The Lockdown in Retrospect: An International, Mixed Methods Perspective on Student and Faculty Experiences with COVID-19 Remote Learning

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Background

COVID-19 Impact on the Classroom

The COVID-19 pandemic has impacted higher education worldwide, affecting more than 1.3 billion students from all education levels across 142 countries (Karalis & Raikou, 2020). Prior to the pandemic, online education had become a mainstream phenomenon across the globe (Kumar et al., 2017). As of Fall 2014, approximately 1 in 4 students in higher education in the United States took at least one online course, and 1 in 7 students (or approximately 2.8 million) took their courses exclusively online (Allen et al., 2016). In spring 2020, the emergence and rapid spread of COVID-19 prompted universities across the globe to transition from in-person teaching to remote online teaching (Trust & Whalen, 2020), greatly increasing the already existing need to understand the nuances of online course delivery.

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While many universities offered online or hybrid courses prior to the COVID-19 pandemic, this emergency shift to almost exclusive online instruction was the best solution universities had for continuing instruction amid the COVID-19 crisis (Donham et al., 2022). This rapid transition left many instructors with little time and resources to alter their face-to-face courses to suit this new modality without reducing their pedagogical rigor. The stress of the transition was lessened for some instructors with prior online teaching experience or courses readily translated to an online format. However, many instructors felt considerably less prepared and were forced to rely on department or university-provided support, the likes of which were often of dubious quality (Pagoto et al., 2021). Although emergency remote instruction during the pandemic is different from other online courses due to the swift improvisation required to move classes online (Donham et al., 2022), this transition also brought with it a myriad of options for how to adapt traditional learning activities into a digital space. For example, synchronous lectures delivered in real time via videoconferencing platforms (e.g., Zoom or Microsoft Teams) allow for more traditional lecture activities and student engagement patterns. In contrast, asynchronous lectures, often delivered as prerecorded videos with self-directed student activities, allow more flexibility for students to work at their own pace (Hickling et al., 2021). Some instructors even combined these methods by recording live lectures and then posting them to the learning management system for maximum flexibility, a method that proved effective among STEM students (Pagoto et al., 2021).

Beyond content delivery, other factors also impacted higher education during the pandemic. Research on courses that switched from face-to-face to remote delivery during the pandemic has indicated a general detriment to student attitudes and engagement with remote courses (Armstrong et al., 2022). In one study, 51% of surveyed students reported being "very satisfied" with their courses before the emergency transition, but that percentage dropped to only 19% after the transition (Means & Neisler, 2021). One specific barrier that negatively impacted both instructors and students was attempting to navigate home environments that were often noisy, busy, crowded, and not conducive to learning (Bartolic et al., 2022a, b; Donham et al., 2022).

Like their instructors, students were also forced to rapidly adjust to the emergency transition, sometimes with poor communication from their instructors and universities (Pagoto et al., 2021). In facing the transition, up to 80% of students reported having difficulty staying motivated, with an additional 1 in 6 students professing consistent issues with access to reliable technology that hampered their ability to learn. Furthermore, 46% of surveyed students reported physical or mental health concerns that interfered with their course participation (Means & Neisler, 2021). Caregiving responsibilities, occupational demands, and demographic differences, such as race, socioeconomic status, and location also created additional challenges for students (Pokhrel & Chhetri, 2021). Quantitative findings from a separate study also indicate that Hispanic, first generation, and sexual or gender minority students experienced the greatest challenges regarding distance learning relative to the other student populations (Fruehwirth et al., 2021). One focus group additionally found that 11% of students reported feeling uncared for by instructors who

were inflexible to students who had accessibility or accommodation concerns, those in different countries or time zones, or those that did not have sufficient course infrastructure present in the chosen learning management system (LMS) (Pagoto et al., 2021).

Despite these barriers, the flexibility of online learning, due to the lack of rigid course schedules, is a boon for students who have extensive commitments outside school, such as work or caring for family. Further, using software such as Zoom can improve the accessibility of education. For example, Zoom offers the option to produce automated closed captions, and lecture recordings allow students to move back and forth through the lecture to repeat content as needed (Donham et al., 2022). For students whose attendance may be impacted by health issues, lecture recordings also allow them to access any content they may miss. For instructors, the ability to create course content asynchronously on their own time may offer similar flexibility (Hickling et al., 2021).

