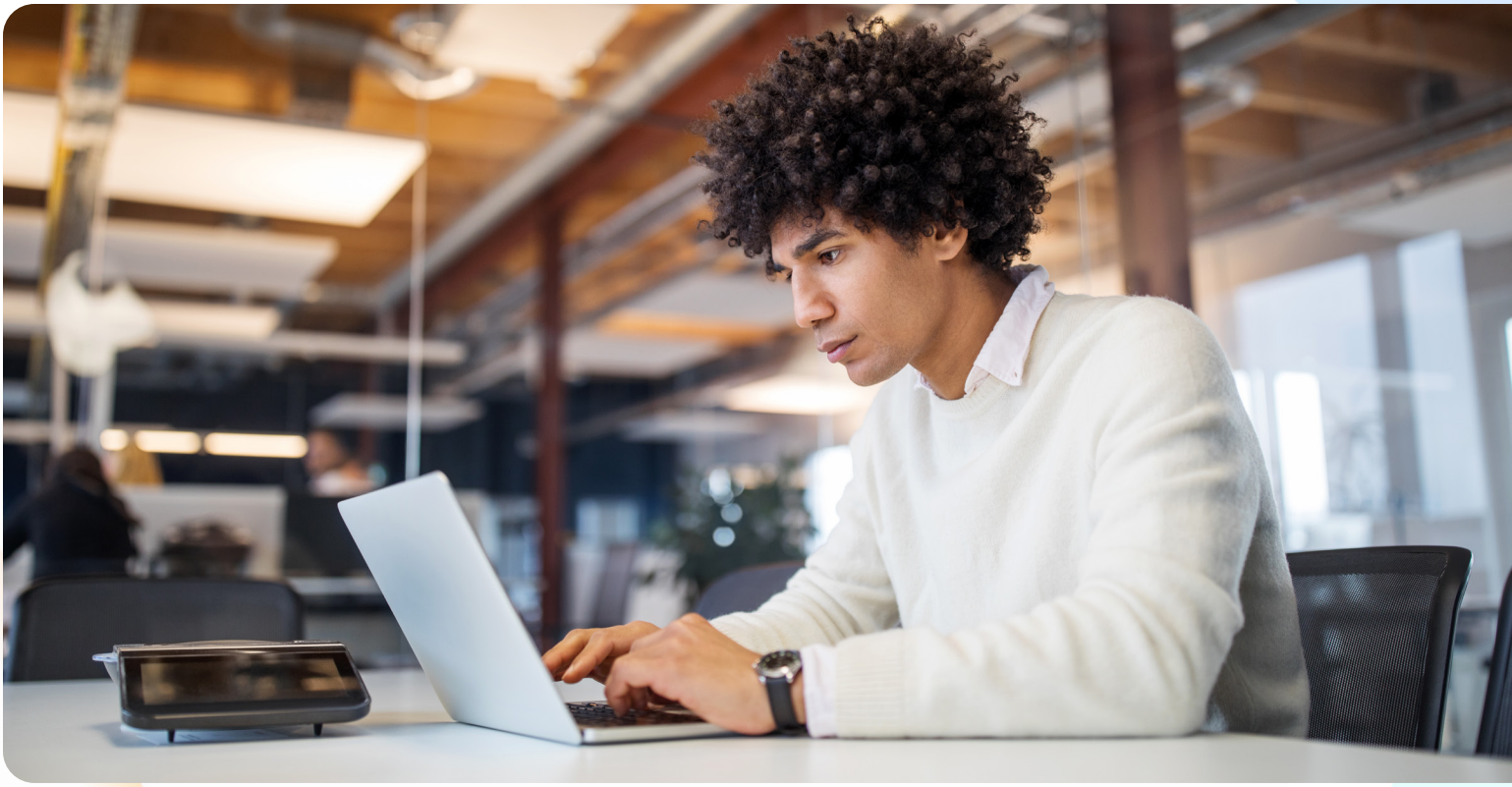
> ***Clear communication and support mechanisms need to be incorporated into course design as well to reduce stress on students who experience technology connectivity or software and hardware difficulties. Additionally, clear protocols and policies for acceptable online behaviours need to be stated and communicated to students.***

Taking an LXD approach means stepping back and looking at the learner journey and considering when, for example, internet issues or lack of technical skills would be most disruptive to learners and understanding how and when learners interact with different technologies, for what learning benefit, and what other options or pathways could be designed. LX designers may also identify what strategies could be designed into a course to mitigate these challenges. For example, more student choice, more student orientation, and FAQs or chatbots to help students problem solve. Again, learning analytics can hold some potential here to understand where the pain points are for learners.

