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Examining the Use of Twitter in Online Classes: Can Twitter Improve Interaction and Engagement?

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Abstract

Student engagement promotes communication and knowledge acquisition, a concept that is challenged in the online environment as few opportunities exist to physically connect instructors and learners. Limited research suggests that social media is a tool that can positively impact student engagement in the online classroom, which is especially relevant in the case of the COVID-19 pandemic and learning formats transitioning online. Specifically, Twitter, a favoured format for sharing news, entertainment, and professional networking, may provide a platform and an opportunity for engagement between students and the instructor outside of the traditional, formal classroom setting. This research explores how postsecondary students enrolled in two introductory online self-directed asynchronous courses used social media tools for personal, professional, and academic purposes and how Twitter, as a course evaluation requirement, contributed to interaction and engagement. Relying on 104 pre- and 34 post-semester surveys, our analysis revealed that while Twitter was not used as widely as other social media platforms, a notable proportion of students shared positive perceptions about Twitter's use. Further analysis revealed some polarizing results with recommendations for successfully implementing Twitter in online learning.

La participation des étudiants et des étudiantes favorise la communication et l'acquisition des connaissances, concept qui est mis au défi dans l'environnement en ligne du fait qu'il existe peu de possibilités de connecter physiquement les enseignants et les enseignantes avec les apprenants et les apprenantes. Des recherches limitées suggèrent que les médias sociaux sont un outil qui peut affecter positivement la participation des étudiants dans les salles de classe en ligne, ce qui est particulièrement pertinent dans le cas de la pandémie de la COVID-19 et des formats d'apprentissage qui sont passés en ligne. En particulier, Twitter, un format privilégié pour partager les nouvelles, les distractions et le réseautage professionnel, pourrait présenter une plate-forme et une occasion de participation entre les étudiants et étudiantes et les instructeurs et instructrices hors du cadre traditionnel formel de la salle de classe. Cette recherche explore comment les étudiants et les étudiantes du niveau post-secondaire inscrits dans deux cours d'introduction en ligne asynchrones auto-dirigés ont utilisé des outils de médias sociaux pour des besoins personnels, professionnels et universitaires et comment Twitter, en tant qu'exigence d'évaluation de cours, a contribué à l'interaction et à la participation. Notre analyse, basée sur 104 sondages pré-semestre et 34 sondages post-semestre, a révélé que, alors que Twitter n'avait pas été utilisé aussi largement que d'autres plates-formes de médias sociaux, une proportion notable d'étudiants et d'étudiantes avaient partagé des perceptions positives à propos de l'utilisation de Twitter. Une analyse supplémentaire a révélé certains résultats polarisants avec des recommandations pour une mise en oeuvre réussie de l'utilisation de Twitter dans l'enseignement et l'apprentissage en ligne.

Keywords

undergraduate student learning, engagement, social media, Twitter, innovation in evaluation; apprentissage des étudiants de premier cycle, participation, médias sociaux, Twitter, innovation en évaluation

Student engagement, a central component in teaching and learning, is critically important for knowledge acquisition and the development of students' communication and networking skills. In an online classroom, however, the physical distance between the instructor and students potentially comprises course engagement and elicits fewer opportunities to connect/engage compared to the traditional classroom. Based on theories of social learning, social presence—the visible level of activity on online social media platforms—can positively impact online learning outcomes and engagement (Bandura, 1977; Dunlap & Lowenthal, 2009; Tu, 2000).

Social media platforms (e.g., microblogging tools) allow users to be both consumers and producers of online knowledge. Twitter is a platform that has been said to “blur the lines” between formal methods of teaching and informal learning spaces (Dunlap & Lowenthal, 2009; Reed, 2013). Informal learning spaces, like social media platforms such as Twitter, allow students to create and personalize their learning experience as they can develop their own interactions and connections, or what are known as virtual learning communities (Dunlap & Lowenthal, 2009; Reed, 2013; Tess, 2013; West et al., 2015). Essentially, Twitter is a platform that provides an opportunity for engagement between students and the instructor outside of the traditional, on-campus in-person classroom setting.

Twitter has been found to improve postsecondary student engagement (Junco et al., 2011), and if implemented correctly, can develop and sustain connections, communication, and engagement between students, instructors, and professionals (Dunlap & Lowenthal, 2009). Although more educators are using social media in the classroom, no overall consensus exists about whether using social media tools promotes or hinders engagement and interaction. The question remains, can the use of Twitter improve/increase interaction, engagement, and connections between peers, students, and professors for online, self-directed courses?

Few empirical studies exist regarding the impact of Twitter in the online self-directed classroom, particularly research that examines students' Twitter use, behaviours/habits, and perceptions of Twitter's usefulness and/or benefits. Our research sought to determine whether integrating Twitter as an engagement and learning tool resulted in perceived improved interaction, engagement, and connections between peers, students, and instructors.

Literature Review

What is Twitter and How Does it Compare to Other Teaching Communication Tools?

