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Online or Remote Learning and Mental Health

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Abstract
While there has been a great deal of debate over the impact of online and remote learning on mental health and well-being, there has been no systematic syntheses or reviews of the research on this particular issue. In this session, we will present a review of research on mental health / well-being and online or remote learning. Our preliminary analyses suggest that little scholarship existed prior to 2020 and that most of these studies have been conducted during the COVID-19 pandemic. We report three findings: (a) it is very difficult, if not impossible, to control for pandemic effects in the data, (b) studies present a very mixed picture, with variability around how mental health and well-being are measured and how / whether any causal inferences are made in relation to online and remote learning, and (c) results across these studies are extremely mixed. Based on this study, we suggest that researchers, policymakers, practitioners, and administrators exercise extreme caution around making generalizable assertions with respect to the impacts of online/remote learning and mental health.

Keywords: mental health, online learning, remote education, anxiety, stress, well-being, wellness

Introduction

As a result of the pandemic, the preponderance of school and university students switched from a predominantly in-person educational experience to remote forms of teaching and learning. Concomitantly, student mental health appears to have worsened during the pandemic. But is there a relationship between remote education and student mental health? More importantly, is remote education associated with declines in student mental health? This study is motivated by widespread assertions that we observed in the public sphere that remote learning is detrimental to the mental health and well-being of learners, which should thus outweigh other health and safety concerns in policy and decision making. Many of these claims seem to be based on anecdotal observations, reports in public media, isolated research studies, isolated evaluation reports, or pure speculation. To date there are no comprehensive studies, systematic reviews, or systematic syntheses of the research on the relationship between online or remote learning and learner mental health and well-being. Motivated by our inability to identify systematic analyses that investigate this topic, we engaged in a systematic approach to uncover and synthesize evidence that speaks to remote learning as it relates to mental health. Our analyses answer the following questions: Is there a larger body of research? What does that body of research have to say? Are there any methodological issues that should be accounted for?

Context

Since the pandemic much has been written in the popular press about the impact of remote learning on learners' mental health. Highly publicized articles for example include Malesic (2022) and Oster (2022), with the latter for instance noting that, since most students are vaccinated, remote education is "a mistake" and not only it "reflects an outmoded level of caution," but is also "represents a failure of universities to protect their students' interests" and an "abdication of universities' responsibility to educate students and protect all aspects of their health." The author notes that students suffer from isolation and loneliness, and "it's difficult not to make the connection" with remote learning, even if she recognizes that "not all of these problems are driven by remote schooling." Public policy officials made similar arguments. For instance, in a letter dated December 2021 to post-secondary institution presidents in British Columbia (BC), the BC Provincial Health Officer noted: "The previous move to online post-secondary education in 2020 and 2021 was associated with significant negative consequences for post-secondary students, who reported significantly poorer and worsening mental health and greater negative economic impacts than other British Columbians" and that "moving to online instruction can be…detrimental to the mental health and wellbeing of students". The text in italics was hyperlinked to a report authored by Samji et al. (2021) for the province's Center for Disease Control. The report identifies mental health as a growing concern, and for our purposes here, it explicitly identifies youth and learners as people disproportionately affected. Nonetheless, the data upon which these assertions are made seem to be grounded on mental health comparisons before and after the pandemic, without isolating the role of remote learning in this relationship. In particular, Samji et al. noted: "Canadian students pursuing graduate studies (n = 1,431) reported increased anxiety, depression, feelings of helplessness, loneliness, or being overwhelmed compared to before the pandemic, with most (72%) attributing these feelings to COVID-19" rather than remote learning per se (p. 22). To be clear, Canadian students, like students around the world, have reported declining mental health. For instance, in a study which synthesized 21 surveys examining the impacts of COVID-19 and emergency

remote learning on approximately 155,000 post-secondary Canadian students, researchers found that mental health and well-being was a significant concern for students (Houlden & Veletsianos, 2022). Nonetheless, the research assessing the source of those concerns does not appear to be unequivocally attribute those concerns to remote learning.

