

## Central Lancashire Online Knowledge (CLoK)

Title	Teaching and Learning in the New Normal: Responding to Students' and Academics' Multifaceted Needs
Type	Article
URL	<a href="https://clock.uclan.ac.uk/47981/">https://clock.uclan.ac.uk/47981/</a>
DOI	##doi##
Date	2023
Citation	Piki, Andriani orcid iconORCID: 0000-0003-0376-1713 and Brzezinska, Magdalena (2023) Teaching and Learning in the New Normal: Responding to Students' and Academics' Multifaceted Needs. International Conference on Human-Computer Interaction, 14026 . pp. 116-136. ISSN 0302-9743
Creators	Piki, Andriani and Brzezinska, Magdalena

It is advisable to refer to the publisher's version if you intend to cite from the work. ##doi##

For information about Research at UCLan please go to <http://www.uclan.ac.uk/research/>

All outputs in CLoK are protected by Intellectual Property Rights law, including Copyright law. Copyright, IPR and Moral Rights for the works on this site are retained by the individual authors and/or other copyright owners. Terms and conditions for use of this material are defined in the <http://clock.uclan.ac.uk/policies/>

# Teaching and Learning in the New Normal: Responding to Students' and Academics' Multifaceted Needs

Andriani Piki<sup>1</sup>[0000-0003-0376-1713] and Magdalena Brzezinska<sup>2</sup>[0000-0002-4213-8636]

<sup>1</sup> University of Central Lancashire – Cyprus, Larnaca, Cyprus

<sup>2</sup> WSB University, Poznan, Poland

apiki@uclan.ac.uk, magdalena.brzezinska@wsb.poznan.pl

**Abstract.** Alongside the prolonged social and economic instability and the escalating demands for upskilling, Covid-19 pandemic had a detrimental impact on students' and academics' mental health and wellbeing. Social isolation and the emergency transition to remote education caused high levels of psychological distress, hindering students' self-efficacy and academic performance. The pandemic also induced sudden changes affecting academics' personal and professional lives, leading to mental disorders and risk of burnout. While recent research focuses on addressing the effects of the pandemic on either students or academics, this paper presents a collective analysis. The key themes that emerged by examining the experiences of both students and academics in higher education, are framed in a multi-layered support system embracing qualities such as: self-efficacy, wellbeing, equality, diversity, and inclusion, social and peer interactions, human-centred technologies, and authentic pedagogical methods. The findings are discussed with the aim to extract informed recommendations for enhancing teaching and learning experiences in the post-pandemic era.

**Keywords:** Higher Education, Emergency Remote Teaching, Wellbeing Education, Inclusive Education, Learner Engagement, Upskilling.

## 1 Introduction

The unstable social situation and the unpredictable consequences of Covid-19 pandemic have challenged students, academics, and the broader higher education ecosystem (Al Miskry et al., 2021; Halabieh et al., 2022). Recent literature addresses academics' readiness (Yiapanas et al., 2022) and students' preparedness (Meletiou-Mavrotheris et al., 2022; Piki, 2022) to respond to the emergency shift to online education. As the impact of the pandemic continues to unfold, governments, policymakers, and higher education institutions (HEIs), strive to reframe the education system and re-establish effective and engaging teaching and learning environments (Hodges et al., 2020; Marinoni and van't Land, 2020; Piki et al., 2022; Piki, 2022), while also attending to the increasing demands for reskilling and upskilling. Various initiatives have been recently launched leveraging digital and mobile technologies (Abu Elnasr et al., 2020; Engelbrecht et al., 2020; Marinoni and van't Land, 2020; Muñoz-Carril et al., 2021; Piki, 2020; Vlachopoulos et al., 2020) and innovating pedagogies (Kukulska-Hulme et

al., 2022) towards alleviating the consequences of the pandemic and responding to emerging needs. Despite these efforts, reimagining education in the new normal constitutes an ongoing challenge (Piki, 2022; Brzezinska, 2022), which needs to be addressed across institutional, technological, pedagogical, psychological, emotional, and social layers. Various problems have been identified in recent literature (Halabieh et al., 2022) including institutional challenges (such as low student retention, increased number of dropouts, inclusion issues, and inequitable access to higher education), technological limitations (including the need for upgrading the technological infrastructure and leveraging state-of-the-art systems in education), career-oriented and digital skills gaps and growing training needs, and inner and more severe consequences on students' and academics' mental health and wellbeing (Brzezinska and Cromarty, 2022; Dinu et al., 2021; Halabieh et al., 2022; Kita et al., 2022; Urbina-Garcia, 2020; Wray and Kinman, 2021).

Recent research has explored the effects of the pandemic on students (Aucejo et al., 2020; Meletiou-Mavrotheris et al., 2022; Piki, 2020; Piki et al., 2022; Piki, 2022; ) as well as academics (Al-Taweel et al., 2020; Brzezinska and Cromarty, 2022; Dinu et al., 2021; McGaughey et al., 2021; Yiapanas et al., 2022; Watermeyer et al., 2021), although the first group has attracted more attention in the literature than the second (Dinu et al., 2021). On one hand, during emergency remote teaching (ERT) students have experienced high levels of psychological distress and mental disorders (Halabieh et al., 2022), hindering their self-efficacy and academic performance (Piki et al., 2022; Piki, 2020), while the enduring social instability caused high levels of uncertainty, estranging and demotivating students (Piki, 2022) and further increasing the number of dropouts (Halabieh et al., 2022). On the other hand, sudden and profound changes affected academics' personal and professional lives and resulted in escalating mental health disorders and risk of burnout, since many academics had to manage family obligations, teaching, and research duties alongside their increased workload (Dinu et al., 2022; Brzezinska and Cromarty, 2022; Kita et al., 2022; McGaughey et al., 2021; Watermeyer et al., 2021).

Although the number of articles exploring the impact of Covid-19 pandemic on education has increased since its outbreak, most studies present either academics' or students' perspectives, with only a few addressing both (e.g., Al Miskry et al., 2021). To fill this gap, this paper takes a holistic and systemic approach drawing on empirical insights, personal experiences, and recent literature, with a twofold aim: firstly, to collectively explore academics' and students' perspectives, and secondly, to extract informed recommendations highlighting the key qualities that forward-looking pedagogies should aspire to accommodate. The paper is structured as follows: Section 2 portrays the research background and a review of related studies exploring academics' and students' experiences and captures the juxtapositions between their views. Section 3 synthesises the findings and provides recommendations that can inform pedagogical approaches in higher education. Finally, conclusions are presented in Section 4.

## 2 Research Background and Related Work

Recent literature portrays abundant insights on the intricate impact of the pandemic, the impromptu coping strategies devised, and the role of social technologies. The paragraphs below discuss both academics' and students' perspectives, experiences, and visions indicating the inextricable connection among their worldviews.

### 2.1 Academics' Perspectives and Experiences

The negative effects of the pandemic were evident across various disciplines, career stages, and geographic locations (Al-Taweel et al., 2020; Brzezinska and Cromarty, 2022; Dinu et al., 2021; McGaughey et al., 2021; Watermeyer et al., 2021; Yiapanas et al., 2022). These included the academics' technological (un)readiness, varying degrees (or lack) of support, increased workload and difficulty to maintain work-life balance, which altogether impacted academics' mental health and wellbeing. Some positive aspects attached to technology-mediated remote teaching were also identified, including flexible working hours, less commuting, and establishing stronger bonds with colleagues, helping each other to endure the challenges.

