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Supporting student success in online learning during the COVID-19 pandemic: Learning Design Perspective

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Abstract: During the COVID-19 pandemic, universities around the world were forced to transition to online learning, with students and lecturers undertaking classes remotely from home. While this transition may seem simple in concept, many universities have faced numerous problems failing to support students' learning and success. The Learning Designers' team at the University of Derby is an independent online learning unit that has been accumulating practical knowledge and skills to offer online classes with high student satisfaction and achievement for over ten years. Learning design plays a central role in generating positive outcomes. Accordingly, this article introduces strategies and suggestions for other universities regarding online education, during the pandemic and beyond.

Keywords: Learning Design, Online Learning; COVID-19, Shift to Online, Student Support.

Introduction

When universities were forced to cancel in-person teaching in 2020 in response to the COVID-19 pandemic, online learning became a lifeline for higher education institutions (Kotera et al., 2021). However, this unplanned emergency transition to remote learning required multiple changes to be implemented (Kotera *et al*, 2020) and in turn "snared [lecturers and students] in the headlights of digital disruption" (Watermeyer, 2021, p. 638). Consequently, some significant challenges were highlighted for both lecturers and students (Table 1). Learning design can attempt to overcome these difficulties by focusing on the learning and teaching process (Koper & Olivier, 2004).

Table 1

Challenges Presented by the Move to Online Learning and Teaching

Challenges faced by lecturers	Challenges faced by students
(1) Lack of confidence and/or experience in online content development and delivery	(1) Feelings of isolation and lack of belonging
(2) Lack of required digital skills and familiarity with the VLE	(2) Unfamiliarity with the VLE
(3) Time-consuming adaptation to new ways of working	(3) Perception of less value for money

Note. VLE = Virtual Learning Environment.

Although Carillo and Flores (2020) list further challenges posed by the abrupt transition to online learning related to infrastructure and the working environment, these challenges are outside the control of universities themselves. However, universities can design for student success. Indeed, both Cohen (2021) and Davey et al. (2019) emphasise the importance of learning design to support students studying online. Moreover, Davey et al. (2019) further argue that a team approach using design-based thinking is key to successful online practice. However, to achieve this there are important factors to consider. Firstly, the practical

nature of some degree programmes limits the suitability of online learning because field work is impossible "when the 'field' is not currently available" (Smith, 2020, p. 92). Secondly, online learning presents an information gap (Carillo & Flores, 2020) that requires more support for students navigating it.

Problems Encountered by Universities with Online Learning During the Pandemic

Little consideration is needed for how resources are presented to students in a face-to-face setting, but in an online context it is necessary to revise the pedagogical approach and create an "inclusive or aligned pedagogy" whereby learning is designed and facilitated (Cohen, 2021, p. 15). Thus, in order to provide students with a positive online learning experience, lecturers need to make resources available to help them both navigate the material. This is reinforced by Devlin and McKay (2016, p. 1) who highlight that as technology becomes more widely used in teaching, "there is less emphasis on the notion of the educator as sage on the stage and more interest" in their role as a "guide on the side." Lecturers therefore need to visualise how material will appear to students to ensure that the content is stimulating and accessible—but doing so can be challenging for lecturers with little experience using their virtual learning environment (VLE) or are unfamiliar with the student interface.

Moreover, students may struggle to engage with online learning due to their separation from peers and lecturers. High-quality online learning is often built upon engaging activities, which requires resources (Barber et al*.,* 2021). Therefore, a new and often more time-consuming way of working is required, adapting pre-existing routines and expectations (Bryson & Andres, 2020). Lecturers need to consider the time it will take students to complete schoolwork to plan their workload schedule whereas, with in-person delivery, they predominantly plan how much time it takes for them to deliver the teaching itself. Similarly, lecturers need to facilitate a different form of student engagement, whereby learning can continue without the presence of the lecturer (Cohen, 2021). Students who may not be able to attend a synchronous session or access certain resources at a specific time may still engage with learning in a way that suits their learning environment (e.g., students in a different time zone, or students with disabilities). However, students need more self-discipline in online learning (Bryson & Andres, 2020) so lecturers need to help facilitate this, but it can be more difficult to hold students accountable in this setting (Marshall *et al.*, 2020). Lecturers also need to use different measures when checking student success online and consider how they can make student learning visible. Yet, despite the increased workload for lecturers trying to manage these factors, students' perception of the value they are getting for their tuition severely deteriorated during the pandemic in 2020 (McKie, 2020).

