

**SILVER LININGS: PANDEMIC EDUCATIONAL TECHNOLOGY USE
IN A POST-PANDEMIC CLASSROOM**

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ABSTRACT

While pandemics, even global ones, are nothing new to the history of humanity, what makes the COVID-19 pandemic unique to any previous infectious outbreak was that it occurred at a time where human advancement in technological resources allowed people, to a great extent, to continue to communicate in immediate time despite being physically separated. The development of widespread internet combined with advancements in telecommunications and video technology meant that, for the first time, work, socialization and also instruction could continue, if slightly altered, to adjust to a 'remote' rather than 'in person' format.

This quantitative study used a faculty survey to examine the move both to remote instruction and back from remote instruction. This study relied on data collected in several institutions of Higher Education as well as K – 12 schools to answer the following research questions:

1. Did COVID-19 have an impact on the use of technology?
2. Did COVID-19 have an impact on teaching methods?
3. Are the differences on the impact of COVID-19 dependent on a person's characteristics?

The results indicated that both the use of technology as well as instructional methods changed very little during the pandemic. As found in other research, the negative impact of the pandemic was more pronounced for females instructors.

This dissertation is dedicated to my family David, Sharon, Mike and Phonethip, who helped me to achieve all the essential things I wanted to achieve, my dogs Hansel and Gretel who have been my constant companions and given me purpose to move forward, and most importantly, my son Alexander, who when I started this journey had never thought of meeting, but at the end can't imagine my life without.

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TABLE OF CONTENTS

	Page
ABSTRACT	iii
DEDICATION	iv
ACKNOWLEDGMENTS	v
LIST OF TABLES.....	viii
LIST OF FIGURES.....	x
CHAPTER	
1. INTRODUCTION	1
Statement of the Problem	5
Positionality	6
2. REVIEW OF LITERATURE	7
History of Distance Learning.....	7
Benefits and Disadvantages of Online Remote Education.....	9
Faculty Perceptions of Remote Education.....	11
COVID-19 Pandemic	12
Development of Digital Resilience	15
Work-Life Balance.....	16
3. METHODOLOGY.....	21
Background.....	21
Measures	22
Participation / Sample.....	23
Procedures	23
4. RESULTS	24
Descriptive Data on the Higher Education Sample.....	24
Responses to the Questions on the Survey	26
Analysis Relevant to the Research Questions.....	36
Descriptive Data on the K-12 Sample	38
Analyses Relevant to the Research Questions (K-12 Sample)	48
5. DISCUSSION.....	52

Summary and Discussion of Findings.....	52
Limitations.....	55
Future Research.....	57
Conclusions	61
REFERENCES.....	63
APPENDICES	
APPENDIX A (K-12 INSTRUCTOR COVID-19 SURVEY)	70
APPENDIX B (HIGHER ED INSTRUCTOR COVID-19 SURVEY).....	88

LIST OF TABLES

Table	Page
4.1 Instructor Status	25
4.2 Departmental Affiliation.....	25
4.3 Level of Students Taught	25
4.4 Gender	25
4.5 Usefulness of Activities During the Pandemic	26
4.6 The Use of Educational Technology Before and After COVID-19.....	28
4.7 Teaching Methods Used Before and After the Pandemic	30
4.8 Assessments Used During the Pandemic	31
4.9 Difficulty of Various Activities During the Pandemic.....	32
4.10 Difficulty of Various Activities During Remote Instruction.....	34
4.11 Concerns in the Transition to Remote Teaching.....	35
4.12 Overall Rating of Institutional Response.....	36
4.13 Comparison of Males and Females on the Impact of COVID-19	37
4.14 Comparison of Adjunct to Full-time Faculty	38
4.15 Level of Students Taught	39
4.16 Gender	39
4.17 Usefulness of Activities During the Pandemic (K-12 Sample)	40
4.18 The Use of Educational Technology Before and After COVID-19 (K-12 Sample)	41
4.19 Teaching Methods Before and After COVID-19 (K-12 Sample).....	43
4.20 Assessments Used in the Pandemic (K-12 Sample)	44
4.21 Difficulty of Various Activities During the Pandemic (K-12 Sample).....	45

4.22 Difficulty of Various Activities during Remote Instruction (K-12 Sample)	46
4.23 Concerns about the Transition to Remote Instruction (K-12 Sample)	47
4.24 Overall Rating of School's Response	48
4.25 Data Relevant to Gender	49
4.26 Data Relevant to Teaching Level	49

LIST OF FIGURES

Figure	Page
1. Postbaccalaureate Enrollment by Distance Education Enrollment.....	3

CHAPTER 1

INTRODUCTION

Educational instruction has always been affected by the technology available. There are many examples of this interwoven history. Hundreds of years ago, the development of interchangeable type allowed for the proliferation of printed material and a following increase in population literacy to consume it. In recent history, the electronic communication brought on by the telegraph, telephone, television and today real-time communication online allow for learning and discussion regardless of physical distance. While these tools are currently, in theory, available for teaching instruction in K-12 and beyond, it has long been the stance of a majority of the educational community that, while remote instruction is possible, it is far less desirable than traditional in-person classroom education.

The transition to entirely remote education during the COVID-19 pandemic, then, was a unique event in educational pedagogy. Using existing technology, the majority of educational instruction, even through imperfect and uneven methods, had the possibility of being disseminated remotely to students on an unprecedented scale. While not without issue, the consensus in the educational community was that remote instruction was a way to keep students moving forward in their educational journey.

Several years after this ad-hoc mass transition to remote learning, the majority of K-12 and Higher Education institutions have once again returned to their traditional in-person format that previously had been taken for granted. This return, however, does not mean that methods and patterns of instruction have reverted entirely to pre-pandemic practices. Rather, having been forced to undergo a traumatic if temporary transformation,

instructors and administrators alike are negotiating large questions. A primary question relates to technology use itself, as whether instructors have changed their use of it despite a return to largely in-person instruction. A secondary question relates to changes in their pedagogical methods themselves. A tertiary question is if these impacts of the transition to remote learning during the pandemic were felt unevenly in any one particular demographic of instructors.

While the COVID-19 pandemic marked a clear turning point in the use of online learning, the use and value of technology in educational pedagogy already had a small if established track record. In 2016, 6,359,121 college students took at least one distance education course representing 31.6 percent of all college students. These students were nearly split between those who took exclusively online courses (3 million) and those who took a mix of online and in-person courses (3.3 million) (Watkins, 2020). Both the number and percentage of students taking online courses has increased steadily over the past 20 years despite the overall decrease in the number of college students nationwide (Seaman, 2018). These two trends of declining numbers of college students combined with increasing online enrollments created pressure on institutions to expand their online offerings, particularly in parts of the country with decreasing numbers of high-school graduates.

The growth of online learning has not been distributed evenly across institutions or sectors. Many traditional accredited colleges and universities prior to the pandemic had no online presence while online learning remained relegated to largely private for-profit institutions. This difference is presented below in Figure 1.1.

Postbaccalaureate Enrollment by Distance Education Enrollment

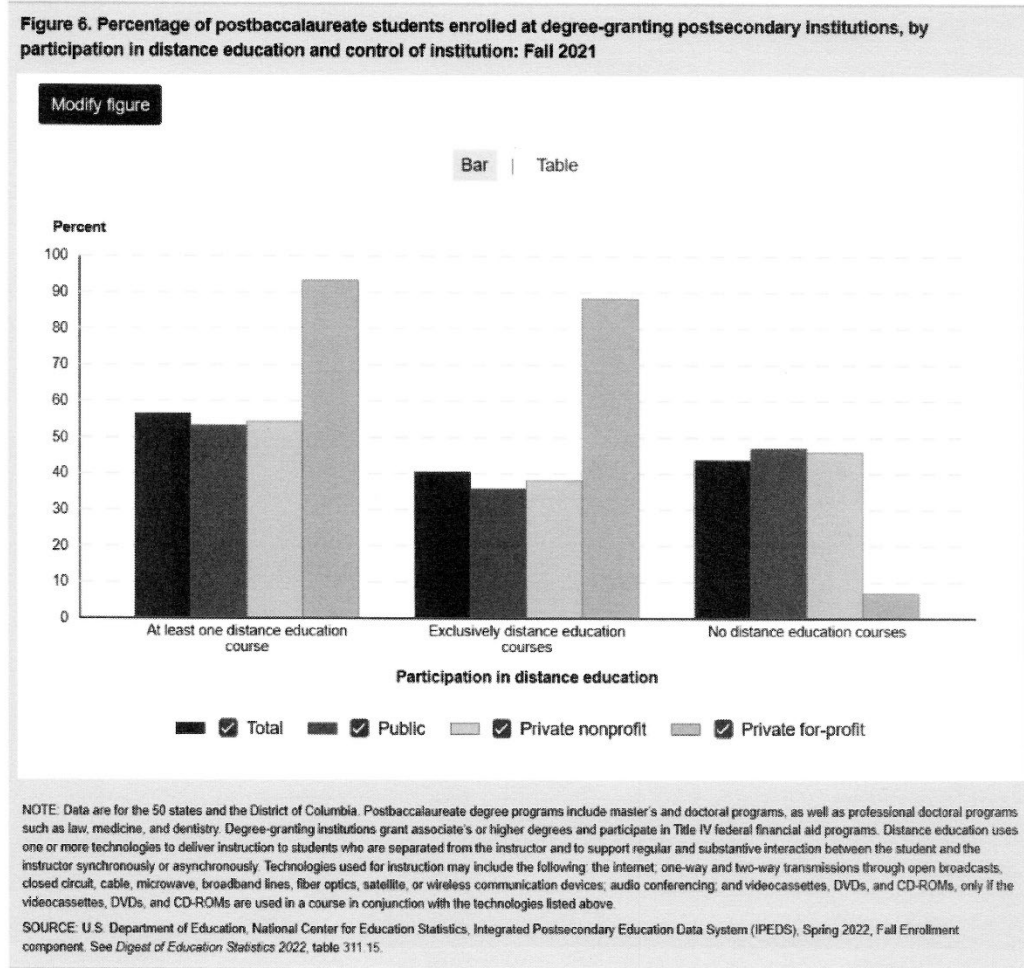


Figure 1. Postbaccalaureate Enrollment by Distance Education Enrollment.

Due to this uneven distribution of remote education and the stigma of lower value associated with for-profit Higher Education, traditional brick and mortar colleges and universities were acutely unprepared for the logistics needed for remote education due to federal and/or state health requirements during a public health crisis.

If the challenges put forward by the pandemic to Higher Education institutions were great, the challenge for K-12 education was even greater. Before the pandemic, only around thirty percent of charter schools offered any course entirely online, compared with twenty percent of traditional public schools (DOE., 2018). As with universities, the

required move to provide completely online instruction also was a daunting task for these educators as well. Under-resourced schools, hamstrung by budgets that were tight in normal conditions, now had to find money to provide both the teachers and the students with the needed technology and system support. Compared to districts that had twenty-five percent or less low-income students, teachers in districts that had greater than seventy-five percent were three times as likely to say that their lack of technology access was a major challenge to teaching. Additionally, of the remote options that were offered, higher poverty schools were less likely to have live instruction and were more likely to have students collect and return work packets in-person rather than online (Herold, 2020).

Dovetailing with the concerns that students would take in knowledge remotely were concerns that students would take assessments without succumbing to cheating or other ways to increase their grade without honest study. Instructors who had previously given in-class exams where it could be easily seen if a student was attempting to cheat now had to think outside their traditional assessment methods to either come up with alternative methods or (if the budget allowed) utilize one of the anti-cheat software systems that were being developed in response to this mass remote transition (Lee, 2021).

The changes caused by the pandemic to Higher Education and K-12 instructors alike were not limited to their work environment. Even before the pandemic, the life of a teacher had not been synonymous with having great work life balance. Multiple compounding factors such as lack of support had already been a significant cause of teacher burnout and exit from the profession (Saloviita, 2021). The pandemic, with its additional work and emotional burdens, not only exacerbated those existing factors, but

unequally distributed those additional stresses between gender, with women affected far more than their male counterparts (Leo et al., 2022).

In sum, the emergency nature of the migration to remote instruction impacted all instructors, but depending on the communication from their administration, the particular subject area in which they were teaching, the age level of their cohorts and other factors such as work-life balance made the remote education during the COVID-19 Pandemic a unique event in the history of educational development. Although the total impact of the pandemic on educational practice going forward has yet to be fully examined, it is the hope that the research presented here can provide a small contribution towards that greater understanding.

The purpose of this research was to review instructors' evaluation of the extreme shift in technology use during the COVID-19 pandemic by instructors in both K-12 and Higher Education institutions. Three guiding research questions were addressed:

- Did COVID-19 have an impact on the use of technology?
- Did COVID-19 have an impact on teaching methods?
- Are the differences on the impact of COVID-19 dependent on a person's gender or teaching level (elementary, middle, high school)?

Statement of Problem

While there is currently some early literature on the rapid change of technological use during the pandemic, there has yet to be any research on whether the pandemic impacted technology use with the return to in-person education. Continuing to study not just the effects of the pandemic but also to see if there are lingering aftereffects due to the forced learning of remote instruction by a majority of educational institutions will be

valuable not only to instructors but also to administrators when reviewing changes to teaching modalities, faculty effort and work- life balance, and types of faculty support.