**Techno-pedagogical challenges, technological readiness, and skills gaps.** During the pandemic various technological barriers hindered academics' experiences, including poor or unstable Internet connection; limited remote accessibility to software, hardware, and data resources; outdated personal computers; shortage of peripheral devices including headsets and web cameras; compatibility issues; and deficient home-working ergonomics (Dinu et al., 2021; Halabieh et al., 2022). Nevertheless, in a recent study, 91% of instructors reported that it was not technology that posed the biggest problem for them during ERT (Leone and Brzezinska, 2021). Rather, key challenges included having to cope with poor student participation, low student engagement, ineffective interactions, increased distractions, and student interruptions (Bożykowski et al., 2021; Halabieh et al., 2022; McKenzie, 2021; Piki, 2020). Hence, most academics expressed their preference for traditional, classroom-based teaching where learning outcomes can be met more straightforwardly (Bożykowski et al., 2021). Besides techno-pedagogical factors, digital skills gaps, and the lack of familiarity with social technologies also affected academics' experiences. While some academics evaluated their technological readiness as relatively high (Bożykowski et al., 2021; Leone and Brzezinska, 2021), for others the demands to utilise new or unfamiliar technologies for teaching and interacting with students, constituted a source of considerable anxiety (Dinu et al., 2021). Even in cases where the motivation to develop digital competencies was high, many academics reported there was insufficient time for adequate preparation and training (Killen et al., 2021).

Alongside the challenges, the social benefits of technology were valued during remote education. A significant observation was that academics who were involved in collaborative activities, as well as those who had a strong social identity and high technological competencies, were more likely to report high mental wellbeing (Dinu et al.,

2021). Online social interactions with colleagues were crucial for remaining connected with the academic community, reducing feelings of loneliness and isolation, and maintaining strong bonds amongst colleagues. These social aspects acted as key enablers contributing positively to academics' wellbeing. Flexible working hours and reduced commuting, online office hours and consultations with students (Bożykowski et al., 2021), fewer distractions (compared to working in a shared office at the University), increased attendance in research meetings, and widening access to conferences offering reduced fees for virtual participants, were also some of the advantages reported during the pandemic. For some academics, homeworking was considered more flexible, effective, and efficient, hence contributing positively to professional development, productivity, and mental wellbeing (Dinu et al., 2021). Evidently, technology played a multi-faceted impact during the pandemic. On one hand, technical issues and prolonged exposure unfavourably impacted self-confidence and wellbeing, while on the other hand, social technologies played a crucial role maintaining interactions and reactivating faculty motivation.

**Disrupted academic responsibilities, work-life balance, and wellbeing.** Unlike distance education, which is especially designed for remote delivery, ERT engendered many challenges due to rapid and unplanned changes (Brzezinska 2022; Brzezinska and Cromarty, 2022; Halabieh, et al., 2022; Piki, 2020). An eminent challenge was the additional time and effort required for managing remote interactions with students, re-designing educational activities, and adjusting learning content, assessments, and feedback strategies (Yiapanas et al., 2022). The unfolding economic and social consequences, the anxiety related to the negative health situation worldwide (Brzezinska and Cromarty, 2022), the unmanageable workload and difficulty to find work-life balance (Dinu et al., 2021), limited resources and poor connectivity, the implicit assumption that academics should be available 24/7, digital skills gaps and the necessity to abruptly adapt to the new teaching environment constituted aspects which further hindered academics' experiences. The mental, physical, and emotional deficits academics had suffered was evidenced across continents (Brzezinska and Cromarty, 2022; McGaughey et al., 2021; Kita et al., 2022). In certain contexts more than half of the faculty members experienced mild psychiatric problems, high levels of worry, or work-related stress (Al Miskry et al., 2021), and one in three academics admitted they neglected their personal needs due to the demands of their work (Wray and Kinman, 2021), or considered leaving their jobs because of chronic pandemic stress (Flaherty, 2020).

A key source of distress was the additional responsibilities academics had to assume, both towards the HEI and their students (e.g., offering additional feedback and support), while at the same time maintaining a research-active profile. As a result, poignant problems included work-related stress, 'digital fatigue', work-life imbalance, and significant concerns over potential longer-term changes to academia because of the pandemic (McGaughey et al., 2021). A common obstacle seemed to be unrealistic time pressures enforced to alleviate the eminent crisis (Wray and Kinman, 2021). Senior academic staff members were more likely to be overburdened with increased time pressures and additional duties, such as academic and advisory support provision for students, dissemination, and administration of official policies to ensure they are properly applied

by all faculty members. Although the number of teaching hours per academic semester were not generally affected during the pandemic, in many cases academics reported a substantial increase in their working hours and overall workload (Dinu et al., 2021; Wray and Kinman, 2021). Migrating online engendered significant dysfunctionality and disturbance to academics' professional roles and personal lives (Watermeyer et al., 2021). Many academics felt that revising teaching material for online delivery, learning how to use new technologies, and devising new ways to keep students engaged at a distance required considerably more effort compared to face-to-face teaching (Wray and Kinman, 2021). Almost every academic felt they devoted far more time for class preparation during ERT that had been the case for on-site classes (Czaja et al., 2020). On one hand, the increased workload made many academics more vulnerable to burn-out, anxiety, and stress (Watchorn et al., 2020; Gewin, 2021). On the other hand, some felt that it was not the increased workload or the lack of digital abilities and confidence in teaching online that negatively impacted their wellbeing; rather, factors such as the rapid and enduring changes, and the broader social instability were identified as deterrents to good mental health (Brzezinska and Cromarty, 2022; Gewin, 2021; Watchorn et al., 2020). Furthermore, a lack of recreational activities, prolonged social isolation, and mobility restrictions inflicted several negative experiences including a sense of monotony (Dinu et al., 2021), overwhelming exposure to technology, lack of motivation, and fatigue especially after spending long hours in front of a screen (Brzezinska and Cromarty, 2022; McGaughey et al., 2021; Watermeyer et al., 2021).

The level of motivation and distractions fluctuated across different phases of the pandemic, affecting academics' performance and productivity in varying degrees. The reduction or loss of research funding, the interruption of research experiments and data gathering activities, and the postponement of promotional procedures constituted additional factors which impacted academics' sense of belonging and in turn, their mental health and wellbeing (Dinu et al., 2021). Many academics mentioned that they had to re-establish their work-life balance while working from home (McGaughey et al., 2021; Watermeyer et al., 2021). Distractions increased especially for academics with parental responsibilities, forcing them to balance full-time work and family caring responsibilities, which often negatively impacted their work performance and productivity (Dinu et al., 2021). Furthermore, during the lockdowns, many academics felt that teaching turned impersonal and distant (Dinu et al., 2021), both metaphorically and in practice.

It is also likely that students' anxiety and distress during ERT and subsequent lockdowns and social isolation periods may have had a knock-on effect on the workload and emotional strain of academic staff (Dinu et al., 2021). Students' increased demands for instructor time and assistance, which often meant one-to-one virtual meetings, further increased academics' already high levels of stress. Strong negative emotions and anxiety expressed by some students, who may have had no other vent, overburdened faculty, and often enhanced the feeling of helplessness (Wray and Kinman, 2021). Thus, a significant downside to remote instruction, in addition to invading academics' privacy and blurring the borderline between professional and family life, was the prevalence of psychosocial hazards such as loneliness, alienation, isolation, and being overwhelmed (McGaughey et al., 2021).

Recent research re-emphasises the complex role that educators need to perform, not only in motivating and supporting their students during the lockdowns (Piki, 2020; Piki et al., 2022; Piki, 2022; Watermeyer et al., 2021), but also in responding to students' mental health concerns (Hughes and Byrom, 2019; Dinu et al., 2021), which incurs an additional mental burden on academics. However, the fact that the emotional investment and time academics eagerly devoted to supporting their students as well as the overheads incurred for adjusting materials for online teaching were not adequately recognised by the University further impacted faculty's own mental health and wellbeing (Urbina-Garcia, 2020). In many cases, academics felt that the time and effort spent in supporting students during ERT was unaccounted for, and often came at a cost to other academic and research responsibilities assessed in performance reviews and counting towards academic promotion (Dinu et al., 2021). These factors highlight the inextricable connection between students' and academics' wellbeing and put forward the need for adopting a systemic approach when formulating innovating teaching and learning practices. This observation emphasises the need to collectively explore and analyse their experiences, worldviews, and visions for the future – a need addressed in this paper.

