Evolving with the Times: COVID-19's Impact on Tutoring in Higher Education

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Abstract

The impact of the COVID-19 pandemic on higher education is being widely studied. However, research on its effect on tutoring is relatively sparse. Furthermore, no study places existing studies in dialogue with each other. This study synthesizes ten international articles on higher education tutoring during the pandemic. This review found changes and difficulties in accessibility, tutoring modalities, and pedagogy during sessions. However, the limited number of articles shows that more research needs to be done to understand the effects of COVID on tutoring and how tutoring centers can evolve to adapt to the new normal.

Keywords: Online tutoring, Learning Centers, COVID-19, higher education

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In 2020, the face of higher education was changed by the advent of the COVID-19 pandemic to the United States. Institutions had to quickly decide how they were going to transition all their services, from classes to administration, to an online format where they could

continue to have classes while also being socially distanced to help flatten the curve. One area in higher education which COVID-19 affected was tutoring and learning centers. As the lockdown prevented face-to-face meetings, tutoring centers had to find different ways to meet with students and give them educational support.

Technology became the way tutoring centers connect to students in their homes. However, this was a major shift to many centers. Before the pandemic, one survey found that less than half of the 75 colleges and universities surveyed offered online tutoring (Mills et al 2022). Furthermore, a survey that went out after the pandemic revealed that out of twenty-eight higher-education learning centers surveyed, only three had online tutoring before the pandemic (Johns & Mills, 2021). This mode of tutoring dramatically changed after the pandemic, as each one ended up having some form of online tutoring available. Through these surveys, researchers showed that even if some centers may have had online tutoring as an option, there were many more in which this switch was a brand-new experience. Furthermore, even before the pandemic, there was a call for more tutor training concerning the difficulties of online tutoring, with the Association of Colleges for Tutoring and Learning Assistance (ACTLA) even publishing some standards for online tutor training (Price et al, 2007; ACTLA, 2019). However, the standards were not attached to any research and were also

published right before the COVID-19 pandemic started. Consequently, when the pandemic hit, learning centers needed to rapidly get their tutors up to speed on technology that they may or may not have been familiar with while also preparing tutors to help students get used to this sudden shift.

Research Questions

Two years after this event, I wanted to examine research on higher education learning centers to understand how the online shift during the COVID-19 pandemic affected tutoring. In reviewing the literature, I examined two questions: First, how did the virtual switch because of the pandemic change tutoring and tutoring pedagogy in higher education? Secondly, what difficulties have arisen in tutoring due to the switch to online platforms? Online tutoring is becoming the "new normal" for higher education tutoring centers. In the Johns and Mills (2021) survey mentioned above, eighty-seven percent of respondents were either considering or fully intending on continuing online tutoring after the restrictions were lifted. Moreover, research on higher education online support services, especially in STEM, is lacking (Mullen et al, 2021). Thus, more research needs to be done on online tutoring, and the pandemic gives an opportunity to examine online student support and the difficulties and opportunities it may present. Hopefully with this information, tutoring centers will know various resources

of online tutoring, understand the benefits of online tutoring, and be aware of some difficulties that training ought to address.

Methods

I used a qualitative content analysis-styled literature review to answer these research questions. Content analysis allows me to interpret meaning to data (Schreier, 2012). In this case, I want to interpret how the different research articles come together to show different areas in which tutoring was affected by the switch to virtual platforms. To do this, I searched for articles that specifically focused on tutoring centers or learning centers in higher education. Furthermore, I looked for peer reviewed quantitative, qualitative, and mixed methods studies, while bypassing articles that were simply reflections on the pandemic with no analysis. At first, I used a university library's search feature and ERIC to search for articles. However, after not finding many articles that related to tutoring, I used Google Scholar to find most of the articles. When searching these databases, I used the search terms "tutoring," "COVID-19," "higher education," and "learning center." From these searches, I found ten articles dealing with the effects of the pandemic on learning centers and tutoring in higher education throughout the world. There were five articles conducted in the United States, one in Spain, one in Ghana, two from South Africa, and one final article that examined both Ireland and Australia.

After collecting the articles, I noted the methods of the articles and then examined their results and conclusions for initial results within the articles that signified changes and difficulties within the tutoring programs using reductive coding in order to index the results (Schreier, 2012). These codes were then noted on an Excel file and the following article was coded in the same way. After all the articles were coded, I compared the ideas found within the sources, compiled them into categories, and then created themes (see Table 1).