Given the extensive impact of the pandemic on higher education, research on online teaching and learning has rapidly proliferated. Although many universities have reopened their doors, online instruction and assessment are continuing to be offered in greater amounts alongside face-to-face education (Tartavulea et al., 2020). Therefore, in the wake of the emergency transition to remote instruction, instructors can use their experiences and emerging research to improve their teaching practices and be better prepared to transition online again in the event of a future crisis (Trust & Whalen, 2020).

However, despite the strides we have made in understanding how we might improve our pedagogies based on our experiences during the pandemic, there is still much we can learn from student and faculty experiences during the pandemic. Specifically, understandings of individual student differences, and if those differences were perceived and acted upon by faculty, remain as key research areas still worth exploring. This is particularly true from an international perspective, as the nature of learning is not bound to Americentric expectations. As a result, the present study seeks to derive meaning from the synthesis of over 4000 student and 500 faculty perspectives worldwide on their experiences during the transition by means of a multi-institutional consortium of academics, each collecting data from their own students and faculty.

Existing consortium work has revealed considerable lessons of note for institutions of higher education. Perhaps most noteworthily is that many of the original fears held by students and educators around the world at the onset of the COVID-19 pandemic, while not completely assuaged, did not come to the cataclysmic conclusions many anticipated (Bartolic et al., 2022a). While it may have been a reality for pockets of instructors and students, data suggests that a majority of faculty did not, as many feared, abandon all pretenses of teaching during the pandemic in favor of pre-recorded lectures or standalone PowerPoints without additional support. Additionally, students, while many underwent (and continue to experience) considerable duress due to COVID-19, many found the support they needed to continue their education. Mass dropouts, swaths of students abandoning their degree programs, and like fears largely did not come to pass. That said, while reviews of study data suggest these more dire fears about how the pandemic would change higher

education did not come to fruition, there is still much to learn from exploring what additional factors may have influenced student experiences during the transition.

An International Perspective on COVID-19 Responses

Nine higher education institutions from seven countries (Australia, Belgium, Canada, the Netherlands, the Philippines, the UK, and the United States) formed the bulk of this unnamed academic consortium. Each participating university collected data from their students, faculty, and, if possible, course support staff and department administrators. During data collection, each partner university made use of a base, self-completed, online survey that partners could add, but not subtract, questions from. One survey existed for students and another for faculty. Additionally, each university collected one-on-one interview data using a base set of open-ended qualitative questions from faculty. Of this consortium, two universities, one based in the United States and one in Belgium, provided additional qualitative analysis of study data. All quantitative data collection was organized and coordinated by a Canada-based university.

Process: Quantitative Analysis

To assess a general summation of student takeaways from the emergency remote transition, students were asked to pick a specific course that underwent a full or partial transition as the subject of their experience. This was coupled with more generalized attitudes about how students fared during the transition, as well as contextual, student-specific factors such as demographic information. Alongside other findings previously presented by the consortium, student responses to the emergency transition overall were cataloged in a series of 23 Likert scale questions (from 1 to 7 on an Agree–Disagree axis) that captured their personal, rather than mechanical, perspectives about how the transition was handled by themselves and their instructors, alongside their general perspectives on their learning values. For ease of interpretation, these 23 items were then evaluated using an exploratory factor analysis to group items with overlapping variance in the students' experiences.

After two iterations, making use of varimax rotation to clarify factor loadings, four items were deleted from the factor solution based on either significant factor cross-loadings or not loading onto any factor in the solution using a coefficient cut-off of 0.40. This final factor solution suggested the existence of four overall factors for these student perspectives and learning values: negative beliefs about transition outcomes (e.g., after the transition, the quality of my work declined, 7 items), confidence in the instructor to handle the transition (e.g., I was confident as my instructor transitioned to online learning, 4 items), willingness to engage with difficult course material (e.g., In general, I prefer more challenging courses, 4 items), and

preference for avoiding academic risk (e.g., I would rather drop a difficult course than earn a low grade, 4 items).

Findings: Student Individual Differences and Transition Perspectives

As anticipated, high confidence in the instructor's ability to handle the transition was strongly, inversely correlated with negative outcomes post-transition for students ($r = -0.54$, $p < 0.001$, $n = 3179$). Interestingly, students who professed a preference for less challenge appeared to experience more negative outcomes with the transition than students who did not show this preference ($r = 0.10$, $p < 0.001$, $n = 2799$), but this pattern was not inversely identified for students who expressed an explicit preference for more challenging courses ($r = 0.03$, $p = 0.07$, $n = 2824$).