Twitter is a free microblogging social media website created in 2006, where users communicate with others via tweets/retweets, hashtags, direct messages, favouriting tweets, and following other accounts (Twitter, 2020). The platform has more than 300 million users and can be found in nearly every country worldwide. Twitter's concise, short-format post limit of 280 characters (formerly 140), known as tweets, is how it earns its classification as a “microblogging” website compared to typical blog-style posts that can easily surpass 1,000 words. Users post on Twitter for social and professional purposes, such as self-documentation and self-expression (e.g., sharing personal photos/videos/stories), information seeking and sharing (e.g., following news stories, searching for employment, conducting business), social interaction (e.g., connecting with family or friends, meeting new people, professional development, or networking), entertainment (e.g., planning or promoting events, keeping up/connecting with celebrities or local/public figures and organizations), and passing time, among other uses. Users also use Twitter for learning and completing school assignments. Data indicate that 50% of Canadian Twitter users are under 35

years of age, and 64% disclosed their main reason for using Twitter was to keep up with trending news stories (Slater, 2018). In Canada, Twitter has the third highest number of users across all social media platforms used (Briggs, 2021).

In the context of teaching and learning, Twitter merges the classroom and social spaces, or formal and informal teaching environments, using “just-in-time” (Dunlap & Lowenthal, 2009), or “24/7” (Chawinga, 2016) means of communication (Reed, 2013). Specifically, Twitter is said to be more instantaneous and interactive than email, discussion posts, or meeting with the instructor (Chawinga, 2016; Dunlap & Lowenthal, 2009; Reed, 2013). Twitter creates new pathways for communication which one can quickly avail of, especially for online self-directed courses which limit (or completely eliminate) the opportunity for students and the instructor to interact. Instantaneous forms of communication, facilitated by social media platforms, supersede discussion forums for communication and engagement; discussion forums are considered to be less accessible and more formal spaces of learning because they are located within a course shell and their sole purpose is educational (Junco et al., 2013). Discussion forums limit interactions to those who are in the class, eliminating the opportunity to network with other students or professionals and prevent engagement beyond educational interactions in these non-social spaces (Thoms & Eryilmaz, 2015).

Factors That Influence the Use of Twitter in the Classroom

Researchers have identified many barriers that influence the implementation of Twitter in the classroom: student/personal resistance to its use (Luo et al., 2017), age (Feliz et al., 2013), distractions (Dunlap & Lowenthal, 2009), hesitation to respond to others’ tweets (Lowe & Laffey, 2011), and issues surrounding the cost, availability, and accessibility of software (Chawinga, 2017; Dunlap & Lowenthal, 2009; Feliz et al., 2013). There are also challenges facilitating engagement, interaction, and communication between students in an online self-directed classroom compared to the traditional classroom generally (Malik, Heyman-Schrum & Johri, 2019). The traditional classroom is, in our research, defined as the on-campus in-person classroom where students are physically in the same location as the instructor. The online classroom in our case refers to courses which are only offered online and do not incorporate digitized lectures. This format is often referred to as an asynchronous or self-directed learning environment, in which the student is provided with all the material at the beginning of the semester and is responsible for completing the course requirements (e.g., readings, assignments) on their own volition.

The on-campus in-person classroom provides the opportunity for face-to-face interaction and engagement between students and the instructor, the chance to ask questions and have them answered immediately, and the ability to connect directly with peers and instructors. Online asynchronous self-directed learning classes (hereby referred to as the online classroom) typically do not offer a prescribed time or space for such engagement, interaction, or communication, which may impact a student's learning outcomes. Incorporating social media, which are inherently created to facilitate communication, interaction and engagement, may mitigate these challenges in the online classroom.

Theoretical Framework

Throughout the literature, social presence is cited as one, if not the most important, factor related to increasing student engagement and success in the online classroom (Reed, 2013; Ricoy & Feliz, 2016; Thoms & Eryilmaz, 2015; Tu, 2000). Social presence is defined as the “consciousness of another person in an interaction and the salience of an interpersonal relationship” (Tu, 2000, p. 27). In short, social presence refers to the level of visibility individuals exhibit on a social media platform through posting their own tweets and interacting/making new connections with others (Dunlap & Lowenthal, 2009). Social presence, when implemented in the online classroom, is said to increase student engagement (Junco et al., 2011).

Such ideas are premised on theories of social/observational learning, in that actions and behaviours are learned and repeated by observing the actions of others; thus, the instructor is to lead by example (Bandura, 1977; Tu, 2000). If the instructor is more active in an online forum such as Twitter, students are more likely to be active as well. This rationale is explained by Dunlap and Lowenthal (2009) who found that students felt the instructor cared more about the course and the students’ success when levels of social presence were higher. To legitimize using Twitter in the online classroom, the instructor should be visible by tweeting regularly and communicating with students, while simultaneously encouraging engagement and collaboration between and with other students (Thoms & Eryilmaz, 2015).