Positionality

My own experiences of being a university administrative staff member during the pandemic influenced my thoughts and development of this project. I was working both as full -time university staff and also as a course TA when the pandemic shut down in-person instruction and my university became fully remote. As a TA, I, along with the course instructor, had to swiftly migrate the instructional dissemination from being in-person to remotely over zoom, and also had to adjust exams and other learning measures to also be distributed remotely. In my capacity as an employed administrator for the university medical school, I had to assist the didactic course instructors with their own move to remote instruction, which involved transferring a great deal of material to Canvas, setting up and teaching instructors how to lecture over zoom, and also using newly modified exam software that would allow me to proctor exam takers remotely with video monitoring running in the background.

CHAPTER 2

REVIEW OF LITERATURE

History of Distance Learning

Education outside of physical presence has an extended history dating back to the first correspondence courses in the eighteenth century (Holmberg, 2011) . As technology developed, so did opportunities for educational instruction by telegraph, phone, television and today through the internet. Despite these tools, none of these new methods of instruction ever gained enough traction to cause systemic movement away from the brick and mortar model (Ehrmann, 2000; Garrison, 1985). This reticence to take advantage of existing technology meant that in the late twentieth century, even as the worldwide web became more advanced in its technological capabilities regarding chat and video communications, educators and educational institutions were not equally keeping up with the opportunities offered by ‘blended’ or ‘hybrid’ instruction, or alternatively virtual synchronous and asynchronous classes. In Higher Education, there were several factors that could be considered. Supporters of increasing an online presence said that having a virtual presence could make advanced degrees more attainable by removing the location requirements that restricted courses access only to those who had the ability to come to a location at a designated time (Carey, 2016). Alternatively, there was other research to suggest that remote instruction could exacerbate equity gaps, imposing additional burdens of access because of the personal expense of technology needed (Hart, 2016; Johnson, 2014). It is no surprise then, that at the beginning of the 21st century, only sixty five percent of institutions reported that online learning was a part of their long-term strategic plan (Allen, 2011). Of these institutions, the distribution of implemented remote

instruction was also uneven. Up until a few years before the pandemic, over fifty percent of all distance education students were in only five percent of all U.S. Higher Education institutions, the majority of those being for-profit institutions (Seaman, 2018). It is important to point out that, in defining remote instruction, this is not the same as having international students. Right before the pandemic, there were only seven US Higher Education institutions that had more than one thousand enrolled students and only half a percent were enrolled exclusively to complete their degree (Seaman, 2018). Even post-pandemic, international students cannot complete their degree completely remotely (Whittle, 2024) .

Although mirroring developments in Higher Education, K-12 technology use diverges in some key areas. As with Higher Education, K-12 instruction had also been gradually increasing its use of technology and digital tools prior to the pandemic (Barbour, 2019; Molnar, et al., 2019). Before the pandemic, it is estimated that about 2.7 million students participated in some form of digital education, including full- time online public school (Singh, 2024). As with Higher Education administration as well, educational credential and leadership programs that serve to instruct new K-12 teachers on their pedagogical methods also failed to review and incorporate new technological developments for the benefit of classroom instruction and management (LaFrance, 2014). Their lack of preparation for virtual teaching environments, combined with the reasoning that because most K-12 schools serve as a safe place for children to be while their parents are away at work, meant that when the COVID-19 pandemic arrived these schools would also face a severe crisis relating to managing continuation of their students' curriculum.

Benefits and Disadvantages of Online Remote Education

Benefits

One of the largest benefits of online education is flexibility of location, time, or both. Asynchronous courses, which exist outside of set meeting and location times, allow students flexibility of completing the course when it best suits them around their existing schedule of work and other obligations. It allows those who would otherwise not be able to attend in- person because of lack of transport, lack of time to commute to campus, prior commitments, or any combination thereof, to still participate and enjoy an enriched learning experience to finish their education goals. (Reese, 2015). An additional benefit from the university standpoint is the (theoretical) lack of a cap on student enrollment, and therefore the potential for increased tuition with the increased number of attending students. Indeed, from an administrative standpoint, virtual learning allows for increased profits from more enrollment, more university outreach, potential better outcomes in graduation and retention, and less costs associated with infrastructure and faculty hires (Palvia, 2018).

Synchronous learning in particular, although bound by time, provides an easier bridge to student engagement since everyone will come together for class, while still retaining the benefit of less physical infrastructure support (Watkins, 2021). This is important as one of the most essential components in transitioning any pedagogical course from in-person to a remote format is ensuring continuous student engagement with the material as well as re-enforcing exiting aspects of self- motivation (Dumford, 2018).

Disadvantages

As discussing the advantages of remote instruction, there are several drawbacks, often correlating with potential advantages. One example of this are the potential side effects of increased enrollment. While beneficial from a financial perspective in terms of tuition, the increased workload for faculty because of these greater student numbers is a potential issue (DiBiase, 2004). Another issue is the greater reliance on student initiative, since student self-regulation is a greater requirement in online than in- person learning (Czerkawski, 2016). As discussed earlier, access to faster Wi-Fi speeds along with the technology needed to adequately engage in the course is also a concern (Watkins, 2021).

At a department or college level, while it may be cheaper to run an individual course, it is a misnomer that it would be less expensive when including the initial set up costs. For instance, it can take 200 hours to design a single student learning module (Delgaty, 2012). This work is almost akin to building a course from scratch, where a greater emphasis on prompt feedback, engaging activities, adaptation to individual needs, instructional flexibility, and social interaction must be taken into account and away from the stimuli that they normally associate with being in an in- person classroom (Larreamendy-Joerns, 2006). In addition to internal institution concerns regarding curriculum changes, individual accreditation bodies also want proof that online programs and courses offer the same rigorous proficiencies in content understanding that already exists in currently approved in person programs (Education M. S., 2021).

Faculty Perceptions of Remote Education

Because the aim of this research was to find if instructional faculty currently find benefit to the technology they were forced to use during the pandemic, it is worthwhile to give a brief overview of teaching instructors' relationships to technology. As stated earlier, while overall use of technology was growing, it was at an uneven rate with only one in three of all U.S. college students having some form of online experience (Gallagher, 2020). Research prior to the pandemic suggests that general stratification of age was an important predictor of use of technology, making it a possibility that not enough younger technology-friendly faculty had yet come up through the ranks in colleges and universities to make a difference in use of technology as an educational tool (Troncoso et al., 2014). This unevenness, in part, also reflects differences in individual faculty buy-in and commitment to either reworking an existing course into a remote format or even building a course entirely from scratch (Gallagher, 2020). Importantly, these activities involve significant time investment that are generally not reflected in work effort reports that are used for tenure and promotion structures. Faculty who had never learned a CMS (content management system), even if they were interested in using it, would put off learning about new software and digital methods because they could not make an immediate connection between the technology and how it could improve their class (Ackerman & Chung, 2014). While developments in technology continuously move forward to potentially enrich student experience, if faculty are not aware of these developments the technology cannot advance instruction (Stallings, 2001). Indeed, prior to the pandemic forcing introduction of courses that were supported by both online and in-person formats without additional compensation put additional stress on both faculty

and students, leading to unrealistic expectations and overall worse outcomes (Reese, 2015). In short:

Faculty are concerned about the effects of distance education not only on students but also their own careers and workloads...[they] need to know more about interactive and individualized pedagogy...distance learning entails a host of teaching and learning practices that may be convenient for students but are far more labor intensive than traditional college practices; Creating courses, maintaining chat rooms, and responding to emails outside of office hours....Additionally, distance learning comes with a new language and different expectations, including ‘anytime, anyplace learning’, ‘24/7 advising’, and ‘round-the-clock’ availability of instructors. (Levine, 2002, page 6)

In summary, right up to and even into the spring of 2020, there was a significant resistance from the traditional educational community in engaging in virtual instruction (Ball, 2020). Instead of accepting that learning how to teach remotely could offer new possibilities for the way they performed their jobs as educators, many saw the overnight move to being remote as a temporary inconvenience that needed to be put up with rather than a potential long-term method of teaching (Hodges, 2020).

COVID-19 Pandemic

Although there had been calamities in the past that had altered or even shut down educational institutions for short periods of time, for the first time in history large masses of the population still maintained the ability to instantly communicate with each other despite prohibitions of physical locality. By March 26th, 2020, over 1,100 universities and colleges closed due to the COVID-19 virus (Hess, 2020). All universities and their employed faculty overnight had to modify their existing educational content to be distributed to students who were no longer physically there to receive it, with adjustments made at class, department, and university levels (Ferhan, 2021). As it became clear that the pandemic was not a short-term emergency of one to two weeks, a secondary mindset

transition also occurred as instructors and administrators alike began to think about adjustments for not only the upcoming fall semester but into the 2021-2022 academic year. In Higher Education, the number of undergraduate students enrolled in at least one remote course nearly doubled from fall 2019 to fall of 2020 (Statistics, 2022).

In general, the large majority of institutions closed, along with other related income generating on-campus activities (Kelly, 2020). While almost every institution had some form of emergency communication plan in place to communicate organizational changes related to the pandemic, the communication lines between administrators, faculty, and staff were created on the fly, if they existed at all (Marinoni, 2020). Ninety percent of colleges and universities accepted that their in-person classes would be replaced by distance learning effective immediately and for an indeterminate period of time (Lederman, 2022). This reactionary method of dealing with the pandemic typified all aspects of day-to-day university administration as infrastructures, pedagogies, and competencies shifted in real time experimentation of mass remote instruction (Marinoni, 2020). The pushback varied across different department and different programs. Large classroom lectures with small group discussions could at least theoretically work well with Zoom, Webex or another platform than what had been hands- on labs in the sciences. Professional programs in law schools had to negotiate for virtual summer associate programs (Paukner, 2020). Likewise, medical schools suffered from the deprivation of hands- on experience needed for clinical patient practice (Franklin et al., 2021). COVID-19 led to a large decrease in interactive teaching of clinical correlates as virtual reality or 3D platforms are to this day mostly a future ideal rather than current strategy (Shin et al., 2022). Different levels of transferability of

learning were exposed in the different healthcare programs, where although didactic learning was easily moved, clerkships and other aspects of clinical education were deferred, delayed or even cancelled until alternative evaluation methods that still satisfied school curricular guidelines were created (Valentin, 2022). Courses like anatomy became creative with live remote instruction, while others had ‘alternative experiences’ to make up for the lack of visiting patients because of social distancing (DePhilip, 2022).

In K-12 schools, parents as well as their students also became caught up in the need to become technological experts overnight in different kinds of webinar, video conference and other educational LMS systems (Harris, 2020). As with Higher Education, this emergency transition was not done from the blueprint of a well-researched procedure, but rather ad-hoc moving forward with whatever seemed to be working best, exacerbating negative teaching outcomes of the pandemic (Trust, 2020). By March 2020, every state had either mandated or recommended some form of school closure. To any extent possible, remote or virtual learning was required to take place until in- person learning could be resumed. When it became apparent to school administrators that this situation would not be a few days or even weeks, states petitioned the federal government for waivers of previous mandates on school attendance and standardized testing requirements (Slavin, 2020). Teachers were expected to make radical changes to their lesson plans and, just as the parents and students, become technical experts with the software that they now had to use for remote instruction, including basic technical support for students in regard to basic things like having the microphone on or off, or having them have their camera on to make sure that they were paying attention. It is no wonder that by the end of the 2020 academic year, only twelve

percent of teachers said that they were able to cover the majority or all of their curriculum (Hamilton, 2022).

While teachers had to previously deal with shorter duration emergencies due to things like weather, it was the extended duration of the pandemic and the continued use of ‘emergency’ procedures for over one academic year that instead of a quick return to status quo, this ‘emergency teaching’ became their normal (Trust, 2020). To this day, there is still ongoing discussion about how to make up for the loss of learning that occurred during both the transition to and continued remote instruction that occurred during the pandemic, and what lessons can be learned, if any (Engzell, 2021).

Development of digital resilience

Because remote/virtual learning during the pandemic was not brief in nature but went on for an extended duration of time, it is appropriate to discuss digital resilience and its intersection with pandemic education. Initially only referring to software’s security attributes, the term digital resilience has since been expanded to include a socio-technological aspect during disruptive life events at the individual level (Sun et al., 2022) as well as an organizations’ ability to maintain, change or recover technology-dependent operational capacity (Garside, 2018). Becoming digitally resilient involves both evaluating existing technologies in terms of their ability to meet learner and teacher demands and their impact on their overall resilience. Before the pandemic, there was minimal need to think about digital resilience aside from the preservation and security of data from hacking and other outside threats. During the pandemic, however, the digital resilience of individual institutions began to include tests of the agility of the institution to move its pedagogical content from in-person medium to a virtual one. At the time,

only around half of institutions had educators who could speak from a position of past teaching some form of online course (Bettinger, 2017; Lederman, 2020). An additional issue was that these temporary solutions that could assist as a band-aid to get through the spring semester of 2020 would not be more resilient. While they might have been ‘good-enough’ to at least prevent all coursework from stopping in their tracks, they may not be more resilient for institutions to maintain since they may allow for flawed or inflexible procedures to take root and endure, with consequences for future remote instruction development. Despite some of the exposed issues in digital resilience, some research has shown that there were some benefits to individual instructors. For instance, K-12 educators did report development in several factors relating to their own cognitive growth, including their technical understanding, adaptability of new teaching strategies, shifting teaching priorities, and new professional skills (Trust, 2021).

