Chapter 29
Responsive Online Course Design: Microcredentials and Non-Linear Pathways in Higher Education

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Abstract COVID-19 required educators to rapidly change their course programs and structures. Many courses in higher education moved from face to face or blended models to entirely online approaches, and educators were required to grapple with new technologies and, more importantly, new pedagogies to engage students through novel mediums. One key aspect of these emergency pedagogies is the need to embrace responsive approaches to teaching and learning, especially considering program and course structure, assessment and participation. This chapter will outline the pandemic-motivated development of the Graduate Certificate in Learning Design at UTS that made use of both the principles of a Hyflex approach within individual courses as well as microcredentialling and non-linear pathways within the program structure to encourage a self-curated, student directed learning experience. A crucial outcome of this approach is that such a model of course and program structure fits well with the principles of socially-just learning design. Students have more control over what they learn, but also how and where they learn it. This means that the course is more accessible and inclusive of diverse communities.

1 Introduction

The COVID-19 pandemic disrupted education providers around the world. Lockdowns and travel bans meant that many students were unable to access physical campuses, and social distancing requirements ensured that even those who were able to physically attend their institutions often did so in a way that was alien to their previous experience of university education.

Many institutions grappled with trying to find ways of providing effective and meaningful education to students who were trapped in a different country or for domestic students who were quarantined or locked down in their home cities

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(Bhowmik & Bhattacharya, 2021). Often, this took the form of a 'pivot' (Nordmann et al., 2020) to emergency online learning via web-conferencing tools like Zoom, which was met with mixed reactions from students – and staff (Aristovnik et al., 2020). Furthermore, as the pandemic developed throughout 2020, universities were required to remain flexible and continually adapt their plans in order to address emerging issues, or new outbreaks.

In Australia, where the higher education sector relies heavily (Deloitte Access Economics, 2015) on funding provided by international students (many of whom come from countries like China and India), the effects of the pandemic were even more keenly felt, and will likely be felt for at least the next 2–3 years. While Australia itself has been relatively fortunate in terms of the number of cases of COVID-19, the effects of lockdowns and international travel bans have been particularly notable in the higher education sector, with numerous universities facing shortfalls in budgets and needing to make staff redundant due to these deficits (Zhou, 2020).

Designing educational opportunities within this context is a particular challenge. In Australia, educators were faced with four related challenges to navigate in the provision of their courses. Firstly, large numbers of international students were trapped overseas, and hence were unable to attend face to face classes (even when those classes resumed). Secondly, for students within China, access to online material was often severely limited by what was available through China's firewall. Thirdly, some students were in quarantine in a third country (i.e. not Australia or China) or in quarantine in Australia, so, while they were in the same country as their university – and perhaps even the same city, they were still unable to attend classes. In addition, in these settings, there were often issues with the bandwidth of the internet available to students, and the additional cost that might be related to that. Finally, there was the ever-present concern that, at any time, cities in Australia could be locked down in order to prevent the spread of any outbreaks – either on a suburb-by-suburb basis or on a greater scale, necessitating an immediate and possibly only partial change in the mode of provision, which would lead to teachers teaching both in a face to face manner and also online—at the same time!

This chapter explores the way these factors informed the emergency changes and ongoing design considerations of one program (the Graduate Certificate in Learning Design) at the University of Technology, Sydney, a large public university in Australia. In particular, the shift towards a more flexible course and program structure, modelled on the principles of the HyFlex approach (Beatty, 2019), the incorporation of microcredentials (Ralston, 2021), and the emphasis on providing a variety of access options with the aim of more socially just learning design (Heggart et al., 2020), is described.

2 Context

The COVID-19 pandemic, as it pertains to Australian institutions, has gone through two phases to this point in time. In the first phase, the focus was on managing the current enrolments especially as they related to international students. In the second phase, the focus shifted more towards designing courses for a 'new normal'—that is, education in the time of ongoing pandemics and the challenges associated with that. While these two phases are clearly delineated, the first informed the second, and that was the case with the Graduate Certificate in Learning Design at UTS, in that the principles and design considerations that were deployed in an emergency fashion in the first phase were evaluated, and where successful, were considered for use in the second phase.