Some students believe social media should not encroach on academia and should instead be limited to personal/social uses (Gettman & Cortijo, 2015; Thoms & Eryilmaz, 2015). Scholars have cited the perception of social media as an exclusively personal platform as a barrier to its successful implementation in a course and a reason for low participation (Ricoy & Feliz, 2016); however, increasing levels of social presence are said to mitigate this concern (Dunlap & Lowenthal, 2009). Social presence is of the utmost importance for online/distance-only courses, where instructor presence is not as evident as on-campus courses (Dunlap & Lowenthal, 2009). When online course instructors are not actively present, their legitimacy decreases, as does the engagement between students and student to instructor (Dunlap & Lowenthal, 2009). This is due to the online classroom not presenting the opportunity for by-chance interactions or socialization that would occur had students physically gathered in a traditional in-person classroom.

Instructors can be socially present on Twitter by posting course-related announcements, assignments or exam information, reminders, relevant articles, tweets or news stories under the course hashtag, and favouriting or retweeting student responses (Goodyear et al., 2014). The more active the instructor is on Twitter, the more likely Twitter is perceived as legitimate by students (Tu, 2000). Favouriting or retweeting student tweets reinforces that they are completing their assignments correctly and that their participation is noticed; it can also encourage participation from other students (Goodyear et al., 2014).

Training on how to use Twitter for both the instructor and the students has also been reported as imperative to its success in the online classroom (Junco et al., 2011, 2013; Mwalimu et al., 2018; Reed, 2013; Tess, 2013; West et al., 2015). This includes providing students with detailed instructions on how to set up a Twitter account, explaining how Twitter works and how they will be evaluated (Rohr et al., 2015), posting model tweets an activity/evaluation, and ensuring students are aware of what is expected from them (West et al., 2015). Further, guidelines for how the class will use Twitter (i.e., Twitter etiquette) and providing explicit examples of the instructor’s expectations (Dunlap & Lowenthal, 2009) are important. Researchers cite providing incentives (i.e., grades) for participation as a primary factor that encourages student participation

on Twitter (Dunlap & Lowenthal, 2009; Liu et al., 2010; West et al., 2015). Chawinga (2017) cites providing incentives for participation as the single most important factor influencing participation, stating students are unlikely to complete extra optional work on top of the course requirements.

Interaction and Engagement

Previously, the concept of engagement referred to the amount of energy, mental and/or physical, that students dedicate to their academic endeavors (Astin, 1984). Today, engagement is the time and effort invested in educational endeavors that produce the desired learning outcome (Junco et al., 2011; Kuh, 2009). Twitter is increasingly being used in the online classroom and has been found to increase engagement between students (Chawinga, 2017; Junco et al., 2011; Rohr et al., 2015), and between students and their instructor (Luo et al., 2017; Rinaldo et al., 2011; Tess, 2013; Thoms & Eryilmaz, 2015). When comparing engagement on Twitter in distance courses versus blended-learning or traditional in-person on-campus classrooms, engagement was found to be higher for distance courses (Chawinga, 2017; Feliz et al., 2013; Junco et al., 2013; Luo et al., 2017; Thoms & Eryilmaz, 2015).

Research has shown that students in blended learning or traditional in-person classrooms reported the in-person classroom affords sufficient opportunity for engagement between students and the instructor, minimizing the need and opportunities for engagement on Twitter (Junco et al., 2011; Thoms & Eryilmaz, 2015). Students in online classes, however, were not presented with the opportunity to ask questions in person and were found to be 25% more active in online learning communities compared to those attending classes while using Twitter (Thoms & Eryilmaz, 2015). Discussion response rates, which are indicators of interaction, are also found to be higher in distance courses compared to blended style or traditional course formats (Chawinga, 2017; Thoms & Eryilmaz, 2015). The difference in response rates is said to be due to online platforms engaging those who would not typically participate in an in-person classroom setting (Luo et al., 2017). Online forums afford anonymity (to an extent) and remove the pressures of face-to-face interaction. Using Twitter to increase engagement proved to be beneficial for distance-only classes, as it provided a platform where engagement could occur, which would otherwise not be accessible (Chawinga, 2017; Junco et al., 2011; Menkhoff, 2015; Thoms & Eryilmaz, 2015).

Social Media in the Online Classroom

The studies that have been conducted on social media and learning have focused on incorporating Twitter in the on-campus, in-person classroom. The limited research on Twitter's impact in the online classroom, particularly related to postsecondary students' Twitter use behaviours and perceptions of its usefulness in learning and engagement (Peters et al., 2018, 2019), encouraged the present exploratory research. Our research question asked: does the integration of Twitter as an engagement and learning tool result in perceived improved interaction, engagement, and connectedness between postsecondary students and their peers and instructors? Based on its intended objective, we anticipated to find that the implementation of Twitter would increase engagement, interaction, and connections between students, instructors, and peers.

Methodology

This research used survey data collected anonymously from postsecondary students enrolled in two introductory courses at a comprehensive, mid-sized university in Atlantic Canada in fall 2019, prior to the COVID-19 pandemic and its effects on teaching and learning. Response options for these questions were guided by Liu et al. (2010) and Whiting and Williams (2013). A copy of the pre- and post-surveys are available upon request. As an alternative to traditional online group discussions or blogs, each of the courses integrated Twitter activities and/or evaluations as interaction and engagement tools. The survey data was initially intended for program evaluation. At that time, feedback from the Interdisciplinary Committee for Ethics in Human Research (ICEHR) indicated that ethics review was not required. Due to the expanded nature of the project, particularly its research focus, additional feedback from the ICEHR was solicited. It was determined that the data presented in this manuscript aligns with secondary use of information not originally intended for research, and additional review was not required.

