

Accelerated HE Digitalisation: Exploring staff and student experiences of the Covid-19 HE rapid online-learning transfer.

Laura Louise Nicklin, Luke Wilsdon, Darren Chadwick, Laura Rhoden, David Ormerod, Deborah Allen, Gemma Witton and Joanne Lloyd*

Laura Louise Nicklin – Laura.nicklin@wlv.ac.uk - Institute of Education, Faculty of Education, Health and Wellbeing, University of Wolverhampton, Walsall, UK - ORCID: 0000-0002-6195-9501 (*Corresponding Author)

Luke Wilsdon - L.A.Wilsdon@wlv.ac.uk - Department of Psychology, Faculty of Education, Health and Wellbeing, University of Wolverhampton, Wolverhampton WV1 1LY, UK - ORCID: 0000-0001-8268-3199

Darren Chadwick - D.Chadwick@wlv.ac.uk - Department of Psychology, Faculty of Education, Health and Wellbeing, University of Wolverhampton, Wolverhampton WV1 1LY, UK - ORCID: 0000-0002-4963-0973

Laura Rhoden - L.Rhoden2@wlv.ac.uk - Department of Psychology, Faculty of Education, Health and Wellbeing, University of Wolverhampton, Wolverhampton WV1 1LY, UK - ORCID: 0000-0002-7269-3032

David Ormerod - D.R.Ormerod@wlv.ac.uk - Department of Psychology, Faculty of Education, Health and Wellbeing, University of Wolverhampton, Wolverhampton WV1 1LY, UK

Deborah Allen - D.Allen6@wlv.ac.uk - Department of Psychology, Faculty of Education, Health and Wellbeing, University of Wolverhampton, Wolverhampton WV1 1LY, UK - ORCID: 0000-0002-7970-462X

Gemma Witton - Gemma.Witton@wlv.ac.uk - College of Learning and Teaching, University of Wolverhampton, Wolverhampton, UK- ORCID: 0000-0003-2488-0412

Joanne Lloyd - Joanne.Lloyd@wlv.ac.uk - Department of Psychology, Faculty of Education, Health and Wellbeing, University of Wolverhampton, Wolverhampton WV1 1LY, UK - ORCID: 0000-0003-3891-7247

Author Contributions: Conceptualization J.L., D.C., D.O., D.A., L.L.N. and G.W.; Methodology, J.L., L.L.N., D.C., D.O., D.A. and G.W.; Analysis, L.L.N., D.C. and J.L.; Investigation, J.L., L.L.N., L.W., and L.R.; Writing – Original draft preparation, L.L.N., L.W. and J.L.; Writing – review and editing, L.L.N., L.W., J.L., D.C., D.O., D.A., L.R. and G.W.; Supervision, J.L., and L.L.N. ; project administration, J.L., and L.L.N.; funding acquisition, J.L., D.C., D.O., D.A., and G.W.. All authors have read and agreed to the published version of the manuscript.

Accelerated HE Digitalisation: Exploring staff and student experiences of the Covid-19 rapid online-learning transfer.

Abstract

In the UK, the first ‘lockdown’ of the COVID-19 pandemic necessitated a rapid shift to online learning and digital technologies in Higher Education (HE). While the situation was unprecedented, extant literature on online learning suggested there would be challenges, opportunities, and benefits to this transition, and we sought to understand these via a case study of one UK HEI department at this time. To draw out in-depth and nuanced accounts of this (at time of investigation - unstudied) scenario, qualitative data were collected via semi-structured online interview or written reflection. To explore, identify and understand the experiences from both sides, and with a diverse sample, we purposively recruited both staff (n=10) and students (n=12), from various roles and backgrounds, including those with additional learning and/or mental health needs. The ‘bricolage’ data were analysed inductively, utilising a latent reflexive approach, and organised into a framework around five core themes: ‘methods and means of engagement’; ‘learning maintenance, destruction and construction’; ‘remote education and resource accessibility and literacy’; ‘support and communication’; and ‘life and learning: responses, adaptations and impacts’. Within these, a range of challenges, successes and, most importantly, future learning and innovation outcomes were identified-by staff and students, particularly relevant to working with and supporting students with additional needs in the online learning forum. These discoveries informed a set of practical recommendations, provided here in Box 1, for (rapid implementation of) online learning (in times of stress).

Keywords: Online learning, Covid-19, Higher Education, Qualitative, Rapid Transition, Education Innovation.

Statements and Declarations: This project was funded by [anonymised for peer review]. The funder had no input into or control over the research process or findings. The Authors have no competing interests to declare that are relevant to the content of this article.

Acknowledgments: This project was funded by [anonymised for peer review].

1.0 Introduction

The Covid-19 pandemic, and the restrictions on social, educational, and commercial interaction this brought, saw the temporary closure, from March 2020, of most face-to-face public establishments within the UK. While government-mandated closures of educational establishments were initially restricted to schools, ‘work from home’ guidance and travel restrictions meant that Higher Education Institutions (HEIs) also had to quickly implement online teaching and learning in order to avoid a break in provision (Crawford et al., 2020). By April 2020, schools and HEIs were closed in 185 countries, impacting approximately 1.5 billion learners (UNESCO, 2021). HEIs were forced to respond to the unprecedented restrictions on face-to-face activities by rapid and essential investment, development and upskilling in digital technologies (Watermeyer et al., 2020). The purpose of the research presented here was to explore and understand, in qualitative depth, experiences of HE learning and teaching during the Covid-19 pandemic. Crucially, even at this time of writing in January 2022, HE is still experiencing an ongoing rapid digitalization process - with the development of new technologies in concurrence with the emergence of Covid-19 variants creating fluctuations in restrictions. This brings a necessity to future-proof educational provisions, which will have implications for the HE sector indefinitely, and further highlights the importance of research, such as this, to identify practical recommendations for the rapid implementation of – and now continued maintenance of – online learning, particularly in times of stress or uncertainty.

Staff and students were required to rapidly transition to digital, distance delivery of not only taught provision, but also independent learning and student support. Furthermore, students with additional learning needs or challenges also faced digitalisation (or, in some cases, temporary loss) of the existing support provisions they would normally receive, including one-to-one and face-to-face support. This has presented unique challenges for these students, who have experienced particularly elevated levels of disruption and anxiety (Sideropolous et al., 2021).

Research surrounding the challenges, successes and future learning of such an unanticipated and accelerated digitalisation of the education sector is just beginning to emerge (e.g. Sánchez-Cruzado et al., 2021; Hodges et al., 2020), and will continue to do so as restrictions continue to change and education systems globally are required to adapt within the post-pandemic world. With this in mind it is important to note here the array of research into this area continuing to emerge commenced publication after the data collection, analysis and much of the writing up of this study had concluded (e.g. Giray, 2021; Churi et al., 2021; Sharma et al., 2021; Sutarto, 2020). Much current research has focussed on attempting to measure the impact or differences in the value of online learning in the pandemic context (e.g. Churi et al, 2021; Ma et al, 2021), whereas others have considered innovation in teaching and learning that continues to emerge (Suarto, 2020; Tomczyk & Walker, 2021). This research commenced at the immediate onset of the pandemic restrictions, drawing on immediate and raw responses of staff and students directly experiencing this change in its earliest phase. It would be therefore disingenuous for us to claim that our own research had been informed by any of this which was published after the data had been collected and analysed. For this reason, there is greater consideration of contemporary literatures and commentaries with our discussion section, rather than, rather than in this initial Introduction section.