**Level, type, and source of support.** The provision of technological and psychological support was not consistent across HEIs with regards to the level and type of support academics felt they received from their colleagues, the University, and governmental or policy making bodies (e.g., Higher Education Quality Assurance Agency or Ministry of Education).

Regarding psychological support from the University, academics reported fragmented connection with University services and felt that support was either unavailable or scarce. This increased academics' stress and spawned feelings of anxiety (Dinu et al., 2021; Wray and Kinman, 2021). Many academics would have truly appreciated psychological support from their institution, yet most did not receive the expected caring response. Frequently, academics felt that their changing responsibilities were too demanding, making them feel anxious and lonely rather than supported, encouraged, and understood (Leone and Brzezinska, 2021). Findings also revealed that communication with the leadership and professional support from the human resources department could have been improved (Dinu et al., 2021). A few HEIs attempted to respond to psychological needs by forming mentoring schemes and organising virtual drop-in sessions. These were positively received and helped involved academics navigate the abrupt changes (Dinu et al., 2021), yet the challenge was to get academics to participate in such endeavours (Wray and Kinman, 2021).

Other actions of support included technological assistance, providing equipment such as tablets or laptops, and basic digital training. Nevertheless, the one-off and rapid nature of the training offered was often insufficient. Hence, many academics started looking for external resources, which further contributed to the information overload they were experiencing during the pandemic. Furthermore, the fact that ERT was implemented swiftly, with no transitional period, meant that training had to be prepared and delivered immediately. Thus, it was not feasible to tailor it to specific needs. Even in cases where the academic faculty was provided with an in-depth, half-day training,

this often addressed only the basic functionalities of a selected videoconferencing platform. Academics who wanted to further develop their skills had to pursue external training. Such training sessions covered a broad range of skills and knowledge areas including: successful online teaching methodologies; effective strategies for transferring teaching skills and learning content from the classroom to the digital environment; converting classroom activities to engaging virtual activities; techniques for adjusting and personalising learning content; approaches for engaging students online; the use of specific applications for enhancing student-student and teacher-student connections; and methods for fostering student mental wellbeing, amongst other relevant topics. Drawing on the authors' experiences, while attending additional training was informative and instrumental for acquiring and further developing the desired skills and competencies, it required time-consuming online research, and often, the content was not relevant to the particular educational context. Thus, the invested time and effort did not always translate to substantial gains in personal or professional development. Such efforts often generated additional overheads and led to varied impromptu approaches. This, in turn, had an impact on students who found this diversity of approaches confusing (Piki, 2020).

During subsequent phases, the level of support and quality of training offered internally by HEIs were refined. In some cases, wellbeing questionnaires were administered amongst academics to gather their insights. Still, active psychological or wellbeing-oriented support was not always provided as a follow up. Many academics characterised their institution's approach as superficial and 'empty' gestures rather than an active response to feedback from staff surveys, commenting that although HEIs had official policies on work-life balance, equality, and mental health awareness, the actual working culture was not aligned with them (Wray and Kinman, 2021). Even in cases where the University employed strategies to address academics' mental health and wellbeing disorders, many academics emphasised that no intervention (including relaxation, mindfulness, or building resilience), could in fact substitute for a crucial reduction of workload, stating that the demands of the job absorbed their time, making it impossible even to make use of the solutions provided by the University (Wray and Kinman, 2021).

In addition to the internal procedures adopted at each HEI, the respective governmental body (i.e., Ministry of Education or Higher Education Quality Assurance Agency) published official recommendations including the rights and responsibilities of academics while teaching remotely under lockdown, which were later revisited and adjusted for hybrid and blended teaching modes. These policies covered a range of guidelines and recommendations covering various aspects of teaching delivery, the compulsory recording of lectures, the provision of synchronous lectures and virtual office hours, as well as regulations regarding GDPR, ensuring that all learning materials are available on the University's Learning Management System (LMS) or communication platform, students' learning process is documented and monitored and attendance records are kept to confirm the regularity of contact and interactions with students. Faculty may have been required to schedule online consultations for students and provide regular feedback on their learning progress. Evidently, the list of responsibilities was quite extensive, and in some contexts the only faculty rights were autonomy in the selection of tools to support distance learning and the right to receive support regarding



distance learning methods, instruments, and techniques. Nevertheless, in many cases, the published policies were not accompanied by clear explanations of how the requirements were to be met nor provided academics with specific procedures to follow, leading to diverse interpretations and ad hoc solutions.

A profound observation was that the genuine support amongst colleagues, was highly valued and appreciated at all stages of the pandemic. Social interactions amongst colleagues were crucial for reducing the consequences of isolation. The overall inference from published findings is that, in general, academics would have appreciated support at different levels: better technological assistance; improved access to necessary hardware, software and data resources; customisable resources and materials adapted for remote instruction; personalised training on online teaching and assessment methods; specific training and best practices on retaining students and reactivating learner engagement; and more time to adapt to the new teaching environment; psychological support from colleagues and the University; and wellbeing education to help faculty handle the complexities they were experiencing. All the above indicate the prominent need for teacher training, upskilling in technology-mediated teaching, and multi-layered support responding to multi-faceted needs.

## 2.2 Students' Perspectives and Experiences

Understanding what affects students' engagement and how they respond to various educational technologies and social interactions can make valuable contributions and inform pedagogical design, theory, and practice (Aucejo et al., 2020; Muñoz-Carril et al., 2021; Meletiou-Mavrotheris et al., 2022; Piki, 2020; Piki, 2022). Prominent themes in recent literature include the impact of the pandemic on learning approaches and learner engagement, the ambivalent role of social technology and social media, and students' self-reports on how they envision the future of learning in the post pandemic era.

**Learning and learner engagement amidst the pandemic.** Learner engagement has become more fragmented and distributed than ever before due to the abrupt changes and enduring consequences of the pandemic (Piki, 2020; Piki, 2022). During ERT, students were compelled to continue their university studies at a distance. This brought several challenges to young adults' lives and degree of engagement (Kara, 2021). First, for most students, remote education was an unfamiliar situation, and many had never attended classes online before, hence they lacked important digital skills. Naturally, the way students engage, learn, and interact in online education differs compared to attending a conventional classroom (Ma et al., 2020; Wang et al., 2022). Secondly, pedagogical procedures inevitably changed: lectures were often recorded impeding spontaneous student participation, assessments were an additional burden even though the process for requesting extensions became more lenient, communications with lecturers became fragmented, while social, informal interactions during online lectures disappeared (Piki, 2020). Thirdly, students were undergoing a fusion of swift and imposed changes beyond their control, including restricted mobility, social isolation, and reduced flexibility, which was contrary to their pre-pandemic lives. The severe health-related

consequences of the pandemic globally further challenged students, similar to academics, and elevated student uncertainty and distress (Kara, 2021; Vijayan, 2021; Wang et al., 2022), especially for those in vulnerable groups of the population or whose family members were at risk (Brzezinska and Cromarty, 2022). Due to the novelty of the situation, students frequently exhibited frustration and anxiety, which was sometimes manifested during ERT classes and one-to-one meetings with instructors.