Participants and the Twitter Assignments

The postsecondary student participants were registered in a human kinetics and recreation course or a sociology/police studies course. Human Kinetics and Recreation 1000 (HKR 1000), Fitness and Wellness, is an introductory online course and a popular elective course for the broad university student community that 75 students completed in the fall 2019 semester. This convenience sample was asked, as a course evaluation component, to complete three Twitter assignments that required students to craft and post one original tweet and one response to another students' tweet to specific questions during predetermined weeks of the semester, all using the designated course hashtag #HKR1000. A more detailed description of the Twitter assignments and online course apparatus can be found in Peters et al. (2020).

Sociology/Police Studies 2300 (SOCI/PLST 2300), Criminological Inquiry, is offered online in the Department of Sociology as a lower-level course that is required for Police Studies and Criminology students at the university and is also popular among students from other disciplines. At the start of the fall 2019 semester, there were 62 students enrolled; 52 students completed the course. As in HKR 1000, SOCI/PLST 2300 students were asked to complete three Twitter assignments—in this case, during weeks 6, 10, and 12 of the semester. Corresponding with the HKR 1000 assignments, each Twitter assignment required students to (a) locate and tweet one news story from a credible news source related to deviant/delinquent behaviour/crime and tweet a critical comment about the theme that aligned with that week's course content; (b) retweet one classmate's tweet or the course instructor's tweet; and (c) respond to one tweet from a classmate/instructor, using the hashtag #SOCI2300. A small percentage (i.e., 15% or less) of students' final grade in each of these courses was designated to the Twitter assignments.

Procedures

Two identical surveys were administered in both courses at the beginning (i.e., pre-survey) and end (i.e., post-survey) of the fall 2019 semester. The questions were developed based on existing literature, our research questions, and one author's previous study on postsecondary Twitter use and course engagement (Peters et al., 2018, 2019).

The first anonymous pre-survey was administered in the first two weeks of the fall 2019 semester, through the online learning management system, Brightspace. All students were invited to complete the 23-question survey, containing almost exclusively closed-ended questions, with one final open-ended comment question. In total, 104 students completed the pre-survey, 65 from HKR 1000 and 39 from SOCI/PLST 2300. The anonymous post-survey was also administered in Brightspace in the final two weeks of the semester. Although many of the pre-survey questions were repeated, the primary focus of the survey was to assess students' experiences with Twitter during the semester: Did students use Twitter? Did Twitter encourage interactions and contribute to a sense of community in the online environment? We received feedback from 34 students, 23 from HKR 1000 and 11 from SOCI/PLST 2300.

Results

We divided the results into three main sections: sample characteristics, students' perceptions of Twitter as a pedagogical tool, and students' perceptions of Twitter as a course engagement tool.

Sample Characteristics

Most students who responded to the pre- and post-surveys identified as female (almost two-thirds in the pre-survey and three-quarters in the post-survey); this was reflective of the large proportion of females enrolled in the HKR and SOCI/PLST courses.

As summarized in Table 1, the mean overall age of respondents was 20 years old (pre-survey) and 22 years (post-survey). Students in HKR 1000 had a mean age of 18 years and 22 years in each survey, and SOCI/PLST 2300 21 years and 22 years, thus one pre-survey subsample of students was slightly older than the other subsample. These marginally older students also had more years of experience in university. Most HKR students (81%) who completed the pre-survey and a smaller majority (70%) of those who completed the post-survey were in their first year of postsecondary education, yet only 5% and 0%, respectively, of SOCI/PLST 2300 were in their first year. This is consistent with what we expected as the HKR 1000 course is an elective first-year course, while the SOCI/PLST course is available to students who are in their second year or beyond in their program/postsecondary studies. In line with these findings, 97% of HKR students sampled indicated this was their first HKR course; 87% of the SOCI/PLST students revealed 2300 was not their first Police Studies/Criminology course.

Table 1
Sample Characteristics

Indicators	Pre-Survey (N=104) Mean/%	Post-Survey (N=34) Mean/%
Age	20.4 (n=88)	21.7 (n=31)
Gender		
<i>Female</i>	64.4	74.2
<i>Male</i>	34.6	25.8
<i>TG/NB</i>	1.0	0.0
Course		
<i>HKR</i>	62.5	67.6
<i>SOCI/PLST</i>	37.5	32.4
Year of Study		
<i>1st year</i>	52.9	45.2
<i>2nd year</i>	13.5	12.9
<i>3rd year</i>	12.5	19.4
<i>4th year</i>	8.7	12.9
<i>5th year or higher</i>	12.5	9.6