In phase one, international students enrolled in Australian universities were unable to return to Australia in early 2021. Some international students had already left China before the international travel bans in Australia came into effect, and were able to undertake quarantine in a third country, before coming to Australia—in what became known as the 'back door'. At this point in time, classes in Australia were still mostly delivered in a face-to-face setting. In addition, domestic students who had undertaken an international study period in another country were also either unable to return to Australia, or required to spend significant amounts of time in quarantine before they were able to return to normal university classes.

The initial response from many academics was to move as much of their material online as possible. This was despite the fact that many of these academics had only limited experience in teaching in an online fashion (see, for example, Gülbahar & Adnan, 2020), and tools for online learning and teaching and web conferencing were foreign to both the educators and their students. While UTS (and many other Australian institutions) was well supported via different learning management systems and other online support systems, this solution had its own difficulties. The Chinese firewall blocked access to many different sites, including some LMSs, and many video resources used by academics as well. Eventually, a tunnel was negotiated that provided access for students in mainland China, but that took a significant amount of time. In a similar fashion, students in third countries, or even in quarantine in Australia, often had only poor-quality internet access, meaning that richer multimedia content was unable to be accessed, which limited the learning opportunities for students.

At this point, academics were often teaching two different classes at the same time: the first, a traditional face to face approach supported by content on a LMS, and the second a kind of online only experience for those students who could only access the material this way. While not sustainable in the long term, this approach was called for in the first stages of the pandemic. However, as the second phase developed, these two models became more closely aligned. In phase two, due to cases of COVID-19 extant in Australia, many universities in Australia closed their physical campuses, moving all their content to online models of teaching and learning. While still an emergency provision, there was more time and support provided

for academics in order to make this change, and in some ways, it was easier, as they were no longer teaching both online and face to face, but instead teaching one online only class. The concerns about access to material and bandwidth issues remained, however, as well as concerns about the student experience.

In addition, at about this time, concerned by the economic effect of the pandemic, the Federal Government released a training package for Australians. This took the form of short courses (at the level of Graduate Certificates) that were heavily subsidised to encourage a high uptake from potential students. As part of the requirements of the scheme, these courses need to be deployed in the second half of 2020, and they also needed to be delivered in an entirely online fashion. Finally, they were also only available to domestic (i.e., not international students). In this way, these short courses (or Higher Education Certificates [HECs]) were a trial model of future course offerings both during and after the pandemic. These factors certainly informed the way that the subjects within Graduate Certificate in Learning Design were developed; in fact, the HEC allowed for a period of trial of several practices that would later become a feature of the GCLD. These practices were developed firstly because of the constraints related to being part of the HEC, but also with a mind towards the future of higher education in Australia, where lockdowns and ongoing quarantine and international travel bans were likely to be regular occurrences. These changes needed to be implemented in a much shorter time scale, too. Whereas the GCLD, in its original format, was planned to be deployed in 2021, this timeline was advanced by 6 months to fit it within the requirements of the HEC.

3 Approach to Design

The design of the GCLD therefore reflected a mix of careful planning (for the elements that had been already considered before COVID-19) and responsive design, considering the challenges presented by the pandemic. The term responsive is more appropriate here than flexible, as the design in question was developed in response to the demands of the COVID-19 pandemic, rather than being designed purely from the start with flexibility in mind. However, this responsive design ultimately meant that the final design for the structure of the GCLD was significantly more flexible than the original design, and for this reason, many of the emergency elements originally conceived in response to the pandemic will be included in future offerings of the course.