New research has been, and continues to be, published since the onset of this phenomenon (and thus, this research) , with quantitative studies presenting complimentary data to the qualitative findings in this study having emerged, for example Giray (2021) reporting quantitatively surrounding broader students experiences and satisfaction with online learning (in Turkey) during Covid-19. The findings of such quantitative research hold enhanced value when combined with the nuance and complexity uncovered qualitatively from the staff and students in this research. Such measures of student satisfaction and the student experience maintain status as critical to the future of Higher Education, thus holding significant relevance to academic, professional and industry stakeholders. Further, staff perspectives are also essential in considering this, where the quality and capability of educators to operate within a digital realm can impact student satisfaction and perceived performance (Gopal et al., 2021). In addition, conflicting perspectives surrounding the capability, needs and impact on staff cannot be overlooked when considering the efficacy of HE digitalization, and the future of HE delivery. Further, studies are frequently attuned to their specific geographical context (with those cited here based on several continents), much like our research specifying one UK case study. However, this is highly beneficial as multiple approaches and perspectives, including the use of both qualitative and quantitative approaches, continue to facilitate the growth of a library of resources that are beneficial to the HE field on an international scale, with applicability benefits both during the uncertainty of the covid-19 pandemic and beyond.

However, even prior to the pandemic, we were able to draw on a wealth of prior research surrounding pedagogy for online learning, (e.g. Lawrence, 2020; Coker, 2018; Doerring et al., 2009), which can provide some useful context. Advantages of online education, where students use Internet-enabled devices (such as laptops and mobile phones,) to study and interact with learning materials, include the fact that it can be done at any location with an Internet connection (Singh & Thurman, 2019), and can occur synchronously or asynchronously (Bray & Pradhan, 2020). Benefits of this approach have been emerging in academic research for at least two decades, in line with the post-millennium expansion of technological use and access, such as the potential for increased accessibility (Russ & Hamidi, 2021, Pearson & Koppi, 2002), diversity (Ciges, 2001), efficacy (Suprianto et al., 2020) and flexibility (Daymont et al. 2011; Daniel 2016).

However, both during and prior to the pandemic, challenges associated with online learning have been identified - such as equality of access, digital poverty and digital literacy for both students and instructors (Henriksen et al., 2020; De Macido & Ulbricht, 2013; Muilenburg & Bierge, 2005), impact of digital literacy or skills on ability to utilise it effectively (Sánchez-Cruzado et al, 2021; Breakstone et al, 2018) and appropriateness of content for an online format, particularly when designed at an emergency pace (Hodges et al., 2020). While mass delivery of online learning in large numbers is one of the advantages of an online platform, the effectiveness of this from a student perspective has also been called in to question - with a range of challenges and benefits identified surrounding cohort size, group interaction and learning outcomes (Hamann & Wilson, 2012; Hurst, 2020). Staff have also identified similar benefits and challenges (Palmer & Holt, 2014; Davis et al, 2007.)

While online learning has long been a part of academia for those who choose or require more flexibility in their studies, and online or blended-learning learning tools are well established in the education sector, prior to this pandemic they were more typically an optional addition rather than a mandatory necessity. Further, access to

technological provision for those without home access to devices or the internet could be facilitated via the physical university provision of computer and library spaces – whereas this was not possible in the pandemic context. The Office for Students (OfS) found that 52% of students said learning during the pandemic was negatively affected by poor internet access, 18% reported technological equipment issues and 71% reported lack of appropriate study spaces (OfS, 2021). Other unique challenges of the pandemic such as home-schooling duties during times of school closures (Cheng et al., 2021) meant students with children had to juggle home-schooling with their own teaching and learning. Similarly, those with other caring responsibilities or keyworker roles inevitably also had to balance studies with additional burden of these tasks. These are important issues for consideration in connection with equity and equality of the accessibility of online learning provisions; and understanding how these kinds of issues impact upon students and staff from their own perspective is a crucial first step towards addressing them.

In order to understand experiences of learning and teaching during the Covid-19 pandemic, we conducted a qualitative investigation with staff and students in a UK Higher Education Institution (HEI), at the peak of the rapid transference to online learning. A qualitative approach was selected to draw out in-depth and nuanced descriptions of the participant experiences, and the qualitative analysis adopted here brings a unique and collaborative vision for students with additional needs right at the first phase of UK pandemic restrictions. This enables a deep and detailed identification of the impact of the restrictions in relation to higher education digitalization, focussing on including students with additional needs and staff voices from within the same department. Thus, this approach enabled this project to explore, identify and understand the issues and ideas experienced by less mainstream voices, from both sides of the experience. Participants were purposively sampled in order to capture such experiences of individuals from a variety of demographic background, and with an array of extra-curricular challenges (such as work or caring responsibilities), and to ensure inclusion of the voices of those with additional learning or other support needs. The aim was to explore the challenges, successes and lessons from the rapid transition in this diverse sample. These discoveries thus formulate our emergent recommendations as detailed in Box 1 for (rapid implementation of) online learning (in times of stress).

2.0 Methodology

2.1 Design

We conducted a qualitative investigation utilising a ‘bricolage’ approach, i.e. obtaining and collating data, from both staff and students, through a variety of methodologies/modalities – in this case, semi-structured (remote) one-to-one interviews and written reflections submitted online via synchronous digital chat, email or a research portal. Bricolage is particularly appropriate where there is a need to collect a large amount of data in a short period of time, with insights from multiple perspectives (Kincheloe et al., 2011; Sobers, 2010) - which was very important here, due to the rapidly evolving nature of the COVID-19 pandemic and governmental regulations and the need to hear from individuals while the critical period of change and adaptation was fresh in their minds.

2.2 Participants:

Participants were nine teaching-responsible staff members and 11 students from a Social Science Department in a UK HEI (*anonymised for ethical reasons*). Purposive sampling was used to recruit individuals from a variety of demographic backgrounds, with a range of different teaching and learning profiles; specifically, we recruited student participants of a variety of ages (both ‘traditional’ recent school-leaver backgrounds and non-traditional route, mature students), with a range of ethnicities and genders, and placed emphasis on recruitment of students with additional learning needs. We recruited staff with a range of levels of seniority and types of duties (including a Teaching Assistant, Lecturers and Senior Lecturers, those with module and course leadership duties, and those teaching at levels 3 (Foundation Year) through to 8 (PhD)). Final participant recruitment numbers were determined by research judgment taking into account (a) progression towards saturation and (b) practical constraints e.g. (number of willing participants). Students were given the opportunity to disclose learning difficulties, disabilities and/or mental health issues and 8 out of 11 students reported either an

additional learning challenge, mental health/wellbeing issues or both. These are indicated as relevant demographic information throughout to qualify quotations with additional information - “MHW” Indicates that the participant has disclosed a mental health and wellbeing issue they perceived as relevant to their response, and “LDD” Indicates that the participant has disclosed a learning difficulty or disability they perceived as relevant to their response.

2.3 Procedure

Participants were informed of the study with emails circulated to staff and students, and potential volunteers were asked to express their interest using an anonymised survey. Interested parties were sent a link to an information sheet, consent form and a pre-interview questionnaire consisting of basic demographics questions (age; gender; ethnicity; marital, occupational, additional needs, disability or difficulty), administered via Qualtrics online survey software. Participants were invited at this point to create a unique code to support data anonymization and withdrawal, if desired. Due to the richness of data, the resulting sample was very appropriate for the qualitative nature of the study and the information sought via the research, allowing for a rich, nuanced and complex data set to suit the subject matter and research intention.

Participants chose their method and modality of participation for the qualitative component of the study; semi-structured one-to-one remote interviews (via online text-based chat or online video-call) or written reflection on the same questions used in the interview guide, submitted online via email or the Qualtrics research portal. They were also offered an opportunity to choose who conducted their interview, from a small pool of interviewers. While the information sheet assured participants of the confidentiality of their participation, the research team contained individuals who taught and/or worked alongside participants and we were cognizant of potential socially-desirable responding or power dynamics. We sought to minimize this and make participants as comfortable as possible by allowing to select their interviewer (or submit an anonymous written reflection).

A semi-structured interview schedule (or written prompt-sheet, for those providing written reflections) was used to guide participants in reflecting on experiences of the rapid transfer, while prompting them to discuss both challenges and opportunities openly including objective, subjective, technical, personal and emotional reactions to the transition. The perceived impact upon learning and assessment performance were also asked about. To situate the insights and impact gained within the individual context, we also asked people to elaborate on how personal circumstances such as individual and diverse needs influenced their experiences of the transition to online learning or teaching. Some questions were posed to both staff and students (e.g. “How have you found this experience (of the switch to online learning), from a practical perspective?”) whereas others were specific to students (e.g. How well have the university aided with this experience?) or to staff (“How well have your students engaged with this experience?”).