Table 1

Example of Analysis Procedures for Accessibility Theme

Source	Reductive Code	Category	Theme
(Mullen et al., 2021).	Math is hard to communicate via Zoom, some students found online very accessible to schedules	Software issues, flexible/accessible	Accessibility
(Aboagye, 2021)	Hard times with network connectivity and technology expenses	Network issues, expenses/prices	Accessibility
(Motaung & Makombe, 2021).	Difficulty with internet access especially off campus, issues with data costs. Power outages. Students found aid flexible	Network issue, expenses, power issues, flexible/accessible	Accessibility

Findings

This content analysis unearthed three main themes dealing with the changes and difficulties with tutoring: accessibility, mode of tutoring, and tutoring pedagogy.

Accessibility

One area where there were common ideas among many of the articles was in the theme of accessibility. In some of the articles,

authors emphasized the lack of tutoring accessibility, especially concerning internet difficulties. This was especially true in Africa. One mixed methods study in Ghana by Abogye (2021) would find this to be true. He quantitatively examined, via questionnaire, sixty-three tutors throughout Ghana, with ten also participating in a phone interview via purposive sampling which he qualitatively coded. One finding of this study was that both students and tutors complained of network connectivity and slow internet. Two other studies in South Africa reported similar results. Motaung and Makombe (2021) interviewed nine online tutors for an English class using a questionnaire, analyzing them qualitatively on the tutor's experience when tutoring students at a rural South African university. Motaung and Makombe (2021) found that the tutors' internet access was spotty, especially when off campus; thus, they could not consistently connect with tutors. The other South African study by Nyawo (2021) surveyed 170 students in the University of KwaZulu-Natal, using quantitative Likert scale questions to examine the students' experiences with tutoring before and during COVID-19. They found that poor internet connectivity and network issues were major problems for the students. Overall, these studies showed that slow internet connectivity along with power issues made it challenging for students to access the tutoring provided by their institutions.

However, this issue with accessibility was not only seen in Africa. An American study by Gregg & Shin (2021) quantitatively analyzed data from the University of Maryland, Baltimore County's Academic Success Center and thematically analyzed conversations happening in tutor training. Gregg & Shin (2021) found that working remotely was a challenge for some of the tutors as internet connections were spotty. Thus, internet connection issues were found to be an issue both inside and outside of the United States, though it seemed to not affect studies in the United States as much as those in Africa.

Many of the above articles also reported that there were major difficulties getting either the students or tutors to adapt to the new technology that were used for tutoring (Aboagye, 2021; Gregg & Shin, 2021; Motaung & Makombe, 2021). Without a decent knowledge of the software being used to facilitate tutoring, students could feel like their accessibility to tutors is limited. At the same time, tutors might have difficulties accessing students and relaying key information if not well-versed in said software. Mullen and colleagues' (2021) examined students and tutors in both an Irish and an Australian university to see if there were similar issues faced by Math tutors in the areas. The researchers qualitatively analyzed interviews among seven Irish students and four Irish tutors along with six Australian students and six Australian tutors. One issue they found was that tutoring Math became a complicated process

because technology did not allow the tutors to quickly transfer mathematical symbols using their online platform. A study by Van Maaren (2022) also found that software was an issue. The author examined twenty-three tutors and twenty-three students at the Catholic University of America using Likert scale questions and open-ended questions. While they had very few students respond that technology was a barrier to tutoring, they found through the open-ended responses that students sometimes ignored or were wary of links for easy access to the tutoring center. This finding revealed that students, although they did not feel that there was a technological barrier to tutoring, had technological hurdles from accessing tutors because of their unfamiliarity and suspicion with the tutoring links. Thus, technology was a factor in hindering students' accessibility to tutoring.

While internet difficulties and new technology were central accessibility problems brought up by the literature, there were other issues mentioned by two of the African studies: technology cost and electricity issues. Aboagye (2021) found that students complained of how expensive it was to buy smartphones and other needed technology. This was echoed by Motaung & Makombe (2021) who stated that the student engagement with tutoring was not consistent because of data costs. Electricity was also an issue, with Nyawo (2021) stating that it was hard to reach all types of students with their survey because the province where the college in that study

was located lagged behind the other provinces of South Africa in terms of electricity. Furthermore, Motaung & Makombe (2021) stated that the tutors they surveyed complained that the lack of electricity affected tutoring. Overall, the switch to online tutoring created accessibility issues for many students. Internet access and unfamiliarity with technology were major hinderances to accessing tutors, while the cost of technology and lack of reliable electricity were further hurdles that some communities had to overcome.

