Designing and Implementing an Online Academic Integrity Tutorial: Identifying the Challenges within a Post-secondary Context

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ABSTRACT: In addition to institutional policies and procedures, many post-secondary institutions offer various supports and resources to support students' knowledge and enactment of academic integrity. In this study, we drew upon the literature and current practice to develop and implement an online academic integrity tutorial. This tutorial was customized to support undergraduate and graduate students enrolled in online and blended programs in a faculty of education at a Canadian University. We share the preliminary findings in this article and consider recommendations for future research and supporting students to learn about academic integrity generally.

Keywords: Academic integrity, Design-based research, higher education, Canada, online learning, blended learning

RÉSUMÉ: En plus des politiques et procédures institutionnelles, de nombreux établissements d'enseignement postsecondaire offrent divers supports et ressources pour aider les étudiants à acquérir des connaissances et à promouvoir l'intégrité académique. Dans cette étude, basé sur la littérature et les pratiques actuelles, nous avons développé et mis en œuvre un tutoriel en ligne sur l'intégrité académique. Ce tutoriel a été personnalisé afin d'appuyer les étudiants de premier cycle et des cycles supérieurs inscrits à des programmes en ligne et hybride dans une faculté d'éducation d'une université canadienne. Dans cet article, nous partageons nos résultats préliminaires et faisons des recommandations pour des recherches futures afin d'aider les étudiants à se renseigner sur l'intégrité académique en général.

Mots-clés: intégrité académique, recherche basée sur le design, enseignement supérieur, Canada, apprentissage en ligne, apprentissage mixte

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Introduction

Canadian and international institutions have begun to acknowledge that academic dishonesty is a serious concern in higher education (Altbach, 2015; Eaton & Edino, 2018). A large percentage of students are now likely to cheat during their schooling (Carpenter, Harding, Finelli, Montgomery, & Passow, 2006). For instance, studies have found upwards of 80% of students self-report cheating during high school or post-secondary (Oran, Can, Seno, & Hadimli, 2015). At the same time as academic misconduct is increasing, changes in technology have made it more difficult to catch students cheating and are making opportunities to cheat more accessible (Hollis, 2018).

As a field of research, academic integrity is emergent, having yet to reach the same maturity as other fields of educational research such as assessment (Eaton & Edino, 2018; Macfarlane & Zhang, 2014). To address problems of academic misconduct, post-secondary institutions have tried to implement a number of detection strategies such as using plagiarism software (e.g., TurnitIn) and proctoring tools (e.g., biometrics). They have also created institutional policies that define misconduct and guide case management. More recently, institutional discussions on academic misconduct have evolved from focussing strictly on detection and imposing punitive consequences to a focus on education and prevention. A growing body of literature advocates for moving from morally judgemental and punitive approaches to a more supportive educational approach that helps students learn with integrity (Bertram Gallant, 2008; Moore Howard, 2016). Institutions are seeing the value of including learning supports for both students and educators around what academic integrity is and methods for preventing it before it happens (Busch & Bilgin, 2014). This includes developing a culture of academic integrity in which both students and educators have an understanding of expectations and processes involved (Bertram Gallant, 2008). They have recognized that many cases of misconduct derive from a lack

of student knowledge about how to prevent academic dishonestly or do not understand the seriousness of the cheating (Barnhardt & Ginns, 2016; Greenberger, Holbeck, Steele, & Dyer, 2016).

The purpose of this article is to share what we have learned in terms implementing an online academic integrity tutorial. In our work, we drew from the literature and current practice to create a tutorial customized to support students engaged in online and blended learning environment. The tutorial aimed to fill a gap at our institution for students in online and blended education programs who had limited access to university-wide supports on academic integrity. The article presents a discussion on the challenges with implementing and evaluating this type of tutorial.

Academic Integrity Prevention

Many institutions now fund student education supports on academic integrity including workshops, tutorials and online resources. However, there is inconsistency in how they are offered to students, (Miron, Eaton, & McBrearity, 2019; Miron, Eaton, Nearing, & Stoesz, 2019). Some institutions have campus-wide tutorials that are available to all students (e.g., University of York, n.d.). Others choose to house tutorials within individual faculties and/or to embed them within courses (Henslee, Murray, Olbricht, Ludlow, Hays, & Nelson, 2017). Furthermore, the majority of tutorial focus on plagiarism, which is only one component of academic integrity (Gunnarsson, Kulesza, & Pattersson, 2014; Lui, Lo, & Wang, 2013).