2.4 Analytical process

One-to-one interviews were conducted by Author 1, Author 8, Author 2 and Author 4, audio recorded and transcribed verbatim by Author 2 and Author 4, and imported into NVIVO 12. A framework analysis procedure (Gale et al, 2013; Kiernan & Hill, 2018) was carried out, following: Transcription (Author 2 and Author 4), Familiarization with the interviews (Author 1, Author 3), generation of initial codes based on 2 staff and 2 student transcripts (Author 1 and Author 3), development of a working analytical framework (Author 1, Author 3), charting of data into the framework matrix (Author 1, Author 3), and data interpretation (Author 1, Author 3, Author 8).

As a protocol for trustworthiness (Amankwaa, 2016), after development of the framework, Author 1 and Author 3 blind-coded the selected transcripts independently, followed by collaborative comparison and discussion to reach an agreement on emerging codes. Author 8 further blind coded the same transcripts and engaged in further discussion and consensus. Author 1 then coded the additional transcripts in line with the analytical framework constructed and a final check and discussion of the overall emergent themes was completed by Author 1, Author 8 and Author 3 to ensure consistency, and to ensure the data outcomes were fully explored and extracted.

Coding was followed by reviewing, defining and naming the themes through discussion and mutual agreement of the research team. Analysis was wholly inductive, with themes dictated by the data rather than pre-specified.

Author 2 coded a sample of transcripts utilising the completed framework to further ensure accuracy in interpreting the data set and his coding was wholly consistent with the framework, further ensuring that any other themes or domains within the transcripts were not overlooked, in addition to checking for coherence and consistency. This process did not identify any problems with the framework adopted. Our goal was to utilise the framework in order to ensure that all important experiences had been identified, rather than to quantify them. Thus, if a coder identified additional aspects to the data through their own coding, this was included as a beneficial contribution rather than conflicting perception. That said, all coders were consistently in agreement surrounding the application of the framework and the codes and themes with no conflicts or disputes arising.

Documented procedures were undertaken to ensure that the research approach held “credibility, transferability, dependability, and confirmability” (Lincoln & Guba, 1985), in line with recommendations from Amankwaa (2016) that “*The creation of a protocol for establishing trustworthiness within qualitative research is essential to rigor*”. (Amankwaa, 2016 p.123). In relation to credibility, the coding researchers participated in peer debriefing whereby they either joined live or watched recordings of a sample of each other’s initial interviews (Author 4 and Author 2) and Author 1 listened to a sample of each - enabling reflection and feedback on interview style, technique, accuracy and practice. For further credibility, and also transferability and dependability, researchers utilised journaling and notation throughout data analysis, coding, streamlining, theming and analytical processes, with journaling conducted after each of these significant activities from basic notes through to thicker description for exploration and justification to a research auditor.

2.5 Ethics

The project undertook a Universalist stance on ethics, whereby ethically grounded rules laid out from the initiation of the research were not broken under any circumstances (Bryman, 2008). Any potentially identifying information within the interview recordings (e.g., names of people, classes/courses, or places specific enough to endanger anonymity) was anonymised during transcription.

Ethical approval was granted by the Psychology Ethics Committee at the University of [Hidden for peer review].

3.0 Findings

The data were organised into a framework built around five core themes, discussed in detail below. These were ‘methods and means of engagement’ (encompassing the changes and adaptations in how people engaged with learning); ‘learning maintenance, destruction and construction’ (encompassing issues around how and why learning changed for better or worse, or remained the same); ‘remote education and resource accessibility and literacy’ (encompassing practical and skills-based factors that impacted upon ease of accessibility of online learning and teaching); support and communication’ (encompassing issues around how staff and students communicated, with particular focus on how this impacted support); and ‘life and learning: responses, adaptations and impacts’ (encompassing how the experience of rapid transition to online learning impacted people for better and/or worse, and what learning emerged).

3.1 Methods and Means of Engagement

Both staff and students spoke of the practical aspects of their experience of transition to online learning, describing the (sometimes novel, sometimes familiar) ways in which they engaged with teaching or learning. They identified (pre)recorded lectures, shared on a virtual learning platform and accessible asynchronously, as the primary and most prevalent means of taught content delivery (“*lectures were recorded and always available could pick and choose when I wanted to watch them*” Annalise, Student) - these were popular with students and staff in prompting accessibility and engagement with flexibility surrounding life commitments, which were often heavily exacerbated by the pandemic restrictions. However, some staff questioned their value in comparison with their normal (face-to-face) teaching practice (“*I much prefer to work with that live interaction between staff and student... in terms of lecture content and engagement, I think students struggled...*” (Christine, Staff), and some students found it negatively contravened their expectations, partly due to reduced capability for direct (i.e. synchronous) interaction “*I like face-to-face, I like lectures. That’s why I came to university, if I wanted it this way, I would’ve done it...*” (Sammy, Student [LDD, MHW]).

In addition to pre-recorded materials, live-streamed lectures, discussions and question and answer opportunities via workshops delivered synchronously, or via online forums utilised asynchronously, were all also identified as common approaches to teaching delivery by both staff and students - all of which were described as having both benefits and limitations, e.g. challenges of high numbers of students trying to ask questions at the same time, dominant voices and the risk of getting lost or feeling ignored due to the lecturer struggling to keep up with a heavy and constant stream (“... if everyone’s typing I’m guessing all those messages are going to come through round about the same time ... you’re gonna miss quite a lot of the answers” (Bailey, Student [LDD, MHW]).

One-to-one synchronous student learning support (e.g. via videoconferencing software) was also highlighted by a small number of staff and students, in addition to email or similar forms of asynchronous online communication, providing learning opportunities and opportunities for student-staff interaction outside of formal teaching time. For some staff, these interactions had a negative impact on workload - though many students reported missing or not being aware of such interactions, implying that the take up of such opportunities, and/or knowledge of the possibility to all students may have been limited.

Finally, students identified self-directed remote means of engagement through the establishment of peer-networks for discussion of learning via social media and communications technology such as WhatsApp, an interesting dimension that, though not established by staff, was reflective of initiatives other staff had reportedly tried to implement like social discussion time and peer interaction time within official university platforms with, anecdotally, less success.

Overall, staff and students recognised varied challenges and opportunities associated with the wide array of methods of delivering and engaging with online learning.

3.2 Learning maintenance, destruction and construction

This theme encompasses views and experiences around how delivery quality of taught content changed (or was preserved) during the rapid transition to online learning, and how it might, or should, continue into the future. Within this theme we describe variability in experiences; the impact of time pressure on the adaptation to online learning; perceptions of staff going ‘above and beyond’; assessment adaptations; challenges meeting additional needs; unexpected benefits, and ideas around ‘looking forwards’ at what should be adapted or continued in the future.

3.2.1 Variability

Some spoke of some variability or inconsistency between departments, modules or staff in terms of provision (“some of them wasn’t and some of them was really helpful” Sammy, Student [LDD, MHW]). While some students described occasions where they perceived a lack of effort put into the provision given (“at one point it just felt like, you know what, because you’ve paid your money already, we have to throw something in” Bailey, Student [LDD, MHW]), others felt there was great effort put into a maintained high-quality learning provision (“It seemed that lecturers did everything they could depending, in the circumstances” (Tommy, Student [MHW])).

Staff described variation in how feasible adaptation to online delivery was across different modules – being more challenging, and less attainable, for modules that had previously entailed significant practical engagement (e.g. specialised equipment or group interaction). They referenced how online delivery for such modules removed the potential for essential demonstrations, impeded flexibility in student involvement, and reduced interactivity (“In our case on the [level 8 course] there is a huge applied skills based component... I don’t think online can replace it” Les, Staff).