Disconnection, Loneliness, Communication

Being off campus and away from other learners and from faculty can be an isolating experience. A US study (Torpey-Saboe, 2021) is seeking to identify barriers to college enrollment in 2020 – 2021. It started with leader perspectives (learner data collection is underway), whereby lack of connection to peers, reduced support from social networks and loneliness were identified as key underlying causes that are negatively impacting enrollment. Data from a UK study highlighted that students who felt lonely and isolated were less satisfied with their educational experience and at higher risk of drop-out (Watermeyer, R., Crick, T., Knight, C. et. al., 2020). In Europe, 50% of students felt less included in their class experiences after going online and missed the presence of instructors and peers. (Means & Neisler et al., 2020). In the US, levels of access to faculty, clear communication, clarity around the learning process, and opportunities for small group peer discussion had a significant impact on student satisfaction (Foerderer et al., 2021).

In Australia, students complained about the lower-than-expected levels of interaction and engagement (TEQSA, 2020). Even with opportunities to interact and collaborate online in class and small groups, Australian university students still felt isolated and alienated from their peers – especially in comparison to the campus-based social experiences they had come to expect (TEQSA 2020). This lack of informal social experiences contributed to feelings of not wanting to persist with their studies (Means & Neisler, 2020; TEQSA 2020). Limited human connection also led to a lost sense of belonging and community (Fawaz & Samaha, 2020).



Examples of Design Approaches

From a designing for learning perspective, it is important to design for communication, engagement and online presence. Garrison et al's (2000) "Community of Inquiry" framework suggests we need to design for three kinds of presence:

- Social presence: designing opportunities for students to socially connect with each other and teachers in ways that build their personal relationships and positively impact their engagement
- Cognitive presence: designing opportunities for learners to create meaning and experience self-awareness and reflection through communication
- Teaching presence: designing opportunities for teachers to welcome students, to humanize themselves to learners and establish themselves online as an expert and a guide

Taking an LXD approach could involve students, themselves, designing ways to informally socially connect and mitigate feelings of loneliness. Often students are not so conducive to participating in institutionally organized social events so getting students to devise solutions can serve an important function, as well.

For example, during the pandemic in Singapore, student leaders and assistants worked together to come up with social activities that were inclusive of all students - including the international students who were unable to return home and perhaps less familiar with Singaporean culture. Initially, they organised online games and movies that they could watch together virtually. Later, when lockdowns subsided, these turned into outdoor nature walks and cultural activities.

Motivation

Keeping motivated online can be challenging. In Australia, students found it more difficult to remain motivated online because they felt less engaged and were unsure of how they were tracking (TEQSA 2020). On campus, they could easily check in with classmates to understand whether they were falling behind and to check understanding of content. In the US, 57% of students reported a loss of interest in course content after going online. 42% reported that staying motivated in the course was a major problem and another 37% said it was a minor problem (Means & Neisler et al., 2020). Students from the same study commented "the greatest challenge was finding the motivation to get out of bed and complete assignments. It's not the same as getting up, getting ready, driving to class, then sitting in class to learn" and "With the world in chaos, it was hard to stay focused and motivated to mentally show up for class" (p.10). Students also reported that they were unable to retain interest in long lectures online and would easily become distracted with other activities happening at home. Students need structure, motivational strategies and ways to check in on whether they are learning to keep engaged and motivated.

Examples of Design Approaches

> ***From a designing for learning perspective, it's important to think more about student attention spans realistically as well as what motivates and excites students to learn. This can be accomplished by linking learning to future employment and real-world problems, designing learning in different modalities, shortening presentation of content, and designing more opportunities to gage understanding and provide formative feedback.***

Taking an LXD approach could mean thinking about how to motivate learners in a course and doing some research on learners and what motivates them using techniques like persona development and empathy mapping. This is a helpful way of putting a distinctive student lens on design.