Across demographic lines, overall negative experiences from the transition were not significantly different in terms of gender (note: no non-binary participants included), nor between students who had or had not ever taken a course online before. However, there was a positive correlation between negative experiences post-transition alongside student age ($r = 0.15$, $p < 0.001$, $n = 3201$) and student academic level ($r = 0.05$, $p = 0.003$, $n = 3220$), which was mirrored for both demographic points in the anticipated, inverse direction for how confident students were in their instructors ($r = -0.10$, $p < 0.001$, $n = 3420$; $r = -0.07$, $p < 0.001$, $n = 3446$, respectively). Accordingly, data suggests that general patterns of student experience during the transition to remote instruction was one of greater perceived difficulty and more distrust in "the system" for students who were older and had progressed further in their academic tracks.

These negative experiences with the transition also had considerable overlap with students' home environments. Both more negative experiences with the transition as well as a lack of confidence in instructors post transition were significantly correlated with students having slower Internet access, their home environments being too noisy or crowded, a lack of study space, and their work schedule being unaccommodating to their academic needs. However, while this might be expected, comparisons of these results to student beliefs about their academic abilities provide some additional context to these responses. Students who were academic challenge-averse *also* indicated (at the $p < 0.05$ level) that they had more problems with slow Internet, too much noise, a lack of space, and difficulty with their work schedule. This was not mirrored for students who displayed explicit confidence to challenge themselves academically. Students who scored highly in a desire for academic challenge only indicated greater difficulties with slow Internet and a lack of study space, with no effect detected for how they reported on disruptiveness of their home environments, as well as for how likely their work schedule was to interfere with their studies.

While these results by no means diminish the very real effects of home environment and life stability of students during the emergency remote transition, they do underlie the possible role of existing student academic outlook in how they processed their remote learning. That is, while a student's desire for more challenging vs. less challenging classes is unlikely to have a strong direct effect on their home environment, the same lack of desire for challenge may still incur more sensitivity to disruptions affecting their studies. This is not to say that students less confident in their abilities were unfairly oversensitive. Rather, the present pattern suggests that the effects of the pandemic were felt most harshly among those who may have already been struggling both at home and in their academic convictions, with resiliency to these effects present for students who maintained their desire for challenge during the pandemic.

Findings: Personal vs. Community Resilience (Single University)

To understand more about other possible factors that created protective effects for students facing the transition, a single university based in the United States also had students complete two additional scales, the short-form Connor–Davidson Resiliency scale [CDRISC10, (Connor & Davidson, 2003)], as well as a university-focused, modified version of the short-form Conjoint Community Resiliency Assessment Measure [CCRAM10, (Leykin et al., 2013)], focusing on individual, and community, resiliency, respectively. As one might expect, personal ($r = -0.21$, $p < 0.001$, $n = 310$) and community ($r = -0.30$, $p < 0.001$, $n = 0.307$) resilience were both inversely correlated to the perception of negative transition outcomes for students. As predicted by the aforementioned results about home environment, students who showcased a higher drive for challenging courses also reported higher levels of personal ($r = 0.32$, $p < 0.001$, $n = 313$) and community ($r = 0.12$, $p = 0.04$, $n = 309$) resiliency.

The students who indicated that they avoided academic challenge showed a correlation with lower personal resiliency ($r = -0.29$, $p < 0.001$, $p = 312$, $n = 312$) but, surprisingly, no relationship with levels of community resiliency ($r = -0.04$, $p = 0.45$, $n = 309$). Ultimately, these results perhaps suggest that a key experience during the remote transition for students was one of what one might be called privilege. Students who were already driven academically were spared (at least according to their beliefs) much of the harshest pandemic realities, while students who may have been struggling to push themselves reported greater difficulty at home, more severe negative outcomes due to the transition, and a dearth of support from their communities.

Process: Qualitative Analysis

To aid in contextualizing student responses, two universities, one in the United States and one in Belgium, also provided qualitative assessments of faculty perspectives on the transition. From the open-ended faculty interviews, three questions were selected as the subject of qualitative analysis as both a concession to time and for their poignant, surface-valid use for understanding faculty experiences. Additionally, this question gave faculty a chance to offer both their perspectives looking back on the choices they made during the pandemic and how their perspectives had changed since. These questions were, "How was teaching during the emergency remote transition informed your opinions about the future?" "How do you think your students fared with this transition?" and "What could have been done differently or better?"

