Teaching Healthcare Professional Students in Online Learning during COVID-19: Reflection of University Lecturers

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Abstract: Online education has been regarded as a lifeline for many education institutions during the COVID-19 pandemic, offering students a means to advance their education and career. While face-to-face teaching universities convert their education curricula to the online settings, many institutions lack effective online teaching strategies, leading to reduced student enrolment and satisfaction. Contrarily, we have been receiving an ever-increasing number of healthcare professional students in our learning department since the outbreak, while maintaining high satisfaction. These students work as registered professional key workers and study online. Among numerous measures taken to support this student group, this short paper reports four effective teaching practices we have implemented: (a) active use of adaptive learning, (b) Padlet discussions, (c) wellbeing webinars, and (d) resilience building. These teaching strategies are deemed to address weaknesses of online learning and offer emotional support to students. Our teaching practices will be useful to many universities supporting this crucial group of students in the online environment.

Keywords: online learning; healthcare professional students; COVID-19; resilience, adaptive learning

Introduction

Online Learning as Lifeline during COVID-19

Although its importance was already recognised, online learning has become a lifeline for many higher education institutions worldwide during the COVID-19 pandemic. As the United Nations Educational, Scientific and Cultural Organization (2020) referred to as 'a major education crisis', more than 1.5 billion students worldwide have been affected by closures resulting from the pandemic. Accordingly, many institutions globally shifted their module deliveries from face-to-face to online learning, enabling virtual contact with lecturers and peers (Gallagher & Palmer, 2020; Openo, 2020; Witze, 2020). Times Higher Education (2020) regarded online learning as the most effective educational instrument during the pandemic, maintaining student retention and access to learning. On the surface, it appeared the shift from face-to-face to online would solve the problem in higher education, however this is not straightforwardly the case (Hedding et al, 2020; Stukalo et al., 2020). Academics with minimal experience teaching online have struggled with converting the teaching materials to digital format, familiarising themselves with the online environment, interacting with students, and supporting student journeys without seeing them in person (Gewin, 2020; Rapanta et al., 2020). Unsurprisingly, many students have decided to defer their studies: for example, 22% of students in the United Kingdom [UK] deferred their studies (University and College Union, 2020).

These problems might explain why many prospective students have begun to enrol in established online learning programmes, where academics and materials had already been trained in and designed for online education (Santillo & Busby 2021). The online learning department of the University of Derby, UK, has been exclusively offering online education for more than 20 years, and has been receiving an increasing number of students during the pandemic, while maintaining high student satisfaction. One discipline area that has attracted students is healthcare, consisting of nursing, perioperative practice, social work and counselling programmes, where registered professionals learn to enhance their practice. Across these programmes, enrolment has increased about 60% relative to the same time last year (University of Derby, 2020). These healthcare professionals are categorised as a key worker, providing care and treatment for people in community and hospital environments.

During the initial phase of the pandemic in the UK, hospital services were reconfigured to accommodate a feared exponential increase in patients requiring a higher level of care (Care Quality Commission, 2016; Stannard, 2020). Additional capacity was created by suspending elective services and using these areas with the associated staff to deliver critical care, and by rapidly building Nightingale Hospitals (temporal facilities for acute services; National Health Service [NHS], 2020a,

2020b). Accordingly, demand has increased for healthcare professionals to be on site offering care for the public.

Despite this backdrop, nurses and allied health professionals are still seeking higher education, with a 58% increase in students studying modules for an undergraduate top-up degree compared to the same period in Autumn of 2019 (University of Derby, 2020). In the previous year (2018/19 to 2019/20) there was essentially no change in student numbers studying the same modules (from 454 to 457), but it appears the pandemic has encouraged additional interest in online study that had already been assuming increased importance (LaSala, Polyakova-Norwood & Starnes-Ott, 2020). However, universities must consider this dramatic rise in student numbers, and infectious status of the country and beyond (e.g., vaccination has started in the UK in December 2020). Registered nurses and allied health professionals undertaking study are facing an increased demand to provide care and treatment (Kotera et al., 2020a). They must balance these competing pressures while negotiating the pandemic's harmful effects on their psychological wellbeing, including heightened stress due to worries associated with high risk of infection (Kotera, 2021). This interferes with a student's ability to study, indicating a need for countermeasures.

Teaching and Supporting Healthcare Professional Students

Recognising the high stress in our healthcare professional students, we have implemented several additional practices to support their learning. Although we have not empirically evaluated nor recorded, based on students' informal feedback and our observation, these four were deemed especially effective: (a) active use of adaptive learning, (b) Padlet discussions, (c) wellbeing webinars, and (d) resilience building (Table 1).

Table 1.

Additional teaching practices, aims, and students' feedback.

Teaching Practices	Aims	Students' Informal Feedback
Active applications of adaptive learning, where computer algorithms tailor interactions with the student and learning materials/activities.	To meet the unique needs of each individual student, as healthcare professional students are working in diverse and often uncertain conditions.	Students found it helpful to receive customised interaction and learning resources, which allowed them to focus on what needed to be learned efficiently.
Using Padlet for discussions.	To allow students to share their thoughts more	Students enjoyed this creative way of sharing,

	creatively.	which helped to create a 'safe' online space, allowing to share personal reflections regarding COVID-19.
Wellbeing webinars.	To provide a synchronous space where students can connect with peers and teaching staff to seek out support and address their wellbeing.	The attendance to webinars was high. Many students found the wellbeing webinars beneficial, as these developed connectedness with peers and academics through informal conversations.
Discussion board threads focusing on resilience building	Discussion board threads that helped students to identify their strengths in relation to studying and managing clinical practice.	Many students experienced challenges in managing COVID-19 in practice whilst studying. Many students were able to reflect on and identify their personal strengths and developed useful coping strategies to manage a work-study-life balance.

