



Exploring academic integrity and mental health during COVID-19: Rapid review

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Abstract

Purpose: The goal of this study was to understand the relationship between academic integrity and students' mental health during the COVID-19 crisis.

Methods: We employed a rapid review method to identify relevant data sources using our university library search tool, which offers access to 1026 individual databases. We searched for sources relating to the concepts of (a) COVID-19 crisis; (b) academic integrity; and (c) mental health. We delimited our search to sources published between 01 January and 15 May 2020.

Results: Our search resulted in a preliminary data set of sources ($N=60$). Further screening resulted in a total nine ($n=9$) sources, which were reviewed in detail. Data showed an amplification of students' anxiety and stress during the pandemic, especially for matters relating to academic integrity. E-proctoring of examinations emerged as point of particular concern, as there were early indications in the literature that such services have proliferated rapidly during the crisis, with little known about the possible impact of electronic remote proctoring on students' well-being.

Implications: Recommendations are made for further research to better understand the impact of e-proctoring of remote examinations on students' mental health, as well as the connections between academic integrity and student well-being in general.

Keywords: academic integrity, mental health, rapid review, COVID-19, e-proctoring

JEL Classification: I21, I28

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1 INTRODUCTION

Academic integrity is a broad term used to address issues relating to student academic (mis)conduct, mainly in secondary and tertiary education. The term was popularized by the late Donald (Don) McCabe, whose large-scale survey research through the late twentieth and early twenty-first century resulted in academic integrity emerging as a field of research, as well as educational administration and policy (McCabe, 1992, 2016; McCabe, Butterfield, & Treviño, 2012). McCabe framed his work around a values-based approach to academic integrity, focusing on courage, fairness, honesty, respect, responsibility and trust (International Center for Academic Integrity, 2014). He advocated for a pro-active approach that focused on

upholding and enacting the values of integrity, rather than focusing only on academic misconduct behaviour such as cheating and plagiarism, and other cheating behaviours, such as contract cheating (Clarke & Lancaster, 2006)

There has been ample research on how and why students engage in cheating. One indicator that has consistently been highlighted in the research is that students can feel high levels of anxiety related to academic integrity, ranging from anxiety over not knowing what is expected of them and fear of doing the wrong thing (Adam, 2016; McCabe, 2016), to stress resulting from poor time management and poor planning skills to complete their work on time (Selemani, Chawinga, & Dube, 2018), to pressure to perform due either to a student's own obsession to achieve high grades or familial expectations that signal that anything less than high



achievement is unacceptable (McCabe, 2016; Selemani, Chawinga, & Dube, 2018). More recently, researchers have begun to pay more explicit attention to the links between academic misconduct and mental health (Tindall & Curtis, 2020), though this remains an underdeveloped area of academic integrity research.

In this paper, we examine the intersection of academic integrity and mental health during the COVID-19 crisis. We situate ourselves within the discipline of educational research, rather than health sciences or psychology. We are educators and make no claims of having medical expertise. Instead, the purpose of our inquiry was to explore the literature that emerged during the pandemic that highlighting any connections between stress, academic integrity and teaching and learning. To our knowledge, no previous research has examined this topic specifically. The research question that guided our rapid review was: What does the available evidence indicate about the relationship, if any, that exists between academic integrity and mental health during the Coronavirus pandemic?

2 THEORETICAL BACKGROUND

Because academic integrity research has been interdisciplinary, a variety of theoretical approaches have been used including the theory of planned behaviour (Harding et al., 2007); literary theory (Sutherland-Smith, 2008); cultural theory (Mahmud, Bretag, & Foltýnek, 2019; Leask, 2006); organizational theory (Bertram Gallant & Drinan, 2006) or critical theory, drawing specifically on power discourses in educational contexts (Adam et al, 2017; Howard, 1995; Sutherland-Smith, 2008). There is no single theoretical approach that dominates academic integrity research. More common has been a conceptual framing approach, which might be a better fit, due to the inherently practical nature of applied ethics in educational contexts.

One conceptual approach proposes that educational integrity research can be framed through a policy, moralistic or educational lens (Adam, 2016; Kaposi, & Dell, 2012). Although moralistic approaches were common in the twentieth century, today scholars advocate against positioning academic integrity in terms of moral binaries or ethical dichotomies and instead favour educational approaches that take a teaching and learning approach (Bertram Gallant, 2008). However, policy continues to play a role as a means to address violations of academic integrity (Bretag, Mahmud, East, et al. 2011).