Online tutorials are an attractive way to provide education on academic integrity because of the flexibility and accessibility of the learning platform. An online tutorial provide learners, especially at a distance, with access to a resource that would otherwise be on-campus and unavailable unless students travelled to campus. Learning management systems (LMS), such as Canvas and Desire2Learn, allow users to interact with material online (e.g., Curtis, Gouldthorp, Thomas, O'Brien, & Correia, 2013). Users can log into the system and move through the context at their leisure. The online environment in the LMS offers multiple interactive features including discussion boards, chat rooms, email, and grade centers.

Several online tutorials using LMS or web-based instruction have been developed for students (e.g., Lowe, Londino-Smolar, Wendeln, & Sturek, 2018). Stoesz and

understanding of, and attitudes toward academic integrity, improved through completion of the online tutorial?

Method

Academic Context

Tutorial design. We used a design-based research (DBR) methodology to create an online tutorial for academic integrity for students enrolled in blended and online programs. The goal of DBR is to "improve educational practices through iterative analysis, design, development, and implementation, based on collaboration among researchers and practitioners in real-world settings, and leading to contextually-sensitive design principles and theories" (Wang & Hannafin, 2005, p. 6–7). DBR involves the creation of an innovation (e.g., an academic integrity tutorial) as a solution to an identified real-world problem and then to study this solution in action. DBR has "with the intent of producing new theories, artifacts, and practices that account for and potentially impact learning and teaching in naturalistic settings" (Barab & Squire, 2004, p. 2).

There are various ways of conducting DBR in education. For our study, we followed McKenney and Reeves' (2012) three phase design model for conducting DBR: 1) analysis and exploration; 2) design and construction; and 3) evaluation and reflection. Before designing the tutorial, there was a review of the literature on academic tutorials resources that other institutions had on their websites, as well as a scan of existing resources at the University of Calgary. Consultation occurred with various academic staff across campus involved in creating materials and supporting academic integrity initiatives within different faculties and with student services. We consulted with a group of academics at another Canadian university who shared their learnings with us about designing academic integrity tutorials for students. This mentorship proved useful as we designed of our online tutorial.

After reviewing a number of other tutorials that had been developed both on our campus and elsewhere, we generated broad categories for the tutorial content. A mock-up of the major themes was shared with members a campus-wide Academic Integrity Committee, a group of academics who are responsible for supporting practices within their faculties. This consultation helped to affirm the design

Yudintseva (2018) reviewed published articles that used tutorials to promote academic integrity and found eight studies that used e-learning tutorials. Much of the literature focused on teaching students about plagiarism and university academic misconduct policies. In general, the interventions improved understanding plagiarism and reduced the likelihood that students would plagiarize (Stoesz & Yudintseva, 2018). Despite the positive findings on web-based tutorials, there remains limited empirical evidence about the effectiveness of these academic integrity tutorials (Kier, 2019; Marusic, Wager, Utrobicic, Rothstein, & Sambunjak, 2016) and there are several limitations of the studies including small sample sizes leading to low statistical power (e.g., Henslee et al., 2017; Liu et al., 2013).

This Study

The University of Calgary is a large university located in western Canada. The institution has established academic integrity policies at the institutional level, but support for both students and faculty members has been less systematic until recently. A scan of resources and supports available across the campus found that there were various approaches being used within individual faculties (e.g., slide decks, online resources, and faculty-specific tutorials). In addition, students could access university-wide workshops offered by student services, which provides a variety of supports for students who have engaged in academic misconduct.

At the time of this study, the Werklund School of Education had not developed student resources on academic integrity. The School is one of a small group of faculties on campus that had expanded its programs by offering single courses and entire programs online. This move toward online courses has made post-secondary education more assessible and flexible to the community and currently makes up a large proportion of its graduate enrolment, with over 900 students enrolled in online and blended programs. We identified a particular need for an online tutorial to support online and blended students in developing their understanding and practices with academic integrity. In response to this service gap, the goal of our study was to improve equity and access to academic integrity support for our online and blended students. After developing an online tutorial on academic integrity, we evaluated students' change in knowledge and attitudes about academic integrity with pre- and post-tutorial surveys. Specifically, we asked, how is students'

before members of the team began writing content for each of the modules.