Work-Life Balance

Finally, aside from job-related issues that occurred with instructors during the pandemic, attention should be paid to changes that also occurred outside of class and office hours. To that effect, historically, gender has been the primary determinant of who has performed the largest amount of domestic work and childcare, even among different gendered couples who believed that they should be split evenly (Blaisure, 1995; Gerson, 2010). While random assignment experimentation with labor arrangements is not possible, the enactment of the Families First Coronavirus Response Act (FFCRA) for the first time covered employers with up to two weeks emergency paid sick leave and 10 weeks of paid family medical leave, closing the FMLA gap for businesses that had under 500 employees (Labor, 2020). Simultaneously, labor related to taking children to and

from school and other external activities disappeared, reducing that portion of mothers' domestic labor (Hays, 1998).

During the pandemic, in overall employment women were more likely than men to either get reduced hours or to be laid off from their jobs, with the majority of these changes occurring between March and June of 2020 (Carlson et al., 2022). This uneven change in the workforce had the initial impact of exacerbating existing gender inequality of different gender couples with young children, as these changes occurred simultaneously to the majority of K-12 school closures. Theoretically, the increase in remote employment among both men and women during this time could also have seen a coinciding increase in men's participation in domestic labor and childcare, since historical blocks to male parent engagement were lack of paid leave and inability to telecommute (Harrington & Lawler McHugh, 2019; Lenhart & Swenson, 2019). Despite this opportunity, because the overall net increase in total domestic labor and childcare, any increase in male participation in domestic and child labor did not overall reduce or even slow the total increase in female work effort. Although there are some outliers regarding shared care, in general mothers consistently performed more housework and at least as much if not more of the childcare than their male partners both before and during the pandemic, with specific note that mothers bore the brunt of the additional homeschool work or loss of access to daycare (Carlson et al., 2022).

For those employed as instructors in Higher Education or K-12, it is necessary to consider that not all faculty were affected equally by the change to remote work structure. Women faculty, like women in general, were taking on a disproportionate amount of additional domestic work compared to their male counterparts, resulting in disparities in

work productivity that widened the existing faculty work-output gender gap (Ellinas et al., 2022; Profeta, 2021). Having a young child especially affected this performance, with those who had at least one child under five submitting fewer grant submissions, fewer publications, and overall fewer faculty activity hours than they had before the pandemic (Krukowski & Jagsi, 2021). If this downturn in activity was because of the pandemic itself irrespective of additional domestic labor and childcare, there would be a reduction in productivity metrics of both male and female faculty, yet men's self-reported productivity metrics did not change (Krukowski & Jagsi, 2021). Additional reporting also reflects that academic journals saw significant decreases in article submission from women (Fazackerley, 2020; Oleschuk, 2020). A further study of twenty-eight academics found that during the pandemic, female faculty felt a greater responsibility toward their student's emotional well-being than their male counterparts, reflecting traditional social expectations that women will perform more emotional labor. Other studies corroborate this, with male faculty overall being spared from an outsized increase in student related emotional labor (Berheide, 2022). Female faculty found that they were not as able to prioritize work while working at home than their male partners (Gorska et al., 2021). This was not an isolated incident, as a different study also found that mothers reported fewer uninterrupted working hours than fathers (Gordon, 2022). Female faculty were also more likely to report extreme discomfort or lack of familiarity with the transitional teaching software, leading to more reported anxiety and depression (Saw & Chang, 2022).

These individual disparities filter up to reflection in female faculty in leadership positions as well. Shortly before the pandemic, women were fifty- eight percent of total

undergraduate enrollment and sixty- one percent of postbaccalaureate enrollment (NCES, 2023). Despite this, women faculty are only forty- eight percent of full-time faculty, and just under thirty- six percent of full professors are female, earning proportionately less than their male counterparts at all ranks. This uneven distribution at the highest levels means that female faculty were more likely to be hired on a contract or part-time basis. As with other professions, more women than men were likely to leave their professorship because they felt pushed out for professional reasons, work- life balance, workplace climate, or a combination (Palmer, 2023).

As in Higher Education, K-12 female teachers also felt a disproportionate increase of stress, with district decisions around COVID-19 procedures leading to a seventy- eight percent increased risk of women teachers leaving compared to male teachers (Gillani et al., 2022). While some women teachers reported gender disparities in work-life balance more related to COVID-19 and work instead of childcare, childcare was still a major factor impacting their overall well- being (Leo A. H., 2022) Other reporting indicated that they also experienced the same hardships of increase in domestic labor and caregiving experienced by women generally (Clark, 2021), including caring for their children at home while overseeing their children's remote learning (Kosir, 2020).

To summarize, in both Higher Education and K-12, male and female instructors were caught in the midst of an overnight sea-change in how they needed to perform their jobs and the technology they used to perform it. Although some institutions were able to provide more resources than others, by and large much of the support offered was created in the moment and with no previous evaluations of the implemented changes. By looking at both educators in Higher Education and also in K-12 instruction, it is possible to

review how different faculty and programs have decided to maintain parts of their used 'emergency' toolbox now that education has returned to its more traditional in-person format. Two years after this jump in remote education, institutions are still grappling with how to maintain some of the best changes in practice that occurred as a forced initiative, while returning to the best benefits of in-person instruction. To that end, it is the faculty and teachers, those who are at the forefront of these course-by-course and session-by-session choices, who will be looked to for feedback.

CHAPTER 3

METHODOLOGY

Background

Due to challenges in acquiring a sufficient number of survey responses, the way the study was conducted was altered from the method originally proposed, all of which will be explained below. To understand why this happened and what caused a change to be needed, it is important to describe how the sample was obtained. As originally proposed, the questionnaire for the higher education faculty survey was developed from questions designed from a Likert scale survey sent from the office of Institutional Research at a large, mid-Atlantic institution of higher education in the United States. At that time I was employed at a smaller private liberal arts college and since the issues addressed in the original survey were also relevant to my employer institution, permission was sought to administer the survey at my institution with some modifications to make the question a better fit for that specific institution. Despite a lengthy process to obtain an adequate sample, the final sample size from the small private liberal arts college was considered to be too small to draw any valid conclusions. After I discussed this with my committee, we decided to try and find an additional institution of higher education to increase the size of the sample. Using personal contacts, an institution was found that agreed to distribute the survey to their instructors. This was a mid-size public institution of higher education in the Mid-Atlantic region. While this increased the sample size, the number of respondents was still somewhat small. Consequently, following additional discussion with my committee, we decided to see if a sample of teachers in a K – 12 setting could be obtained. While this is clearly a different context, it

was agreed that the issues faced by both instructors in higher education and K – 12 were similar enough that meaningful data could be derived. Using personal contacts, a sample of teachers from K – 12 was also obtained. As will be discussed in Chapter 5, this is clearly a limitation. I believe, however, that the sample can provide some meaningful answers to the questions posed in this research.

Measures

The original survey contained several different sets of questions that can be broken down into different types. There are categorical attribute questions (such as age of students, gender) to find if there are statistically significant differences in experience between instructor groups. There are relational questions related to the perception of helpfulness of communication/interaction between administration, peer groups and students to see if any one point of contact was particularly useful in assisting the instructors. There are a number of pre and post questions relating to how instructors taught (with an emphasis on the change in specific technology applications) as well as how they adapted their own personal styles of information dissemination and assessment. These pre and post questions were included to look at exactly to what degree and in what areas instructors felt the need to dramatically adjust, and what common issues they felt they encountered during this transition. This original survey was slightly modified to better fit the institution that was the originally intended site for data collection. No modification was made when the survey was administered to the teachers in the K – 12 sample. A copy of the questionnaire is contained in Appendix A.

Participants /Sample

As mentioned above, the sample was obtained in a variety of ways. For the higher education responses, the survey was initially sent to all faculty at the small liberal arts college through the office of institutional advancement. Although the instructors were encouraged to participate in the survey, the final number of returned surveys was considered to be too small to draw any valid conclusions. As a consequence, an additional institution of higher education was asked to participate. A contact at this institution was asked to distribute the survey to instructors using a form of snow-ball sampling.

Procedures

For the original institution of Higher Education all full-time and part-time instructors received an email from the Director of Institutional Research and Effectiveness who had taught at the university during the 2022-2023 academic year. This email included a voluntary invitation to participate in the study. For the additional institution of higher education, after permission was obtained to solicit participants, the survey was made available to any full-time or part-time instructor who wanted to participate. K-12 instructors received their survey from a Qualtrics link sent by the researcher. Potential participants were invited to complete a brief online survey using Qualtrics. The survey included an informed consent outlining the purpose of the study and their role as research participants. The survey required approximately 15 minutes to complete.

CHAPTER 4

RESULTS

For the purpose of presenting results from the survey, Chapter 4 will be divided into five sections. Sections A and B will present data from the Higher Education sample, with section A containing descriptive data on behavior before and after the COVID-19 pandemic as well as categorical demographic data, and section B answering the three core research questions. Sections C and D will present data from the K-12 sample, with section C paralleling section A from the Higher Education sample in descriptive findings and section D providing answers to the three core research questions as they relate to K-12. Finally, section E will put forward some analyses comparing the two samples as well as some additional analyses that extend the initial core research questions.

Descriptive Data on the Higher Education Sample

There was a total of 118 surveys that were returned from the Higher Ed sample. From this total, 22 of these respondents completed only the questions concerning demographic characteristics, so these responses were removed, leaving a final sample size of 96. The demographic data on these respondents are presented in Table 4.1 to 4.4. To make these data easier to interpret, the question that the respondent completed is presented for each table.

Table 4.1. Instructor Status

Are you an adjunct or full time instructor?

Status	Frequency	Percent of Responses
Adjunct	46	47.9
Full Time	50	52.1

Table 4.2. Departmental Affiliation

In which department do you perform the majority of your instruction?

Department	Frequency	Percent of Responses
Arts and Sciences	19	19.8
Health Sciences	17	17.7
Education	43	44.8
Business	17	17.7

Table 4.3. Level of Students Taught

What level of students do you teach?

Type Taught	Frequency	Percent of Responses
Undergraduate Only	46	47.9
Graduate Only	23	24.0
Both	27	28.1

Table 4.4. Gender

How do you identify?

Gender	Frequency	Percent of Responses
Him/His	30	31.3
She/Her	66	68.7

As shown in Tables 4.1 to 4.4, the Higher Education sample is comprised primarily of females who teach in a College of Education, with the majority of respondents identifying as female. About half of the respondents instruct only undergraduates, the other half teaching graduate students only or a combination of both undergraduates and graduates. The sample is approximately evenly divided between full-

time and adjunct instructors. For the survey data, then, it is important to keep in mind that the responses provided may disproportionately reflect issues associated with being female or female-identified teaching undergraduates in education majors.

Responses to the Questions on the Survey

The respondents were asked how helpful various activities were to help them deal with the pandemic. These data are presented in Table 4.5. To assist in interpreting these data, these are presented in rank order.

Table 4.5. *Usefulness of Activities During the Pandemic*

How Useful were the following activities during *COVID-19*?

	Very Useful (4)	Useful (3)	Sometimes Useful (2)	Rarely Useful (1)	NA or missing	Mean
My colleagues	41	29	22	1	3	3.18
Counseling services	13	28	3	9	41	3.08
My students	32	33	15	10	6	2.97
University library	21	36	7	10	22	2.95
Emails from University	29	29	23	7	5	2.92
Student health services	7	23	17	3	39	2.68
My chair	21	37	16	18	4	2.66
Seminars and workshops from the teaching center	16	31	20	21	8	2.48
Human resources	8	7	30	13	38	2.17
The dean's office	7	25	16	28	20	2.14

As indicated in Table 4.5, the respondents' colleagues were ranked the highest in usefulness. While some of the activities all had reported numerical values from respondents (such as colleagues and students), other activities such as counseling services, student health services, and human resources are frequently indicated as "Not Applicable" indicating that the service was either not available or that the respondent did

not use that service, which may lead to a distortion between the respondents reported mean and its real usefulness. It is interesting that the seminars and workshops from the institution's teaching center, while being rated as generally useful, were not rated more highly.

The respondents were asked what educational technology they regularly used before and after the pandemic. These data are presented in Table 4.6. To make this comparison easier, only the means are presented, and the various types of educational technology are listed in order of rank before COVID-19. The questions used a four-point Likert where 4 = Very Often and 1 = Seldom or Never. The pre and post means were compared by Wilcoxon Signed Ranks tests. The results of these analyses are also presented in Table 4.6.

Table 4.6. *The Use of Educational Technology Before and After COVID-19*

Before (and after) COVID-19, what educational technology did you regularly use in your teaching?