3 METHOD

We employed a rapid review method for our project, which involves the rapid collection of sources with the goal of synthesizing the breadth of existing evidence on a given topic in quickly (Dobbins, 2017; Hartling et al., 2017). This method is considered to be a modified version of the systematic review method, which uses *“explicit and systematic methods to search for and identify multiple systematic reviews on related research questions in the same topic area for the purpose of extracting and analysing their*

results across important outcomes” (Pollock et al., 2020, n.p.). Rapid reviews are adapted from the systematic review approach for circumstances where timely information is a matter of some urgency. The rapid review method has been employed in previous academic integrity research to identify emerging and critical topics that merit deeper investigation (Eaton & Dressler, 2019; 2020).

We understood that *“available evidence”*, for the purposes of our study, would include media reports and other information found in the public domain. This is due, in part, to the lag in publishing scholarly research. Our intention is for this rapid review paper to inform further data-driven research over time. As such, we focused on publicly available information available during the Coronavirus crisis itself, with media reports and news articles serving as a data sources for our rapid review. The rationale for the inclusion of news items is further addressed in the discussion.

2.1 Search strategy

We delimited our search to sources published between January 1 and May 15, 2020. We classified search terms under three broad categories: (a) COVID-19 crisis; (b) academic integrity; and (c) mental health.

Table 1: Rapid review search terms

Category 1	Category 2	Category 3
COVID-19	academic integrity	mental health
Coronavirus	academic dishonesty	anxiety
	academic misconduct	stress
	exam cheating	
	plagiarism	

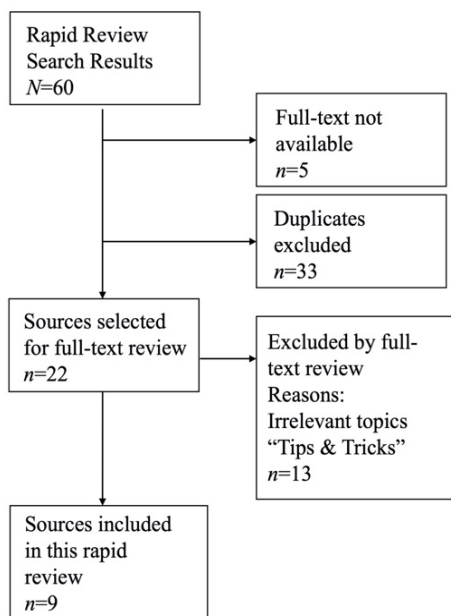
In order to be included in our rapid review, a source had to include a minimum of one term from all three categories. Exact matches for search terms were conducted using the Boolean operator *“and”* between category words (e.g., *“COVID-19” AND “academic integrity” AND “mental health”*). We used our university library search tool, which offers access to 1026 individual databases. Unlike Google Scholar, the university database is agnostic in its searches, meaning it does not customize results based on location or previous searches, resulting in less bias and more rigour in the results. We delimited our sources to those published in English.

Citations were retrieved from the university library databases and imported into the reference management software Endnote (v. 9). Full-texts of sources, when available, were retrieved and imported into Endnote at the same time. We performed manual cross-checks the bibliographic data of each individual entry to ensure all the relevant details had been imported into Endnote accurately, making corrections and additions as needed to ensure records were as complete as possible.

4 RESULTS AND ANALYSIS

Our search resulted in a total of sixty sources (N=60). Of these, thirty-three were duplicates. Among the remaining twenty-seven, full texts were not available for five, leaving us with twenty-two sources to review. We classified thirteen of these as being on topics not related to education or being too superficial in nature to be included (e.g. “tips and tricks”). That left us with a total of nine sources, which we critically appraised (see Figure 1).

Figure 1: Flow diagram of rapid review selection criteria



4.1 Critical Appraisal

Our initial review of sources showed that many of them were journalistic in nature (n=7). For that reason, we selected the Joanna Briggs Institute (JBI) Critical appraisal tool for text and opinion papers as the instrument to evaluate our sources (Joanna Briggs Institute, 2019). Because the JBI tools are intended for systematic, rather than rapid reviews, and are designed principally for use in health-related fields, we used a modified version of the JBI tool for our rapid review, which had an educational focus. (See Table 2).