The tutorial was divided into the following four sections: (a) the importance of academic integrity, (b) types of academic misconduct, (c) prevention, and (d) reflecting on integrity. Each module within the sections followed a similar format. The section on types of academic misconduct was divided into five modules covering plagiarism, self-plagiarism, cheating, collusion, and contract cheating. The prevention section was divided into four modules covering self-regulated learning, developing skills, understanding assignments, and protecting your work. Each module began with an overview of the topic, followed by a video with three graduate students engaged in conversation of the topic, an interactive component (e.g., test your knowledge survey question, writing activity), and a list of references and resources.

The first draft of the tutorial was reviewed by the second author who suggested changes in terms of the formatting, content, and wording of the modules. A second draft was reviewed by a research assistant and final edits were made based on the feedback.

Participants

Graduate students (N = 987) enrolled in education programs were invited to voluntarily participate in the tutorial through the following seven strategies: (a) verbal invitations at graduate student orientations; (b) notices in e-newsletters for graduate students; (c) bookmarks with tutorial registration information distributed at graduate student orientations and events; (d) academic staff members sharing information about the tutorial in classes; (e) an article about the project in the university-wide daily e-newsletter distributed across campus; (f) an invitation shared with the graduate students' association in education, who then sent it on to their members; and (g) a web page with information about the project posted on the faculty's office of teaching and learning website.

Despite these robust attempts to recruit participants, between June and September, 2018, only 12 graduate students (0.1%) volunteered to take the tutorial with 3 consenting to participate in data collection and 1 person agreeing to be interviewed. This prompted further action. We obtained permission to make the Academic Tutorial accessible on the landing page for all graduate courses in the

University's LMS, Desire2Learn. As a result, by February 19, 2019, 21 individuals consented to participate in the study and completed the pre-survey, with 8 of those also completing the post-survey.

Data Collection Procedure

Students completed a survey before and after completing the online academic integrity tutorial. They were sent an email inviting them to participate in the tutorial. On the front page of the D2L course, they were invited to participate in the research. Participation was voluntary and if they did not consent, they could still complete the tutorial. Students consented to participate by clicking on a link, which took them to an online survey. A second link to the post-tutorial survey was located in the final module of the tutorial.

The survey assessed participants' understanding of academic integrity and measured changes to knowledge and attitudes. The questions on attitudes were adapted from Etter, Cramer, and Finn (2006) and Christensen Hughes and McCabe (2006). Participants were also asked to report on their awareness of policies on academic misconduct at the University, to identify where they learned about them, and rate their confidence in their knowledge of the policies on a Likert scale from 1 (a little) to 4 (a great deal). They were then asked to rate their confidence (out of 10) in their ability to identify why academic integrity is important, their ability to avoid a number of places where academic misconduct can occur from 1 (very little confidence) to 4 (quite a lot of confidence). Next, they were asked to identify how often, in the past year, they had engaged in behaviours related to academic misconduct, ranging from 1 (never) to 3 (more than once) and to rate the seriousness of the behaviour, ranging from 1 (not cheating) to 4 (serious cheating). Finally, in the fourth section of the tutorial, participants were invited to reflect on what they had learned in the tutorial and what integrity had come to mean to them. For this purpose of this article, we are not sharing findings from this data source.

Results

The following provides descriptive data on the eight participants who completed the pre- and post-survey. The respondents were evenly distributed between years one to three of their graduate program. Half the respondents were between the ages of 41 to 50 with the remaining between the ages of 20 to 40. All respondents were female.

At pre-test, seven respondents were aware of the academic misconduct policies of the University but three respondents rated their degree of knowledge about institutional academic misconduct policies as "a little" to "some." After completing the tutorial, 3 out of 7 respondents reported knowing "a good deal" or "a great deal." Lastly, at post-test all respondents had "quite a lot of confidence" in their ability to identify why academic integrity is important compared to half the respondents at pretest.

When asked how often they had engaged in a list of behaviours related to academic misconduct in the past year, respondents reported never having engaged in the behaviour or the behaviour was not relevant for the program for the majority of behaviours. There were exceptions. One respondent reported having engaged in the following behaviours once: a) looked up answers on the internet while completing an exam, b) shared questions on an exam just completed, c) changed a few lines of a paper that was written for one class and submitted the new paper for a different class, d) submitted or copied homework assignments from a previous term, and e) cited references for a paper for which only the abstract was read.