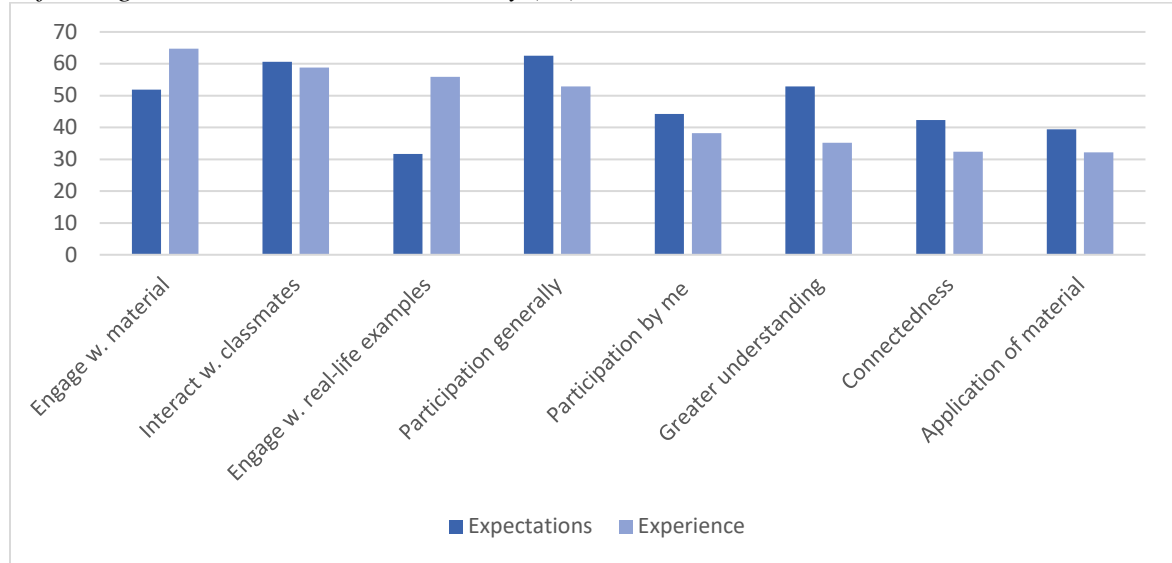
Twitter as a Tool for Learning

Based on the results of the pre-survey assessing students' expectations for Twitter as it relates to learning, we found that 53% and 52% of students, respectively, expected Twitter would promote a greater understanding of and engagement with the course material compared to discussion forums within the course shell or not using Twitter at all, while 39% anticipated it would promote greater application of the course material (see Figure 1).

The post-survey results revealed that some of these expectations were exceeded; 65% of students who responded felt that Twitter did promote greater engagement with course material; 35% felt it contributed to a greater understanding of course material, 32% a greater application of the course material.

The post-survey included questions to assess Twitter's use as a pedagogical tool and its perceived impact on learning. Students were asked how the Twitter assignments compared to the discussion forums in other online courses. Seventy-seven percent of students reported that they agreed that the Twitter events were a straightforward method to use information acquired in their respective course and 49% of students preferred Twitter assignments over traditional discussion forums, 24% preferred traditional discussion forums, and 15% indicated no preference. Twelve percent had never used a discussion forum before, thereby limiting their ability to comment.

Figure 1
Benefits of Using Twitter in Courses, Generally (%)



We also found that students perceived Twitter to be helpful in applying course material outside of the traditional course setting generally (85%), applying course material to real life events (i.e., news stories; 80%), engaging with course material in an alternative format to listening to a class lecture or reading (74%), providing an opportunity to see other students' interests and engagement with material (71%), engaging with course material in alternative format to group activities as well as engaging with material external to the course (68%), and using social media in learning (65%).

Twitter as a Tool for Interaction, Engagement, and Connectedness

The final set of results relate to whether Twitter's integration in the HKR and SOCI/PLST courses resulted in students' perceptions of improved interaction, engagement, and connections to other students in the course and the course professors. First, however, the pre-survey asked students a series of questions about their perceptions of how Twitter can and should be used and their anticipated use of Twitter throughout the semester.

Expectations

Almost three quarters (71%) of our sample expected to use Twitter more in their current semester than they had in the past, 23% expected to use it the same as they had previously, and a very small proportion expected to use it less (6%). For context, 32% of our sample had never used Twitter before, and by default, they would expect to use Twitter more than they previous had. With respect to how Twitter could be beneficial in the two courses specifically, students expected that Twitter would promote: greater course participation generally (63%) and by themselves (44%), interaction with their classmates (61%), engagement with the course instructor (48%), and community/classroom connectedness (42%).

Experiences

Following the completion of the three Twitter activities, students felt that there were many benefits to using Twitter in their respective course. Figure 1 illustrates the post-survey results related. The most commonly selected responses were that Twitter promoted more interaction with their classmates (59%), greater engagement with real-life examples (56%), and greater course participation generally (53%), when compared to discussion forums within the course shell or not using Twitter at all. About one-third of students felt that Twitter promoted greater course participation by them specifically, as well as community and/or classroom connectedness. Approximately 12% of our sample felt that Twitter did not promote any of the aforementioned outcomes.

One of the post-survey questions asked the students to compare the level of connectedness they felt in these courses as compared to other distance courses. The results indicated that approximately one-quarter (27%) of students agreed that they felt more connected in this course compared to other distance courses and 35% felt the same degree of connectedness; 24% felt less connected in these classes.