Two of the sources (González-González et al, 2020; Williamson, B., 2020) were scholarly in nature. Of these, only one was empirical research (González-González et al, 2020). Upon closer inspection of the article, we noted that it was received by the journal on 16 March 2020 and published on 24 April, meaning that the life cycle of the article from submission to publication occurred during the Coronavirus crisis. The topic of the article was on electronic proctoring (e-proctoring), also called online proctoring (Harwell, 2020) of remote exams. The topics of e-proctoring specifically or examinations generally, as they related to mental health, anxiety and stress were also addressed in seven additional sources (Erickson, 2020; Harwell, 2020; Kim, 2020; MacNamee, & Fogarty, 2020; May, 2020; Strauss, 2020a, 2020b).

Table 2: Critical appraisal overview using modified JBI approach for text/opinion sources

Author(s)	Type of evidence	Source	Logic evident	Audience
Harwell, D. (2020)	Newspaper article	Washington Post (USA)	Yes	Public
Erickson, A. (2020)	Newspaper article	TCA Regional News (USA)	Yes	Public
González-González, C., Infante-Moro, A., & Infante-Moro, J. (2020)	Journal Article	Sustainability (Switzerland)	Yes	Academic
Kim, Y. (2020)	Newspaper article	TCA Regional News (USA)	Yes	Public
MacNamee, D., & Fogarty, S. (2020)	Newspaper article	UWire (Ireland)	Yes	Public
May, C. (2020)	Newspaper article	TCA Regional News (USA)	Yes	Public
Strauss, V. (2020a)	Newspaper article	Washington Post (USA)	Yes	Public
Strauss, V. (2020b)	Newspaper article	Washington Post (USA)	Yes	Public
Williamson, B., Bayne, S., & Shay, S. (2020)	Scholarly Editorial	Teaching in Higher Education (Routledge)	Yes	Academic

E-proctoring involves the systematic remote visual (and sometimes auditory) monitoring of students in real time using web cameras to conduct of students as they take their examinations (González-González et al, 2020). Such services are often offered by third party vendors (González-González et al, 2020). Invigilation can either occur live, with another person watching via web cam from a different location, or by an artificial intelligence using facial recognition and eye-tracking software (Harwell, 2020). Students might be taking their examinations in one country, such as the United States, while live proctors watch in real time from off-shore locations such as India, Jamaica, Panama, and the Philippines (Harwell, 2020). The vendor collects data such as “test-takers' browsing history, searches and online interactions with a group of website analytics providers” (Harwell, 2020, n.p.) Certain behaviours, such as looking off screen for more than a few seconds, leaving the room or having another person enter the camera frame can trigger alerts indicating possible breaches of academic integrity (Harwell, 2020). This has been highlighted as being concerning to students, as they worry even innocent actions might cause them to fail, adding anxiety to an already stressful situation.

Students’ reactions while being e-proctored included being uncomfortable with the practice (Harwell, 2020; Kim, 2020); anger (Harwell, 2020); anxiety (Strauss, 2020b), crying (Harwell, 2020), nausea (Harwell, 2020), stress (MacNamee & Fogarty, 2020; Strauss 2020a), and vomiting into wastepaper bins on camera during the exam because they were not permitted to leave the room during the exam (Harwell, 2020). The financial stress of having to buy computers or web cams in order for e-proctoring to take place emerged as a secondary issue that might possibly be related to elevated levels of anxiety (Strauss, 2020a, 2020b), though the link between mental health and financial stress due to e-

proctoring services was not strongly established in this rapid review.

Finally, questions for students with disabilities requiring academic accommodations was noted (Strauss 2020a). The link between mental health and increased stress for students with disabilities was noted as a possible issue for future study, though it was noted that students with underlying health conditions might be disproportionately affected by the COVID-19 pandemic (Strauss, 2020a, b).