In a structured approach to qualitatively code what the perceived underlying patterns of how faculty members responded were, the US-based university created a coding tree that described prevailing trends in how faculty answered the questions of interest based on recommendations by Braun and Clarke (2006) within NVivo, with final codes iterated until they reached an acceptable Cohen's Kappa of greater than 0.80. Sharing this coding tree with the university based in Belgium (note: quotes from Belgium faculty translated from French), the independent conclusions drawn by each organization were then compared against one another (see Appendix A for complete breakdown of which elements of the coding tree were detected/not detected across faculty at both universities).

Findings: Faculty Perspectives Within the United States and Belgium

Analysts at both universities identified noteworthy overlaps (and lack of overlap) in how their respective faculty responded to our three target questions (see Table 1). Faculty at both universities indicated that the accessibility of course materials, as well as their awareness of contextual student hardships (e.g., housing or food insecurity) was of importance to their takeaways from the pandemic. Echoing a sentiment espoused by dozens of faculty, one US faculty chose not to focus their response on how they believed students fared during their transition on academic outcomes, but on the context-based hardships students were experiencing.

"For the students it was an extremely stressful time. Their lives were changing, their schedules had changed, the environment in which they were trying to learn had changed. So, some people were letting go. Some people were in a bad housing situation. Some were not sure where their next meal was coming from. And some were working 50 hours a week and trying to figure out how to learn at the same time…"

Some faculty, however, also conceded that the pandemic's switch to virtual lectures, while inhibiting some benefits of face-to-face learning, "… was a really

Table 1 Qualitative coding theme comparison between the US and Belgian universities

Accessibility Concerns About Course (Parent Code)	
Concerns about Course Assessment	*Concerns about Course Materials*[a]
Awareness of Student Contextual Hardships[a]	Awareness of Student Mental Health Issues
Awareness of Student Physical Health Issues	Compliance with the Office of Accommodations
Adaptation Styles to the Remote Transition (Parent Code)	
Reported Difficulties Using Technology	Positive Experiences Using Technology
Awareness of Student Preparedness	*Awareness of Student Lack of Preparedness*[a]
Evidence of Lack of Preparedness of Faculty	*Evidence of Preparedness of Faculty*[a]
Overcoming Transition Anxiety[a]	
Concerns about Assessment During the Transition (Parent Code)	
Concerns about Academic Dishonesty	Concerns about Fairness of Assessment
Concerns about Privacy of Assessment	
Evidence of Ineffective vs. Effective Pedagogy in Remote Model (Parent Code)	
Difficulties Communicating with Students	Ease of Communicating with Students
Learning Environment Disruption (Students)	*Learning Environment Disruption (Technology)*[a]
Difficulties Communicating in General[a]	Flexibility of Remote Work
Faculty Confidence in Handling of Transition	Lack of Confidence in Handling of Transition
Negative Beliefs about Remote Work[a]	Positive Beliefs about Remote Work
Successful Faculty Support from University[a]	*Unsuccessful Faculty Support from University*[a]
Changing Levels of Course Engagement (Parent Code)	
Decreased Engagement in Remote Model[a]	*Increased Engagement in Remote Model*[a]
Lack of Focus/Concentration in Faculty	*Lack of Focus/Concentration in Students*[a]

Note: [a]Faculty response in line with code detected at both the US and Belgian Universities; parent codes are displayed in bold font.

important disability accommodation issue that made my class accessible to everyone… everyone gets to be more physically comfortable too. You know, chairs are not comfortable at all…" – *US-based faculty.*

Additionally, some faculty from both universities espoused they believed themselves adequately prepared for the emergency remote transition while simultaneously observing students may have lacked the opportunity to appropriately prepare. One Belgium-based faculty professed, in response to what they thought about how students fared: "The first week was complicated for them. Some of them expressed anxiety in relation to the recordings to be produced and regarding the examination, the technical problems to be solved...The course contents remained the same and it made them anxious in terms of workload."

For some faculty, this awareness that students were having to overcome a lot of anxiety drove a need to be prepared and available to handle the uncertainty students were facing. At both universities, some faculty went so far as to invest in their home-teaching station in advance of courses being formally transitioned during March 2020, or commit to additional office hours that they might otherwise have not.