Online activity design needs to cultivate learning, set expectations for students, and clarify the lecturer's role in a way that enables all students

to engage with the content, their peers, and the lecturer. Because "the lack of in-person interaction with fellow students and teaching staff can make the experience demotivating and isolating" (Barber et al., 2021, p. 40), fostering a sense of belonging is crucial to encourage student engagement and prevent performance and achievement from being negatively impacted by loneliness. The self-paced nature of online learning is associated with loneliness (Kotera et al., 2021) because the process can become task-focused and impersonal (Bryson & Andres, 2020) which can impede students' motivation, academic skills, well-being, and success.

When lecturers are unfamiliar with online learning, they can neglect to use a pedagogy-first approach (Barber, 2021), instinctively reusing materials that are designed for in-person delivery (Davey et al., 2019) which can create a disjointed online learning experience. Although online learning represents a "technology-dense" educational context (Naidu, 2020), pedagogy needs to drive design (Barber et al., 2021, p. 3). Barber et al. (2021) found that lecturers actually felt less confident than students in online learning, which "supercharged a sense of existential panic among academics" (Watermeyer, 2021, p. 638). As such, lecturers may not make the most effective use of available tools (Munna & Shaikh, 2020). Learning design support is crucial for bridging the gap between pedagogical and technological knowledge (Davey *et al.*, 2019) so that online content can be designed to encourage student engagement and meet their requirements.

Moving from in-person to online learning represents a shift "from a teaching to a learning paradigm" necessitating a change in the role of the lecturer to include mentoring, coordinating, and facilitating learning (Boling et al., 2012, as cited in Bryson & Andres, 2020, p. 609). Students and lecturers alike experienced increased anxiety, workload, and fatigue when transitioning to online learning after the pandemic hit and everyone was forced to adapt to a new way of working (Bryson & Andres, 2020). Students may also feel disconnected from their lecturers and have difficulty acknowledging their support and input. Activity design can signpost students to the feedback they will receive from their lecturer to increase the lecturer's presence in asynchronous online settings.

The Hidden Impact of the University of Derby's Learning Design on Student Experience and Success

Although it "may be seen as the poorer cousin and may be regarded as less prestigious" (Redmond, 2011, as cited in Davey et al., 2019), the University of Derby has committed to investing in the development of online learning programmes, and has successfully deployed learning design support to launch 13 new programmes in less than two years in this effort. At the University of Derby, online content is created with the goal of being learner-centred (Bennett *et al.*, 2006), by stating that an average of 20 hours of learning is required per week (including engaging with learning material, further reading, completing unit activities and preparing for summative assessments) so that students are clear about the time required.

Downloadable versions of online content are also available for students who may wish to access the learning material offline. In the aftermath of the COVID-19 pandemic, the learning designers' team changed how support was provided to lecturers who were new to online learning to help them design online material that enhanced student success. Lecturers were provided with the following:

1. Virtual 'just-in-time' support for lecturers: Different types of learning design support were provided at various stages of the authoring process so that lecturers received tailored support at the time when they needed it, instead of relying on a general introduction that condensed all information into one training session.
2. Virtual demonstrations of the authoring process and the student view of content on the VLE: Lecturers were provided with examples of completed authoring documents and allowed to preview examples of pre-built content on the VLE before creating their own.
3. Activity templates and examples of different types of online material were provided that specified the required elements of activities (aim, duration, word count, task and feedback) to help lecturers construct challenging activities that were designed to enhance student achievement and engagement.

Before the pandemic, face-to-face planning meetings, coaching sessions and writing retreats were regularly held with lecturers. These have now been replaced by virtual videoconferencing meetings to provide a comparable level of face-to-face support without the constraint of being in the same room. A collaborative design process facilitates the design of pedagogically informed online learning (Buus & Georgsen, 2018; Conole, 2013, as cited in Buus & Georgsen, 2018) by allowing new lecturers to ask questions and receive guidance on planning for online learning from their peer and learning designers. Content producers (who build the online content in the VLE) and media producers (who help lecturers to create media elements like videos) can now also share their experiences and provide demonstrations of online content to show new lecturers the possibilities of online learning. To reduce anxiety over activity design, activity templates are provided that include all elements required to clarify expectations for students, how students will benefit from completing activities, and how they will receive feedback to allay the perception of lecturers' "limited presence" (Richardson et al., 2015, as cited in Ghazi-Saidi et al., p. 370). Students appreciate being told "that time on task matters" (Morris & Finnegan, 2008-2009, as cited in Bailey & Card, 2009, p. 153), and helps them see the value of online learning by clarifying expectations and how the lecturer would be visible to them.

As the pandemic rendered in-person learning and practical experience impossible for students, online content was adjusted to best approximate the face-to-face learning experience. The University of Derby

initiatives (Table 2) were created to support applied learning, develop employability skills, and foster student success. These virtual experiences enhance student success by helping them to prepare for coursework through the provision of remote opportunities to apply their knowledge in authentic situations.