Some students also discussed detrimental impacts of not being able to receive and engage with certain types of learning face-to-face. Conversely, for some types of learning (particularly, lectures and drop-in sessions), students reported being very happy with the online format:

“We had lectures with the same lecturers every week which was great and you could do a drop-in session and you could show them assessments and that was perfect.”

(Sammy, Student [LDD, MHW])

Variability in who delivered the session, and how good they were at online delivery, was also reported, and consistency and familiarity of the lecturer were important to one participant (though this may have been because the lecturer in question was perceived as a particularly good (online) teacher):

“If I’m honest if [Lecturer’s Name] was teaching this group I, and other students agreed... I think it would’ve been different [better]” (Bailey, Student [LDD, MHW]).

This inconsistency was also recognised by staff, and partially attributed to variable pre-existing levels of technological literacy, though they also referenced the emergency, time-sensitive nature of the work as a limiting factor, as discussed in the next subsection.

3.2.2 Impact of time pressure

Time pressure was a major factor discussed by both staff and students, with staff noting that action (i.e. commencement of online delivery) was needed before comprehensive training and support could be appropriately introduced.

Students were generally sympathetic to the challenges brought by the immediacy of the rapid transfer, and the implications of this for staff to have to act quickly and digitalise learning provisions with minimal warning: *“I think they did the best they could with the short time they had... it’s an unprecedented situation”* (Finley, Student [MHW]). Expressions like ‘in the circumstances’ and ‘best they could’ implied that students were taking this into account and judging the quality of provision more leniently than they might have done ordinarily.

Staff themselves elaborated on issues of haste required in material creation, with consideration of the *“rushed”* unprecedented nature of the task (*“everything needed to be done immediately ... lack of time to do things”* Sarah, Staff). Some staff reflected on the necessity to prioritise producing a high volume of resources that transferred the required information quickly over preparing more creative, optimal resources, and regretted not being able to ‘do more’, or do things perfectly.

“When we were originally told that we were to move everything online I don’t remember exactly how long we had ... it was really quick. That didn’t give us a whole lot of scope thinking creatively ... we just kind of threw them together last minute.”

(Zack, Staff)

3.2.3 Above and beyond

While unavoidable ‘rushing’ was mentioned, staff also recounted expending significant effort to ensure they still attended to pedagogical considerations in adapting the learning provision to an online format:

“There are big differences between how people engage online and how people engage face-to-face... I think pedagogically it’s kind of different, you have to account for those for those differences”

(Spencer, Staff).

Though highlighting the workload implications of this (*“I had to spend a long time researching strategies to try and improve engagement.”* Matilda, Staff), staff explained willingness to input significant additional efforts to ensure the quality of the learning provision (*“the extra hours involved in preparing the teaching ...you don’t mind putting the hours into that”* Sarah, Staff). Part of this change was adapting to new methods and means of delivery, for a range of subject areas including both traditionally text-based and practical disciplines.

While there were initial concerns from staff that the lack of time for adjustment prohibited creativity in development of materials, they also reflected that while adapting to online delivery, innovation and creativity, and the development of new skills (e.g. vital digital literacy for new technologies), were all prevalent. They described the undertaking of rapid CPD to ensure quality:

“I have felt well supported via the training opportunities provided... I am learning and adapting and I believe the materials I am creating are good, beneficial and accessible to students”

(Susan, Staff).

Furthermore, staff and students recurrently described forced technological upskilling on both an individual and institutional level, enabling innovation and enhancing teaching for the future.

"[Staff] would be comfortable working in ways that they wouldn't have been comfortable to work with before"
(Les, Staff)

Several staff praised the learning that emerged during the process, and that peer support provisions (such as online collaborations, discussions and new communications software) developed enabling them to enhance their new online provisions over time (*"we are continuing to learn and adapt in ways that will better facilitate learning for everyone using digital technologies, even beyond the covid-19 pandemic."* Susan, Staff).

3.2.4 Assessment adaptations

Staff reported making urgent changes to assessment and introducing emergency measures to ensure all students had a fair chance at their assignments such as the introduction of alternative but relevant assignments, and the creation of workarounds so that students could still complete their mandatory dissertations in a time where active data collection could not be moved online and completed (*"I've actually had to kind of create a false data set for the student ...they hadn't had the opportunity"* Spencer, Staff). Students echoed this, speaking of a range of changes to their assessments including examinations being replaced by essays and research projects having dummy data sets generated in place of the opportunity to collect real world data.

In relation to marking and grading, students' views diverged on the support given; some suggested that more allowances should have been made with arguments that *"the grading policy ... I don't think was justified"* (Bailey, student [LDD, MHW]) and a call for more lenient *"discretionary"* measures to allow students achieving borderline grades to pass (Sammy, Student [LDD, MHW]). Some, however, spoke positively about the adjustments made, such as granting of extensions due to mitigating circumstances (*"With the universities support and extensions, I was able to complete the work to the best of my ability given the circumstance."* (Charlie, Student)); and reduction in the number of credits used to calculate degree classifications (*"Lessening the amount of credits that they used, that did help me"* (Annalise, student)).

Both staff and students spoke of the additional measures, such as extra time and extra tools to aid with assessments, that were introduced to help support all students, and these were largely perceived to be positive (*"...the changing of the assignments and the things ... I think they dealt with it the best that they could."* (Finley, Student [MHW])). However, some students reported a drop in their grades (*"All my grades are really low, I've even failed one module."* (Sammy, Student [LDD, MHW])) – suggesting the efforts made to support students in the online domain were not able to mitigate completely against the detrimental impact of the pandemic.

Interestingly, one student noted that blanket changes, intended as a supportive tool for all, do not necessarily aid all students' needs. They felt that extensions (although optional) felt difficult to resist when they were available, despite not necessarily being beneficial:

"I can see the danger there of keep extending deadlines ...someone like me particularly with depression and so-on I could've very much kept leaving it ... it could've ended up worse."
(Alex, Student [MHW])

3.2.5 Challenges meeting additional needs

Some specific difficulties were described as impacting students with additional learning needs, where it was not possible to fully meet their support requirements in the way they required during remote delivery:

"There are a lot of people who might not have been able to get the service that they were initially promised"
(Jessie, Student [MHW])

Some reflected on aspects of support that simply were not possible online, such as looking at hard copies of material in physical proximity to their tutor:

"I haven't felt supported, I haven't felt guided...I need to be able to print something off and sit with my tutor and say to my tutor, "what's this" because of my learning disability."
(Sammy, Student [LDD, MHW]).

Face to face provision was missed by another student with dyslexia who had tried receiving support via email but found it was not an equal alternative to the provision they felt they needed (*"I've struggled with it, I have done stuff with email but I've got dyslexia...I am better having proper tuition where I can talk face-to-face"* Sammy, Student [LDD, MHW]).

A particular issue was noted for students with additional learning needs who were, pre-Covid, supported by a note-taker:

“Think about students who used to have note-takers, like I used to have [name] in to help take notes you know so when you’re literally not having that service anymore it’s like all those have been taken away from you so now it’s like you’re trying to deal with it by yourself.” (Bailey, Student [LDD, MHW])

In addition to learning-related needs, one participant highlighted specific challenges in receiving mental health support remotely:

“I was in the process of having therapy through the Uni when it all happened so that moved to online...it was a bit awkward because of the environment I was in because you’re not in a private environment you’re in a house where other people can hear you...” (Alex, Student [MHW])

In relation to provision for students who were deaf or hard of hearing, whilst the university staff paid particular attention to accurate subtitling, interpreters and other similar support measures, it is clear that some student participants felt the digital alternative did not entirely replace this provision.

3.2.6 Unexpected benefits

While there were many challenges, there were also successes and benefits described. In part due to staff efforts (*I am learning and adapting and I believe the materials I am creating are good, beneficial and accessible to students.*) (Susan, Staff); and in part due to unique affordances of online delivery (*“Thanks COVID; you’ve literally helped me out... in front of a screen you can just sort of focus on the content.”*) (Jessie, Student [MHW]), many students identified and appreciated strengths in the provision offered (*“It surpassed my expectations; I was absolutely thrilled.”*) (Elizabeth, Student [MHW]). Several felt their online-taught provisions either were on a par with, or enhanced, in comparison to pre-Covid provisions, with some finding that it surpassed previous (face-to-face) provision in meeting their individual learning needs.