Firstly, the design of the GCLD was based on careful user-centred design principles (Hernández-Leo et al., 2018). Eleven stakeholder interviews were conducted in a range of industries, including healthcare, defence, finance and different levels of education. In addition, further interviews were undertaken with potential applicants to determine what the possible ‘pain points’ might be that would prevent them either enrolling or successfully completing the course. The findings from these surveys largely mirrored extant literature, both about the development of learning

design courses (York & Ertmer, 2016; Tripp, 2008) and the experiences of Australian university students (Bradley et al., 2008). Stakeholders indicated a desire to have job-ready graduates from courses such as the GCLD. They noted that other, similar courses often favoured theory at the expense of practical experience, meaning that graduates took a long time to 'get up to speed' in the workplace. However, the potential students indicated their concerns about time constraints, and the challenges of undertaking study (either full time or part time) while maintaining their work or family commitments. They also indicated a concern with previous online experiences – 'too dull' or 'not engaging' were the terms commonly used. Thus, any program of study would need to be both industry focused and flexible—and flexible at both a macro (i.e course structure) and micro (i.e. subject) level.

The arrival of the pandemic meant that changes needed to be rapidly put into place, especially if the GCLD was to be part of the Federal Government's HEC program. The largest change was the need to move from a blended mode of learning (a mix of online and face to face elements) to one that was entirely online. This was a requirement of the government program, and was achieved by re-designing the block sessions to work via web conferencing tools. Originally, the GCLD was intended to be delivered in 2021; however, that timeline was advanced so that the first subjects were offered to students (with more than 50 students enrolled) in mid-late 2020.

Another consideration that was part of the design process was the realisation that the pandemic was not necessarily going to be short term. In Australia, there remains (as at June 2021) only limited take up of vaccinations amidst confusion about access, and so the likelihood of future lockdowns is quite high—indeed, in June 2021, Melbourne, Australia's second largest city, entered lockdown for the fourth time. This means that the emergency interventions put into place in response to the first wave of the pandemic need to be kept in place in order to manage future waves and lockdowns. This informed the design of the GCLD as well.

Taking into account these constraints, the decision was made to ensure that the course was informed by the principles of socially-just learning design (Heggart et al., 2020). This idea draws from Fraser's (2003, 2007) work on social justice, and especially its relationship to education as described by Hocking (2010). This approach combines Fraser's three dimensions of social justice (redistribution, recognition and representation) with Meyer et al.'s (2014) work on Universal Design for Learning through the lens of Wiley's (2014) open education principles (Retain, Revise, Remix, Reuse and Redistribute).

4 The Final Design

The final design for the Graduate Certificate in Learning Design (GCLD) operated on both a whole-of-course level and also an individual subject level. Principally, to meet the requirements for responsiveness and inclusivity, the course was offered in a non-linear fashion. In other words, students could complete the eight subjects that

comprised the course in any order they choose. This was primarily to allow them to take those courses (in a part time study mode) at times that were suitable for them. This did provide some challenges, especially with Work: Learning Design Subject, which was nominally a capstone work-integrated learning (Doolan et al., 2019) subject. In this instance, students were strongly advised to do it last—advice which students thus far have heeded.

In addition, the subjects were also (with the exception of Work: Learning Design Project) offered as microcredentials external to the course. Again, this was designed to provide an access point for potential students concerned about their ability to complete a full certificate. This meant that students could take on a much smaller challenge—e.g. enrolling in a microcredential rather than a full award course—and should they successfully complete it, they would be able to receive credit for that particular subject towards the GCLD. At the time of writing, the Design: Designing for Learning and Predict: Current and Future Trends in eLearning have been particularly popular, and numerous participants in these microcredentials have used it as stepping stone to enrol in the full GCLD.