When asked if participation in the Twitter events contributed to a sense of community or belonging, 21% of students responded that they felt really connected to their class and that they were looking forward to opportunities like this in the future, and 29% responded that they felt connected to a few people, together totalling 50%. An equal proportion (29%) indicated that they did not feel connected to anyone, and approximately 15% completed the event with simply the completion/end goal in mind. A small majority of students (65%) responded that the use of Twitter did not help bring them closer to their classmates, despite each Twitter assignment's requirement for students to respond to/comment on at least one of their peers'/instructors' posts. Regardless, a lower proportion of students (74%) fulfilled this requirement than the vast majority that completed all three Twitter events (90%).

Our sample was evenly divided when asked if they wished more university courses would integrate Twitter into their course activities. When asked if they wished more classes would integrate Twitter in course evaluations, however, there were only slight changes: 56% of students agreed or strongly agreed that Twitter should be integrated in course evaluations.

Discussion, Implications, and Limitations

In consideration of the course number and program organization, as was anticipated, SOCI 2300 students were, on average, slightly older and further along in their academic careers than the HKR 1000 students. While SOCI/PLST 2300 presents foundational criminological information, there is a prerequisite course requirement which is not required for HKR 1000 and likely the reason for the higher age of students and completed years of study. Technology accessibility, which is an often-cited barrier for the successful use of Twitter in the online classroom (Feliz et al., 2013; Mwalimu, et al., 2018; West et al., 2015), was not a concern identified in the present study.

Twitter for Learning

Students' perceptions were divided on the usefulness of Twitter—and social media in general—in learning and for course engagement. Students agreed that using Twitter enhanced their understanding of course material and encouraged engagement with information in a format that

was external to the required course readings and traditional course/on campus university setting. Further, students noted Twitter provided an opportunity to engage with other students and to see their interests. An HKR 1000 student shared that Twitter “was another way of learning, stretching us to do more and think more...” (Student A, 2019). The findings with respect to students’ comparisons between Twitter and other discussion forums showed that the greatest proportion of students preferred Twitter assignments over traditional discussion forums (49%) with 24% of indicating they preferred traditional discussion forums. A higher number of students in the SOCI/PLST 2300 course indicated preference for the discussion forums.

When asked if they wished Twitter was used in other university courses, 50% of our sample responded no. As well, only 21% indicated Twitter helped them to feel more connected to the class and 29% indicated it helped them feel closer to peers. The vast majority (65%) responded that Twitter did not help them feel closer/more connected to their classmates. These results align with the research presented above that has found the use of social media in the online classroom is divided (Dunlap & Lowenthal, 2009; Evans, 2014; Feliz et al., 2013) potentially indicating that students’ individual motivations for the use of social media in the online classroom are important when it comes to their perceptions of the use of Twitter for learning. The previously cited social learning theories, as applied to social media, propose that learning can be fostered in online education environments via social presence (Bandura, 1977; Tu, 2000), hence (greater) Twitter use by the course instructors/teaching assistants, as well as greater student/classmate “buy-in” could also result in better outcomes for some of these indicators.

Past research shows students may believe social media has no legitimate place in the academic classroom, that its uses should remain social, as they were intended (Thoms & Eryilmaz, 2015). Almost one-quarter (23%) of respondents in the post-survey selected the response indicating they only use Twitter for personal reasons. Students’ perceptions of social media solely for personal/social reasons has been cited as preventative to its successful implementation in the classroom, in-person or online, and a reason for low participation levels (Ricoy & Feliz, 2016). When looking at our sample, the notable proportion of postsecondary students who indicated using social media primarily for personal/social reasons was somewhat unexpected for the purposes of our research and course integration/delivery, and this may be a reason why only 50% agreed that Twitter/social media should be used in other university courses. The social functions of Twitter seem to prevail in the literature (and findings), but this may be due to the demographics of the samples chosen, i.e., students’ age, stage in academic career. Despite such perceptions, Dunlap and Lowenthal (2009) believe that having a higher level of social presence may mitigate such concerns and can be used to legitimize the use of social media in the online classroom.

Again, reflecting on the ages of the respondents, higher-level/older students have a better sense of university expectations and desire to do well, thus they may be more comfortable, and as shown here, in some cases prefer, opportunities to post longer discussion comments and engage in greater dialogue about a topic, whereas first-year students may see Twitter/tweeting as means to and end with a quick/short/reduced effort. More mature students may be more likely to recognize the effort required to write a short/concise and meaningful/critical thinking tweet/post.

This indicates that different years of students (e.g., first- versus upper-year as a basic but noteworthy comparison) may have developed different learning strategies and also have different perspectives on the benefits of Twitter use, or social media in general, in the online classroom. Furthermore, students’ individual perceptions on whether Twitter should be used for personal or professional purposes, or both, impacted their use, and their future Twitter use for either purpose. This is a common concern that has been raised in other research, with Twitter merging formal and

informal teaching environments (Chawinga, 2016; Dunlap & Lowenthal, 2009). Yet a primary reason the course instructors' (two authors of this article) selected a social media-based activity was due to its popularity as a communication and information-sharing tool for young people today, and the main reason we selected Twitter specifically (instead of Instagram, Snapchat, even Facebook, for example) was that it is often used in professional contexts and that it encourages more professional content exposure and sharing.