Information overload or inadequate information further overwhelmed students. Learner engagement was more affected in practical modules, such as accounting and mathematics, where students found it more difficult to follow the lecturer's line of thought (Cassibba et al., 2020; Engelbrecht et al., 2020; Piki et al., 2022). Over time, these experiences made students feel detached from reality and disengaged from their normal routine, which inevitably had a negative impact on their learning, level of concentration and degree of participation (Piki, 2020). This was evident during initial national lockdowns, which enforced ERT (Kara, 2021), but also in subsequent lockdowns and self-isolation periods (Piki, 2022).

Various technological adaptations (Veluvali and Suriseti, 2022) and innovating pedagogies (Kukulka-Hulme et al., 2022) have been recently proposed emphasising the need to explore the role of individual learner characteristics (Kara, 2021), to attend to diverse learners and learner abilities, and to promote learner engagement in higher education (Piki, 2020; Piki, 2022; Veluvali and Suriseti, 2022). Despite efforts to understand the factors that impacted learner engagement during the pandemic, counter-engaging expressions such as boredom, fatigue, anxiety, stress, and poor mental health are commonly reported in the literature (Kara, 2021; Vijayan, 2021; Wang et al., 2022; Ma et al., 2020; Muñoz-Carril et al., 2021). This means that efforts need to be intensified to better understand the personal, pedagogical, technological, and social factors influencing student engagement (Piki, 2022) and move forward, towards actioning on these prominent findings and designing experiences with engagement and wellbeing in mind (Peters et al., 2018).

Inequalities in access and accessibility were heightened during the pandemic, stressing the need for refocusing on human-centred design accounting for wellbeing needs (France, 2020; McKenzie, 2021) and on learning environments that afford quality and inclusive learning for all learners (Meletiou-Mavrotheris et al., 2022). On the contrary, during the pandemic, training and support offered to students was limited, inequitable, or completely non-existent. Hence, developing new learning strategies was largely opportunistic and most students had to become accustomed with new technological platforms on the fly. Furthermore, the variability in the approaches employed by different academics was confusing for students, (Piki, 2020). The unfolding crisis, coupled with the lack of appropriate training, and the unstable social situation inevitably affected students' engagement and motivation (Kara, 2021; Piki, 2022).

**Multifaceted role of social technology and social media.** The multifaceted role of social technology and social media, and the impact they have had on learner engagement and students' academic performance became evident during the ERT (Brzezinska and Cromarty, 2022; Hodges et al., 2020; Kara, 2021; Piki, 2020). Familiarity with social and mobile applications led students to using various mobile applications

intuitively, for learning, studying, and interacting with their peers and lecturers (Piki, 2022). In fact, under lockdown, social media interaction was the only way students could stay connected with their peers, lectures, and the rest of the world (Piki et al., 2022). Unsurprisingly, the pandemic has accelerated the uptake and utilisation of social, collaborative, and mobile game-based technologies (Abu Elnasr et al., 2020; Piki, 2020; Piki, 2022). In many cases, using these technologies was not merely an alternative or supplementary option for teaching and learning; rather, it became a necessity (Hodges et al., 2020). Still, the utilisation of these technologies has not been systematically considered in subsequent policies and official recommendations for teaching and learning ‘in the new normal’. Furthermore, recent results underline that students’ familiarity with social technologies (Piki, 2022), or their self-efficacy in using e-learning tools, does not directly equate to their preparedness to cope with the abrupt challenges brought by ERT (Meletiyou-Mavrotheris et al., 2022). With the consequences of the pandemic still unfolding, it is imperative to leverage the unique characteristics and educational capabilities of mobile, collaborative, and social technologies towards reactivating learner engagement (Piki, 2022), helping students to acquire the necessary skills, and improving the learning outcomes. Such technologies need to be seamlessly and systematically fused in the pedagogical process (Piki, 2020).

Paradoxically, while students reported that social mobile technology was the only channel for staying connected and supporting each other, they also admitted that the same technology constituted a major source of distraction and learning demotivation, both during the live online lectures and while studying on their own (Piki, 2020; Piki, 2022). Coupled with technical problems, such as poor Internet connections and compatibility issues (McKenzie, 2021), social media apps distracted students and negatively affected their engagement, concentration, and level of participation, which, in turn, impacted their overall academic performance (Piki, 2020). A reason which elevated the adverse impact that social technology had on students’ concentration was a lack of strict online participation requirements. In most cases, students preferred to keep their web cameras off, which also coincided with the official recommendations in some countries. Therefore, it was impossible for lecturers to monitor how concentrated students were, whether they looked puzzled or had any questions, or even whether they were present (Piki et al., 2022). This made instructors feel like they were talking to the screen (Brzezinska and Cromarty, 2022). Students could easily get away with joining the session simply to get their attendance recorded, yet without really engaging throughout the lecture (Piki, 2020). Over time, this caused a cycle of negative emotions for both academics (who felt they could not connect to their students like they did in the classroom) and students (who felt they could not stay concentrated during online lectures and thus eventually lost interest).

Another intriguing finding was that students would behave differently in modules where they felt their lecturer was socially active, interacting with them and replying to their messages on social networking apps. This responsiveness and openness of some academics was highly appreciated by students; they considered it as a gesture of empathy and, caring, which affected their decision to attend live online lectures. Many students admitted they consciously chose which lectures they would join based on their instructor’s approach (Piki, 2020; Piki, 2022). All these observations re-emphasise the

inextricable connection between the ways students and academics experienced ERT and how their actions affected each other.

Another important aspect from the technological point of view is the need to take a more human-centred approach in the utilisation of technologies. Technologies should not be seen merely as a tool for teaching and learning, but rather as a means of establishing quality interactions. Such interactions need to be carefully designed, seamlessly incorporated in teaching and learning, and properly monitored to ensure they are ethical, inclusive, responsible, and sustainable, respect participants' privacy, and enhance human wellbeing (Darby and Lang, 2019; France, 2020).

**Visions of students for learning in the new normal.** Recent studies show that most students are still in favour of traditional, face-to-face, classroom-based instruction over distance education (Gierdowski, 2019; Piki, 2022). The former is associated with an effortless and natural learning process, which students consider as ideal particularly for practical subjects such as mathematics (Piki et al., 2022). This gives rise to several human-centred attributes of educational technology. Firstly, any online, virtual, or intelligent educational environment should offer a seamless fusion of multiple affordances, such as simulation of the whiteboard to allow students to synchronously follow their lecturer's writing, natural representation of the lecturer's facial expressions and body gestures, and any additional learning materials such as lecture slides. This portrays the need for multimodal and natural learning environments. Secondly, successful remote lectures are those that 'simply work', with no Internet connectivity hassles or compatibility issues. Thirdly, unsurprisingly, breaks are important. Both students and academics highlighted the need to recreate casual discussions, and 'social breaks' in online and virtual environments. This re-emphasises the notion that learning is inherently a social activity. Furthermore, many students stated they value aspects such as psychological support, empathy, and mutual understanding from their families, lecturers, and peers alike (Piki, 2020). These findings indicate there is still a lot to explore about the affordances of emerging technologies for wellbeing-oriented social and community-based learning. Such an exploration entails designing for motivation, engagement, and wellbeing in digital experiences (Peters et al., 2018).

### 2.3 Juxtapositions in Academics' and Students' Experiences & Perspectives

This paper undertakes to collectively investigate and analyse academics' and students' experiences and perspectives to inform pedagogical recommendations for teaching and learning in the new normal. Table 1 presents juxtapositions between key themes across multiple layers: self-efficacy, emotional and psychological, social, technological, pedagogical, institutional, and the broader educational ecosystem. We outline the key enablers (sources of support) and barriers (challenges) evident in each layer. The list is not intended to be exhaustive; rather, the goal is to highlight shared themes and constructs across academics' and students' experiences and perspectives.