3.2.7 Looking forwards

Many students highlighted a desire for future flexibility combining online and face-to-face elements of teaching:

“I personally felt I had more control over how I spent my time, rather than taking time to get to university and sit in a lecture hall that may have had limited engagement...”
(Matthew, Student)

Whilst others, though acknowledging that it was most appropriate to the situation, they did not want online learning to be the sole future of university taught provision:

“I will probably learn more effectively through being in Uni and being back in that environment ... there’s plans on there being a mix”
(Finley, Student [MHW]).

At the point of interview, several staff engaged in a reflective cognitive-revaluation of their ongoing provision. Whilst noting things that they might have done differently in hindsight (*“I wish I had changed content and I wish I had thought about it a bit more, but at the same time it all happened so quickly”*) (Claire, Staff), they also identified things that they were optimistic about developing, going forward, with more time, scope and access to knowledge and resources:

“As time goes on the technologies are hopefully adapting and updating to help make them more user friendly and adaptable for specific situations and needs.”
(Susan, Staff)

There was a dominant voice of positivity surrounding provision being the best it could have been at the time, and positive innovations and developments for future education that have emerged:

“We are continuing to learn and adapt in ways that will better facilitate learning for everyone using digital technologies, even beyond the covid-19 pandemic.”
(Susan, Staff)

3.3 Remote Education and Resource Accessibility and Literacy

Both students and staff reported a range of challenges and inequities associated with access to technology, including hardware and software access. For staff, importance of access to, and training in use of, appropriate recording equipment for capturing lectures and other learning materials digitally was raised, with not all staff being able to access this smoothly, and ability of their devices to cope with the technology varying. Students described challenges in access to devices with many being in households that had single or limited devices and several people within the household (including home schooling dependants) requiring access to these. Due to the cost of such devices, affordability and accessibility were a key challenge in equality, particularly where university-based digital resources (e.g. PCs in study spaces on-campus) that students ordinarily used became inaccessible by restrictions and closures. While the University did undertake to loan IT equipment to students without access, a shortage of laptops and similar digital equipment prevented timely roll-out of this initiative to all who needed it.

Digital literacy, which was reported to be very varied between staff and students alike, was another factor impacting ability to effectively transition to remote online learning and teaching. Staff reported a need for rapid CPD and upskilling, but also spoke of challenges finding the time to do so. Several were keen to learn and innovate, but faced barriers including lack of resources, restricted resource capability, and limited personal digital literacy. Many students cited discomfort in the online realm, not just in online learning but also avoiding social media and struggling to understand and navigate the internet more generally. Further challenges were highlighted for students with additional support needs; increased digital literacy had to be attempted with high levels of independence with only remote support available, while some (as described earlier) found online support inferior to face-to-face provision in meeting their needs. Further accessibility issues were identified for students who needed supportive or adaptive equipment and resources e.g. hearing aids and visual impairment aids. Those who relied upon a sign language interpreter in lectures, for example, were particularly reliant upon accurate subtitles for remote lecture slides.

Access to appropriate (e.g. quiet/private) learning spaces within the home was also an issue for many (“*you can't take for granted that somebody has... a space that they can be and sort of follow the session*” (Les, Staff)). Furthermore, challenges in accessing physical books and texts, when libraries were forced to reduce opening hours and eventually close, further exacerbated the challenges for those struggling with access to technology for remote learning, who were less able to avail of e-books due to the aforementioned barriers.

Even for those that could access and confidently use the technology, both staff and students identified occasions where the university software failed to cope with mass use, leading to overload in the system and issues in being able to engage with learning, particularly in the case of content taught synchronously. Furthermore, both students and staff reported common issues with internet connectivity – from low-bandwidth broadband to no internet access in the home, which created a significant barrier to delivering/accessing online learning, and was a frequent source of stress (“*We lost internet here for about two weeks and I thought, we'd lost everything*”) (Sammy, Student [LDD, MHW]). Some staff spoke of instances where technical failures led to duplication of work (e.g. needing to re-record lectures), which interacted negatively with the rapidness of the transfer, resulting in increased workload and associated pressure.

3.4 Support and Communication

The shift to wholly online delivery saw significant changes and disruptions to communications between staff, students, and the wider University. Notably, there was a large increase in volume of communications, owing to the need to disseminate guidance in an unprecedented situation, and exacerbated by frequent short-notice changes to protocols being implemented by the University in response to changing government guidance. While both staff and students felt the information contained in these communications was likely important or useful, they found them hard to keep up with due to the sheer volume of them (“*it's just too much.*” (Spencer, Staff)), with several speaking of “information overload”.

Many found the use of multiple platforms for information dissemination (email, video, MS Teams messages, and online verbal briefings) confusing, due to duplication of information – or in some cases conflicting information (particularly when guidance changed rapidly and messages may be outdated by the time they were read). Several participants noted how challenging it was that communications strategies lacked consistency, from the systems that were used (“*Everybody was doing slightly different things and we were all using slightly different systems for communicating ... it felt quite chaotic*” (Claire, Staff)), to the degree of contact maintained

“There was a lot of over sending of stuff, and then not sending of anything... you’ve either got 50 emails about it, or you got nothing” (Alex, Student [MHW]). Some students and staff reported communication difficulties leading to delays and difficulties in gaining access to information and support, particularly from centralised services where they were reliant upon generic helpline numbers, issue logs or email addresses. There were frustrations over emails that went unanswered, missed calls, meetings not fit for purpose and not enough time made available to resolve issues (*“Sometimes you would send an email and you would not get a response for weeks...”* Bailey, Student [LDD, MHW]).

Other students did, however, report feeling well responded to and informed by university staff (*“Lecturers replied quickly to emails for support”* (Charlie, Student)). Some staff reported developing a new empathy for student needs, undertaking additional burdens and making additional efforts to further support student learning, grounded in a heightened sense of responsibility. They reported mixed outcomes, with some describing an increased ability and ease of access in communicating with students, leading to enhanced rapport and satisfaction in being able to best support them, and others encountering new challenges in making/maintaining contact with students solely online. There were also workload and emotional implications of undertaking this additional responsibility level without additional capacity to do so.

The value of peer support communication networks being established in the online context was highlighted by both staff and students. They created a sociable, collaborative online environment which several participants felt helped combat the isolation of lockdown (*“We’ve got a university WhatsApp group ... it was just getting that sort of social support from people who are literally in the exact same boat as you.”* (Jessie, Student [MHW])), and had potential to support learning, development, problem-solving and engagement (*“Throughout this process using MS teams chats the staff and colleagues in my department have aided each other or shared unforeseen barriers and potential solutions.”* (Susan, Staff)).

3.5 Life and learning: Responses, Adaptations and Impacts

The transition to online learning did not happen in a vacuum, and participants spoke of the broader impact of Covid-19 restrictions on their lives, which interacted with their learning or teaching experiences during this time. Major and minor life events and challenges, though they can take a toll on learning at any time, were experienced particularly frequently and consequences were exacerbated for many. Increased workload and responsibilities, high time-pressure and peer comparisons all had impacts on mental health and wellbeing. However, life and learning benefits were also highlighted, with some participants reporting improvement in mental health and wellbeing, new coping strategies and increased emotional resilience, improved work/study life balance, increased social interaction and a rapid upskilling and personal development.

Students and staff alike reported family and home life issues such as bereavements, employment loss or furlough, relationship breakdowns and additional caring responsibilities; reducing their ability or capacity to fully engage with the work required of them, and often generating worry or stress:

“constructing my own school-esque timetable whilst simultaneously doing my job, trying to keep my son fed, clean, happy, exercised... I found this extremely tough.”

(Christine, Staff)

“At home I helped out and was busy with looking after my siblings. This stressed and worried me about completing my work on time which was a downside of not going into the library and being online.”