Many students today are seeking education and experience that can be practically applied and will result in employment upon graduation (rather than thinking theoretically, analytically, critically about issues; Hechter et al., 2012). It may, therefore, be more difficult for some students to see the usefulness of Twitter in their postsecondary education and/or to demonstrate critical thinking under the restrictions imposed through Twitter. In another vein, by not using Twitter in more meaningful scholarly and professional ways, or not recognizing the potential role of Twitter in facilitating some of this, students are overlooking an important platform for networking and promoting themselves. While this was not the primary intention for its use or the specific "skill" being taught in these courses, it may be important for instructors to explicitly highlight this to students. Equally important then is to remind students of the fact that their account is public and that they should be mindful of this in constructing and posting their tweets. Should instructors wish to use Twitter in their courses, as we have, they should provide stated objectives concerning reasons for its use and the intended outcomes of its use in the course, whether it be interaction or engagement or increased learning outcomes (Dunlap & Lowenthal, 2009; West et al., 2015).

Teaching social media etiquette, or how to be appropriately present on social media academically, is the responsibility of the instructor to clarify, especially for lower-level university courses. Clear use guidelines should be made available and clarified at the beginning of the course (for example, what language is acceptable, guidelines for how to have respectful interactions and discussing differences in opinions, how to contact the professor and other students). These guidelines, of course, should be tailored to each course, as the content will dictate certain requirements. Outlining expectations for Twitter use is done not only to clarify expectations for students' behaviour, but also implicitly as means to train students for how social media is used in the professional world. The use of Twitter in university settings and for postsecondary education specifically can help students develop these skill sets, if they do not already have them, and learn how to curate more professionally for those who do.

Twitter for Interaction, Engagement, and Connectedness

Based on the low proportion of students who reported feeling more connected in their courses (27%) and closer with their peers in the courses (35%), course connectedness is difficult to achieve in an online course and Twitter may not be the way to accomplish this. To enhance Twitter's capacity to do so, we need to ensure students clearly understand why Twitter is being integrated (e.g., its objectives) and also may require more regular use generally as an activity and/or evaluation, as well as by the course instructor (Dunlap & Lowenthal, 2009; Junco et al., 2011; Mwalimu et al., 2018; Rohr et al., 2015). Two of the present study's authors are examining this latter part further. Twitter use in courses may be more beneficial for teaching students about (social) media literacy rather than enhancing course engagement and even more so connectedness—there are many variables that factor into students' feelings of connectedness (e.g., academic achievement, teaching methods used, students' individual motivations for attending,

cognitive and social skills; Lemberger et al., 2014), and some who take online courses may not actually be seeking that goal/outcome

Although we had hoped to see a higher proportion of students report that they felt connected to the class—especially since 90% of students completed all three Twitter events¹ and higher levels of connectedness can contribute to increased interactions and engagement (Dunlap & Lowenthal, 2009; Junco et al., 2011, 2012)—approximately half of students felt Twitter contributed to a sense of course community by connecting them to class or a few people in the course(s).

Almost three-quarters of students who completed the post-survey indicated that they retweeted a classmates' post during the Twitter events. While this was a strong majority, it was notably less than the 90% of students who indicated they had completed all three Twitter events as required under this course evaluation. It was interesting to identify this finding demonstrating that some students only partially completed the Twitter-related assignments, despite the requirements for each Twitter event being clearly articulated to students. The impetus behind including this assignment criterion was to encourage further communication and engagement, and in effect connectedness, to other students and the course.

Again, this was a requirement of the assignments, yet was completed by only a small majority of students, a proportion notably lower than almost the entire sample that indicated they had completed the number of required original tweets/posts. Thus, we assume students want to engage and be connected, yet were not making an effort to do so. This leads us to the question of whether or not postsecondary students even wish to be connected to their classmates and what may motivate this connection. This is especially true for students in online courses, where there is seemingly less chance to interact and engage with classmates compared to the traditional on-campus, in-person classroom. Other remaining questions that could not be discerned in this research include why some students did not respond to or retweet their classmates' posts and whether there are external factors, such as disinterest, social anxiety, forgetfulness, or other responsibilities, that may be preventing them from participating/engaging more with their peers. This should be explored in future research.

With regard to what instructors can do to further promote the use of Twitter in the classroom, past literature cites the importance of providing explicit instructions to students when it comes to participation (West et al., 2015). With this in mind, instructions and expectations for students were clarified in multiple locations within the course shell, including the course syllabus, course content, course announcements, and course emails; the importance of this component in Twitter integration should be emphasized as a means to promote increased engagement with and openness to using Twitter as an educational tool. Nevertheless, regardless of how clearly instructions are provided in an online classroom, it is ultimately the responsibility of the students to read the syllabus, course content, and course evaluation expectations independently.