A great deal of faculty attitudes toward the remote transition found across both universities was particularly intense surrounding issues within classroom communication in the remote model. Many faculty felt that, while initial university responses may have been appropriate, how exactly courses changed during the transition to distance learning may have not been clear enough: "At the beginning, we had a fairly clear view of what the distance version of the course should look like, but we did not convey our view very clearly to students. Communication on course organization should have been more precise." – *Belgium-based faculty, in response to question on what could have been done better.*

The software universities made use of to facilitate distance learning was an oft-cited reason for the breakdown of communication between students and faculty as well. Many faculty professed that they were forced to choose between a more stable, audio-only lecture vs. a more choppy but more engaging audio and video (i.e., cameras on) setup for their courses. One US-based faculty member lamented, in response to the question on what could have been done better, while they understood that choppy Internet was a valid concern (particularly for low-income students), letting students turn their camera off always led to "… teaching and all you have are these black windows. You don't know what they're doing, and it feels strange that you don't know what they're doing. I guess I take it personally, like [even those who aren't low income] are not interested in being there."

This sentiment surrounding how the remote model may be negatively affecting the teaching experience did not stop there. One other Belgium-based faculty recalled, in reference to what could have been done better, how, for them, the remote transition was a major problem due to the situational pressures and inequitable nature of eLearning technology for many students.

> This was a major problem: not having the opportunity to check understanding and conditions of learning. I just had insights through e-mails of students with very small homes, doors slamming, trains passing, noises of motorcycles in the street, slow bandwidth… It just means that inequalities were reinforced by lockdown and that we did not collectively

> provide enough support. How many students did we lose? I feel bad thinking thereabout… Technologies are not neutral. If one wants more eLearning without taking account of this, eLearning will be a socio-economical nightmare and disaster. – *Belgium-based faculty*

Yet, despite some of these harsher condemnations from faculty, the reality of whether the transition to remote education was more of a boon or bane for learning continues to be controversial on an international scale. Claims that they saw increases *and* decreases in engagement from students were numerous from faculty at both universities, sometimes even from the same faculty. From the faculty perspective, playing into the lack of neutrality (and perhaps the nature of student preferences for a challenge vs. less challenging academics) of pandemic effects, faculty noted that about a third of students appeared to struggle above and beyond their peers, leading to a drop in attendance, lack of engagement in synchronous lectures, and, in some cases, dropping out of courses altogether. Other students, conversely, found features of distance education, such as the "chat" feature during lectures, the ability to screenshare relevant links to the whole class under their own power, or even just being in their own space while they were learning to be much more conducive to staying on task.

Discussion

The findings from the quantitative analysis appear to suggest a possible impact of existing (i.e., prior to the pandemic) student academic outlook in how students perceived their household environment. Students with lower confidence in their academic prospects may have been sensitive to disruptions in their household, impacting their learning more compared to those with more confidence. Also, the transition to remote instruction appeared to be more difficult for students who were older than traditional college learners and were more progressed in their academic studies (e.g., advanced undergraduate or graduate courses). This might be because students in this demographic category tend to juggle multiple commitments, such as employment and a family and, as a result, have fewer dedicated opportunities for learning and tend to study in noisier households.

The trends overall suggest that the effects of the pandemic were felt most harshly among those who may have been previously struggling both at home and in their academic convictions, with individual resiliency to these effects mildly present for students who maintained their desire for challenge during the pandemic.

The rationale for employing a mixed method empirical study was to use the qualitative data to dig deeper into the trends identified in the quantitative data sets. In this chapter, we qualitatively focused on the faculty attitudes and beliefs as they were handling the remote transition. More specifically, at the university in the United States, we attempted to better understand if the shift to the remote model was ultimately successful or not for them, how faculty perceived student success in the

remote model compared to the in-person model and how aware were faculty of students' hardships or complaints.

One of the most common sentiments in the faculty dataset was their awareness of student hardships and were largely supportive in nature. However, faculty seemed more likely to hedge for a theoretical hardship happening behind the scenes rather than having a specific student or concern in mind. A component of a theoretical theme here is how faculty support of students in this time manifested. Manifestations were largely in how faculty conceded the need for flexible due dates to their students, with less emphasis on lowering their academic standards.

As we have seen in the analysis, a faculty desire to be fair to their students was also prevalent. Faculty wanted students to have a fair shot at both an education and good grades, but did not want this to come as a consequence of them lowering their pedagogical standards. Faculty had to expand their definitions of student academic success, beyond a letter grade, in light of the pass or fail system adopted by many of the universities present in our international consortium, to incorporate more real-life oriented successes, such as in students maintaining their mental well-being or teachers imparting on students how to learn in an environment shifted to online mid-semester. Faculty awareness of students' mental health and isolation being a risk factor in their learning experience reflect the findings across the nation and globally, indicating that prolonged social isolation during the pandemic can lead to mental health issues that contribute to cognitive decline (Morgan, 2022). Evidence from the last 2 years of studying this phenomenon indicates that the rapid shift to remote learning disrupted students' social and cognitive functions (Guppy et al., 2022a) as well as emotional well-being (Ferdig et al., 2021).