Assessment

Quality assurance agencies in most countries raised concerns about assessment and academic integrity in relation to emergency remote learning modalities (Farnell, et al., 2021). However, changes made to assessment to address these concerns, particularly e-proctoring, attracted a great amount of criticism from students who felt their privacy was being invaded.

Concerns about the use of online exams and online connectivity added to student anxiety (Basuony et al., 2020). Other student concerns included how individual contributions to group work were monitored and fairly graded online (TEQSA 2020).

Another challenge was the extent of helpful feedback being provided in a timely way and access to transparent, clearly communicated assessment tasks. These issues impacted student satisfaction levels in the US (Foerderer et al., 2021). And, in Australia, students felt that interaction and feedback was even more critical in an online environment – particularly in terms of timeliness (TEQSA 2020). This was possibly due to less opportunities for informal feedback from faculty and peers. Students wanted consistency in this regard as they felt that not all teachers were as committed as others and that some did not seem to empathize with students' challenges during the pandemic.

Examples of Design Approaches

> ***From a designing for learning perspective, it is absolutely critical that students are clear on what their assessment requirements are, what criteria they are graded on and how the assessment will contribute to their learning in and beyond the course (e.g., how it links to future employability).***

Some online strategies might include short videos which explain assessment requirements, opportunities to discuss rubric criteria, and strategies to provide more personalised feedback via peers or experts.

Taking an LXD approach might involve a discovery process to identify some of the ways that assessment design can reduce issues around academic integrity, or how personalised and impactful feedback can be provided to learners just when they most need it. Another important aspect is the concept of having a portfolio assessment, which means using multiple assignments delivered in different ways to assess the learner. For instance, assignments such as papers, essays, etc., including discussion board posts and tests to assess the learner. This would give a holistic way of ensuring the learning outcomes were achieved and it also negates the issue of having to proctor.

Flexibility, Equity and Wellbeing

Students experiencing unreliable internet or juggling work, family, financial, health and personal challenges found learning and assessment schedules too inflexible during the pandemic. For 27% of Hispanic students in the US, fitting learning in with home and family responsibilities and finding a quiet place to study were problematic (Means & Neisler et al., 2020).

Any of these challenges can exacerbate inequities in educational access and achievement. Subsequently, when access and achievement are impacted, students' well-being can also be affected (Abramson, 2020). A US study found that lower-income students are 55% more likely than their higher-income peers to have delayed graduation due to COVID-19 (Aucejoa et al., 2020).

A study conducted by Salesforce (2021) surveyed trends from over 2,000 students across ten countries. One important finding was that 40% of students said their institution could support their wellbeing with more flexible learning options. Critically, it is typically those who are most disadvantaged that suffer most (Farnell et al, 2021).

Students experiencing difficulties in Australia expressed concerns about not being able to easily access support services. Difficulties included those of financial, work (or loss of), family, mental health and anxiety issues, and isolation. Additionally, these challenges were particularly experienced by low SES, rural and indigenous students (TEQSA 2020).

The World Bank has raised concerns about medium to longer term equity effects and reminds us that we must ensure that no underrepresented, vulnerable of disadvantaged students should be left behind due to challenges.

CONCLUSIONS

- Successful online learning demands designing courses with specific principles and theories centered on the learner. Designing *for* learning ensures learners are aligned with the intended learning outcomes as the whole course has been designed, supported, and equipped to grow their knowledge and capabilities through orientations, communication strategies, guidance and support, opportunities for collaboration and interaction, course information, and content, as well as the selection of technology resources to enhance usability and learning. It also includes a formative assessment designed to motive learners to self-monitor their learning process and understand what has been achieved and what they need to improve.

- The recent COVID-19 pandemic accelerated the need for designing *for* learning, as students started facing challenges affecting their academic performance and wellbeing while having an increase in workloads and dealing with digital literacy and connectivity issues. Many of these challenges can be mitigated by considering designing online learning as it contemplates how students learn, the common standards of quality online courses, and the array of technology tools available.

- In most cases, designing *for* learning demands training and a lot of effort from faculty to develop courses successfully online. Getting expert advice, either a review or a full course design option, would improve the overall e-learning experience, including students' communication, engagement, performance, and online presence.

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- **Custom Course Creation:** full online course design according to the institution plan and requirements.
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- **Course Templates:** choose from existing standard, branded or custom templated adapted to the institution use cases.
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