Furthermore, learning design support was tailored towards both reducing lecturers' time and anxiety and maximising student success. The labour-intensive process of locating reliable and reusable material was demonstrated to lecturers to enable them to work more efficiently. Virtual writing retreats provided 'just-in-time' bespoke support when appropriate tools and technologies were selected by learning designers for specific pedagogical reasons.

Table 2

Initiatives to Enhance Student Experience and Success

Discipline	Initiative	Description
Engineering	Virtual fieldwork	Videos of scanning and identifying structural failures and ancillary elements, and an interactive 360º image of a structure allowed students to apply their learning to real-life situations through remote fieldwork.
Engineering	Interactive demonstration of tools	An interactive replica of Topcon laser scanner helped students to learn how to use the tool that they would need in practice in their careers.
Nursing	Virtual x-ray room	Students explored the features of a typical x-ray room by using an interactive 360º image that enabled students to select different features within the image to learn more information about the equipment.
Nursing	Signposting to relevant apprenticeship standards	References to apprenticeship standards were embedded throughout apprenticeship modules to clarify which units within a module focused on which standards.
Nursing	Case studies of anonymous patient experiences	Case studies from the Care Opinion website were utilised to demonstrate real-life experiences of patients to help students consider how to improve quality of care by viewing the patient's perspective.
Policing	Character design for videos	An animated cartoon character was designed in a video accompanying an activity designed to induce feelings of being under pressure to prepare students for situations they may encounter in their careers.

Suggestions for Other Universities

Providing comparable experiences to on-campus learning is essential for ensuring that online students are not disadvantaged by not being able to attend events. For example:

1. Simulations of using tools, virtual rooms and recordings of field trips can substitute for first-hand experience.

2. Carefully choosing electronic resources and checking their accessibility, reliability and quality will enhance the student experience.
3. Clear activity design can clarify student expectations by outlining input from the lecturer to help students acknowledge how value for money translates into online learning.
4. Specifying the duration and purpose of activities can help students balance their workload alongside other commitments.
5. Asynchronous and blended learning opportunities enable students to work at their own pace and fit their learning into their daily routines. This also future-proofs content by preparing for any subsequent incidents like lockdowns.

Providing support for students and lecturers is essential to help them prepare for the virtual setting. As part of this, it can be helpful to acknowledge that online teaching and learning may be more time-consuming and anxiety-inducing (Kotera et al., 2019), but it is also important to mitigate this by providing just-in-time training and support. Providing digital up-skilling for students and lecturers is essential in introducing them to the VLE and efficient ways of working online along with the relevant skills needed to do so. Table 3 summarises key recommendations from this paper.

Table 3

Recommendations for Other Universities

Recommendation	Resolved challenges for lecturers	Resolved challenges for students
Provide comparable experiences to on-campus learning	Time-consuming adaptation to new ways of working	(1) Feelings of isolation and lack of belonging (2) Perception of less value for money
Refer students to readily available online resources.	Time-consuming adaptation to new ways of working	(1) Feelings of isolation and lack of belonging (2) Perception of less value for money
Include asynchronous and blended learning opportunities for students	Time-consuming adaptation to new ways of working	(1) Feelings of isolation and lack of belonging (2) Perception of less value for money
Consider accessibility requirements	Lack of confidence and/or experience in online content development and delivery	Perception of less value for money
Use clear activity design to clarify expectations for students and input from lecturers	Lack of confidence and/or experience in online content development and delivery	Perception of less value for money
Provide support and digital up-skilling for students and lecturers	Lack of required digital skills and familiarity with the VLE	Unfamiliarity with the VLE and required tools

Note. VLE = Virtual Learning Environment.

Limitations

While this commentary offers actionable recommendations based on our experience; limitations should be noted. First, these practices need to be empirically tested to evaluate their impact on students and lecturers. Second, the situation of COVID-19 and online learning infrastructure, as well as the perception towards online learning in other areas of the world, were not considered. However, this commentary has reported practical knowledge that may be helpful to improve online learning in other universities in a timely manner.

Conclusion

The COVID-19 pandemic forced an urgent move to online learning, putting student success at risk. Experienced learning designers at the University of Derby worked closely with lecturers to mitigate this risk and implement strategies to facilitate student success. Initiatives provided online experiences that were comparable with face-to-face learning to help students engage with their peers and lecturers, and improve their sense of getting value for their tuition. The next step in using learning design to drive student success could be to introduce automation for parts of the authoring process for online content and then focus more on intentional design for student success.

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