Beyond discussions in the popular media, prior to the COVID-19 pandemic there exists a large body of literature that examines isolation and loneliness in distance education, but a dearth of literature investigating mental health and well-being. The literature on online and distance learning notes that isolation and loneliness are a major concern (e.g., Galusha, 1997). This literature notes that such feelings result from a confluence of factors, and often highlights strategies to address it, including developing opportunities for meaningful instructor-learner, learner-peer, and learner-institution interactions (e.g., Croft et al., 2010; Jones et al., 2019; Shin, 2003). The literature examining mental health with respect to online and distance learning is scant and, while this gap has been identified nearly a decade ago (Thompson & Porto, 2014), it has not yet been addressed. Thompson and Porto as well as Scheer and Lockee (2003) highlight the need to provide wellness resources and support (including mental health) for online and distance learners. Other studies show that distance education learners with mental health difficulties have lower completion, but not lower grades (Richardson, 2015), that even though some doctoral students are aware of their wellness needs they have little time available for self-care and wellness and do not feel empowered to manage their needs (Lynch et al., 2020), and beyond the online environment, work-study and family-study conflicts negatively impact mental health among distance learners (Waterhouse et al., 2020).

Given the dearth of literature, the significance of mental health, the lack of direct empirical evidence to guide data-informed decision-making, and the scholarly and practical implications of a direct and strong relationship between mental health and remote learning, a synthesis of the evidence surrounding mental health and remote learning during the pandemic is imperative.

Methodology

The purpose of this study was to investigate what was known from the existing research literature about the relationship between remote learning and mental health during the pandemic. Fink (2014) advised researchers that when conducting a review of the literature, researchers should “systematically examine all sources and describe and justify what you have done. This enables someone else to reproduce your methods and determine objectively whether to accept the results of the review” (p. 14). In keeping with this advice, the researchers used Google Scholar as the main search engine to identify possible literature for inclusion in the study. Prior to searching, each researcher created a library link to their respective institutions. “Library links are article-level links to subscription full text for patrons affiliated with a library” (Google Scholar, n.d., para. 3), which meant that in addition to public open access material, Google Scholar was able to identify full text options for any database that the libraries of Royal Roads University, Touro University California, or the University of New Mexico had subscribed to. Additionally, the researchers also used a variety of popular media and social media references from their own personal networks to identify potential literature.

The researchers searched using a variety of terms related to remote learning (e.g., distance learning, online learning, virtual learning, cyber learning, emergency remote learning, distributed learning, hybrid learning, virtual schooling, cyber schooling, correspondence education, concurrent teaching, co-seating, co-locating, etc.) and mental health (e.g., depression, anxiety,

stress, psychological health, emotional health, well-being, etc.). The search of the literature occurred from January through April 2022, and the researchers limited their search to items published since March 2020. Through this search process, we identified 63 research and related items.

These 63 items were placed into three groups (see Appendix A for the codebook), and each of the researchers were responsible for coding two of the three groups (i.e., researcher 1 coded groups A and B, researcher 2 coded groups B and C, and researcher 3 coded groups A and C). This process meant that each item was coded by two researchers to establish inter-rater reliability (Denzin, 1978), with the third researcher available to resolve any disagreements in the coding. This process generated 1008 individual codes, with a level of agreement for 97.8% of the codes based on the initial coding. Through the process of coding, it was determined that 18 articles were not actually research studies. These articles included opinion pieces, summaries of other's research, and other pieces that were not empirical studies, which meant that 45 of the original 63 studies were included in the results below.

Results

This section summarizes our findings. All of the results can be found in a visual format in our slides from the OTESSA 2022 conference (Moore et al., 2022).

The studies selected for inclusion in our review were primarily situated in higher education (55.6%) and K-12 (33.3%) with a majority in higher education. Although nearly 50% of studies were situated in the United States, the remaining 50% represent findings across 18 other countries as well.

As to whether the study was specifically focused on mental health and online learning during the context of the pandemic, the vast majority were specifically situated in the pandemic context. Only two studies did not originate during the pandemic, one of which happened to start their study in Fall 2019 and continued it into Spring 2020 as the pandemic unfolded. This context is important for interpretation of results, as the pandemic and its effects are persistent confounding variables throughout nearly all studies on the relationship between mental health and online learning.