One respondent reported having engaged in the following behaviours more than once. This person wrote a summary based on an online abstract of a journal article rather than reading the article and read a summary of a review of a book rather than reading the full-length version. Two respondents reported more than once citing references for a paper for which only the abstract was read and reading a summary of a review of a book rather than reading the full-length version.

When asked in the pre-test how serious the behaviours were, respondents considered most behaviours were either "moderate" or "serious" cheating. For the following behaviours, one respondent considered the behaviour "trivial": shared questions on an exam just completed, worked in groups on a take-home exam and falsely claimed to have attached an assignment to an email or submitting it in D2L to have extra time to complete the assignment. One respondent did not believe it was cheating to use an online translation tool as a way to paraphrase information from a reference.

When considering the seriousness of writing a summary based on an online abstract of a journal article rather than

reading the article itself, one respondent considered it "trivial" and one respondents believed it was not cheating. Less agreement was found on the perception of citing references for a paper for which only the abstract was read. For that behaviour, three students believed it to not be cheating. Another two respondents believed it was not cheating to read a summary of a review of a book rather than reading the full-length version. Four believed it to be "trivial" cheating.

With the post-test, all respondents saw the list of behaviour associated with academic misconduct as "moderate" or "serious cheating" with the exception of one. When asked about the seriousness of using an online translation tool as a way to paraphrase information from a reference, one respondent believed it to be "trivial." They were also asked to indicate how likely they would be to engage in the behaviours. Respondents indicated they were "not at all likely" for most of the behaviours. Exceptions included a) share questions on an exam just completed, b) citing references for a paper for which only the abstract was read, and c) read a summary of a review of a book rather than reading the full-length version, for which one respondent indicated he/she was "somewhat likely" to engage in the behaviour.

Students noted that instructors were inconsistent in discussing academic integrity topics such as plagiarism, guidelines on group work and collaboration, and citations. They reported seeing behaviours related to academic dishonesty (e.g., use of crib notes during an exam) just as being as serious on both the pre- and post-survey. After taking the tutorial, all participants rated their degree of knowledge as "high" with 5 out of 7 rating it "very high" (see Table 1). The majority were "confident" or "very confident" they could avoid cheating behaviours. They saw value in understanding assignment requires, protecting their work, and avoiding collusion. From the comments about the tutorial, participants (n = 4) reported an increase in skill development (e.g., APA, paraphrasing). One participant expressed concern that the tutorial may teach students more ways to cheat. Though this is a small number of respondents, we see these results as promising in terms of increasing students' knowledge about academic integrity and confidence with related concepts.

Table 1.
Confidence rating by students (N = 8).

How confident are you in your ability to :	1 Very little Confidence		2 A little Confidence		3 Some Confidence		4 Quite a lot of Confidence	
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
Identify why AI is important	1	-	-	-	3	2	4	5*
Avoid plagisrism	-	-	1	-	3	3	4	5
Avoid self-plagiarism	2	1	-	-	2	-	4	7
Avoid collusion	-	-	2	1	2	1	4	6
Avoid contract cheating	-	1	2	-	3	-	3	7
Avoid other types of cheating	-	-	1	-	3	-	4	8

*Note. One participant response is missing

Discussion

From our preliminary findings, the design of the academic integrity tutorial received positive feedback from colleagues who saw a need for such a resource. Despite support from colleagues with participant recruitment, we encountered significant challenges with voluntary student uptake and completion of the tutorial. Not only did a small number of students choose to enrol in the tutorial, but of those who enrolled, many did not complete it. This suggests that although some students saw the relevance of the tutorial and intended to learn more about academic integrity, ultimately, they abandoned the learning process part way through.

Although the small response rate is a limitation of the study, the responses suggest that students had a good understanding of academic integrity before starting the tutorial and understood its importance. They were unlikely to engage in activities that would lead to misconduct and saw

most activities as cheating. Post-tutorial, fewer participants rated fewer behaviours as not cheating but continued to see some behaviours as trivial cheating and indicated they were likely to continue to engage in them. This finding suggests that the tutorial had some influence on student attitudes but should consider spending more time on areas of academic integrity that are less clear than areas students already understand.