(Charlie, Student)

However, students also cited knowledge and use of specific university support provisions to support them through such challenges:

“I had regular contact with both graduate teaching assistants who offered help, and my mentor, who was very helpful in offering support and advice throughout lockdown. I was unfortunate to become infected with Covid-19 whilst taking my [family member] for [medical treatment] ... but I still managed to complete all of my assignments”

(Rosalie, Student [LDD, MHW])

Staff spoke of a tendency to blur the space between work and home, with work tasks encroaching on household and family responsibilities, and vice versa, and some made conscious efforts to avoid this:

“Working from home I had to be clear when work finishes and personal life starts

(Les, Staff)

Similarly, students reported challenges due to these blurred boundaries. Some struggled to fit in learning around wider home-life expectations, while others found it hard to be productive in an environment they associate with leisure time:

“It’s that thing of [having] to remove myself from my bedroom, where I want to sleep, into a work environment... forcing myself to have structure and be more productive.”

(Alex, Student [MHW])

Many staff described increased workloads, with certain existing tasks taking longer remotely; additional duties being incurred (e.g. development of online resources, cover for unwell colleagues); and an increased sense of responsibility to support students pastorally through difficult times (*“Students... have struggled with pandemic pressures... and I’ve found myself taking on a stronger pastoral role than previously.”* (Sharon, Staff)). This led to staff feeling unable to take a break from “unmanageable” workloads, which was felt to have had a detrimental impact on wellbeing (*“This has taken its toll in terms of workloads, many colleagues have expressed having felt like they have not had a break between the years due to the work needed ...”* Susan, Staff).

Some students also reported mental and physical health and wellbeing impacts of the experience, with some experiencing an exacerbation of existing mental health conditions (*“I’ve suffered with loads with anxiety.... it’s the fear of the unknown it’s not being able to go out, it’s not being able to interact with anybody.”* (Sammy, Student [LDD, MHW])). Some described how this reduced their ability to engage with learning (*“I did not study... I felt too tired and demotivated to finish my assignments”* (Tommy, Student [MHW])). For some, this led to feelings that they were failing to cope, keep up, and to negative responses including disenfranchisement with the system (*“devastated...I’m angry, I’m annoyed...if I wanted it to be this way, I would’ve done it through Open Uni.”* (Sammy, Student [LDD, MHW])), disengagement (*“at one point I just stopped engaging”* Bailey, Student [LDD, MHW]), and consideration of dropping out to avoid the experience (*“if this is how we’re gonna start September I’m not sure I’ll be going to Uni in September”* Bailey, Student [LDD, MHW])). Many negative feelings arose around perceived helplessness, where students lacked control over their situation. Some felt this was untenable and doubted their ability to cope with the situation if it did not resolve:

“If I was to start my second year online I don’t know if I don’t know if I could cope - I don’t know if I could do it.”

(Bailey, Student [LDD, MHW])

Again, though, some had very different experiences; acknowledging challenges in mental health and wellbeing, but reporting the development of increased resilience and independence (*“You had to go deeper, you had to dig deeper, you had to... get really resilient.”* (Bailey, Student [LDD, MHW])), with the recognition, real-world application and adoption of new coping strategies (*“I just have to find the mechanism, the coping strategy to say, ‘you know what? This is how I’m gonna do it,’ and... that’s a positive”* (Finley, Student [MHW])). Additionally, some spoke of pre-existing strategies or skills that they were able to apply in the context of the pandemic, to support their learning:

“I have dyslexia so I have always had to pre-prepare for learning...once we knew what changes were planned ... we set up a timetable... I think it helped both with our workloads and our mental health.”
(Rosalie, Student [LDD, MHW]).

4.0 Discussion and Conclusions

This study has, via a bricolage approach, thematically analysing data from written reflections and one-to-one semi-structured interviews, enhanced understanding staff and student experiences of rapid adaptation to remote online learning during the covid-19 pandemic at a UK HEI. One of the most important insights from this work is

that there are both commonly shared experiences and prominent individual differences. Here, we summarise these, drawing together key observations from the array of themes discussed in detail above.

Unsurprisingly, the interviews highlighted that during the transition to online learning, changes and adaptations to how things were done were unavoidable, and frequently challenging, putting pressure on both staff and students. This is consistent with research highlighting the stressful nature of unplanned organizational change (Fotinos-Ventouratos, 2021). Many of the staff and students were overwhelmed by volume of communications across multiple channels, so although transparency of internal communication during the pandemic has been found to be associated with positive relationships with the organisation and positive coping-based strategies (Li et al., 2021), our participants highlighted that it may also be important to streamline this flow of information - to reduce repetition and ensure crucial information can be distinguished from extraneous details.

Further challenges that impacted both staff and students included technical challenges like learning to use new technologies, and practical issues like internet connections and access to hardware and software; replicating issues identified in many other educational establishments employing remote delivery during the pandemic (e.g. Ghazi-Saidi et al., 2020). Balancing home and work life was also a concern for many – consistent with quantitative findings that poorer work-life balance during the Covid-19 pandemic is linked with mental distress in both University students (Yunus et al., 2020) and academic staff (Steenhout et al., 2021).

Amongst both staff and students, there were marked individual differences in experiences of challenges and how difficult they were to overcome. Some were better equipped than others to deal with the situation, in terms of physical resources (hardware and software, physical spaces, finances), and knowledge and skills (digital literacy, prior experience of online learning or teaching), as has also been described in other studies of remote learning during Covid-19 (e.g. Parmigiani et al., 2021;). Some students experienced challenges adapting to new and unfamiliar ways of learning, which were not well-aligned to their preferred modality of communication or their additional support needs whilst others had the advantage of an intrinsic preference for remote learning (consistent with findings that college students differ in how well they cope with self-regulated learning (Schwam, Greenberg & Li, 202; Giray, 2021). For those with additional support needs, some derived advantages from the affordances of the online realm (such as the flexibility and ability to learn independently and distraction-free), but others' needs were harder to meet remotely, and some encountered practical difficulties such as lost access to interpreters or note-takers. Even within an educational culture (Italy's school system) where inclusion is imperative and digital inclusion embraced, there are still needs that are difficult to meet online, particularly during the conditions of a pandemic (Parmigiani et al., 2021), and our participants accounts conveyed this. A common stressor for students was feeling a lack of control over their learning experience, and uncertainty about when it would revert to the status quo, consistent with findings that intolerance of uncertainty is associated with poorer wellbeing during the pandemic (Satici et al., 2020).

Factors outside of the individual teacher or student also impacted upon experiences of the transition to online learning. From a purely practical point of view, some types of materials or sessions (such as workshops or practical data collection) were much harder to effectively deliver and engage with online than others (such as lectures). Furthermore, people's external circumstances differed; some encountered stressful life events – which are known to have the potential to negatively impact wellbeing (e.g. Cleland et al., 2016), and which, at times, limited their ability to cope with the demands of the transition to online learning and teaching. Staff frequently encountered increased workloads and time pressures, and feelings of heightened responsibility for trying to meet the needs of students who often needed additional learning and pastoral support - consistent with other studies of academics' experiences during the pandemic (Tsai et al., 2020; Watermeyer et al., 2021; Sutarto, 2020).

In the face of challenges, and despite individual differences in the magnitude of these – and in people's ability to cope with them, we frequently heard about considerable efforts being made by staff and students alike, and stories of resilience and adaptation were prevalent – consistent with narratives from other researchers in the field of education during the time of the Covid-19 pandemic (James & Thériault, 2020). Staff described 'going the extra mile' to minimise the impact of the transition on students and ensure they continued receiving pedagogically informed provision and consistent support, and students frequently acknowledged this – also making allowances where (particularly in the early days) provision was less than optimal. Staff were, likewise, sympathetic to students' circumstances, making extra allowances and offering additional support – and in some cases developing greater empathy – which Baran and AlZoubi (2021) highlight as a critical tool for successful development of remote teaching during the pandemic. Consistent with wider research during the pandemic (Suresh, Alam, & Karkossa, 2021), peer support networks were a valuable resource for both staff and students'

emotional wellbeing. Interestingly, students felt these were particularly beneficial when they emerged organically.