	Before COVID-19		After COVID-19		Results of Wilcoxon Signed Ranks Tests	
	Mean	Rank Order	Mean	Rank Order	z	p
Microsoft Office Suite	3.28	1	3.52	2	2.70	.007
Google Suite	2.67	2	3.48	3	5.10	.001
Canvas Speed Grader and Feedback tools	2.66	3	3.12	5	2.80	.005
Existing video recordings	2.65	4	2.87	6	2.71	.007
Canvas Discussions	2.23	5	2.49	9	3.85	.001
Existing audio recordings	2.18	6	2.74	7	2.61	.001
Video conference features (e.g., breakout rooms)	2.03	7	3.42	4	8.22	.001
Adobe Creative Cloud	1.98	8	2.01	11	2.02	.043
Canvas quizzes	1.87	9	1.69	14	NS	
Video conferencing (e.g., Zoom)	1.86	10	3.66	1	7/08	.001
Narrated slides (voiceover Powerpoint)	1.85	11	1.72	13	NS	
Self- made audio recordings	1.76	12	2.11	10	3.07	.002
Self-made video recordings	1.75	13	2.58	8	5.15	.001
Padlet	1.67	14	1.67	15	NS	
Polling tools	1.63	15	1.96	12	3.55	.001
Panopto tools	1.57	16	1.63	16	NS	
Respondus lockdown browser	1.26	17	1.39	17	2.06	.010
Nearpod	1.15	18	1.15	18	NS	

As an additional analysis, the ranks were compared by a Spearman Rank Order correlation. This produced a Rho of .800, $p = .001$. As shown in Table 4.6, almost all of the means increased from before COVID to after, with most of these means being significantly different. It is interesting to note that, for some reason, video conferencing features were ranked higher than video conferencing itself before COVID-19. Overall, it does not appear that there was any great movement in the use of technology as demonstrated by the significant Spearman correlation. The one exception is for video conferencing, which before had been ranked toward the middle of usefulness but moved towards the top of the rank post- COVID-19. The idea of having video conferencing and video conference features as stand-alone educational technology options was to tease out the importance of virtual meetings as separate from other parts of software suites included in Microsoft and Google (separating out Google Meet and Microsoft Teams meetings from word processing, email, and other read/write only applications).

The respondents were asked what teaching methods they regularly used before and after the pandemic. These data are presented in Table 4.7. To make this comparison easier here as well, only the means are presented, and teaching methods are listed in order of rank before COVID-19. As before, these means are compared by Wilcoxon Signed Ranks tests.

Table 4.7. Teaching Methods Used Before and After the Pandemic

Before (and after) COVID-19, what Teaching methods did you regularly use?

	Before COVID-19		After Covid-19		Results of Wilcoxon Signed Ranks Tests	
	Mean	Rank Order	Mean	Rank Order	z	p
Discussion	3.74	1	3.55	1	-2.33	.020
Small group or pair work	3.51	2	3.27	3	-3.61	.001
Problem Solving	3.23	3	3.25	4	NS	
Peer review/peer critique	3.07	4	3.09	5	NS	
Reflection activities	3.03	5	3.35	2	4.14	.001
Lectures	3.02	6	2.80	8	-3.85	.001
Case-based activities	3.01	7	2.94	6	-2.21	.001
Demonstration	2.70	8	2.87	7	2.43	.019
Simulation	2.59	9	2.70	9	NS	
Experiential/community based learning	2.58	10	2.68	10	NS	
Lab activities	2.06	11	2.42	11	4.79	.001
Surveys	1.92	12	2.10	12	NS	
Polls/rapid-response devices	1.26	13	2.09	13	6.14	.001

The Spearman Rank Order correlation comparing the before to after ratings was highly significant ($Rho = .951, p = .000$). While overall there was no one activity that presented a large degree of change from before the pandemic to after pandemic instruction, the biggest apparent difference appears to be the increase in importance of reflection activities. This would indicate that reflection activities were one of the activity / tools that were available during the pandemic and instructors appeared to have reasonable success in creating student engagement and work product with this activity.

The respondents were asked about assessment activities they used during the online teaching after the start of the pandemic. These data are presented in Table 4.8. As before, these are presented in rank order.

Table 4.8. *Assessments Used During the Pandemic*

After going online during the spring semester, what did you do regarding course assessments?

Options	#	Percent of Respondents
Was flexible with due dates and times	76	79.2
Allowed students to revise or resubmit work	55	57.3
Allowed students to submit work in a variety of ways (upload in Canvas, email, Google Drive)	51	53.1
Eliminated an assessment and substituted a different type of assessment	38	35.6
Gave more frequent, but lower-stakes, assessments	31	32.3
Allowed students to choose from a variety of assessments	29	30.2
Made no changes to my assessments	23	24.0
Lowered the stakes of my assessments (e.g., changed an exam to count for 20% instead of 40 percent)	23	24.0
Had students sign an honor code statement, or I talked about the importance of integrity before taking exams.	23	24.0
Used Canvas quiz features such as random questions/answers, time limits, or item bank to improve the security of my exams	22	22.9
Tried a variety of strategies to improve exam integrity	19	19.8
Allowed open book/open notes for exams	14	14.6
Used a proctoring solution (e.g., Respondus) to ensure exam security	9	9.4
Used Zoom to proctor exams	5	5.2
Gave incompletes until my students can be back on campus to complete my usual assessments	0	0.0

Based on the responses, the greatest changes implemented when going online revolved around making assessment completion more flexible, either by adjusting deadlines or giving the opportunity to resubmit work. Options that promoted flexibility aside from giving incompletes ranked higher than options that emphasized control or

concerns over cheating.

The respondents were asked to assess the difficulty of various activities during the pandemic. These data are presented in Table 4.9.

Table 4.9. Difficulty of Various Activities During the Pandemic

When teaching online, how easy or difficult did you find the following?

	Very Easy (4)	Somewhat Easy (3)	Somewhat Difficult (2)	Very Difficult (1)	NA/Missing	Mean
Answering student emails	67	28	1	0	1	3.71
Using Zoom	68	26	0	1	0	3.69
Using Canvas	64	31	0	1	0	3.65
Managing participant features in Zoom	54	25	11	0	6	3.48
Holding office hours	37	52	0	0	7	3.42
Maintaining discussion boards	35	35	13	0	13	3.27
Obtaining digital course materials for students	24	15	43	0	4	3.12
Advising on theses and/or dissertations	12	40	6	0	38	3.10
Assigning grades	28	44	24	0	0	3.04
Supervising undergraduate and/or graduate teaching assistant	7	15	7	0	67	3.00
Maintaining my normal academic standards	8	56	24	7	1	2.68
Adapting major exams to the online environment	8	28	15	6	41	2.67

Recording or presenting lectures	13	39	43	1	0	2.67
Adjusting creative laboratory or technical courses	2	5	14	0	72	2.65
Understanding my students' needs	6	36	48	6	0	2.44
Supporting my students' well-being	8	30	50	8	0	2.40
Keeping students engaged	7	37	27	25	0	2.27
Maintaining the quality of interactions with my students	3	7	48	32	6	2.23
Finding time for my professional development	10	20	23	41	2	1.99
Locating non-responsive students	7	9	43	32	6	1.88
Finding time for my research	0	16	21	29	30	1.80

As shown in Table 4.9, when examining questionnaire responses on ease or difficulty of different aspects of teaching, it seems that in general there was not a great deal of difficulty in utilizing the technology. When it comes to interpersonal issues such as managing student interactions and also personal time management for things like research, however, there appears to have been more difficulty with those activities.

An additional series of questions involved other aspects of teaching Higher Education students remotely. These data are presented in Table 4.10 and 4.11.

Table 4.10. *Difficulty of Various Activities during Remote Instruction*

After your university transitioned to remote work and instruction, how easy or difficult were each of the following?

	Very Easy (4)	Somewhat Easy (3)	Somewhat Difficult (2)	Very Difficult (1)	NA	Mean
Having computer skills needed for online teaching	38	44	14	0	0	3.25
Finding a quiet space for completing work	41	26	29	0	0	3.13
Having reliable access to a functioning computer, laptop or other similar device	34	41	15	6	0	3.07
Communicating with friends and/or family	26	49	12	9	0	2.96
Communicating with colleagues	22	55	6	13	0	2.90
Having reliable access to the internet	25	26	39	6	0	2.73
Taking care of the health needs of others in my family or household	6	27	47	9	7	2.53
Adjusting to working remotely	11	2	27	16	0	2.50
Managing time	0	27	54	15	0	2.13
Managing my stress level	4	18	55	19	0	2.07
Balancing family, household, and work responsibilities	0	24	51	19	2	2.05
Taking care of my physical and mental health	4	23	35	27	7	2.04

Table 4.11. *Concerns in the Transition to Remote Teaching*

In the transition to remote teaching and learning, how concerned were you with the following?

	Very Concerned (3)	Somewhat Concerned (2)	Not Concerned (1)	Mean
Class attendance	43	42	11	2.35
Curriculum modifications	24	59	13	2.10
Mode of online delivery	24	48	24	2.00
Academic honesty/cheating	28	29	39	1.90
Grading	21	37	38	1.75

In terms of the activities directly associated with instructional work, it is interesting to note that nearly half of the respondents to the survey said that having reliable access to the internet was either ‘somewhat’ or ‘very’ difficult. Reliable internet aside, it appears that instructors for the majority felt they had reliable skills as well as hardware to engage with their work, and that maintaining lines of communication was not an issue. The issues they had, as with Table 4.9, revolved around interpersonal activities like time management, wellness, and work-life balance. In terms of other teaching-related issues, the data in Table 4.11 show that class attendance was by far the greatest concern. It is also evident from Table 4.11 that there was at least some concern demonstrated for all of the typical teaching activities.

The final question on the Higher Education survey asked the respondents to rate the overall quality of their university’s response to the pandemic. The data are presented in Table 4.12

Table 4.12. *Overall Rating of Institutional Response*

Overall, I believe my university has managed the COVID-19 response well.

Rating	Frequency
Strongly Agree (4)	33
Somewhat Agree (3)	32
Somewhat Disagree (2)	20
Strongly Disagree (1)	11
Mean = 2.91	

As shown in Table 4.12, the overall rating is moderately positive with most of the responses being “Strongly Agree” or “Agree”.

Analyses Relevant to the Research Questions

There were three research questions relevant to the Higher Education sample. Each of these is presented below.

Research Question # 1: Did COVID-19 have an impact on the use of technology?

The data most directly related to question 1 are presented in Table 4.6. As shown in Table 4.6, the rank order of the use of technology remained approximately the same before and after COVID-19 with the exception of video conferencing and videoconferencing features, as would be expected. Microsoft Office Suite and Google Suite were commonly used both before and after the pandemic. There is a slight tendency for the means of the higher ranked options to be greater after COVID-19 than before indicating a somewhat greater use of technology in general. It is interesting to note that the use of some specific Canvas features such as speed grader, discussions, and quizzes, were ranked lower post-pandemic despite seemingly being easier to use given the remote nature of Canvas itself.

Research Question # 2: Did COVID-19 have an impact on teaching methods?

The data are presented in Table 4.7. Similar to the results for technology, the rank order for teaching methods was basically the same before and after the pandemic.

Discussion was the most common method used in both time periods, with small group work and problem solving also receiving high ranks. Reflection moved from the 5th ranked to the 2nd ranked, indicating that this teaching method increased somewhat.

Research Question # 3: Are the differences on the impact of COVID-19 dependent on a person's gender or teaching status (Adjunct vs. Full-time Faculty) characteristics?

To answer this question, the data presented in Tables 4.9, 4.10, 4.11 and 4.12 were used. The results for each of the groups are presented below. Only significant results are presented. Since there are multiple analyses conducted on the data set, alpha was set at .01.

Gender

Table 4.13. *Comparison of Males and Females on the Impact of COVID-19.*

How easy or difficult did you find the following? (The higher the mean, the less difficult)

	Male Mean	Female Mean	t	p	Cohen's d
Supporting my students' well-being	2.07	2.54	2.91	.002	.731
Balancing family, household, and work responsibilities	2.22	1.67	4.07	.001	.871
Finding time for my professional development	2.24	1.43	4.32	.001	.841
Maintaining the quality of interactions with my students.	1.97	2.35	2.68	.004	.587

Full-Time Compared to Adjunct

Table 4.14. *Comparison of Adjunct to Full-time Faculty*

	Full-Time Mean	Adjunct Mean	t	p	Cohen's d
Recording or Presenting Lectures	2.89	2.46	3.06	.003	.633
Maintaining discussion boards	3.60	2.93	4.77	.001	1.04
Understanding my students' Needs	2.64	2.24	2.54	.004	.586
Supporting my students' Well-being	2.65	2.16	3.33	.001	.761

As shown in Table 4.13, female instructors had an easier time supporting students' well-being and understanding students' needs. On the other hand, they had a harder time balancing work and family responsibilities and finding time for professional development. The data in Table 4.14 show that full-time faculty found it easier to use technology and to understand and support students' need.

Descriptive Data on the K – 12 Sample

There was a total of 69 surveys returned from the K – 12 sample. However, many of the respondents completed only a small number of the questions, or they completed some sections and left other sections blank. In order to make use of these data, surveys that had at least 50 percent of the questions answered were retained for analysis. The maximum sample size was 59, although the analyses for many of the questions used a considerably smaller sample size. The demographic data on these respondents are presented in Table 4.15 and 4.16. To make these data easier to interpret the question that the respondent completed is presented for each table.

Table 4.15. *Level of Students Taught*

Which students do you perform the majority of your instruction with?

Grade	Frequency	Percent of Responses
Elementary	26	44.1
Middle	20	33.9
High School	13	22.0

Table 4.16. *Gender*

How do you identify?

Gender	Frequency	Percent of Responses
He/Him	25	42.4
She/Her	33	55.9
Prefer not to say	1	1.7

As shown above, the K – 12 sample teach primarily in the elementary or middle level. There are slightly more females than males which is typical of the teaching population in general.

Table 4.17. Usefulness of Activities During the Pandemic (K – 12 Sample)

In the transition to a remote environment because of COVID-19, how useful did you find each of the following?