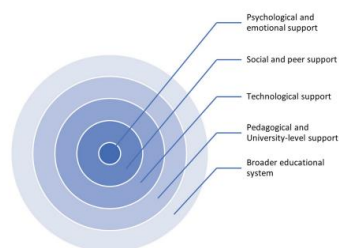
**Table 1.** Barriers (challenges) and Enablers (sources of support) evident at different layers.

Layers	Academics' experiences & perspectives	Students' experiences & perspectives
Self-efficacy, personal capacity, level of confidence, readiness, preparedness, individual skills and competencies	<p><b>Barriers:</b></p> <ul style="list-style-type: none"> <li>- Unfamiliar remote education.</li> <li>- Social digital skills gaps impacting social identity.</li> <li>- Insufficient time for upskilling.</li> <li>- Extra time and effort for adjusting activities, teaching content, feedback, and assessments.</li> <li>- Unmanageable workload and difficulty to maintain work-life balance.</li> </ul> <p><b>Enablers:</b></p> <ul style="list-style-type: none"> <li>- Motivation to use technology for teaching and keeping in touch with students.</li> <li>- Most academics were comfortable with technology.</li> </ul>	<p><b>Barriers:</b></p> <ul style="list-style-type: none"> <li>- Unfamiliar remote education.</li> <li>- Digital skills gaps, insufficient time for adjusting and upskilling.</li> <li>- Practical modules challenging to follow online.</li> <li>- Opportunistic, on-the-fly learning.</li> <li>- Fragmented and distributed learner engagement and motivation.</li> <li>- Rapid changes affecting self-efficacy, concentration, participation, and engagement and academic performance.</li> </ul> <p><b>Enablers:</b></p> <ul style="list-style-type: none"> <li>- Familiarity with social media.</li> <li>- Inner drive to show appreciation to lecturers.</li> </ul>
Psychological and emotional support, mental health, wellbeing	<p><b>Barriers:</b></p> <ul style="list-style-type: none"> <li>- Health and social impact, unrealistic time pressures, digital fatigue, increased workload and distractions, work-life imbalance along with lack of recreational activities, prolonged social isolation and mobility restrictions causing work-related stress, anxiety, burnout, and poor mental health, which hindered productivity.</li> <li>- Active psychological or wellbeing-oriented support unavailable or limited.</li> <li>- Students' distress had a knock-on effect on workload and emotional strain.</li> </ul> <p><b>Enablers:</b></p> <ul style="list-style-type: none"> <li>- Where available, mentoring schemes and virtual drop-in sessions.</li> <li>- Inner drive to help and support students.</li> </ul>	<p><b>Barriers:</b></p> <ul style="list-style-type: none"> <li>- Health and social impact, lack of concentration, reduced motivation, and increased distractions elevated anxiety, uncertainty, anger, distress, boredom, fatigue, and poor mental health, hindering academic performance.</li> <li>- Support from academics and University was inconsistent or unavailable.</li> </ul> <p><b>Enablers:</b></p> <ul style="list-style-type: none"> <li>- Emotional intelligence, empathy, caring approach of some academics.</li> <li>- Ongoing feedback from some lecturers</li> <li>- interactions with peers through social media.</li> <li>- Family bonds and social interactions, playing a key role in maintaining motivation and hope.</li> </ul>
Social and peer-to-peer support	<p><b>Barriers:</b></p> <ul style="list-style-type: none"> <li>- problems to have social breaks or encourage informal discussions with students, particularly during online recorded lectures.</li> </ul> <p><b>Enablers:</b></p> <ul style="list-style-type: none"> <li>- Support amongst colleagues</li> <li>- Social interactions, crucial for reducing the consequences of isolation.</li> </ul>	<p><b>Barriers:</b></p> <ul style="list-style-type: none"> <li>- Social breaks (during lectures) and informal discussions were not recreated during remote education.</li> </ul> <p><b>Enablers:</b></p> <ul style="list-style-type: none"> <li>- Peer groups contributing to stronger bonding and wellbeing.</li> <li>- Social interactions with friends, family, and lecturers, which alleviated feelings of isolation.</li> </ul>
Technological support and effectiveness of technological interventions	<p><b>Barriers:</b></p> <ul style="list-style-type: none"> <li>- More time-consuming and demanding remote teaching and assessment .</li> <li>- Working from home associated with increased interruptions.</li> <li>- Deficient home-working ergonomics.</li> <li>- Limited access to hardware, software, and data resources, poor Internet connection, outdated systems, and compatibility</li> <li>- Digital skills gaps in utilising the available technologies to engage learners.</li> <li>- Prolonged online interactions resulting in digital fatigue.</li> <li>- Utilising new or unfamiliar technologies for teaching, assessment, providing feedback, and interacting with students, which caused considerable stress and anxiety.</li> </ul> <p><b>Enablers:</b></p> <ul style="list-style-type: none"> <li>- Technology allowing academics to continue providing education</li> <li>- Social technology enabled stronger bonds during lockdowns and remote teaching, facilitating mental wellbeing.</li> </ul>	<p><b>Barriers:</b></p> <ul style="list-style-type: none"> <li>- Online lectures were cognitively demanding, negatively impacting concentration, motivation, participation, and academic performance.</li> <li>- Social technology may have been a source of distraction that inhibited learning.</li> <li>- Technological limitations, such as poor Internet connection and compatibility issues</li> <li>- Impromptu and inconsistent, confusing approaches adopted by academics.</li> <li>- Digital skills gaps in knowledge management and utilising the affordances of the available technologies for learning.</li> </ul> <p><b>Enablers:</b></p> <ul style="list-style-type: none"> <li>- Technology allowed students to continue their studies in Higher Education</li> <li>- Social media helped students remain connected with peers.</li> <li>- Social media apps and mobile technologies enabled students interactions with academics, receiving feedback and support to endure challenges.</li> </ul>

	<ul style="list-style-type: none"> <li>- Flexible working hours, reduced commuting, increased access to conferences conducted as virtual events.</li> <li>- Technological support and occasional provision of hardware and software.</li> </ul>	
University-level support schemes	<p><b>Barriers:</b></p> <ul style="list-style-type: none"> <li>- Lack of support, encouragement, and understanding towards academics.</li> <li>- Increased workload, time, and effort.</li> <li>- Fragmented connection with the University services and poor communication with leadership and the human resources department.</li> <li>- Limited, inconsistent, or non-existent digital training and wellbeing support .</li> <li>- Limited attention to academics' readiness and level of confidence with remote education,</li> <li>- Increased demands for upskilling.</li> <li>- Changing responsibilities, which was viewed as demanding, raising anxiety and loneliness.</li> </ul> <p><b>Enablers:</b></p> <ul style="list-style-type: none"> <li>- Mentoring schemes, virtual drop-in sessions.</li> </ul>	<p><b>Barriers:</b></p> <ul style="list-style-type: none"> <li>- Limited, inequitable, or non-existent technological training and wellbeing support offered to students .</li> <li>- Limited attention to students' preparedness, level of confidence with remote education, and digital skills gaps.</li> <li>- Inequalities in access, diversity, inclusivity, and accessibility</li> <li>- Information overload or insufficient information during ERT.</li> <li>- Fragmented connection with the University services.</li> </ul> <p><b>Enablers:</b></p> <ul style="list-style-type: none"> <li>- More lenient procedures to request extensions to summative assessments.</li> </ul>
Broader educational ecosystem, government, policy makers	<p><b>Barriers:</b></p> <ul style="list-style-type: none"> <li>- The list of responsibilities was quite extensive, while rights, academic freedom, and flexibility were constrained.</li> <li>- Published policies and recommendations were often unclear, leading to diverse interpretations and ad hoc solutions.</li> </ul> <p><b>Enablers:</b></p> <ul style="list-style-type: none"> <li>- Flexibility with remote work in higher education</li> </ul>	<p><b>Barriers:</b></p> <ul style="list-style-type: none"> <li>- Students' indirect interaction with the broader educational ecosystem.</li> <li>- Policies and recommendations communicated to students during lectures and through announcements published in LMS.</li> </ul> <p><b>Enablers:</b></p> <ul style="list-style-type: none"> <li>- Flexibility with remote attendance, recorded lectures.</li> </ul>

### 3 Synthesis of Findings and Recommendations

Collectively analysing and exploring how academics and students have experienced teaching and learning during various phases of the pandemic illuminates certain gaps, eminent challenges, and complex needs that need to be attended to. These are discussed below, in the form of recommendation bands, with the aim to inform pedagogical design and educational decision making. Essentially, we argue that an 'onion structure of support' should be formulated (Fig. 1).