The equal division between students who liked the use of Twitter in course activities and those who did not, which was consistent across both courses, was an interesting finding. Still, a small majority of students indicated their agreement that Twitter should be used in more courses as evaluations tools. Based on the results of our study, this finding is likely due to students perceiving the Twitter events to be slightly less effort than discussion-type forums in which students often have endless or lengthier spaces in which to share/present their ideas. Many students, whether recognized or not, do experience increased challenges (which is intended to

¹ Sixty-eight percent of students responded that they only used Twitter those three times in the course.

encourage skill development) with Twitter activities due to the need to be more selective and creative in how to most efficiently and accurately share their ideas, in a 280-character format.

Connections and engagement can occur when students are encouraged to engage in new ways via alternative formats and to provide some freedom to guide their own learning. As one SOCI/PLST student shared in the comments section, the Twitter activities were a “great way to break up the routine of assignment after assignment . . . we were able to choose stories that mattered to us the most” (Student B, 2019). Such freedoms were granted in an attempt to get students to engage with the material at a personal level, encouraging them to uniquely apply course content in ways they may have never before.

While students revealed that they commonly use and favour social media platforms, including Instagram and Snapchat, these services/applications are limited to image and video-sharing, rather than textual information and discussion. In the context of encouraging alternative mechanisms of learning and discussion among postsecondary students and their instructors, Twitter can alternatively offer a medium through which ideas can be widely presented, distributed, contested, and retorted among many different persons, groups, and perspectives. It enables more dynamic interactions and can encourage students to consider alternative approaches to various issues and themes explored in their postsecondary courses.

Compared to traditional forms of interacting in an online course, like emails or discussion forums, Twitter may encourage more critical debate. The access to real-time issues shared on Twitter, as they relate to course material, can be used as sources of information external to course texts, and may encourage content engagement and its application to the real world. As a result of the interactive, written format of Twitter and its wide membership, the platform can also serve as a tool to receive and process negative comments and alternative perspectives, preparing students for what they may encounter in the professional world. Twitter can furthermore be a valuable platform for networking beyond one’s direct/in-person social and professional circles.

As with the use of any alternative form of course materials and content, such as discussion boards, it can be effective to clearly outline the objectives of integrating specific social media applications in course activities and/or evaluations; this can ensure students know the impetus for using these tools and the value in selecting one option over another and can lead to effective teaching/learning. As perusing and posting to social media platforms has become a daily and/or weekly practice for many individuals in today’s global society, it is imperative to evaluate how we are using these applications and for what purpose(s). Instructors and students can therefore use this as an opportunity to reflect upon social media usage, instead of mechanically accepting the seemingly normative social conventions of peers and others.

A few notable limitations in the present research included a lower overall post-survey response rate in both courses due to survey and course access issues at the end of the semester, ultimately corresponding with students’ busy/stressful examination period after classes had ended. We also received higher post-survey responses among older students/students who were further along in their education, which may itself explain why they responded (i.e., older/more experienced students may have stronger performance motivations or course dedication; they also know the “system” and often place more emphasis on “doing well” in university). For these reasons, our results may be more reflective of upper-level/older students’ Twitter/course experiences. Further research that compares social media use differences between first-year postsecondary students and second/upper year students could thus be beneficial. Owing to the sample size and nature of the data collected, our data was not conducive to multivariate analysis. In the future, examining students’ motivations for using social media in the online classroom and

agreement between the success of social media in the online classroom, while controlling for other relevant indicators, would be valuable.

Another limitation of the research was the character limit enforced by Twitter. The 280-character maximum would certainly constrain the amount students could contribute in a single tweet. Students were informed of this limitation and encouraged to respond in a concise manner. Survey questions did not ask about the effects of the word limit, which would be valuable information. However, research has found that Twitter users are able to overcome and adapt to the constraints elicited by the character limit (Boot et al., 2019).

Conclusion

With the growth of technology and social media in postsecondary education and learning, research has examined whether Twitter can encourage postsecondary student engagement, with positive results (Junco et al., 2011). When well implemented, Twitter/social media can foster and support student-student and student-instructor connections and communication (Dunlap & Lowenthal, 2009). The present research built on the existing research that has together demonstrated inconsistent findings related to Twitter use engagement/interaction, with particular attention to online postsecondary courses. The survey results revealed that a majority of postsecondary student survey respondents felt Twitter did promote engagement. More specifically, the use of Twitter in HKR and SOCI/PLST achieved the following: promoted greater engagement with course material generally and engagement with course material in an alternative format to lecture, reading, and group activities, when compared to not using Twitter at all and using discussions within the course shell; provided an opportunity to observe other students' engagement with material; and promoted engagement with material external to the course. Overall, 65% of students agreed that Twitter was a beneficial use of social media for learning and course engagement. Twitter, however, was not found to increase student-peer-course interaction and connectedness, which may be attributed to its low-level use among students and students' uncertainty on the intentions of Twitter and/or the Twitter assignments. Forthcoming research discusses students' motivations around Twitter and social media use in general. Moving forward, our instructional design should include, or at a minimum consider, a focus on the integration of new teaching technologies and strategies. Instructors should be encouraged to incorporate creative activities and assessments that better match students' interests and means of communication. Both can encourage engagement and, in some cases, increase interaction and connectedness.

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