Of the studies selected for inclusion, the vast majority were either quantitative (64.4%) or mixed methods (28.9%) where quantitative was the primary method with some open-ended qualitative items. The dominant methodology used was surveys or questionnaires using self-report as the means for gathering data. In most cases "online learning" was measured by using learners' or others' perceptions of online learning, not learning outcomes or other measurable outcomes. Most studies reported descriptive statistics, and some included correlation analyses.

Several significant issues were observed in the methodologies used in these studies. First, "online learning" was rarely defined and often measured using participant interpretation of "online learning" and self-report perceptions and satisfaction scales. No studies attempted to identify or control for characteristics of the online learning experience, such as degree and types of interaction. Additionally, establishing causality requires the use of certain statistical methods

such as controlled experiments, structural equation modeling, or controlled pre-post testing. None of these methods were used in any of the studies.

The findings in the 45 included studies indicated a mix of impacts. We urge careful interpretation and further citation of these summary findings in context of methodological issues (see below) and quality concerns. Of the articles selected for coding, 53.3% reported negative impacts, 8.9% reported positive impacts, 35.6% reported mixed impacts, and 2.2% reported no impact.

As the studies treated the role of remote/online learning in different ways, we sought to categorize studies based on the hypothesized role of remote/online learning in mental health. In 22.2% of the studies, online learning was mentioned but not a specific focus for analysis. In another 35.5%, online learning was just one of many variables and not isolated in the analysis. In another 31.1%, online learning was treated as an individual, discrete variable among others. In the remaining 11.1%, online learning was the sole variable identified. Based on how few studies carefully defined and controlled for online learning or considered other confounding variables in their studies, we urge further caution in interpreting the findings on impacts.

In addition to methodology and treatment of online learning as a variable, we coded each article for quality evaluating whether we observed any methodological issues. A full 44.4% inferred causation in their article but only established correlation with basic correlational statistics. Another 31.3% inferred causation in their articles but did not even establish a statistical correlation. That is 75.5% that commit the “correlation does not equal causation” fallacy, also knows as the questionable cause logical fallacy. In order to identify causal relationships, statistical methods such as regression analyses, structural equation modeling, controlled experiments (RCT or controlled pre-post) are necessary. No studies that we located used any of these types of analyses and therefore cannot reliably establish causal relationships. Additionally, two other studies (another 4%) had other methodological issues that raised concerns. Combined with the over-reliance on surveys and perceptions of online learning (which present reliability and validity issues), these methodological issues suggest extreme caution should be used when referring to this body of research as justification for a causal assertion.

Of the nine studies with no quality concerns, the findings were mixed in aggregate, with four indicating negative impacts, four indicating mixed impacts, and one indicating positive impacts. Of these studies, one was conducted before the pandemic and the other eight were focused on the pandemic as the context. In four of these studies, remote learning was not a specific focus; in three of the studies, it was one among many variables not carefully isolated; and in two studies, online learning was an individual variable. Some of the authors of these studies were also careful to note that they were unable to control and identify confounding factors, that causal inferences cannot be made from surveys alone, and that all data was self-report, introducing reliability and validity limitations.

Summary

Preliminary themes from the literature appear to be consistent with broader trends in online learning research over the past few decades. First, the quality of the research study and methodology varies greatly, and any studies that employ a variation of “media comparison” methodology risk over-simplification of confounding variables that may better explain or account for differences in outcomes. Additionally, some studies suggest that design decisions around how online / remote learning is designed and delivered matter and may mitigate any potential

negative impacts or even yield more benefits compared to traditional in-person solutions. There is also substantial evidence suggesting that no sweeping assertions or claims may be made one way or another because different learners have varying needs and varying preferences.

Author's Contributions

Each of the author had an equal contribution to the development of the project, as well as the data collection and analysis for the actual study. The authorship for this proceeding, which is essentially a first draft for a subsequent journal manuscript, reflects the specific contribution to the conference presentation and the author order listed in the program. This order will likely change from output to output as the authors continue to analyze this data and extend the study in other ways.