	Very Useful (4)	Useful (3)	Sometimes Useful (2)	Rarely Useful (1)	N/A	Mean
My Colleagues	17	15	4	3	0	3.18
My students	10	20	8	4	0	2.86
The school's remote website, resources and emails	1	31	6	4	0	2.69
My department's workshops and resources	3	20	5	10	4	2.42
The school's workshops, webinars, and consultation services	0	25	6	11	0	2.35
My chair	0	17	5	7	13	2.34
Counseling Services	5	11	12	10	3	2.33
Dean/Superintendent	6	13	8	15	0	2.24
Faculty support group	6	3	9	11	10	2.14
My principal/Principal's Office	1	9	11	15	3	1.89
Student health services	6	5	2	23	3	1.83
Other support centers (student success, career education services)	0	11	2	19	10	1.75
Employee Health	3	5	5	23	3	1.67
Human Resources	0	5	12	13	0	1.52
Faculty Affairs	0	1	9	21	8	1.35
School libraries or librarian liaison	0	4	1	23	3	1.32

Similar to the Higher Education sample, the K – 12 teachers found their colleagues and, interestingly, their students to be most helpful. It is important to note that there is no separate question for support from adult guardians, so it is important to consider that ‘My students’ may also reflect ‘my student’s parents/guardian’, especially when factoring in that the majority of respondents taught at the elementary level.

Table 4.18. *The Use of Educational Technology Before and After COVID-19 (K –12 Sample)*

Before (and after) COVID-19, what educational technology did you regularly use in your teaching?

	Before COVID-19		After COVID-19		Results of Wilcoxon Signed Ranks Tests	
	Mean	Rank	Mean	Rank	z	p
Google Suite (e.g., Sheets, Docs, Slides, Jamboard)	2.84	1	3.42	1	3.56	.001
Microsoft Office suite (e.g. Excel, Word, PowerPoint)	2.82	2	3.06	6	3.57	.001
Existing video recordings (e.g., Youtube videos)	2.65	3	2.94	7	2.67	.002
Third Party interactive learning software (Nearpod, Kahoot, Peer Deck, Classtime)	2.46	4	3.24	4	3.83	.001
Used a Learning Management System like Blackboard, Canvas or Google Classroom for quizzes	2.42	5	3.08	5	3.68	.001
Existing audio recordings	2.30	6	2.27	16	NS	
Used a Learning Management System like Blackboard, Canvas or Google Classroom for discussions	2.19	7	2.71	11	2.87	.013

Table 4.18. (continued)						
Used a Learning Management System like Blackboard, Canvas or Google Classroom for Speed Grading and feedback tools	2.16	8	3.09	5	4.67	.001
Adobe Creative Cloud (e.g. Spark, Photoshop, PDFs)	2.12	9	2.07	17	NS	
Digital Collaborative Whiteboards (Padlet, Kanboard, Task Cardst)	2.00	10	2.45	13	3.12	.014
Video conference features (e.g., breakout rooms, polling)	1.91	11	3.41	2	5.78	.001
Video Conferencing (e.g., Zoom, WebEx, GoogleMeet, Webchats, Panopto)	1.87	12	3.31	3	5.89	.001
Polling tools	1.81	13	2.33	15	3.18	.001
Screencasts	1.78	14	2.75	9	4.12	.001
Self-made audio recordings	1.76	15	2.55	12	3.16	.001
Self-made video recordings	1.75	16	2.74	10	3.90	.001
Narrated Slides / Voiceover Power Point	1.56	17	2.83	8	4.12	.001

The Spearman Rank Order correlation comparing the before and after rankings was not significant ($Rho = .342, p = .179$). Similar to the data from the Higher Education sample, the use of most of the technologies significantly increased from before to after COVID. In this case, however, the rankings were not similar as the Spearman Correlation was not significant. As before, the ranking of video conferencing markedly increased. However, Google Suite remains the most commonly used technology before and after the pandemic. It is also interesting that just like in higher education, there were some technologies that decreased in use, Adobe being the biggest outlier.

The respondents were asked about teaching methods they used during the online teaching after the start of the pandemic. These data are presented in Table 4.19 in rank order.

Table 4.19. *Teaching Methods Before and After COVID-19 (K – 12 Sample)*

Before (and after) COVID-19, what Teaching methods did you regularly use?

	Before COVID-19		After COVID - 19		Results of Wilcoxon Signed Ranks Tests	
	Mean	Rank	Mean	Rank	z	p
Small group or pair work	3.36	1	3.17	3	NS	
Discussion	3.36	2	3.23	1	NS	
Problem solving	3.18	3	3.22	2	NS	
Demonstration	3.18	4	2.90	5	-2.49	.040
Reflection activities	3.06	5	3.10	4	NS	
Simulation	2.72	6	2.33	11	-3.12	.012
Lecture	2.69	7	2.60	7	NS	
Case-based activities	2.67	8	2.56	8	NS	
Peer review/peer critique	2.56	9	2.70	6	NS	
Experiential/community based learning	2.55	10	2.21	13	-3.15	.004
Lab activities	2.33	11	2.32	12	NS	
Surveys	1.72	12	2.48	9	3.35	.001
Polls/Rapid-response devices	1.62	13	2.40	10	3.46	.001

The Spearman correlation comparing the before to the after rankings was significant ($Rho = .808$, $p = .001$). As shown in Table 4.19, the rankings of the teaching methods remained consistent from before to after the pandemic. Small group work, discussion, and problem solving were ranked first, or second, or third in both cases. There was an increase in the use of surveys and polls although both were ranked relatively lower than most of the other teaching methods.

Table 4.20. *Assessments Used in the Pandemic (K – 12 Sample)*

After going online during the spring semester, what did you do in regard to course assessments?

Options	#	percent of Respondents
Was flexible with due dates and times	39	66.1
Allowed students to submit work in a variety of ways (upload in Canvas, email, Google Drive)	35	59.3
Allowed students to revise or resubmit work	22	37.2
Allowed open book/open notes for exams	20	33.8
Gave more frequent, but lower-stakes, assessments	18	30.5
Eliminated an assessment and substitutes a different type of assessment	17	28.8
Made no changes to my assessments	16	27.1
Lowered the stakes of my assessments (e.g., changed an exam to count for 20% instead of 40 percent)	15	25.4
Allowed students to choose from a variety of assessments	14	23.7
Tried a variety of strategies to improve exam integrity	11	18.6
Had students sign an honor code statement, or I talked about the importance of integrity before taking exams	6	10.1
Used Zoom to proctor exams	5	8.5
Used a proctoring solution (e.g., Respondus) to ensure exam security	4	6.8
Gave incompletes until my students can be back on campus to complete my usual assessments	3	5.1
Used Canvas quiz features such as random questions/answers, time limits, or item bank to improve the security of my exams	3	5.1

As with Higher Education, the K-12 instructors ranked options for increasing flexibility as well as reducing the overall anxiety associated with assessments by allowing different ways to ‘correct’ poor submissions, such as work resubmission or having materials available to reference during the assessment.

Table 4.21. *Difficulty of Various Activities During the Pandemic (K – 12 Sample)*

When teaching online, how easy or difficult did you find the following?

	Very Easy (4)	Somewhat Easy (3)	Somewhat Difficult (2)	Very Difficult (1)	NA	Mean
Answering student emails	22	3	4	0	0	3.62
Using Zoom/Webex/Remote Conferencing	10	12	1	6	0	2.90
Using Canvas/BlackBoard/LMS	6	10	6	3	4	2.76
Recording or presenting lectures	6	19	13	0	0	2.76
Managing the participant features in Zoom/Webex (e.g., chat, hand raising)	8	2	18	0	1	2.64
Holding office hours / parent meetings	0	15	8	3	3	2.46
Maintaining discussion boards	2	8	13	3	0	2.35
Finding time for my professional development	3	10	6	10	0	2.21
Obtaining digital course materials for students (e.g., articles, textbooks)	1	5	16	6	1	2.04
Maintaining the quality of interactions with my students	4	3	12	10	9	2.03
Supporting my students' well-being	1	7	10	10	0	2.02
Understanding my students' needs	1	8	10	10	0	2.00
Adjusting creative, laboratory, or technical courses (e.g., art, performance, science/medical labs)	1	0	8	3	17	1.92
Keeping students engaged	0	5	14	10	0	1.83
Maintaining my normal academic standards	1	6	6	16	0	1.72
Adapting major exams to the online environment	0	4	11	13	1	1.68
Assigning grades	0	1	11	13	4	1.52
Supervising student teachers / teaching assistants	0	0	4	4	21	1.50
Locating non-responsive students	1	1	7	17	3	1.46

As with the information provided by the Higher Education respondents, in general there was not a great deal of difficulty in utilizing the technology, but there was more difficulty in finding appropriate teaching materials and also managing the psychological aspects of instruction such as supporting student well-being, engagement, and attendance.

Table 4.22. *Difficulty of Various Activities during Remote Instruction (K – 12 Sample)*

After your school transitioned to remote work and instruction, how easy or difficult were each of the following?

	Very Easy (4)	Somewhat Easy (3)	Somewhat Difficult (2)	Very Difficult (1)	NA	Mean
Having reliable access to a functioning computer, laptop, or other similar device	13	14	1	0	0	3.43
Having reliable access to the Internet (via Wi-Fi or Ethernet)	7	13	7	1	0	2.93
Finding a quiet space for completing work	7	12	7	2	0	2.86
Having computer skills needed for online teaching	10	5	9	4	0	2.75
Communicating with friends and/or family	1	11	4	9	0	2.37
Communicating with colleagues	4	11	4	9	0	2.36
Taking care of my physical and mental health	1	7	11	9	0	2.00
Taking care of the health needs of others in my family or household	1	4	17	6	0	1.99
Managing my stress level	1	3	12	12	0	1.75
Managing time	1	3	8	16	0	1.62
Adjusting to working remotely	1	0	14	13	0	1.61
Balancing family, household, and work responsibilities	1	3	7	17	0	1.57

Because the sample size is smaller than the sample provided by Higher Education, these differences between groups may not scale proportionately. One difference is that the Higher Education instructors ranked having computer skills needed for online teaching higher than their K-12 counterparts. In general, however, it seems that they also found psychological challenges such as work-life balance, stress and wellness harder issues than the physical aspects of remote instruction such as available technology and access to the internet.

Table 4.23. *Concerns about the Transition to Remote Instruction (K – 12 Sample)*

In the transition to remote teaching and learning, how concerned were you with the following?

	Very Concerned (3)	Somewhat Concerned (2)	Not Concerned (1)	Mean
Mode of online delivery	19	9	0	2.68
Class attendance	20	5	3	2.61
Curriculum modifications	15	11	1	2.52
Grading	13	12	3	2.36
Academic honesty/cheating	7	11	10	1.89

In general, the K-12 instructors ranked these as ‘very concerned’ over the Higher Education group, who had the majority of their responses in the ‘somewhat concerned’ grouping.

Table 4.24. *Overall Rating of School’s Response*

Overall, I believe my school has managed the COVID-19 response well.

Rating	Frequency
Strongly Agree (4)	6
Somewhat Agree (3)	26
Somewhat Disagree (2)	4
Strongly Disagree (1)	4
Mean = 2.85	

Similar to the Higher Ed group as well, the overall rating is moderately positive with most of the responses being “Strongly Agree”

Analyses Relevant to the Research Questions (K – 12 Sample)

Research Question # 1: Did COVID-19 have an impact on the use of technology?

The data relevant to this question are presented in Table 4.18. These data are similar to the data from the Higher Ed sample. As before, the ranking of video conferencing markedly increased. However, Google Suite remains the most commonly used technology before and after the pandemic. It is noticeable that the means for almost all of the technologies increased after the pandemic.

Research Question # 2: Did COVID-19 have an impact on teaching methods?

These data are presented in Table 4.19. As shown in Table 4.19 the rank order of teaching methods changed very little from before to after COVID-19. Small group work, discussion, and problem solving were the top three ranks in both cases.

Research Question # 3: Are the differences on the impact of COVID-19 dependent on a person's gender or teaching level (elementary, middle, high school)?

To answer this question, the data presented in Tables 4.21, 4.22, and 4.23 were used. The results for each of the groups are presented below. As before, only significant results are reported and the alpha was set at .01.

Gender

Table 4.25. *Data Relevant to Gender*

	Male Mean	Female Mean	t	p	Cohen's d
Keeping students engaged	1.33	2.07	3.19	.003	1.11
Finding time for my professional development	2.67	1.93	2.15	.004	.746
Communicating with colleagues	1.67	2.62	2.85	.007	.994
Taking care of the health needs of others in my family or household	1.67	2.08	2.18	.009	.681
Balancing family, household, and work responsibilities	2.56	1.45	3.21	.001	1.13

Teaching Level

Table 4.26. *Data Relevant to Teaching Level*

	Elementary	Middle	High	F	p	Eta2
Using Canvas/BlackBoard/LMS	2.36	3.00	3.78	11.12	.001	.410
Maintaining my normal academic standards	1.69	2.67	1.33	4.02	.019	.188
Finding time for my professional development	2.62	1.67	1.33	4.34	.019	.264
Managing time	1.38	2.00	2.25	4.26	.022	.187
Having reliable access to the Internet (via Wi-Fi or Ethernet)	3.15	2.67	2.25	4.48	.018	.195
Having reliable access to a functioning computer, laptop, or other similar device	3.62	3.33	2.75	9.50	.001	.339
Finding a quiet space for completing work	3.08	3.33	1.50	18.54	.001	.501
Adjusting to working remotely	1.38	2.67	1.75	11.56	.001	.124

As shown in Table 4.25, females found it easier to keep students engaged, communicate with colleagues and to take care of the health needs of their family. On the other hand, they found it harder to find time for professional development or to balance work and family. The data for teaching level are somewhat harder to interpret as there is no obvious pattern among the three levels.