**Fig. 1.** Onion-structure capturing multifaced needs and respective layers of support.

### 3.1 Mental and Emotional Support and Wellbeing Education

In a world of crisis, educational efforts should focus on empathy (Rifkin, 2009), strive to restore humanity and equity, and promote wellbeing (France, 2020; France, 2021; Raygoza et al., 2020). Put differently, educators ought to “*Maslow before Bloom*” (Berger, 2020). Wellbeing should be attended to, both in terms of provision of mental and emotional health support and in terms of wellbeing education. Regarding the provision of support, it is obvious that “*No education system is effective unless it promotes the health and well-being of its students, staff and community. These strong links have never been more visible and compelling than in the context of the COVID-19 pandemic*” (WHO/UNESCO, 2021). Therefore, this assistance should be abundant for students and academics alike. It needs to be emphasised that in crisis, when large numbers of people, including academics and students, experience sudden distress, fatigue, and depression, it is instrumental for HEIs to develop proactive mechanisms for recognising specific needs. It is vital that universities focus on truly customized, thought-out solutions fitting a particular context (Wray and Kinman, 2021). This requires motivated and orchestrated efforts to identify what ought to be done at each level, how it should be done, and who should be involved in providing high quality specialist support (WHO/UNESCO, 2021).

Educating students and academics about wellbeing and mindfulness is also a step forward. This can include alerting them about mental health conditions, how to recognise the signs and symptoms of such conditions, and what the role of emotional intelligence is. Strategies for managing stress should also be provided. Wellbeing education can promote welfare across all aspects of teaching and learning and have a positive impact on academic attainment as well as such learning outcomes as self-efficacy, self-esteem, motivation, and decreased dropouts. Wellbeing education, which recently re-emerged as an innovating pedagogy, nurtures values like compassion and empathy in the learning process, supporting teachers’ and learners’ wellbeing (Dinu et al., 2021; France, 2020; Kukulska-Hulme et al., 2022). While the need is not new, the vision of developing a sustainable wellbeing education system has not yet been met (Kukulska-Hulme et al., 2022). Such a systems needs to be based on the premise that “*mental health [is] foundational to all aspects of university life, for all students and all staff*” (UUK, 2021) – from curriculum design to university-level support services, to promoting a healthy workplace culture attending to academics’ workload demands (Wray and Kinman, 2021), involving students and enabling them to play an active role in the development of interventions (Kukulska-Hulme et al., 2022), to the impact of technology on wellbeing. Hence, the emphasis in future pedagogical models should be on wellbeing support and coping strategies, which will, in turn, activate engagement and help attain the desirable learning outcomes, rather than focusing merely on assessments and academic performance.

### 3.2 Embracing Equality, Diversity, and Inclusion in Education

A university class, whether on-site or virtual, should be a safe, inclusive, culturally responsive space. All races, genders, ethnicities, cultural identities, and socioeconomic

statuses should be embraced and cherished by the instructor, who also needs to scaffold such patterns among the students (France, 2021). To foster equitable participation and personal connections, instructors ought to check in on student access, reduce/manage the length of online lectures and embed social breaks (Piki, 2020; Piki, 2022), share troubleshooting resources, enable a transcription service, make sure that the topics they discuss are not sensitive, invite students who have not spoken yet to share and contribute, allow students to alternate group roles, ask students what they learned or appreciated from a peer, or chat informally with the students a few minutes before the class (Raygoza et al., 2020). Other effective strategies of making teaching culturally responsive include using native languages, and featuring traditions and customs in the class (Brzezinska and Cromarty, 2022). To enable inclusivity, it is also important to closely attend to learning (dis)abilities and special needs and ensure learning content is accessible, inclusive, engaging, and interactive, for the benefit of all learners

### 3.3 Upskilling for Addressing Multifaceted Needs

The findings emerging from the preceding analysis provide support for the concept of ‘systemic pedagogies’ which strategically follow a ‘whole university approach,’ focusing on increasing both the academics’ and students’ motivation and resilience. Such a systemic or holistic approach needs to address a wide range of skillsets for both students and academics, including: (a) *social competences* (e.g., social resilience, empathy, social identity management, social presence, peer support and bonding strategies, collaboration and teamwork, and enhanced social interactions between students and academics), (b) *individual aptitudes* (e.g., self-efficacy, self-confidence, emotional intelligence, mental strength and wellbeing, intrinsic motivation), (c) *digital and technological skills* (e.g., familiarity with computer-supported collaborative learning and work, computer-mediated interactions, social media, smart and intelligent emerging technologies), and (d) *digital literacy* (e.g., awareness of ethical, social, legal, privacy, and security considerations embedded in emerging technologies).

Given the inextricable connection between the ways students’ and academics’ experienced technology-enhanced education, a plausible way for motivating students while balancing the instructors’ responsibilities and workload, includes the promotion of peer learning, student autonomy (France, 2020), and agency (Darby and Lang, 2019). Enabling students to feel responsible for their own learning and develop a sense of control in a technology-rich society is amongst the responsibilities of every educator (Bates, 2019). Promoting autonomy helps students become active agents and perceive their learning as a meaningful and fulfilling activity. Thus, assisting students in becoming more autonomous, instructors help them develop lifelong learning skills, which has powerful implications for students’ future success. Higher education should be relevant and closely connected to the real world and job market to prepare self-motivated graduates ready to join the workforce as autonomous agents (Bates, 2019; Darby and Lang, 2019) while, obviously, nurturing their engagement and providing them with direction, assistance, feedback, and high-quality education. This emphasises the important role educators play in creating a space for learners to develop the desirable global skills and become engaged and active citizens. At the same time, to better support students,



academics should also develop self-care strategies (i.e., set clear boundaries between work and life, minimise exposure to technology to avoid feeling overwhelmed, embrace peer support, and celebrate goodwill), in addition to enhancing their competences with technology-enhanced education, and to learning to use online tools skillfully and effectively. Strategic training and continuous professional development plans need to be established to cater for these needs.

An important step for preparing students better for a transition online would be to educate them on the technological capabilities of available educational platforms and technological tools; to familiarise them with netiquette, social rules, and online communication protocols; and to inform them about privacy, security, and data protection regulations. Such an approach, while initially possibly time and energy-consuming on the part of the instructor, brings significant benefits to academics, too. It is likely to result in greater student autonomy, which ultimately translates to the desired reduction in the overload experienced by faculty.