The rapid transition to online learning during covid-19 at this establishment brought challenges and obstacles, and it continues to do so, but it also saw development and innovation, and growth of empathy. While considerable variability in individual experiences and preferences means it is difficult to make blanket proposals for practice, Box 1 presents a list of our key take away messages surrounding broad recommendations for future online delivery, based on what we have learned (several of which have already been implemented at the institution of study). Some are specific to rapid transitions and have potential to inform future scenarios where this may be necessary. Others have potential to inform online delivery planning more broadly.

In terms of limitations, our study focused on a social science department within the UK, where many (though not all) of the topics and skills could be transferred relatively smoothly to online delivery, so our findings may not be generalisable to other disciplines or HE systems. Initial evidence suggests that some subjects – particularly practical ones such as creative arts, are less adaptable to remote delivery (Lorenza & Carter, 2021). This study focused on self-perceptions of the transition to online learning and did not objectively measure learning/performance. The recommendations we make are based around what our data suggest would improve staff and student experiences, and we cannot be sure to what extent they would impact performance-based measures – with the ongoing and ever-changing nature of this issue, we recommend further research in this area utilising our recommendations to explore this, including quantitative measures of impact. Further, this research specifically conducted as a small case study with a close focus on one UK institution and one department, thus we make no claim that our recommendations are unilaterally applicable to HE on a global scale. However, we do acknowledge the value of international voices in building a library of potential, due to the global nature of the pandemic and the issues that ensued from it, including its impact on education systems and provisions internationally, and inter-disciplinarily. We also believe there is significant merit in conducting similar work and considering multiple perspectives internationally. Thus our findings and recommendations, may have wider implications across the sector, just as non-UK specific research emerging has for us. Such recommendations may require adaptation, nuance and evolution to suit the particular practices of a specific country, institution, department or academic discipline.

Finally, this work explored experiences of the first 3-6 months of remote learning, but the University campuses remained closed beyond this, with staff and students continuing to negotiate many of these challenges at the time of writing. Future studies will be important to learn about possible longer-term impacts (both positive and negative) of this transition.

Box 1: Recommendations for (rapid implementation of) online learning (in times of stress)

- Transparent, clear and consistent remote communications strategies should be determined at the earliest convenience by all parties responsible for communicating during the period of online delivery, and clear guidance shared on what information is to be found where.
- Methods to involve students in decisions and/or keep them informed of plans may be beneficial in affording a sense of control (crucial as feeling out of control and uninformed can be major stressors).
- Transition to online learning (particularly when unplanned and urgent) places many demands on staff. Those with the power/resources to manage teaching staff's workloads should consider how to free up their capacity for training, resource development, and provision of additional support to students, while preserving their own wellbeing.
- Continuous CPD in digital literacy should be provided for both staff and students, alongside staff training in online teaching and pedagogy, and student skills training in engagement with digital learning platforms.
- Evaluating and addressing practical barriers to learning (e.g. organising laptop loans for those without access to technology) rapidly and efficiently – to the extent that this is possible, is important to support learning and lessen the impact of inequalities.
- University/Education providers should strive to provide adequate hardware to staff at times of remote learning which doesn't not require additional learning beyond that required by the rapid transfer to online teaching.
- Creative approaches to circumventing barriers to learning, where practical solutions are not possible, should be implemented.
- Interactivity of teaching and learning is important for student engagement (Bonk & Zhang, 2006), and synchronous online delivery may be a prime means of delivering this, which many students favour over asynchronous means when they are able to access it.
- However, the benefits of asynchronicity (particularly where competing demands necessitate flexibility) must not be ignored. Interactivity can take many forms and can be supported through creation of appropriate multimedia resources as constructive forms of student-learning interaction (Anderson, 2003).
- While allowances such as extensions are generally appreciated and perceived as beneficial in times of high stress, students who may be vulnerable to procrastination or being overwhelmed when deadlines converge should be counselled in the implications of accepting multiple extensions.
- Tailored support should be offered to students with additional learning needs, and innovative ways of supporting students remotely (particularly those with additional needs who are unable to access notetakers or interpreters, for example) should be explored.
- Staff and students should be encouraged to develop and utilise online peer support networks.

5.0 References

- Amankwaa, L. (2016). Creating protocols for trustworthiness in qualitative research. *Journal of Cultural Diversity*, 23(3) 121-127.
- Baran, E., & AlZoubi, D. (2020). Human-centered design as a frame for transition to remote teaching during the COVID-19 pandemic. *Journal of Technology and Teacher Education*, 28(2), 365-372.
- Bonk, C. J., & Zhang, K. (2006). Introducing the R2D2 model: Online learning for the diverse learners of this world. *Distance Education*, 27(2), 249-264.
- Brady, A. K., & Pradhan, D. (2020). Learning without borders: asynchronous and distance learning in the age of COVID-19 and beyond. *ATS scholar*, 1(3), 233-242.
- Breakstone, J., McGrew, S., Smith, M., Ortega, T., & Wineburg, S. (2018). Why we need a new approach to teaching digital literacy. *Phi Delta Kappan*, 99(6), 27-32.

- Cheng, Z., Mendolia, S., Paloyo, A. R., Savage, D. A., & Tani, M. (2021). Working parents, financial insecurity, and childcare: mental health in the time of COVID-19 in the UK. *Review of Economics of the Household*, 19(1), 123-144.
- Churi, P., Mistry, K., Asad, M. M., Dhiman, G., Soni, M., & Kose, U. (2021). Online learning in COVID-19 pandemic: an empirical study of Indian and Turkish higher education institutions. *World Journal of Engineering*. (Online).
- Ciges, A. S. (2001). Online learning: New educational environments in order to respect cultural diversity through cooperative strategies. *Intercultural Education*, 12(2), 135-147.
- Cleland, C., Kearns, A., Tannahill, C., & Ellaway, A. (2016). The impact of life events on adult physical and mental health and well-being: longitudinal analysis using the GoWell health and well-being survey. *BMC Research Notes*, 9(1), 1-9.
- Coker, H. (2018). Purpose, pedagogy and philosophy: "Being" an online lecturer. *International review of research in open and distributed learning*, 19(5) (Online).
- Daniel, J. (2016). *Making sense of flexibility as a defining element of online learning*. Athabasca University : Athabasca.
- Davis, D., Chen, G., Hauff, C., & Houben, G. J. (2018). Activating learning at scale: A review of innovations in online learning strategies. *Computers & Education*, 125, 327-344.
- Davis, J., Lennox, S., Walker, S., & Walsh, K. (2007). Exploring staff perceptions: Early childhood teacher educators examine online teaching and learning challenges and dilemmas. *International Journal for the Scholarship of Teaching and Learning*, 1(2), 1-15.
- Daymont, T., Blau, G., & Campbell, D. (2011). Deciding between traditional and online formats: Exploring the role of learning advantages, flexibility, and compensatory adaptation. *Journal of Behavioral and Applied Management*, 12(2), 156-175.
- De Macedo, C. M. S., & Ulbricht, V. R. (2013, July). Universal design and accessibility standards in online learning objects. In *International Conference on Universal Access in Human-Computer Interaction*, 179-186. Springer: Berlin,
- Devlin, M., & McKay, J. (2018). Teaching inclusively online in a massified university system. *Widening Participation and Lifelong Learning*, 20(1), 146-166.
- Doering, A., Veletsianos, G., Scharber, C., & Miller, C. (2009). Using the technological, pedagogical, and content knowledge framework to design online learning environments and professional development. *Journal of educational computing research*, 41(3), 319-346.
- Fotinos-Ventouratos, R. (2021). The Causes and Consequences of Organizational Stress: The Case of Greece. In *Organizational Stress Around the World*, 62-79. Routledge: New York.
- Gale, N. K., Heath, G., Cameron, E., Rashid, S., & Redwood, S. (2013). Using the framework method for the analysis of qualitative data in multi-disciplinary health research. *BMC Medical Research Methodology*, 13(1), 1-8.