The problem of student participation and completion of tutorials is not unique to this study. Stoesz and Yudintseva (2018) identified small sample sizes in the extant literature as a limitation of the research. When such a tutorial is self-paced, it may not be used to its fullest potential. Indeed, studies with the best participation rates made tutorials mandatory by including them into existing courses (Henslee et al., 2017). The obvious benefit to this that students are more likely to complete the tutorial because a grade is associated with the task. One drawback is that the assignments need to take a reasonable amount of time to complete so an extensive tutorial content on academic integrity become prohibitive as part of a course.

This tension between a voluntary and mandatory tutorial has occurred within our project. Making the tutorial mandatory involves full agreement of various stakeholders, including mid- to senior administrators. As we began to reflect upon the lack of data that we were able to gather and the lack of participation in this voluntary tutorial, we considered where and when the tutorial could be situated within a program. For example, we questioned whether it might be more effective to complete the tutorial before starting a program or have it situated within a course. If set before a program, this would give students an opportunity to develop an understanding of academic integrity before becoming to busy with the course work. Students would have time to learn and reflect on the various components. If taught within a course, time would be allocated to working through the tutorial. Having an instructor available in the course to speak to questions and the application to practice. We also wondered if the tutorial was offered various times during a student's program, if it would make a difference in how they engaged in using the tutorial. Also, we questioned if the results would have differed had the tutorial been mandatory. As already highlighted, these questions have been pondered by others, without a clear resolution (Miron et al., 2019a).

We have also considered that support for academic integrity requires ongoing commitment of time, resources and expertise from a variety of stakeholders across campus (Tertiary Education Quality and Standards Agency, 2017). A one-off learning opportunity or providing a resource (e.g., website) is not enough. Rather, students need access to various resources to support their understanding, as well as in developing their knowledge and skills to be able to apply academic integrity in their practice. Dedicated time within a program to educate and inform students is important. Various stakeholders (e.g., instructors, administrators) need to take ownership in how they can contribute to creating and supporting environment that helps students model effective academic integrity practice.

As we considered our results and the limitations of the study as we originally designed it, we began to contemplate how to understand the impact of this work more broadly. Even though participation in the tutorial remains voluntary, we are working to develop a culture of educating students, administrative staff and academic colleagues about academic integrity through the online tutorial. In addition, we have leveraged the tutorial to create opportunities for discussing the importance of academic integrity with staff, academic staff, and students. In doing so, we have emphasized the need for explicit instruction about citing, referencing, and learning with integrity. We have taken opportunities to engage in dialogue with various members of our campus community. In doing so, we are elevating the overall awareness about academic integrity and the importance of supporting students to learn about it.

As we reflect on what we have experienced in the design, development, and implementation of the online tutorial, we have learned that academic integrity is one of the single most complex aspects of student learning, instruction and administration on our campus. We have moved beyond collecting survey data. We are now engaging in dialogue, advocacy, and knowledge mobilization above and beyond the data we proposed to collect with our initial study design.

Limitations of the Study

Reflecting on the study, we have identified three key limitations. First, the low voluntary enrollment has been problematic in terms of assessing the impact of the online tutorial, as well as gaining insight in terms of the influence

the design of the tutorial has on students' understanding of academic integrity. Careful consideration needs to be given in terms of how to promote the enrollment of all students in the tutorial, as well as fostering participating in the study. Second, the pre- and post-survey instrument needs to be further validated. With greater use of the instrument, further analysis can be conducted to ensure validity and reliability. Third, additional education and engagement with administrative leaders is required to better support the shift toward a preventive rather than a punitive approach to academic integrity. This shift will require leaders to have an understanding of the tutorial and the potential impact so they can advocate and endorse the online tutorial within the faculty.

Conclusion

Our online Academic Tutorial has been evidence-informed in terms of the content and design of the learning environment. We struggled to obtain empirical evidence to determine the extent to which this tutorial impacted students' academic integrity practice. However, we have endeavoured to reconceptualize how we understand the impact of this work, situating it within the larger institutional and learning context of our School of Education. We will continue with our efforts to collect data for this project. Increasingly, we recognize that it may be impossible to prove cause and effect. Perhaps it may be wiser to consider how to cultivate a culture of integrity, an endeavour that almost certainly defies measurement.

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