### **3.4 Microlearning, Actionable Feedback, and Authentic assessment**

The findings suggest that teaching and learning in the new normal requires re-establishing core pedagogical pillars. First, planning for a blended future requires setting clear learning objectives and reducing complexity. This can be achieved by chunking courses into manageable units with consistent organisation and temporal cadence (Joosten et al., 2021). Students should be aware of the what, why, and how of the course, the content should be released strategically, and complex tasks should be broken down (Darby and Lang, 2019). The pedagogical approach which saw renewed focus as a means of maintaining student engagement and motivation during ERT and subsequent blended teaching and learning is microlearning or atomic learning (Leong et al., 2020; McKee and Ntokos, 2022; Stefan et al., 2022), founded on the philosophy of learning is small chunks (Kukulaska-Hulme et al., 2022). Common features of such approaches include short duration, fast learning pace, and bite-sized chunks of learning content focusing on a single topic (Leong et al., 2020; McKee and Ntokos, 2022). Second, formative, actionable feedback should be frequently provided (Darby and Lang, 2019) to enable revision and reflection. Comprehension is only achieved when students constantly reflect on what they study (Dewey, 1933; Kumar et al., 2019). In addition to general feedback during the lecture or one posted on the LMS, social technology can be leveraged to provide timely and personalised feedback, guidance, and support (Piki, 2022). Third, assessments and learning materials should be relevant and authentic. Learning content and assignments should have a practical relevance, feature real-life problems, and be authentic (Brzezinska, 2022; Darby, 2019; Kumar et al., 2019; Shaw, 2020). Virtual project-based learning can be employed to engage learners in authentic learning and foster student independence (Bates, 2019; France, 2021; Whitman and Kelleher, 2020;). Finally, assessment should be forward-looking. Formative and summative assignments should evaluate the skills students will need in their future career and life-long learning (Shaw, 2020).

### 3.5 Digital Transformation in Education

Besides techno-pedagogical considerations, several other aspects constitute vital drivers of digital transformation in education, such as strategic educational leadership, availability of resources to support staff to develop pedagogically informed digital practices, and further investing in improving the digital environment, technological platforms, and infrastructures (Killen et al., 2021). These upgrades are a necessity for providing a seamless integration of multiple affordances to support both students and academics. The role of social and mobile technologies should also be further explored given the central role they played during the pandemic (Piki, 2020; Piki, 2022). These findings call for improvements of technological provisions in higher education (Halabieh et al., 2022), while also attending to academics' technological readiness (Yiapanas et al., 2022), and training needs to activate their engagement with social and emerging technologies – changes long overdue.

## 4 Conclusion

Within higher education, the persistence and extent of the pandemic's consequences have compelled both students and academics to re-establish their discontinuous social interactions, fill the gaps caused by fragmented learning experiences, and reflect on personal and social values. Following methodical examination of both sides, we extracted common threads and perspectives between academics and students highlighting the key qualities that such novel pedagogies need to attend to as we enter a new normal in education.

Recent results underline that students' familiarity with social technologies and their self-efficacy in using e-learning tools do not directly equate to their preparedness to cope with the abrupt challenges brought by the pandemic. Upskilling-oriented pedagogical strategies, human-centred technologies, authentic assessments, and wellbeing support are indispensable for ensuring that students are promoted to competent digital learners, equipped with the necessary skills and aptitudes, such as self-regulation and autonomy to fully benefit from the application of emerging technologies in education.

The key themes emerging by synthesising both perspectives can inform forward-looking pedagogical approaches, framed in a multi-layered support system grounded in virtues such mental and emotional support, and wellbeing education; upskilling for addressing multifaceted needs; microlearning, actionable feedback, and authentic assessments; equality, diversity, and inclusivity; and seamless integration of human-centred technology enabling enhanced interactions. These eminent qualities are discussed through the experiences, perspectives, and visions of both students and academics in higher education with the view to extract useful recommendations for improving teaching and learning in the post-pandemic era.

Focusing equally on both perspectives, important findings emerged suggesting that HEIs and policymakers should carefully consider how to support academic staff post-pandemic. While many of these challenges are enduring, as we emerge out of the pandemic, it is imperative to reflect on the lessons learnt and the social, emotional, psychological, technological, and training needs of both students and academics.

## References

1. Abu Elnasr, E. S., Hasanein, A. M., Abu Elnasr, A. E. (2020). Responses to COVID-19 in higher education: Social media usage for sustaining formal academic communication in developing countries. *Sustainability*, 12(16), 6520.
2. Al Miskry, A. S. A., Hamid, A. A. M., Darweesh, A. H. M. (2021). The Impact of COVID-19 Pandemic on University Faculty, Staff, and Students and Coping Strategies Used During the Lockdown in the United Arab Emirates. *Frontiers in Psychology*, 12.
3. Aucejo, E.M., French, J., Araya, M.P.U., Zafar, B. (2020). The impact of Covid-19 on student experiences and expectations: Evidence from a survey. *Journal of public economics*, 191.
4. Bates, A.W. (2019). *Teaching in a Digital Age* (2<sup>nd</sup> Ed.). Vancouver, B.C.: Tony Bates Associates Ltd.
5. Bożykowski, M., Izdebski, A., Jasiński, M., Konieczna-Sałamatin, J. (2021) Nauczanie w dobie pandemii i perspektywa powrotu do normalności, Pracownia Ewaluacji Jakości Kształcenia Uniwersytetu Warszawskiego (University of Warsaw).
6. Brzezinska, M. & Cromarty, E. (2022). Emergency Remote Teaching in the University Context: Responding to Social and Emotional Needs During a Sudden Transition Online. In: Meiselwitz, G. (eds) *Social Computing and Social Media: Applications in Education and Commerce. HCII 2022. Lecture Notes in Computer Science*, vol 13316. Springer, Cham.
7. Brzezinska, M. (2022). Global Skills in the Global Pandemic: How to Create an Effective Bichronous Learning Experience During an Emergency Shift to Remote Instruction. In: Auer, M.E., Pester, A., May, D. (eds) *Learning with Technologies and Technologies in Learning. Lecture Notes in Networks and Systems*, vol 456. Springer, Cham. [https://doi.org/10.1007/978-3-031-04286-7\\_32](https://doi.org/10.1007/978-3-031-04286-7_32)
8. Cassibba, R., Ferrarello, D., Mammana, M. F., Musso, P., Pennisi, M., Taranto, E. (2020). Teaching mathematics at distance: A challenge for universities. *Education Sciences*, 11(1).
9. Darby, F., Lang, J. M. (2019). *Small Teaching Online: Applying Learning Science in Online Classes* (1<sup>st</sup> ed.). Jossey-Bass.
10. Dewey, J. (1933). *How we think: A restatement of the relation of reflective thinking to the educative process*. DC Heath.
11. Dinu, L. M., Dommett, E. J., Baykoca, A., Mehta, K. J., Everett, S., Foster, J. L., Byrom, N. C. (2021). A case study investigating mental wellbeing of university academics during the COVID-19 pandemic. *Education Sciences*, 11(11), 702.
12. Engelbrecht, J., Borba, M. C., Llinares, S., Kaiser, G. (2020). Will 2020 be remembered as the year in which education was changed? *ZDM – Mathematics Education*, 52(5), 821-824.
13. Flaherty, C. (2020). Faculty pandemic stress is now chronic. *Inside Higher Ed*, 19.
14. France, P. E. (2020). *Reclaiming Personalized Learning: A Pedagogy for Restoring Equity and Humanity in Our Classrooms* (First). Corwin.
15. France, P. E. (2021). *Humanizing Distance Learning: Centering Equity and Humanity in Times of Crisis* (First). Corwin.
16. Gewin, V. (2021). Pandemic Burnout Is Rampant in Academia. Nature Publishing Group. Available online: <https://media.nature.com/original/magazine-assets/d41586-021-00663-2/d41586-021-00663-2.pdf>
17. Gierdowski, D.C. (2019). ECAR Study of Undergraduate Students and Information Technology (Research report). Louisville, CO: *EDUCAUSE Center for Applied Research*, October 2019. Available online: <http://www.educause.edu/ecar>