In general, the means for the K-12 groups were lower than the means for the Higher Education instructors. There are several factors that could possibly have contributed to this. Firstly, K-12 education is not funded to the same extent as Higher Education institutions that not only have tuition but research grants from faculty to support resources such as support staff and teaching tools. These monetary issues could have affected any one of the means. For instance, in Higher Education it is much more likely that faculty are issued university laptops that they would be able to use to work from home more readily. Because of their current work structure in writing and reading research in addition to their lesson plans, they may already have had a quiet space to complete work readily available that they simply made increased use of.

Secondly, K-12 covers a much wider range of stages of development. Working with students who are not yet capable of complex executive functioning because they have not reached that developmental milestone would make tasks such as engaged attention to a screen without physical intervention of an individual more difficult. Thirdly, Higher Education, although having certain competencies that needed to be met through things like Middle States accreditation, are not necessarily as strict as the standards that need to be met by requiring that a certain number of students pass state school assessment exams. It has been a historical issue even before the pandemic for K-

12 instructors to juggle their lessons to both encompass the material for these statewide exams while also assisting them in developing more advanced critical thinking skills.

CHAPTER 5

DISCUSSION

It is without question that the sudden fluctuation in social norms and interactions during the COVID-19 pandemic had a large impact on teachers, students, and educational administration. The purpose of this chapter is to summarize the findings presented in this survey in reference to the impact COVID-19 had on the use of technology, teaching methods, and if those impacts were felt differently depending on any one particular characteristic. The chapter will review the data from the three research questions from both the Higher Education and K – 12 samples and then discuss the implications of these results.

Summary and Discussion of Findings

Research question 1: Did COVID-19 have an impact on the use of technology?

The first question that this dissertation was designed to answer focused on the use of technology. Since both higher education and K -12 teachers were forced to use at least some aspect of technology during the pandemic the question being asked is whether this had a lasting impact. Although there was some differences in the before and after ranking of some technologies, in general the use of technology did not markedly change. The only major difference, as would be expected, is that video conferencing and video-conference related features were used more frequently after the pandemic than before. Microsoft Office and Google continued to be the top used applications both before and after the pandemic. The one relative change occurred with K-12 instructors where the use of Microsoft Office and Youtube was pushed down five spots, even below video conferencing. One hypothesis for this is that in looking toward more financial cuts, K-12

administrators evaluated transitioning to a free platform for instruction like the Google Suite as an overall benefit. For those operating in Higher Education, they may have either felt less of a financial incentive to re-train faculty and staff on a new platform or possibly found the security measures Microsoft provides such as Microsoft Defender a greater benefit than the prohibitory cost incurred. What would be interesting for future inquiry would be to see if there was a pre and post COVID-19 split between paid types of video conferencing and free types of video conferencing, or seeing if there was a transition between using no cost to paid or paid to no cost versions of certain tools.

Research question 2: Did COVID-19 have an impact on teaching methods?

For both the Higher Education instructors as well as the K-12 instructors, the transition to remote instruction during the pandemic does not appear to have had any major changes in teaching pedagogy. Discussion and small group or pair work continued to be in the top three methods of teaching before and after. It appears that interpersonal discussion and communication remained fairly easy to maintain even during the pandemic, something that is given additional support by the fact that maintaining discussion boards and answering emails were noted as ‘very easy’ when measuring level of difficulty during the pandemic.

Research question 3: Are the differences on the impact of COVID-19 dependent on a person’s characteristics?

Reviewing Tables 4.13 and 4.14 there was a large effect size by gender in balancing family, household, and work responsibilities and finding time for professional development, with women feeling a far more negative impact than men. In Higher Education adjunct instructors found it more difficult to maintain discussion boards or felt

they were able to support their student's well-being. It would be interesting as follow-up to these results to see if that had to do with the fact that an adjunct is not instructing as their primary job but is often teaching in addition to other work and this may have been an issue of work-life balance as much as anything else. It is interesting that maintaining discussion boards has a far larger Cohen's d than supporting students well-being. For the K-12 instructors, balancing family, household and work responsibilities was also an issue, with female teachers feeling a larger negative impact than male teachers.

Piggy backing on some of the other findings it is interesting that the seminars and workshops from the institutions' teaching center were rated generally useful but not rated highly. There could be several reasons for this, with no one reason impacting in isolation. Firstly, just like the instructors themselves, the teaching center may have been caught off guard with the suddenness in change in format and were reacting to the real-time nature of the emergency, with updates to pedagogical practice. Because of this, it is likely that instructors saw the teaching center as less of a place to go to for 'experienced advice' and more of a place to find 'additional tools' that they could use as needed. Additionally, although it would have been available for questions through email or other media, if use of the teaching center was not something that was part of a frequent practice before the pandemic, it is unlikely that the faculty would change their behavior dramatically and suddenly take advantage of something that had not been frequently used before. Thirdly, the practicality of asking questions of fellow colleagues and students in the midst of discussing other business must have lowered the threshold for frequency of interactions and therefore their usefulness.

Because of the snowball nature of the survey, within Higher Education there were a disproportionate number of responses from female instructors teaching undergraduates in education. As a consequence, the survey results over-represent faculty who were teaching future teachers more than any other professional population. The needs of coursework specific to teaching certification, such as field work and student teaching requirements, may have had an additional impact on instructors' evaluations of their management of students' well-being, supervising undergraduate and/or graduate teaching assistants and adjusting creative laboratory or technical courses. Given that the literature also supports that women more than men had issues with managing work/ life balance during the pandemic since they were still overwhelmingly in charge of childcare, the large effect size of balancing family, household and work responsibilities is understandable.

Limitations

There are two large limitations to this research, with factors dividing into one of two groups, the survey itself and the sample obtained. Within the survey, one of the limitations is that although it asked what technology instructors used before and after, there is no information included to indicate that it was thought that additional technology would be needed, or even if it were accessible. Upon reflection, it would be interesting to follow up with additional questions about the decision making and views of technology that would go into the transition to remote education. An additional survey limitation is that, although there are questions related to perceptions of 'usefulness', there are no specific questions regarding frequency of use. At the time this questionnaire was being modified from the original that was distributed to a large research institution, there were

no questions regarding frequency of technology use mentioned, but upon additional reflection, while something may prove ‘useful’, it is not something that would necessarily be something that would be used often. It’s possible that there would be some correlation between frequency of use and perceived utility, but it is not possible to determine that from these findings. Finally, in the survey, there is no specific language related to the sociological and psychological effects of mortality of friends, family, coworkers, or students. The death of one or more proximate individuals is a traumatic event that would have disproportionately affected lower income areas due to the high cost of healthcare and the greater proportion of individuals who would have had preexisting chronic conditions, making them more susceptible to mortality (Khullar, 2018).

The second large limitation is that, for the purpose of collecting enough data points to have a meaningful set, snowball sampling was used. This limitation is worth mentioning in detail. As mentioned in Chapter 3, as originally proposed, the study was intended to be implemented at one institution of Higher Education. Within this institution, the majority of the survey respondents were in the education field. The findings that support that cheating was not as important as other more psychological aspects of student engagement may reflect this over-representation of education as opposed to instructors of the hard sciences, for whom cheating may have been a much more important consideration in the emergency transition to online learning.

In addition to issues with overrepresentation of a specific higher education field, and despite concerted efforts to encourage instructors to complete the survey, the sample size was too small. To overcome this issue another institution was approached. This added additional subjects to the sample, but even with this addition the number of

respondents was still relatively small. To increase the subject pool, it was agreed to include teachers from several K – 12 institutions. Since the survey had been intended for one institution some of the questions were specifically designed for that site. While reasonable modifications were made for the additional Higher Ed institution and for the K – 12 teachers, the survey was not ideal in some aspects for these additional respondents.

As with other voluntary surveys, this survey is also limited by self selection bias. For those instructors who responded, they were motivated to participate because of any number of factors known to them only. Because of this, it is less likely that the data reflect a representative sample of all instructors.

Additionally, like all surveys, there should be a consideration that individuals answered questions to ‘appear correct’ rather than reflecting what they were doing in real life. For example, the results indicated that activities such as discussion were highly ranked, but that may not necessarily accurately reflect the real use of different activities. It is possible that faculty may be using lecture style learning more than what was reported since it is a more convenient way of delivering content than other active learning activities, but since they ‘know’ that they are supposed to be using more active learning activities they ranked the activities they ‘should’ be using more highly than what were actually being used.

Future Research

A unique aspect to this research, and indeed to technology in education in general, is that the time period in which this survey was done was during a brief historical window of exponential increase in use of digital communication but before the onset of general

commercially available artificial intelligence applications such as Chat GPT. Given the turn toward flexibility over security, it is possible to envision that because it would be easier to cheat on a multiple choice remote assessment rather than an open word entry assessment, there may have been a turn toward more written assessments of demonstrating content understanding. This would also explain the increase in continued use of activities such as reflections. While there may be additional interest in investigating how open-ended entries might be a better alternative in remote learning to multiple choice, the onset of LLM's such as ChatGPT in November of 2022 has meant that technology-related cheating may well have caught up to, if not moved beyond, what would previously have been something that could have been thought to only have originated from human user interface.

A second aspect of future research could be to tease out if there were specific applications within the different suites (Microsoft and Google) that had different pre and post measures of utility and/or frequency of use. The original survey that was adapted for this research project did not separate different components of Microsoft and Google, so that is something that merits further inquiry.

One of the factors that was largely unaddressed in the survey questions but likely had a significant impact on administrative decision making was overall financial well-being for a given school/university. Transitions by their very nature cost time and resources. While the questions were aimed at the instructors and how they were managing on the front lines, it would be helpful to get additional feedback from a higher administrative level in terms of what resources (financial and otherwise) were realistically available to be given to instructors to help ease their workload during this

crisis. As an example, the company Zoom allows for free 30 minute sessions, but anything longer than that requires a paid subscription. If instructors normally have 40 minute sessions with their students, it would be more budget-friendly to ask instructors to modify their material to be cut to 30 minutes. This, however, would lead to more stress and workload for the instructor. Given different financial circumstances, the decision to go one way or another could be more easily concluded. Questions surrounding the use of wifi would also be good to ask. How hard was it to get access to the increased bandwidth necessary to instruct online? Was this bandwidth and/or speeds maintained or did they shrink back to pre-pandemic levels when meetings returned to in- person?

One of the factors to consider with the K-12 population is that, unlike their Higher Education counterparts who are covered by FERPA to not discuss student academic issues with their parents, teaching pre-college students necessitates forming some sort of relationship with that students' parents as well. The parents of the K-12 students would have had far more interaction with the instructors before, during, and after the pandemic as they would work collaboratively with teachers in order to make sure their own children did the best that they could. It would be interesting to see if the interaction with the parents (or lack thereof) had any unique meaningful impact on their stress level

Another potential avenue for future research would be to examine if there had been any unintended consequences for instructors to develop their materials to be more inclusive for what had previously been considered deliberate accommodations. For example, with remote instruction it became an available option for class lectures and sessions to be recorded and even coded for closed captioning. With a return to in-person

instruction, have some instructors still maintained recording their class lectures for the benefit of their students?

With maintaining video conferencing being one of the main takeaways of the survey results, it would be interesting to do further research in exactly how this increased use is being implemented, and if both students and faculty feel that they are benefiting from meeting in a virtual rather than in -person setting. For example, allowing for virtual meeting times allows for greater flexibility to meet when otherwise one party or another may not be able to physically get to a location, but if overall students feel that they ‘get less out of’ meeting virtually than in person, it may be necessary to reexamine this as an option, or only have it as an option for specific designated purposes not related to academic interventions, etc. This piggy backs into a larger issue of measuring the student’s perspective on what happened during the pandemic transition. Now that some time has passed, from the students’ perspective, how did they process the sudden transition? What, if anything, do they feel that they retained? Was there anything that was part of the remote instruction that they preferred (for example, was social anxiety lessened because they weren’t physically in the same classroom space)? If they could, what feedback would they give their instructors about their experiences? How did being remote interact with student’s time management abilities to complete coursework? Are they able to disassociate from instruction, or alternatively are they having issues concentrating? For upcoming students who are always online for non-work purposes, are they able to engage their focus executive function when necessary or because it is online they devote the minimum amount of attention regardless of if it is related to school or

not? Regarding TA's and RA's, this further research could also review the quality of remote interactions with this group as well.

While the survey touched on issues related to student retention and engagement, it would be interesting as part of future research to see what methods of retention work best in the absence of physical location. While this issue has been something that had been an area of research even before the pandemic, the fact that it was seen as an issue across the board implies that there has either not been enough development of this particular field to have established methods for engagement and connection of students performing distance learning, or that there is an issue with getting information from that particular field of research out for general consumption.