- Ghazi-Saidi, L., Criffield, A., Kracl, C. L., McKelvey, M., Obasi, S. N., & Vu, P. (2020). Moving from face-to-face to remote instruction in a higher education institution during a pandemic: Multiple case studies. *International Journal of Technology in Education and Science*, 4(4), 370-383.
- Giray, G. (2021). An assessment of student satisfaction with e-learning: An empirical study with computer and software engineering undergraduate students in Turkey under pandemic conditions. *Education and Information Technologies*, 1-23.
- Gopal, R., Singh, V., & Aggarwal, A. (2021). Impact of online classes on the satisfaction and performance of students during the pandemic period of COVID 19. *Education and Information Technologies*, 1-25.
- Hamann, K., Pollock, P. H., & Wilson, B. M. (2012). Assessing student perceptions of the benefits of discussions in small-group, large-class, and online learning contexts. *College Teaching*, 60(2), 65-75.
- Hattie, J. (2008) *Visible Learning: A synthesis of over 800 meta-analyses relating to achievement*. Routledge: Oxon.
- Henriksen, D., Creely, E., & Henderson, M. (2020). Folk pedagogies for teacher transitions: Approaches to synchronous online learning in the wake of COVID-19. *Journal of Technology and Teacher Education*, 28(2), 201-209.
- Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020). The difference between emergency remote teaching and online learning. *Educause review*, 27(1), 1-9.
- Hurst, G. A. (2020). Online group work with a large cohort: challenges and new benefits. *Journal of Chemical Education*, 97(9), 2706-2710.
- James, N., & Thériault, V. (2020). Adult education in times of the COVID-19 pandemic: Inequalities, changes, and resilience. *Studies in the Education of Adults*, 52(2), 129-133.
- Kiernan, M. D., & Hill, M. (2018). Framework analysis: a whole paradigm approach. *Qualitative Research Journal*. 248-261.
- Kincheloe, J. L., McLaren, P., & Steinberg, S. R. (2011). Critical pedagogy and qualitative research. *The SAGE Handbook of Qualitative Research*, 163-177.
- Lawrence, A. (2020). Teaching as Dialogue: Toward Culturally Responsive Online Pedagogy. *Journal of Online Learning Research*, 6(1), 5-33.
- Li, J. Y., Sun, R., Tao, W., & Lee, Y. (2021). Employee coping with organizational change in the face of a pandemic: The role of transparent internal communication. *Public Relations Review*, 47(1), 101984.
- Lorenza, L., & Carter, D. (2021). Emergency online teaching during COVID-19: A case study of Australian tertiary students in teacher education and creative arts. *International Journal of Educational Research Open*, 2, 100057.
- Ma, K., Chutiyami, M., Zhang, Y., & Nicoll, S. (2021). Online teaching self-efficacy during COVID-19: Changes, its associated factors and moderators. *Education and Information Technologies*, 1-23.
- Muilenburg, L. Y., & Berge, Z. L. (2005). Student barriers to online learning: A factor analytic study. *Distance Education*, 26(1), 29-48.

- Office for Students. (2021). 'Digital poverty' risks leaving students behind - Office for Students. Retrieved 15 July 2021, from <https://www.officeforstudents.org.uk/news-blog-and-events/press-and-media/digital-poverty-risks-leaving-students-behind/> (Online)
- Palmer, S., & Holt, D. (2014). Development of student and academic staff perceptions of the elements of an online learning environment over time. *Australasian Journal of Educational Technology*, 30(4).
- Parmigiani, D., Benigno, V., Giusto, M., Silvaggio, C., & Sperandio, S. (2020). E-inclusion: online special education in Italy during the Covid-19 pandemic. *Technology, Pedagogy and Education*, 1-14.
- Pearson, E. J., & Koppi, T. (2002). Inclusion and online learning opportunities: designing for accessibility. *ALT-J*, 10(2), 17-28.
- Russ, S., & Hamidi, F. (2021, April). Online learning accessibility during the COVID-19 pandemic. In *Proceedings of the 18th International Web for All Conference*, 1-7.
- Sánchez-Cruzado, C., Santiago Campión, R., & Sánchez-Compañía, M. (2021). Teacher Digital Literacy: The Indisputable Challenge after COVID-19. *Sustainability*, 13(4), 1858.
- Satici, B., Saricali, M., Satici, S. A., & Griffiths, M. D. (2020). Intolerance of uncertainty and mental wellbeing: serial mediation by rumination and fear of COVID-19. *International Journal of Mental Health and Addiction*, 1-12.
- Schwam, D., Greenberg, D., & Li, H. (2021). Individual Differences in Self-regulated Learning of College Students Enrolled in Online College Courses. *American Journal of Distance Education*, 35(2), 133-151.
- Sharma, A., Konar, K., Sanghvi, K., Churi, P., & Rao, N. T. (2021, June). Perception of Students in Online Test in Engineering: Case of NMIMS University. In *2021 International Conference on Communication Information and Computing Technology (ICCICT)*, 1-7.
- Sideropoulos, V., Dukes, D., Hanley, M., Palikara, O., Rhodes, S., Riby, D. M., ... & Van Herwegen, J. (2021). The Impact of COVID-19 on Anxiety and Worries for Families of Individuals with Special Education Needs and Disabilities in the UK. *Journal of Autism and Developmental Disorders*, 1-14.
- Singh, V., & Thurman, A. (2019). How many ways can we define online learning? A systematic literature review of definitions of online learning (1988-2018). *American Journal of Distance Education*, 33(4), 289-306.
- Sobers, S. (2010). Positioning education within community media. *Understanding community media*, 188-199.
- Steenhout, I., Van Laere, S., Vesentini, L., & Bilsen, J. (2021). Well-being of academic staff in Belgium during the SARS-CoV-2 pandemic: a cross-sectional stud. *Research Square*. 1-26.
- Suprianto, S., Arhas, S. H., Mahmuddin, M., & Siagian, A. O. (2020). The Effectiveness of Online Learning Amid the COVID-19 Pandemic. *Jurnal Ad'ministrare*, 7(2), 321-330.
- Suresh, R., Alam, A., & Karkossa, Z. (2021). Using peer support to strengthen mental health during the COVID-19 pandemic: a review. *Frontiers in Psychiatry*, 12, 1119.
- Sutarto, S., Sari, D. P., & Fathurrochman, I. (2020). Teacher strategies in online learning to increase students' interest in learning during COVID-19 pandemic. *Jurnal Konseling dan Pendidikan*, 8(3), 129-137.

- Tomczyk, L., & Walker, C. (2021). The emergency (crisis) e-learning as a challenge for teachers in Poland. *Education and Information Technologies*, 1-31.
- Tsai, C. H., Rodriguez, G. R., Li, N., Robert, J., Serpi, A., & Carroll, J. M. (2020). Experiencing the Transition to Remote Teaching and Learning during the COVID-19 Pandemic. *IxD&A*, 46, 70-87.
- UNESCO. (2021). From COVID-19 learning disruption to recovery: A snapshot of UNESCO's work in education in 2020. Retrieved 16 July 2021, from <https://en.unesco.org/news/covid-19-learning-disruption-recovery-snapshot-unescos-work-education-2020>.(Online).
- Watermeyer, R., Crick, T., Knight, C., & Goodall, J. (2021). COVID-19 and digital disruption in UK universities: Afflictions and affordances of emergency online migration. *Higher Education*, 81, 623-641.
- Wiese, C., & Newton, G. (2013). Use of Lecture Capture in Undergraduate Biological Science Education. *Canadian Journal for the Scholarship of Teaching and Learning*, 4(2), 4, 1-24.
- Yunus, W. M. A. W. M., Badri, S. K. Z., Panatik, S. A., & Mukhtar, F. (2020). The Unprecedented Movement Control Order (Lockdown) and Factors Associated With the Negative Emotional Symptoms, Happiness, and Work-Life Balance of Malaysian University Students During the Coronavirus Disease (COVID-19) Pandemic. *Frontiers in Psychiatry*, 11 (Online)