As described above, the course and subject design was inspired by the principles of student choice and multiple means of accessing content present in the Hyflex model. However, time, technological and budgetary constraints ultimately meant that the model of learning was more of a hybrid nature (Roseth et al., 2013) than a strictly Hyflex model, especially at the individual subject level. This was a practical consideration based on the limited time and resources available, and it is this design that separates the approach used in the GCLD from more common applications of HyFlex. This was expressed in the different pathways that students could use to navigate (and ideally successfully complete) the course material. Each subject had multiple avenues for students. These avenues included the 'online, all the time' pathway, where students could complete both the asynchronous course material, take part in various activities and class discussions and most importantly attend the live sessions in real time with their peers from around Australia. Should that not be feasible, students could undertake the 'async' option, which was similar in terms of the asynchronous engagement, but the difference was that the live sessions could be viewed at a time that suited students (as these were recorded). Of course, in such an instance, students might miss out on the interaction that came with the synchronous sessions. However, the students themselves remedied this, by forming independent study groups that viewed the videos together and undertook the activities—in effect, they organised their own, student-led synchronous sessions. Finally, there was the low-bandwidth option, which was designed for students who had limited internet availability or low bandwidth. In this avenue, students could engage in class discussions, complete the readings and other activities, but there was no requirement to either participate live or asynchronously in the live seminars. Importantly, students could select whichever option best suited them at that particular time. This became important for student who were required to travel for work – for example, one student who was normally 'online, all the time' was required to travel to remote Australia for 2 weeks during one of the subjects; during that time, he switched to a

low bandwidth option, which meant that he was still able to take part in learning, and not fall behind his peers.

This approach also necessitated reconsideration about how to structure and sequence learning materials within individual subjects in order to prioritise multiple means of engagement. The decision was made to reduce the amount of face to face hours and instead replace it with more asynchronous content. In practice, this meant that the nominal three hours per week was reduced to only 90 min; however, the total indicative hours of the subjects remained the same (75 h for three credit points) as the remainder was made up through other modes of delivery. An 'async-first' methodology was adopted to developing this material as it was expected that all students would, at least, access this much of the course. Much of the content was made up of open educational resources, especially in the form of open textbooks. Content was foregrounded early in each module (each subject was made up of 6 week-long modules), and the live sessions became more focused on 'deep dives' into the practical application of that content, rather than lectures or seminars. A good example of this was in the development of 'Expression Sessions'. These were the final live session in each subject, and took the form of a learning designer, or someone in a learning design adjacent role, presenting the students with a practical workshop and design scenario that they worked through over the course of the session. This idea also specifically addressed the concerns about the gaps between practice and theory in many ID courses (Gray et al., 2015), and also instituted what was almost a design studio (Lowell & Moore, 2020) approach to the development of learning designers, as well as offering opportunities for representation.

5 Future Considerations

There were a number of lessons learned as part of this course design process, as well as recommendations for future course development. Some of the learning, while new for the course design team, are already well understood in the field of online learning. These are briefly documented here. This course design provides benefits for both domestic students as well as international students by allowing them to access the course in a mode that was possible and even preferable to them. The restructuring of the course meant that the face to face time was used for different purposes: there was more opportunity for facilitating, mentoring and coaching, rather an instructing or delivering content. This also allowed for a wider range of experts to be involved in the expression sessions, drawing from a national and even international pool. However, this was also a concern related to the course design. This extra time necessitated educators within the course needing to devote extra time to preparation and planning of materials, in a 'front-loaded' manner to ensure that the content was ready.

Another aspect that was interesting to note was that the pandemic itself provided educational aspects to this course. The course as a whole was about learning design, so the sudden move towards more online and remote approaches to learning

provided students studying the course with a lot of material to examine. In fact, many students chose to base their assessments upon their current context, which was often related to their employer needing to move materials that were previously delivered face to face into an online format. A key aspect here was recognizing this and building in flexibility to allow it to take place. With that in mind, the assessment tasks in the GCLD were often quite open-ended, often referring to a 'design problem within your own professional context' as a starting point, and encouraging students to make it their own, rather than using a scenario provided by the educator.

However, the most significant learning is that this approach to course design showed that socially just learning design could function in online as well as blended learning environments. In some ways, this design served as a trial of some of the key features of socially just learning design, and the success of the course indicates that by using the principles of socially-just learning design, it is possible to develop an online learning environment that is inclusive and diverse by design.

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