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Ethics Statement

This study relies on collection and analysis of secondary data (i.e., published research). No ethical approval is necessary for this kind of study.

Conflict of Interest

The authors do not declare any conflict of interest.

Data Availability Statement

The raw data, along with the researchers' coding of that data, is available as a *Google Sheet* at https://tinyurl.com/OnlineLearning-MentalHealth

References

Croft, N., Dalton, A., and Grant, M. (2010). Overcoming isolation in distance learning: Building a learning community through time and space. *Journal for Education in the Built Environment,5*(1), 27–64. https://doi.org/10.11120/jebe.2010.05010027

Denzin, N. K. (1978). *The research act: A theoretical introduction to sociological methods*. McGraw Hill.

Fink, A. G. (2014). *Conducting research literature reviews: From the Internet to paper*. Sage Publications, Inc.

Galusha, J. M. (1997). Barriers to learning in distance education. *Interpersonal Computing and Technology, 5*(3–4), 6-14. https://files.eric.ed.gov/fulltext/ED416377.pdf

Google Scholar. (n.d.). *Library support*. https://scholar.google.com/intl/en/scholar/libraries.html

Jones, E., Samra, R., & Lucassen, M. (2019). The world at their fingertips? the mental wellbeing of online distance-based law students. *The Law Teacher, 53*(1), 49–69. https://doi.org/10.1080/03069400.2018.1488910

Lynch, R. J., Perry, B., Googe, C., Krachenfels, J., McCloud, K., Spencer-Tyree, B., Oliver, R., & Morgan, K. (2020). My wellness is: An art-based collective autoethnographic illustration of doctoral student wellness in online distance education environments. *Studies in Graduate and Postdoctoral Education, 11*(1), 73-88. https://doi.org/10.1108/SGPE-05-2019-0049

Malesic, J. (2022, May 13). My college students are not okay. *New York Times*. https://www.nytimes.com/2022/05/13/opinion/college-university-remote-pandemic.html.

Moore, S., Barbour, M., & Veletsianos, G. (2022, May 16-20). Online or remote learning and mental health [PowerPoint Slides]. The 2022 Open/Technology in Education, Society, and Scholarship Conference, hosted by the Congress of the Humanigies and Social Sciences. https://www.slideshare.net/mkb/otessa-2022-online-or-remote-learning-and-mental-health

Oster, E. (2022, January 5). Colleges need to catch up to the post-vaccine reality. *The Atlantic*. https://www.theatlantic.com/ideas/archive/2022/01/university-covid-policies-remote-learning-mental-health/621159/

Richardson, J. T. E. (2015). Academic attainment in students with mental health difficulties in distance education. *International Journal of Mental Health, 44*(3), 231-240. https://doi.org/10.1080/00207411.2015.1035084

Samji, H., Dove, N., Ames, M., Barbic, S., Sones, M., & Leadbeater B. (2021). *Impacts of the COVID-19 pandemic on the health and well-being of young adults in British Columbia.* British Columbia Centre for Disease Control: COVID-19 Young Adult Task Force. http://www.bccdc.ca/Health-Professionals-Site/Documents/COVID-Impacts/BCCDC_COVID-19_Young_Adult_Health_Well-being_Report.pdf

Scheer, S. B., & Lockee, B. B. (2003). Addressing the wellness needs of online distance learners. *Open Learning, 18*(2), 177-196. https://doi.org/10.1080/02680510307409

Shin, N. (2003). Transactional presence as a critical predictor of success in distance learning. *Distance Education, 24*(1), 69-86. https://doi.org/10.1080/01587910303048

Thompson, J. J., & Porto, S. C. (2014). Supporting wellness in adult online education. *Open Praxis, 6*(1), 17-28. https://search.informit.org/doi/epdf/10.3316/informit.935869430554557

Waterhouse, P., Samra, R., & Lucassen, M. (2020). Mental distress and its relationship to distance education students' work and family roles. *Distance Education, 41*(4), 540-558. https://doi.org/10.1080/01587919.2020.1821606