Active Use of Adaptive Learning

Adaptive learning is a method where algorithms provide tailored interaction with students, offering customised materials to meet their unique needs (Mirata et al., 2020). For example, in our independent study module, we provided a short quiz regarding how to write a literature review, which was their final assessment. If a student answered a question about establishing a research question wrong, they would be directed to the contents about research questions. This has been actively used since the outbreak, and has been received positively by the students who indicate that it helped them to directly focus on what they needed to learn. The efficiency of this learning practice was especially advantageous to busy healthcare students who had to balance studies, practice and other life responsibilities.

Padlet for Discussions

Padlet is an online notice board that allows tutors and students to share their ideas creatively by posting texts, images, links, videos and other types of documents. Recognising the tense atmosphere of their practice, we frequently used Padlet for academic discussions, allowing

students to express their thoughts creatively and casually. For example, instead of monotonous texts communication about 'how they feel' during the trimester, Padlet allows them to use images, sounds, movies and GIFs. These functions allow them to express their feelings more freely and creatively, enhancing a sense of human touch in the module (Glenn, 2018). This created a stronger sense of a safe online space that encouraged more personal reflection in relation to COVID-19.

Wellbeing Webinars

We normally offer live webinars about the module (e.g., module overview, assessment), however webinars focusing on student wellbeing have also been offered during the pandemic, before and during the trimester at both programme and module levels. For example, a week before the term started, a programme level webinar was offered to help reduce students' anxiety through socialisation activities such as showing where they live using a map of the world, or asking them to use one word to introduce themselves on a word-cloud live poll. Aligned with previous findings reporting on the importance of informal conversation in higher education (Thompson & Trigwell, 2018), these non-academic conversations and interactions taking place online have also helped to foster students' sense of connectedness with peers and teaching staff.

Resilience Building

Resilience, a psychological coping construct that embraces one's internal quality and behaviours (Grant & Kinman, 2014), is essential to cope with stress and other emotional difficulties (Kotera et al., 2021a). In order to foster students' resilience, we created online discussion board threads focusing on resilience, helping them identify their strengths in relation to learning and practice. Using the resilience model (Padesky & Mooney, 2012), students were encouraged to reflect and identify their strengths that could be particularly useful in the current situation, and peers were encouraged to offer positive feedback to others' posts, which created a safe community. Indeed, identifying and appreciating one's strengths was associated with higher wellbeing and academic performance (Tang et al., 2019). Intrinsic motivation was suggested to explain these relationships: by reflecting on one's internal resources such as curiosity and caring, students are more likely to feel better leading to better performance (Kotera et al., 2021b).

Implications for Other Institutions

There are no indications that the pandemic will end in the foreseeable future (Kennedy et al., 2020; Santana-Cibrian et al., 2020), and a further increased demand for online learning is expected (Whittle et al., 2020). This implies that many face-to-face teaching institutions around the world still face an urgent need to implement more effective and supportive online teaching strategies to assist students' learning

immediately (Health Education England, 2020). Healthcare professional students are in an especially challenging situation, balancing their clinical practice, studies and other duties. Failure to address their needs can negatively impact their studies and clinical practice. Accordingly, we have introduced our most up-to-date and effective teaching practices in this paper.

One salient limitation is that the effects of those practices have not been empirically measured, and therefore future research needs to evaluate them in relation to students' wellbeing and academic performance. For example, appraising the changes of wellbeing throughout a trimester in relation to attendance to those activities and the final grade may help capture the impact of those practices. Moreover, as previous online education research has highlighted, how these practices can create a sense of community and belongingness and counteract loneliness is worthy of evaluation (Kotera et al., 2019). Another limitation is that these practices were used in one institution, therefore some adjustments may be necessary when applied in another context. Further, students who did not want to discuss their workplace issues in the university, might not have engaged in these wellbeing activities. Those students' wellbeing care should also be considered. Lastly, teaching staff's wellbeing also needs to be considered when implementing new teaching practices (Kotera et al., 2020b).

Despite the increasing demands for online education, many universities do not have effective teaching strategies to convert their teaching to the online settings (Rapanta et al., 2020). Moreover, healthcare professional students need additional attention as they balance academic work, practice and other life duties. Our teaching practices can help meet the needs of this critical student group that has been made all the more critical by the current unprecedented health crisis.

Ethics statement
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Conflict of Interest
There is no conflict of interest.

Availability of data and materials
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Authors' contributions
YK conceptualised; PG, AW, RR and UO drafted the first section (Online Learning as Lifeline during COVID-19); RS, MBU and CR drafted the second section (Teaching and Supporting Healthcare Professional

Students); JC and YK drafted the third section (Implications for Other Institutions); YK and GL reviewed and finalised the entire draft.

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