5 DISCUSSION

A number of items merit deeper exploration, with the most prominent being the possible links between e-proctoring and mental health concerns for students, as well as the role journalism plays in acting as an early alert system for academic integrity research topics

5.1 The link between e-proctoring and mental health

We note that none of the eight sources that specifically addressed the topic of student mental health with remote exams and e-proctoring included empirical data, we speculate that the reason this could be because empirical studies have yet to be conducted on this subject. The fact that eight of nine sources mentioned exams and/or online proctoring as a point of concern is noteworthy, pointing to an urgent need to rigorously explore what relationship, if any, exists between e-proctoring services and students' mental health. The proliferation of e-proctoring services has escalated rapidly on a worldwide scale during the COVID-19 crisis, with little empirical evidence about what impact such services, and in particular, the phenomenon of remote surveillance under testing conditions, might be having on students emotional or physical well-being.

We acknowledge that stress during examinations is normal, but it seems there may be emerging evidence that e-proctoring exacerbates stress levels far beyond what might be normally experienced during a face-to-face exam. It is not known to what extent the stress from e-proctoring or taking exams during the coronavirus crisis might differ from stress under normal examination conditions, though available evidence points to the need for deeper investigation to better understand the impacts of e-proctoring on students' mental health. Another point that is not addressed in the literature we reviewed is the contextual factor of the student-teacher connection. It has been established in the literature that academic misconduct is less likely to occur when students believe their instructors care about them (McCabe, 1992,1993). It is not known what effect outsourcing examination invigilation to a third party, effectively removing it as an instructional responsibility, could have on students' perceptions that their instructors care about them. Many questions remain about the effect of e-proctoring services on students' well-being.

5.2 Concerns about privacy and data collection and storage

We noted that data collection and storage, as well as privacy infringement were mentioned in multiple sources (González-González et al., 2020; Harwell, 2020; Strauss 2020b; Williamson, Bayne, & Shay, (2020). In addition to the

sources identified through our rapid review, we note that the topic of e-proctoring of examinations has been prevalent in the news in 2020, with more than one reporter alluding to Orwellian-type surveillance of students (Flaherty, 2020; Hubler, 2020). The links between privacy infringement of e-proctoring and mental health were not directly established in this rapid review but could point to a possible area for future research.

5.3 Considerations for the commodification of higher education through academic integrity products and services

On a broader level, the proliferation not only of surveillance, but of surveillance capitalism (Williamson et al., 2020, Zuboff, 2019), the gathering of human data for profit (Zuboff, 2019), in educational contexts was an underlying theme in some sources. In one source we reviewed, a particular company reportedly estimated their business would increase by four to five times in 2020 alone (Harwell, 2020), resulting in what was noted to be "explosive growth" (Harwell, 2020, n.p.) of the industry. The size of the online proctoring industry remains unknown, though one industry report projected that it could be up to \$10 Billion USD by 2026 (Learning Light, 2019).

The full impact of surveillance in educational contexts is not yet known. However, we might look to the case of text-matching software (TMS) (also known as plagiarism detection software) for clues. TMS began to proliferate at the turn of the millennium (Groark, Oblinger & Choa, 2001). Its use has been contested on the grounds that the products may not always work as marketed and start with an assumption of student guilt (Howard, 2013; Williams, 2007), and may serve to propagate outdated moralistic approaches that modern scholars and advocates advise against.

Others have pointed out that such services may infringe upon students' intellectual property rights (Foster, 2002). The infringement upon intellectual property rights became the central issue in a legal case in Canada when a student, Jesse Rosenfeld, took McGill University to court over the use of Turnitin, objecting to the university's requirement that his academic work be scanned by the product. The courts found in favour of the student (Charbonneau, 2004; Strawczynski, 2004) and the university dropped their license for the product following the lawsuit. Although the use of text-matching software has become ubiquitous in other countries, its use in Canada remains much more limited as a result, in part, of the legal precedent that was set by this case. This example demonstrates how cases of students' rights with regards to the use of academic integrity products and might ultimately be overlooked unless students themselves take the issue outside of the university to the courts. If the court finds in favour of the student it might change the trajectory of how academic integrity products are implemented in a particular jurisdiction.