Despite these disadvantages, many of the previous articles also agreed that online tutoring could aid accessibility because it is convenient for students (Gregg & Shin, 2021; Motaung & Makombe, 2021; Mullen et al., 2021; Van Maaren et al., 2022). Motaung & Makombe (2021), which reported internet difficulties with tutoring, still found that tutors and students found online tutoring very convenient. Furthermore, Gregg and Shin (2021) also showed that while their overall student usage decreased slightly, those that did use the tutoring center used it more often.

Other studies would affirm that the shift to online tutoring improved student accessibility to tutoring. Johns and Mills (2021) surveyed 107 members of the Mathematics Center Leaders listserv and received twenty-eight responses. This survey included multiple choice, Likert questions, and open-ended questions. Afterwards, the Likert questions were quantitatively analyzed while the open-ended questions were qualitatively analyzed. One result they found was

that eighty-seven percent of leaders stated that they would continue online tutoring past the pandemic as it could be more convenient for commuter and non-traditional students. Another study by Mendoza & Kerl (2021) did a mixed methods study examining the benefits of having an online tutor embedded into a classroom. The researchers sent surveys out to undergraduates of the University of New Mexico that included matrix, multiple choice, and open-ended questions. Mendoza & Kerl (2021) found that keeping a tutor in the virtual classroom made them easily accessible to students while also keeping the students engaged with class. These studies together show that the switch to online was not a net negative, but instead was a mixed bag. While there were many technological and internet accessibility hurdles to jump through, those that succeeded found the tutoring center very accessible and flexible with their schedules.

Modality

Another common theme was the different modes that were used by various tutoring centers. Some of them were, or had the potential to be, synchronous. Many of the studies located in the western world talked about using Zoom (Johns & Mills, 2021; Mullen et al., 2021; Van Maaren et al., 2022). Tutors in Johns & Mills' (2021) study preferred this platform, while both Mullen et al. (2021) and Van Maaren et al. (2022) found that tutors found it more challenging using the platform than being face-to-face. Another study, by Manasse and Rostworowski (2022), examined a California

community college, wanting to see if the materials they were giving in training were making a difference in their community college. The authors surveyed 334 students and had a focus group of five students. The survey consisted of multiple-choice questions, Likert scale questions, and open-ended questions. The focus group answered interview questions about tutoring and found that most of the students liked using Zoom and thought that it was an easy platform on which to be tutored. This ease-of-use factor may explain why it was so widely used in the United States, Ireland, and Australia. Unfortunately, very few of the studies examined the Zoom modality in depth and the benefits and drawbacks of its use as a tutoring platform.

On the other hand, Zoom was not the only modality used for tutoring. Gregg & Shin (2021) reported using Google Meet for synchronous tutoring sessions, though the researchers did not delve into the modality but instead just listed it as a tutoring technology their tutors had been using. Additionally, in Spain, Pérez-Jorge and colleagues (2020) quantitatively analyzed a survey of 193 education students in Spain's University of La Laguna to see how the different tutoring modalities affected the students' transition to the online format of the university and their satisfaction with the services offered using a five-level Likert scale. The researchers found that these students were most satisfied with the tutoring services when using WhatsApp for tutoring, which could either be synchronously

or asynchronously used. However, they did not get any information as to why the students were most satisfied with the platform. Consequently, while Zoom was a major mode used in online tutoring, Google Meet and WhatsApp were other synchronous modes that were highlighted.

While these synchronous options were mentioned, other places use asynchronous tutoring modes. For example, two of the articles based in Africa used the discussion board of their university's Learning Management System (LMS) for tutoring (Aboagye, 2021; Motaung & Makombe, 2021). Both studies said that tutors were not as effective using the LMS as they were in face-to-face sessions and more training would be needed. Johns and Mills (2021) noted that e-mail and Piazza, and Slack were popular asynchronous forms of tutoring. However, they only listed these modalities and did not deeply examine them for their effectiveness for online tutoring. Pérez-Jorge and colleagues (2020) found that while students were most satisfied with WhatsApp, they also heavily used e-mail tutoring. Gregg & Shin's (2021) study listed Jamboard and Goboard as asynchronous tutoring options but failed to examine their effectiveness as a tutoring platform. Thus, these research articles show tutoring centers used a variety of modes to reach students during the pandemic. These included both synchronous and asynchronous modalities; however, more research should be done

to examine the effectiveness of the different online tutoring modalities.