Based on the fact that during the pandemic there was a large amount of flexibility in adapting assessments, it would be interesting to know if those adaptations also persisted through when in-person classes returned. An example is that discussion boards became an important part of remote course engagement and assessment of student learning during the pandemic. Have they been maintained as a significant component of students understanding? While meeting in-person and having in-person discussions is valuable, having online engagement allows for a flexible continuation of discussions that would not have occurred in a pre-pandemic format where discussions were culturally restricted to in-person gathering only.

Conclusion

The COVID-19 pandemic, despite the large social structure change that happened while it was ongoing, seems more or less to have had no great revolutionary effect on how the majority of our educational training is performed. Once the social barriers were removed, the majority of instructors felt perfectly at home to return to largely pre-pandemic in-person instruction in more

or less the same format that they had been using pre-pandemic. The greatest change at the instructor level was that, after learning how to navigate video conferencing, a large number of instructors maintained using video for greater flexibility in connecting with students about their academics and other topics as needed. If going forward courses are maintained in either a hybrid or online format, it is less likely that it was because of instructor preference and more that it allowed for greater accommodation / flexibility toward the student population as well as administrative business practice. While the expansion of online and hybrid instruction may prove beneficial overall, large questions around knowledge retention, instructor compensation, and technology ethics must also be carefully considered.

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APPENDIX A

K-12 INSTRUCTOR COVID-19 SURVEY

Start of Block: Default Question Block

Consent: Thank you for your interest in this important research. By completing this survey, you are consenting to participate in this research voluntarily. Participation in this research will in no way impact your status. All of your responses will be kept confidential. The goal is to understand your experiences as an instructor in K-12 education. I would appreciate your completing this survey, it should take no more than 30 minutes. Do you agree to complete this survey?

- I agree (1)
- I do not agree (2)

Skip To: End of Survey If Thank you for your interest in this important research. By completing this survey, you are consen... = I do not agree

End of Block: Default Question Block

Start of Block: Block 1

Q1 Which students do you perform the majority of your instruction with?

- PreK / Kindergarten (1)
 - Elementary School (2)
 - Middle School (3)
 - High School (4)
-

Q2 How do you identify?

- Him/His (1)
- She/Her (2)
- They/Theirs (3)
- Prefer not to say (4)

Q3 In the transition to a remote environment because of COVID-19, how useful did you find each of the following? If that office does not exist in your school select 0 - N/A

	4 - Very Useful (1)	3 - Useful (2)	2 - Sometimes Useful (3)	1 - Rarely Useful (4)	0 - N/A (5)
The Schools' remote website, resources and emails (1)	0	0	0	0	0
The Schools' workshops, webinars and consultation services (2)	0	0	0	0	0
Faculty support group (3)	0	0	0	0	0
My departments' workshops and resources (4)	0	0	0	0	0
My Principal / Principal's office (5)	0	0	0	0	0
My Chair (6)	0	0	0	0	0
My colleagues (7)	0	0	0	0	0
My students (8)	0	0	0	0	0
School Libraries or Librarian Liaison (9)	0	0	0	0	0
Other support center (student success, career education services) (10)	0	0	0	0	0

Student Health Services (11)	0	0	0	0	0
Counseling Services (12)	0	0	0	0	0
Employee Health (13)	0	0	0	0	0
Human Resources (14)	0	0	0	0	0
Faculty Affairs (15)	0	0	0	0	0
Dean / Superintendent (16)	0	0	0	0	0
Other (17)	0	0	0	0	0

End of Block: Block 2

Start of Block: Block 3

Q4 Before COVID-19, what educational technology did you regularly use in your teaching? If the method isn't applicable, please select 0 - N/A

	4 - Very useful (1)	3 - Useful (2)	2 - Sometimes Useful (3)	1 - Rarely Useful (4)	0 - N/A (5)
Used a Learning Management System like Blackboard, Canvas or Google Classroom for quizzes (1)	0	0	0	0	0
Used a Learning Management System like Blackboard, Canvas or Google Classroom for discussions (2)	0	0	0	0	0
Used a Learning Management System like Blackboard, Canvas or Google Classroom for Speed Grading and feedback tools (3)	0	0	0	0	0
Digital Collaborative Whiteboards (Padlet, Kanboard, Task Cardst) (4)	0	0	0	0	0

Third Party interactive learning software (Nearpod, Kahoot, Peer Deck, Classtime) (5)	0	0	0	0	0
Video Conferencing (e.g., Zoom, WebEx, GoogleMeet, Webchats, Panopto) (6)	0	0	0	0	0
Video conference features (e.g., breakout rooms, polling) (7)	0	0	0	0	0
Narrated Slides / Voiceover Power Point (8)	0	0	0	0	0
Google Suite (e.g., Sheets, Docs, Slides, Jamboard) (9)	0	0	0	0	0
Microsoft Office suite (e.g. Excel, Word, PowerPoint) (10)	0	0	0	0	0
Screencasts (11)	0	0	0	0	0
Polling tools (12)	0	0	0	0	0
Self-made audio	0	0	0	0	0

recordings (13)						
Existing audio recordings (14)	0	0	0	0	0	0
Self-made video recordings (15)	0	0	0	0	0	0
Existing video recordings (e.g., Youtube videos) (16)	0	0	0	0	0	0
Adobe Creative Cloud (e.g. Spark, Photoshop, PDFs) (17)	0	0	0	0	0	0
Other (18)	0	0	0	0	0	0

End of Block: Block 3

Start of Block: Block 4

Q5 After COVID-19, what educational technology did you regularly use in your teaching? If the method isn't applicable, please select 0 - N/A

	4 - Very useful (1)	3 - Useful (2)	2 - Sometimes Useful (3)	1 - Rarely Useful (4)	0 - N/A (5)
Used a Learning Management System like Blackboard, Canvas or Google Classroom for quizzes (1)	0	0	0	0	0
Used a Learning Management System like Blackboard, Canvas or Google Classroom for discussions (2)	0	0	0	0	0
Used a Learning Management System like Blackboard, Canvas or Google Classroom for Speed Grading and feedback tools (3)	0	0	0	0	0
Digital Collaborative Whiteboards (Padlet, Kanboard, Task Cardst) (4)	0	0	0	0	0

Third Party interactive learning software (Nearpod, Kahoot, Peer Deck, Classtime) (5)	0	0	0	0	0
Video Conferencing (e.g., Zoom, WebEx, GoogleMeet, Webchats, Panopto) (6)	0	0	0	0	0
Video conference features (e.g., breakout rooms, polling) (7)	0	0	0	0	0
Narrated Slides / Voiceover Power Point (8)	0	0	0	0	0
Google Suite (e.g., Sheets, Docs, Slides, Jamboard) (9)	0	0	0	0	0
Microsoft Office suite (e.g. Excel, Word, PowerPoint) (10)	0	0	0	0	0
Screencasts (11)	0	0	0	0	0
Polling tools (12)	0	0	0	0	0
Self-made audio	0	0	0	0	0

recordings (13)					
Existing audio recordings (14)	0	0	0	0	0
Self-made video recordings (15)	0	0	0	0	0
Existing video recordings (e.g., Youtube videos) (16)	0	0	0	0	0
Adobe Creative Cloud (e.g. Spark, Photoshop, PDFs) (17)	0	0	0	0	0
Other (18)	0	0	0	0	0

End of Block: Block 4

Start of Block: Block 5

Q6 Before COVID-19, what teaching methods did you regularly use? If the method isn't applicable, please select 0 - N/A

	4 - Very Often (1)	3 - Often (2)	2 - Sometimes (3)	1 - Never/Rarely (4)	0 - N/A (5)
Lecture (1)	0	0	0	0	0
Lab activities (2)	0	0	0	0	0
Polls/rapid-response devices (3)	0	0	0	0	0
Surveys (4)	0	0	0	0	0
Small group or pair work (5)	0	0	0	0	0
Discussion (6)	0	0	0	0	0
Problem solving (7)	0	0	0	0	0
Case-based activities (8)	0	0	0	0	0
Reflection activities (9)	0	0	0	0	0
Peer review/peer critique (10)	0	0	0	0	0
Experiential/community-based learning (11)	0	0	0	0	0
Demonstration (12)	0	0	0	0	0
Simulation (13)	0	0	0	0	0
Other (14)	0	0	0	0	0

Q7 After COVID-19, what teaching methods did you regularly use? If the method isn't applicable, please select 0 - N/A

	4 - Very Often (1)	3 - Often (2)	2 - Sometimes (3)	1 - Never/Rarely (4)	0 - N/A (5)
Lecture (1)	0	0	0	0	0
Lab activities (2)	0	0	0	0	0
Polls/rapid-response devices (3)	0	0	0	0	0
Surveys (4)	0	0	0	0	0
Small group or pair work (5)	0	0	0	0	0
Discussion (6)	0	0	0	0	0
Problem solving (7)	0	0	0	0	0
Case-based activities (8)	0	0	0	0	0
Reflection activities (9)	0	0	0	0	0
Peer review/peer critique (10)	0	0	0	0	0
Experiential/community-based learning (11)	0	0	0	0	0
Demonstration (12)	0	0	0	0	0
Simulation (13)	0	0	0	0	0
Other (14)	0	0	0	0	0

Q8 After moving online during the spring of 2020, I did the following with regards to my course assessments (e.g., exams, papers, quizzes, presentations, portfolios): (Select all that apply.)

Click to write Scale Point 1 (1)

Made no changes to my assessments (1)	<input type="radio"/>
Lowered the stakes of my assessments (e.g., changed an exam to count 20 percent instead of 40 percent) (4)	<input type="radio"/>
Gave more frequent, but lower-stakes, assessments (5)	<input type="radio"/>
Eliminated an assessment and substituted a different type of assessment (6)	<input type="radio"/>
Allowed students to choose from a variety of assessments (7)	<input type="radio"/>
Gave incompletes until my students can be back in person to complete my usual assessments (8)	<input type="radio"/>
Used a proctoring solution (e.g., Respondus) to ensure exam security (9)	<input type="radio"/>
Used Remote Video conferencing like Zoom/Webex to proctor exams (10)	<input type="radio"/>
Used remote quiz features such as random questions/answers, time limits, or item banks to improve the security of my exams (11)	<input type="radio"/>
Had students sign an honor code statement, or I talked about the importance of integrity before taking exams (12)	<input type="radio"/>
Was flexible with due dates and times (13)	<input type="radio"/>
Allowed students to submit work in a variety of ways (upload in Canvas, email, Google Drive) (14)	<input type="radio"/>
Allowed students to revise or resubmit work (15)	<input type="radio"/>
Allowed open book/open notes for exams (16)	<input type="radio"/>

Tried a variety of strategies to improve exam integrity (17)

0

Other (please specify) (18)

0

End of Block: Block 7

Start of Block: Block 8

Q9 When teaching remotely, how easy or difficult do you find the following: If the option does not apply to you, please select 0 - N/A

	4 - Very Easy (1)	3 - Somewhat Easy (2)	2 - Somewhat Difficult (3)	1 - Very Difficult (4)	0 - N/A (5)
Using Zoom/Webex/Remote Conferencing (1)	0	0	0	0	0
Using Canvas/BlackBoard/LMS (2)	0	0	0	0	0
Recording or presenting lectures (3)	0	0	0	0	0
Maintaining discussion boards (4)	0	0	0	0	0
Managing the participant features in Zoom/Webex (e.g., chat, hand raising) (5)	0	0	0	0	0
Adjusting creative, laboratory, or technical courses (e.g., art, performance, science/medical labs) (6)	0	0	0	0	0
Answering student emails (7)	0	0	0	0	0
Keeping students engaged (8)	0	0	0	0	0
Understanding my students' needs (9)	0	0	0	0	0
Supporting my students' well-being (10)	0	0	0	0	0
Locating non-responsive students (11)	0	0	0	0	0
Maintaining the quality of interactions with my students (12)	0	0	0	0	0
Maintaining my normal academic standards (13)	0	0	0	0	0

Assigning grades (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adapting major exams to the online environment (15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supervising student teachers / teaching assistants (16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Holding office hours / parent meetings (17)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Obtaining digital course materials for students (e.g., articles, textbooks) (18)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Finding time for my professional development (19)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Block 8

Start of Block: Block 9

Q10 After the school transitioned to remote work and instruction, how easy or difficult were each of the following?

	4 - Very Easy (1)	3 - Somewhat Easy (2)	2 - Somewhat Difficult (3)	1 - Very Difficult (4)	0 - N/A (5)
Managing time (1)	0	0	0	0	0
Balancing family, household, and work responsibilities (2)	0	0	0	0	0
Having reliable access to the Internet (via Wi-Fi or Ethernet) (3)	0	0	0	0	0
Having reliable access to a functioning computer, laptop, or other similar device (4)	0	0	0	0	0
Having computer skills needed for online teaching (5)	0	0	0	0	0
Finding a quiet space for completing work (6)	0	0	0	0	0
Adjusting to working remotely (7)	0	0	0	0	0
Communicating with friends and/or family (8)	0	0	0	0	0
Communicating with colleagues (9)	0	0	0	0	0

Taking care of my physical and mental health (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Managing my stress level (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taking care of the health needs of others in my family or household (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Block 9

Start of Block: Block 10

Q11 During the past few months, which of the following forms of communication did you find helpful?