18. Halabieh, H., Hawkins, S., Bernstein, A. E., Lewkowick, S., Unaldi Kamel, B., Fleming, L., Levitin, D. (2022). The Future of Higher Education: Identifying Current Educational Problems and Proposed Solutions. *Education Sciences*, 12(12), 888.
19. Hodges, C., Moore, S., Lockee, B., Trust, T., Bond, A. (2020). The Difference Between Emergency Remote Teaching and Online Learning. *EDUCAUSE Review*, 2020, 3.
20. Hughes, G.J., Byrom, N.C. (2019). Managing student mental health: The challenges faced by academics on professional healthcare courses. *Journal of Advanced Nursing*, 75(7), 1539-1548.
21. Kara, M. (2021). Revisiting online learner engagement: exploring the role of learner characteristics in an emergency period. *Journal of Research on Technology in Education*, 1-17.
22. Killen, C., Langer-Crame, M., Penrice, S. (2021) Teaching Staff Digital Experience Insights Survey 2020: UK Higher Education Findings. Available online: <https://www.jisc.ac.uk/reports/teaching-staff-digital-experience-insights-survey-2020-uk-higher-education>
23. Kita, Y., Yasuda, S., Gherghel, C. (2022). Online education and the mental health of faculty during the COVID-19 pandemic in Japan. *Scientific Reports*, 12(1), 1-9.
24. Kukulka-Hulme, A., Bossu, C., Charitonos, K., Coughlan, T., Ferguson, R., FitzGerald, E., Gaved, M., Guitert, M., Herodotou, C., Maina, M., Prieto-Blázquez, J., Rienties, B., Sangrà, A., Sargent, J., Scanlon, E., Whitelock, D. (2022). *Innovating Pedagogy 2022: Open University Innovation Report 10*. Milton Keynes: The Open University.
25. Kumar, S., Martin, F., Budhrani, K., & Ritzhaupt, A. (2019). Award-winning faculty online teaching practices: Elements of award-winning courses. *Online Learning*, 23(4).
26. Leone, V., Brzezinska, M. (2021). Transatlantic Educators Dialogue (TED) Program for Global Citizenship. *Idee in Form@Zione*, 99-115.
27. Ma, X., Liu, J., Liang, J., Fan, C. (2020). An empirical study on the effect of group awareness in CSCL environments. *Interactive Learning Environments*, 1-16. doi: 10.1080/10494820.2020.1758730
28. Marinoni G., van't Land, H. (2020). The Impact of COVID-19 on Global Higher Education. *International Higher Education*. Special Issue 102, pp. 7-9.
29. McGaughey, F., Watermeyer, R., Shankar, K., Suri, V. R., Knight, C., Crick, T., Hardman, J., Phelan, D., Chung, R., (2021). 'This can't be the new norm': academics' perspectives on the COVID-19 crisis for the Australian university sector. *Higher education research & development*, 1-16.
30. McKenzie, L. (2021). Bridging the Digital Divide: Lessons From Covid-19. Inside Higher Ed. Available online: <https://www.insidehighered.com/content/bridging-digital-divide-lessons-covid-19>
31. Meletiou-Mavrotheris, M., Eteokleous, N., Stylianou-Georgiou, A. (2022). Emergency remote learning in higher education in Cyprus during COVID-19 lockdown: A zoom-out view of challenges and opportunities for quality online learning. *Education Sciences*, 12(7), 477.
32. Muñoz-Carril, P.C., Hernández-Sellés, N., Fuentes-Abeledo, E.J., González-Sanmamed, M. (2021). Factors influencing students' perceived impact of learning and satisfaction in Computer Supported Collaborative Learning. *Computers & Education*, 174, p.104310.
33. Peters, D., Calvo, R. A., Ryan, R. M. (2018). Designing for motivation, engagement and wellbeing in digital experience. *Frontiers in Psychology*, 9, 797.
34. Piki, A. (2020). An exploration of student experiences with social media and mobile technologies during emergency transition to remote education. *The Proceedings of the 19<sup>th</sup> World Conference on Mobile, Blended and Seamless Learning (mLearn 2020)*, November 2-4, 2020, Cairo, Egypt.
35. Piki, A. (2022). Re-imagining the Distributed Nature of Learner Engagement in Computer-Supported Collaborative Learning Contexts in the Post-pandemic Era. In: Meiselwitz, G.

- (eds) Social Computing and Social Media: Applications in Education and Commerce. HCII 2022 (June 26-July 1, 2022). *Lecture Notes in Computer Science (LNCS)*, vol 13316. Springer, Cham.
36. Piki, A., Andreou, L., Markou, M (2022). Students' Perspectives on the Emergency Transition to Online Education – A Case Study in Mathematics Education. *16<sup>th</sup> annual International Technology, Education and Development Conference (INTED2022)*, March 7-2, 2022.
  37. Raygoza, M., Leon, R. Norris, A. (2020). *Humanizing Online Teaching*. Available online: <https://digitalcommons.stmarys-ca.edu/school-education-faculty-works/1805>
  38. Shaw, A. (2020). *Authentic Assessment in the Online Classroom*. Center for Teaching and Learning. Wiley Education Services.
  39. Stefan, I. A., Gheorghe, A. F., Stefan, A., Piki, A., Tsalapata, H., & Heidmann, O. (2022). Constructing Seamless Learning Through Game-Based Learning Experiences. *International Journal of Mobile and Blended Learning (IJMBL)*, 14(4), 1-12.
  40. UUK (Universities UK) (2021). Stepchange Mentally Healthy Universities. Available online: <https://www.universitiesuk.ac.uk/what-we-do/policyand-research/publications/step-change-mentally-healthy-universities>
  41. Urbina-Garcia, A. (2020). What do we know about university academics' mental health? A systematic literature review. *Stress and Health*, 36(5), 563-585.
  42. Veluvalli, P., Suriseti, J. (2022). Learning Management System for Greater Learner Engagement in Higher Education—A Review. *Higher Education for the Future*, 9(1), 107-121.
  43. Vijayan, R. (2021). Teaching and learning during the COVID-19 pandemic: A topic modeling study. *Education Sciences*, 11, 347.
  44. Vlachopoulos, D. (2020). COVID-19: Threat or opportunity for online education? *Higher Learning Research Communication*, 10(1), pp. 16-19.
  45. Wang, Y., Cao, Y., Gong, S., Wang, Z., Li, N., Ai, L. (2022). Interaction and learning engagement in online learning: The mediating roles of online learning self-efficacy and academic emotions. *Learning and Individual Differences*, 94, 102128.
  46. Watchorn, D., Heckendorf, E., Smith, C. (2020). Locked down, burned out: Publishing in a pandemic: The impact of Covid on academic authors. De Gruyter, Germany.
  47. 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(3), 623-641.
  48. Whitman, G., Kelleher, I. (2020). Your Checklist for Virtual Project-Based Learning. Edutopia. Available online: <https://www.edutopia.org/article/your-checklist-virtual-project-based-learning>
  49. WHO/UNESCO (2021). Making every school a health-promoting school: implementation guidance. Geneva: World Health Organization and the United Nations Educational, Scientific and Cultural Organization; 2021. Available online: <https://www.who.int/publications/i/item/9789240025073>
  50. Wray, S., Kinman, G. (2021). Supporting Staff Wellbeing in Higher Education (ISBN 978-1-7399860-1-8). *Education Support*. London.
  51. Yiapanas, G., Constantinou, M., Marcoulli, E. (2022). The Readiness of Higher Education Academic Staff in Cyprus for Shifting the Instructional Delivery Mode From Face-to-Face to Emergency Remote Teaching. In *Handbook of Research on Digital Innovation and Networking in Post-COVID-19 Organizations* (pp. 301-323). IGI Global.