We did find that students suffering from harsher lockdowns in their homes, perhaps due to the crowding of their space or other difficulties, did appear to have lower confidence in their ability to learn. However, faculty appeared to be aware of these issues, and made remedying them a key feature of their approach to remote learning (Guppy et al., 2022a). Students, even with less-than-ideal housing conditions (e.g., noisy and shared environments, lack of a dedicated study space), rated their confidence in learning higher when they felt their instructor provided strong navigational support for online learning (Guppy et al., 2022b). One caveat is that the nine institutions in our research tilted toward medium and large institutions, most with a strong pre-pandemic presence in online learning and a pre-existing learning technology infrastructure. Regardless, one "success" we can take away from the pandemic is that faculty, and students, appear to have a greater understanding of remote learning technology and how to make use of it in education. Faculty were aware of support for technology amongst their peer groups and amongst the university, such as teaching and learning centers, and seemed to know where to turn to if they needed support (Bartolic et al., 2022a).

Gathered primarily from responses from Belgium faculty, it is apparent that faculty were aware of a variety of different patterns of response to the pandemic in students. One of these most prominent response sets to this end is that a minority of faculty (3 out of 51) did identify that certain students appeared to not undergo almost any academic-related negative outcomes to the pandemic, and appeared to

showcase only academic success in their courses. While only a few faculty highlighted this as part of their experience, it is nonetheless a salient pattern worth mentioning.

Another recurring theme that emerged at both the American and the Belgian institutions is communication (or lack thereof) being a cornerstone of faculty experience. In some cases, students themselves, rather than other faculty, were very difficult to reach in the wake of the emergency remote transition. Furthermore, as so many faculty were unwilling to require students to find and keep on webcams to attend synchronous lectures, most students, far more than can be reasonably explained by the number of students who lack access to technology, elected to keep their cameras off. This "teaching to black boxes" made it especially difficult for faculty to keep tabs on whether students were struggling or not during lectures. This left the responsibility of communicating difficulty up to the students, who were not hugely likely to communicate to faculty unprompted. However, faculty who were proactive in seeking communication and student interaction were much more likely to have a smooth understanding of student hardships.

Lastly, faculty at both universities appeared to prioritize a balance of flexibility with time spent on good pedagogy and supporting students' pandemic living. Faculty were aware of their own increased personal flexibility, but also student hardships and the need to be flexible with them, as well as being aware that they need to reconcile it with efforts required to create a good, pedagogically sound remote course (beyond Zoom lectures). For example, faculty often found themselves spending time researching resources for students' well-being, such as counseling services and food banks, rather than the delivery of the course content.

Limitations and Conclusions

Our consortium attempted to glean a global perspective on the COVID-19 pandemic and its impact on higher education teaching, learning, and pedagogy across the continents. Our multinational research employed a mixed methods design, with a combination of quantitative data from a large student population and qualitative data from faculty members to answer consortium research questions. Our study is not without limitations and challenges. Only the US university collected data about individual and community resiliency, so caution is advised before generalizing the findings to other institutions in and outside of the country.

Our data is also aging, having been collected in the early months of the pandemic. To investigate the long-term impact of a global disruptive event, leading to rapid shift to remote instruction, a follow up may be necessary. Since our study was conducted, COVID-19 vaccinations have been approved and administered globally, and most higher education institutions and workplaces experienced a gradual return to an in-person or hybrid model (Singh et al., 2021; Yang et al., 2021). A follow-up study examining the possible long-term impact could help identify any new or deeper gaps among students and vulnerable populations, and whether the digital

divide and digital disconnect gap identified early on (Guppy et al., 2022a) is closing or deepening. For example, some countries still lag with vaccination rates and appropriate healthcare response to the pandemic, which might impact or mirror the digital divide and the higher education support infrastructure. This could in turn affect students, faculty, and administrators' current (1.5 years later) perception of the future of online and remote learning and where they perceive higher education is heading in the long term. While a hybrid model is gaining popularity, some institutions, particularly those focused historically on serving traditional college learners, are seeking to return at least partly to pre-pandemic practices. For example, MIT is re-embracing standardized testing for their admissions protocol, despite inconclusive scientific evidence of their validity (Bello, 2022). Are we facing a return to pre-pandemic "normality" or a balance of the old and new reshaping normal? Further research might help shed light on these emerging questions.

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