Pedagogy

Finally, the articles found that this shift to online tutoring negatively affected tutoring pedagogy. Some studies mentioned pedagogical difficulties in general, but did not explain many specifics (Aboagye, 2021; Johns & Mills, 2021; Van Maaren et al., 2022). Other articles found that tutors had trouble motivating their students to do the work (Motaung & Makombe, 2021; Mullen et al., 2021; Van Maaren et al., 2022). Mullen and colleagues (2021) noted that because students do not turn on the camera, tutors had a challenging time reading their students on when to best motivate them because there were no physical gestures. Motaung and Makombe (2021) on the other hand were concerned that the lack of motivation on the discussion boards led to the tutoring mode becoming more like a student drop box rather than a place for meaningful conversations between tutor and student. Furthermore, the tutors they surveyed indicated that students were not motivated to learn as there was a higher count of plagiarism among the students. Thus, tutors found it hard to motivate students and did not have the pedagogical training to know how to respond. Unfortunately, the studies gave no data-backed reasoning for this lack of motivation, and little in the way of ideas to help tutors motivate students when in an online tutoring session.

Another pedagogical issue that a few studies emphasized was that the tutors resorted to explaining more than using questioning techniques (Gregg & Shin, 2021; Johns & Mills, 2021). While Gregg & Shin (2021) did not list a reason for this difficulty, Johns and Mills (2021) posited that this might be because students did not want to talk or because of technological issues. The researchers also stated that after the pandemic, tutors needed to be trained on intentional active learning and questioning strategies, suggesting that these techniques needed to be refined after the switch to online tutoring. Thus, the challenge for tutors to use questioning techniques online was another pedagogical issue that plagued online tutors.

Finally, some articles reported that tutors found difficulty in tutoring certain subjects, like math, using the online platforms (Aboagye, 2021; Gregg & Shin, 2021; Motaung & Makombe, 2021; Mullen et al., 2021) Aboagye (2021) found that many of the tutors did not come in with an understanding of the college's LMS, and thus were hindered from helping their students. Gregg & Shin (2021) found that unfamiliarity with a particular software and distractions such as students' background noises led to tutoring challenges for the tutors. Motaung & Makombe (2021) stated that internet outages could happen in the middle of the session, affecting the effectiveness of the tutoring pedagogy. The study by Mullen and colleagues (2021) explained some of the problems technology had on tutoring pedagogy with tutors saying that it was hard to

listen to students try to vocalize their math problems, whiteboards were messy with not enough space, and the technology removed the doing it and seeing it part of tutoring pedagogy, as tutors were not always able to see what their students were doing and the steps they were making in the problem. Overall, the studies show that the sudden online switch affected tutoring negatively in many ways. Issues dealing with motivation, questioning techniques, and technology were highlighted by the research; however, more research needs to be done to find ways to help tutoring centers account for these issues in their online training programs.

Conclusion

Ultimately, this literature review has unveiled many changes and difficulties that the pandemic thrust upon tutoring programs worldwide. These articles show that while online tutoring was convenient for some students, not all students had the same accessibility to online tutoring. They also revealed that tutors needed to be familiar with various modes of tutoring, whether synchronous or asynchronous, while also being flexible with different software to reach the most students. Finally, these studies shed some light on the need for tutor training on the use of good tutoring pedagogical practices in online formats.

Since the mid-2000s, there has been a desire to advance tutoring standards and initiatives supported by research (Price et al, 2007; Van Maaren et al., 2022). With more tutoring centers staying

virtual after the pandemic, there is a distinct need to increase understanding in areas where tutoring ought to be adapted to a virtual space. Hopefully, this literature review will contribute to finding solutions to these issues. By understanding the both the positive and negative aspects of accessibility to technological tutoring spaces, tutoring centers can prepare different avenues of tutoring to reach as many people as possible, while administration can use the research to help solve the monetary and technology issues that students may have. The modality findings show that there are many different resources that tutoring programs have used to help reach students and if one format is not working, centers may want to try other formats in which other centers have found success. Understanding the pedagogical troubles of online tutoring during this transition can help target key areas for additional standards, initiatives, and training.

Overall, the lack of articles shows that more research needs to be done on how the pandemic affected tutoring. Based on these articles, future research should look at specific pedagogies affected by this online transition. While some articles did look at this topic in general, none of the studies focused specifically on pedagogy and how the sudden shift to online tutoring affected this. Furthermore, with the known problems of accessing technology, studies should examine what groups of people are most affected by accessibility issues in tutoring. These studies could include solutions that some

tutoring centers have used to bridge this accessibility gap. By examining how different universities and colleges helped students gain access to tutoring services these studies can offer tutoring centers additional ideas on how to reach more students with online tutoring. With most tutoring centers saying they will keep online tutoring as an option post-pandemic, understanding these issues will help tutoring centers build quality tutoring programs to better help students in the years to come.

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