5.4 Journalism as an early alert in academic integrity research areas

We anticipated that some of the available evidence at this point would be through media stories, rather than scholarly ones. Typically, in a rapid review, news items might be eliminated, as they are not scientific in nature. However, in the field of academic integrity, news stories have previously

not only preceded deeper research into a topic but have prompted it. One example is the issue of contract cheating. The practice of commercial academic outsourcing can be traced back to at least the 1970s when the first lawsuits were launched against term paper mills in the United States (McCormick & Whaley, 2014). The term “contract cheating” was first coined in 2006 as an umbrella term to describe all types of academic outsourcing, including computer coding assignments, for example (Clarke & Lancaster, 2006). Journalists media uncovered large-scale online contract cheating among thousands of students in Australia, facilitated by a company called MyMaster (McNeilage & Visentin, 2014; Visentin, 2015). The scale of the problem was reported extensively in the media. Subsequent to the awareness raised by the press, the topic of contract cheating became an issue of national concern, leading to the development of a research agenda in that country that has resulted in a robust body of published research. Numerous studies received funded by the Australian government, as evidenced in the authors’ acknowledgements in their publications (Bretag, Harper, Burton, Ellis, et al. 2019a, 2019b; Ellis, van Haeringen, Harper, Bretag, 2019; Harper, Bretag, & Rundle; 2020). Similarly in the UK, it was after contract cheating was identified by the press as occurring among tens of thousands of students there (Dean, 2016; Mostrous & Kenber, 2016), with journalists estimating the size of the industry to be worth around £100 Million at the time (Dean, 2016), that policy makers began paying closer attention. This led to the involvement of the national Quality Assurance Agency (QAA), which has gone on to raise awareness, provide support to educators and provide guidance to the government on the topic (QAA, 2016; 2017). We are not suggesting that researchers take their cues from journalists, but rather that researchers be attentive to concerns identified by the press that might indicate the need for rigorous scholarly inquiry to better understand underlying complexities from a scientific perspective.

Receiving government funding not only supports research, it legitimizes it and this has certainly been the case with academic integrity research (Eaton & Edino, 2018). Similarly, when national quality assurance bodies become involved, the topic gains further credibility and attention on a larger scale. Academic integrity remains an underdeveloped area of educational research when compared with other topics, such as assessment (Macfarlane, Zhang, & Pun, 2014). If that is so, then the links between student mental health and academic integrity remain even less developed. Although the links between stress and academic misconduct has been acknowledged in previous research (Blum, 2016; Leask, 2006; Paterson, Taylor, & Usick, 2003), rarely has the relationship between mental health an academic integrity been a primary focus of study, with few exceptions (see Tindall & Curtis, 2020).

There is an urgent need to better understand the connections between students’ well-being and academic integrity, particularly in relation to commercial academic integrity products and services that are being licensed for use with tens of millions of students worldwide. We ought to be particularly concerned about the use of surveillance technology in educational contexts.

5.5 Limitations

The amount of time available to conduct a rapid review impacts the extent to which a comprehensive search for all available evidence is possible (Dobbin, 2017). This rapid review was conducted between May 5 and May 24, 2020 and prepared specifically for this special issue. Although we have made every effort to ensure a thorough and rigorous review, we acknowledge that our search results are not exhaustive. We noted that even after we concluded our collection of sources, news stories about academic misconduct and mental health during the coronavirus crisis, and e-proctoring in particular, continued to emerge (see for example, Chrysanthos, 2020). As such, we offer our results not as conclusive, but rather as a point of departure for discussion and future research.

An additional limitation of our study was that it was conducted in English. We acknowledge the relevance and importance of diverse perspectives on a given topic in a variety of languages. We call upon educational research colleagues in diverse language contexts to expand on our research to better understand how or if evidence might differ in other regions.

5 CONCLUSION

Our rapid review of literature linking mental health, academic integrity and the coronavirus crisis has surfaced the topic of e-proctoring as an area about which little is known in terms of its impact not only on students integrity, but also on their well-being. We conclude with a call to action for researchers with expertise in mental health and educational ethics to undertake collaborative research to better understand the impact of e-proctoring on students. More broadly, we urge educators, administrators and health care professionals to examine broader issues relating to mental health and academic integrity, as the connections have yet to be fully explored and understood. Finally, the impact on students’ overall well-being of attempting to complete their studies during a global pandemic will not be known for some time yet, but it is a subject of utmost importance, particularly in terms of long-term effects that may affect students even after they have completed their studies.

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