	3 - Very Helpful (1)	2 - Somewhat Helpful (2)	1 - Not Helpful (3)	0 - N/A (4)
The Schools' COVID-19/Return to Campus website (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Email announcements from school leadership (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emails / Newsletters from my school (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media posts (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q12 In the transition to remote teaching and learning, how concerned were you with the following:

	3- Very Concerned (1)	2 - Somewhat Concerned (2)	1- Not Concerned (3)
Academic honesty/cheating (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Grading (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Curriculum modifications (e.g., course content, course goals) (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mode of online delivery (synchronous/asynchronous) (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Class attendance (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Block 10

Start of Block: Block 11

Q13 Overall, I believe my school has managed the COVID-19 response well.

- 4 - Strongly Agree (1)
 - 3 - Somewhat Agree (2)
 - 2 - Somewhat Disagree (3)
 - 1 - Strongly Disagree (4)
-

Q14 Is there anything else you would like to add?

APPENDIX B

HIGHER ED INSTRUCTOR COVID-19 SURVEY

Start of Block: Default Question Block

Consent Thank you for your interest in this important research. By completing this survey, you are consenting to participate in this research voluntarily. Participation in this research will in no way impact your status. All of your responses will be kept confidential. The goal is to understand your experiences as an instructor in K-12 education. I would appreciate your completing this survey, it should take no more than 30 minutes. Do you agree to complete this survey?

- I agree (1)
- I do not agree (2)

Skip To: End of Survey If Consent = I do not agree

End of Block: Default Question Block

Start of Block: Block 1

Q1 Are you an adjunct or full time instructor?

- Adjunct (1)
- Full Time (2)

Q2 In which department do you perform the majority of your instruction?

- College of Arts and Sciences (1)
- College of Health Sciences (2)
- School of Education (3)
- School of Global Business (4)
- College of Global Studies (5)

Q3 What level students do you teach? Select all that apply

- Undergraduate (eg. B.A., B.S.) (1)
 - Graduate (eg. M.A., Professional Program) (2)
 - Other. Please explain (3)
-

Q4 How do you identify?

- Him/His (1)
- She/Her (2)
- They/Theirs (3)
- Prefer not to say (4)

End of Block: Block 1

Start of Block: Block 2

Q5 In the transition to a remote environment because of COVID-19, how useful did you find each of the following? If that office does not exist in your school select 0 - N/A

	4 - Very Useful (1)	3 - Useful (2)	2 - Sometimes Useful (3)	1 - Rarely Useful (4)	0 - N/A (5)
All Modes resources and emails (1)	0	0	0	0	0
CTLM resources and emails (2)	0	0	0	0	0
Faculty support group (3)	0	0	0	0	0
My school/college's workshops and resources (4)	0	0	0	0	0
My Dean/Dean's office (5)	0	0	0	0	0
My Chair (6)	0	0	0	0	0
My colleagues (7)	0	0	0	0	0
My students (8)	0	0	0	0	0
Student Success Center (9)	0	0	0	0	0
Career Education Services (10)	0	0	0	0	0
Student Health Services (11)	0	0	0	0	0
Counseling Services (12)	0	0	0	0	0
Employee Health (13)	0	0	0	0	0

Human Resources (14)	0	0	0	0	0
Faculty Affairs (15)	0	0	0	0	0
University Libraries or Librarian Liaison (16)	0	0	0	0	0
Dean of Students/Office of Student Success (17)	0	0	0	0	0
Other (18)	0	0	0	0	0

End of Block: Block 2

Start of Block: Block 3

Q6 Before COVID-19, what educational technology did you regularly use in your teaching?

	4 - Very useful (1)	3 - Useful (2)	2 - Sometimes Useful (3)	1 - Rarely Useful (4)	0 - N/A (5)
Canvas quizzes (1)	0	0	0	0	0
Canvas discussions (2)	0	0	0	0	0
Canvas Speed Grader and feedback tools (3)	0	0	0	0	0
Padlet (4)	0	0	0	0	0
Nearpod (5)	0	0	0	0	0
Video Conferencing (e.g., Zoom, WebEx, GoogleMeet, Webchats) (6)	0	0	0	0	0
Video conference features (e.g., breakout rooms, polling) (7)	0	0	0	0	0
Narrated Slides / Voiceover Power Point (8)	0	0	0	0	0
Panopto tools for teaching (9)	0	0	0	0	0
Microsoft Office suite (e.g. Excel, Word,	0	0	0	0	0

PowerPoint) (10)	0	0	0	0	0
Screencasts (11)	0	0	0	0	0
Polling tools (12)	0	0	0	0	0
Self-made audio recordings (13)	0	0	0	0	0
Existing audio recordings (14)	0	0	0	0	0
Self-made video recordings (15)	0	0	0	0	0
Existing video recordings (e.g., Youtube videos) (16)	0	0	0	0	0
Adobe Creative Cloud (e.g. Spark, Photoshop, PDFs) (17)	0	0	0	0	0
Google Suite (e.g., Sheets, Docs, Slides, Jamboard) (18)	0	0	0	0	0
Other (19)	0	0	0	0	0

Q7 After COVID-19, what educational technology did you regularly use in your teaching?

	4 - Very useful (1)	3 - Useful (2)	2 - Sometimes Useful (3)	1 - Rarely Useful (4)	0 - N/A (5)
Canvas quizzes (1)	0	0	0	0	0
Canvas discussions (2)	0	0	0	0	0
Canvas Speed Grader and feedback tools (3)	0	0	0	0	0
Padlet (4)	0	0	0	0	0
Nearpod (5)	0	0	0	0	0
Video Conferencing (e.g., Zoom, WebEx, GoogleMeet, Webchats) (6)	0	0	0	0	0
Video conference features (e.g., breakout rooms, polling) (7)	0	0	0	0	0
Narrated Slides / Voiceover Power Point (8)	0	0	0	0	0
Panopto tools for teaching (9)	0	0	0	0	0
Microsoft Office suite (e.g. Excel, Word,	0	0	0	0	0

PowerPoint) (10)	0	0	0	0	0
Screencasts (11)	0	0	0	0	0
Polling tools (12)	0	0	0	0	0
Self-made audio recordings (13)	0	0	0	0	0
Existing audio recordings (14)	0	0	0	0	0
Self-made video recordings (15)	0	0	0	0	0
Existing video recordings (e.g., Youtube videos) (16)	0	0	0	0	0
Adobe Creative Cloud (e.g. Spark, Photoshop, PDFs) (17)	0	0	0	0	0
Google Suite (e.g., Sheets, Docs, Slides, Jamboard) (18)	0	0	0	0	0
Other (19)	0	0	0	0	0

End of Block: Block 3

Start of Block: Block 5

Q8 Before COVID-19, what teaching methods did you regularly use? If the method isn't applicable, please select 0 - N/A

	4 - Very Often (1)	3 - Often (2)	2 - Sometimes (3)	1 - Never/Rarely (4)	0 - N/A (5)
Lecture (1)	0	0	0	0	0
Lab activities (2)	0	0	0	0	0
Polls/rapid-response devices (3)	0	0	0	0	0
Surveys (4)	0	0	0	0	0
Small group or pair work (5)	0	0	0	0	0
Discussion (6)	0	0	0	0	0
Problem solving (7)	0	0	0	0	0
Case-based activities (8)	0	0	0	0	0
Reflection activities (9)	0	0	0	0	0
Peer review/peer critique (10)	0	0	0	0	0
Experiential/community-based learning (11)	0	0	0	0	0
Demonstration (12)	0	0	0	0	0
Simulation (13)	0	0	0	0	0
Other (14)	0	0	0	0	0

Q9 After COVID-19, what teaching methods did you regularly use? If the method isn't applicable, please select 0 - N/A

	4 - Very Often (1)	3 - Often (2)	2 - Sometimes (3)	1 - Never/Rarely (4)	0 - N/A (5)
Lecture (1)	0	0	0	0	0
Lab activities (2)	0	0	0	0	0
Polls/rapid-response devices (3)	0	0	0	0	0
Surveys (4)	0	0	0	0	0
Small group or pair work (5)	0	0	0	0	0
Discussion (6)	0	0	0	0	0
Problem solving (7)	0	0	0	0	0
Case-based activities (8)	0	0	0	0	0
Reflection activities (9)	0	0	0	0	0
Peer review/peer critique (10)	0	0	0	0	0
Experiential/community-based learning (11)	0	0	0	0	0
Demonstration (12)	0	0	0	0	0
Simulation (13)	0	0	0	0	0
Other (14)	0	0	0	0	0

Q10 After moving online during the spring of 2020, I did the following with regards to my course assessments (e.g., exams, papers, quizzes, presentations, portfolios): (Select all that apply.)

Click to write Scale Point 1 (1)

Made no changes to my assessments (1)	<input type="radio"/>
Lowered the stakes of my assessments (e.g., changed an exam to count 20 percent instead of 40 percent) (4)	<input type="radio"/>
Gave more frequent, but lower-stakes, assessments (5)	<input type="radio"/>
Eliminated an assessment and substituted a different type of assessment (6)	<input type="radio"/>
Allowed students to choose from a variety of assessments (7)	<input type="radio"/>
Gave incompletes until my students can be back in person to complete my usual assessments (8)	<input type="radio"/>
Used a proctoring solution (e.g., Respondus) to ensure exam security (9)	<input type="radio"/>
Used Remote Video conferencing like Zoom/Webex to proctor exams (10)	<input type="radio"/>
Used remote quiz features such as random questions/answers, time limits, or item banks to improve the security of my exams (11)	<input type="radio"/>
Had students sign an honor code statement, or I talked about the importance of integrity before taking exams (12)	<input type="radio"/>
Was flexible with due dates and times (13)	<input type="radio"/>
Allowed students to submit work in a variety of ways (upload in Canvas, email, Google Drive) (14)	<input type="radio"/>
Allowed students to revise or resubmit work (15)	<input type="radio"/>
Allowed open book/open notes for exams (16)	<input type="radio"/>

Tried a variety of strategies to improve exam integrity (17)

0

Other (please specify) (18)

0

End of Block: Block 7

Start of Block: Block 8

Q11 When teaching remotely, how easy or difficult do you find the following: If the option does not apply to you, please select 0 - N/A

	4 - Very Easy (1)	3 - Somewhat Easy (2)	2 - Somewhat Difficult (3)	1 - Very Difficult (4)	0 - N/A (5)
Using Zoom/Webex/Remote Conferencing (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using Canvas/BlackBoard/LMS (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recording or presenting lectures (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintaining discussion boards (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Managing the participant features in Zoom/Webex (e.g., chat, hand raising) (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adjusting creative, laboratory, or technical courses (e.g., art, performance, science/medical labs) (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Answering student emails (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Keeping students engaged (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understanding my students' needs (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supporting my students' well-being (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Locating non-responsive students (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintaining the quality of interactions with my students (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintaining my normal academic standards (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Assigning grades (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adapting major exams to the online environment (15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Advising on theses / dissertations (16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supervising undergraduates and/or graduate teaching assistant (17)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Obtaining digital course materials for students (e.g., articles, textbooks) (18)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Finding time for my professional development (19)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Holding office hours (21)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Finding time for my research (22)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Block 8

Start of Block: Block 9

Q12 After the school transitioned to remote work and instruction, how easy or difficult were each of the following?

	4 - Very Easy (1)	3 - Somewhat Easy (2)	2 - Somewhat Difficult (3)	1 - Very Difficult (4)	0 - N/A (5)
Managing time (1)	0	0	0	0	0
Balancing family, household, and work responsibilities (2)	0	0	0	0	0
Having reliable access to the Internet (via Wi-Fi or Ethernet) (3)	0	0	0	0	0
Having reliable access to a functioning computer, laptop, or other similar device (4)	0	0	0	0	0
Having computer skills needed for online teaching (5)	0	0	0	0	0
Finding a quiet space for completing work (6)	0	0	0	0	0
Adjusting to working remotely (7)	0	0	0	0	0
Communicating with friends and/or family (8)	0	0	0	0	0
Communicating with colleagues (9)	0	0	0	0	0

Taking care of my physical and mental health (10)	0	0	0	0	0
Managing my stress level (11)	0	0	0	0	0
Taking care of the health needs of others in my family or household (12)	0	0	0	0	0

End of Block: Block 9

Start of Block: Block 10

Q13 During the summer of 2020, which of the following forms of communication did you find helpful?

	3 - Very Helpful (1)	2 - Somewhat Helpful (2)	1 - Not Helpful (3)	0 - N/A (4)
The University's' COVID- 19/Return to Campus website (1)	0	0	0	0
Email announcements from university leadership (2)	0	0	0	0
Emails / Newsletters from my school, college or unit (3)	0	0	0	0
Social media posts (4)	0	0	0	0
Other (5)	0	0	0	0
PortalGuard COVID- 19/Return to Campus tab (6)	0	0	0	0

Q14 In the transition to remote teaching and learning, how concerned were you with the following:

	3- Very Concerned (1)	2 - Somewhat Concerned (2)	1- Not Concerned (3)
Academic honesty/cheating (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Grading (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Curriculum modifications (e.g., course content, course goals) (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mode of online delivery (synchronous/asynchronous) (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Class attendance (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Block 10

Start of Block: Block 11

Q15 Overall, I believe my university has managed the COVID-19 response well.

- 4 - Strongly Agree (1)
 - 3 - Somewhat Agree (2)
 - 2 - Somewhat Disagree (3)
 - 1 - Strongly Disagree (4)
-

Q16 Is there anything else you would like to add?
