



The Impact of Social Media on Social Presence

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As the online education trend increases with more online enrollments, instructors are looking at new technologies to facilitate student discourse and increase student social presence. Instructors have considered the use of social media in education to meet the needs of students. This study looked at the use of Yellowdig, a closed social media platform, to gauge student social presence. Social presence scales from the Community of Inquiry were used to determine whether students perceived a high level of social presence through the use of social media.

Introduction

Online learning has steadily grown into a prominent delivery method in higher education. The number of college students taking online courses has increased every year since its inception. In fact, the observed growth rate was 3.9% from 2013-2014, which was higher than the previous year's growth rate of 3.7% (Allen & Seaman, 2016). With the growth of online education, a similar rise has manifested with organizations, research studies and publications dedicated to this instructional delivery method (Perry & Pilati, 2011). As a result, research on the effective methods of online education have also become prevalent (Means, Toyama, Murphy, Bakia, & Jones, 2009). With social network sites becoming more influential in the lives of many students (Thompson, 2007), the degree of its influence has posed the question of whether social media networks will increase engagement and social presence for online students (Ellison, Steinfield, & Lampe, 2006). This conundrum has led many researchers and scholars to examine the role of social media in postsecondary education (Rowan-Kenyon, Martínez Alemán, Gin, & Blakeley, 2016).



Social media includes a variety of tools via the Internet where people can communicate, collaborate, and creatively express themselves (Debbagh & Rio, 2011). Examples of social media include tools such as Twitter, Facebook, and Instagram that enable social networking. Other social media tools such as Delicious and WordPress enable social bookmarking and blogging; meanwhile web-based collaborative apps such as Google Drive and Microsoft Office 365 allow for document and calendar sharing (Microsoft, 2018). Overall, social media tools allow for users to generate content as well as share ideas, resources and information with other users based on their common interest and value (Ronaldo & Alexandre, 2015).

The social media consumption in the United States is elevated among young people as 88% of 18- to 29-year-olds use any form of social media (Smith & Anderson, 2018) and 79% of all adult learners have and extensively use Facebook (Pew Research Project, 2016). Although social media tools are popular among young adults, the use of social media in higher education has generated mixed feelings and criticisms. These mixed feelings are often associated to the lack of evidence about the instructional effectiveness of these tools (Greenhow & Askari, 2015). For instance, in a study of the use of Facebook pages within four specific university courses, researchers (Irwin, Ball, Desbrow & Leveritt, 2012) found in post-course surveys that only half of the students believed the use of Facebook assisted their learning. In addition to the effectiveness of these tools, students may not see the potential of these tools for educational purposes. For example, in a study examining students' perceptions of technology use in personal versus learning spaces, Jones, Blackey, Fitzgibbon, and Chew (2010) pointed out that more than 70% of the students reported having a social networking account, though students informed rarely using social media for educational purposes. Similarly, in a small-scale survey study of faculty and students' uses of Facebook, Roblyer, McDaniel, Webb, Herman, and Witty (2010) found that the least use of Facebook was for communication about coursework. Furthermore, faculty's use of social media in their teaching practices may also influence the aforementioned findings. Particularly, Manca and Ranieri (2016) found a low level of faculty adoption of social media for teaching practices, with only 38.6% of participants indicating that social media tools were useful for teaching purposes. Faculty age also seemed to be an influential factor in the use of social media tools for teaching practice (Manca & Ranieri, 2016). Thus, it is imperative that those involved in the higher education sections be aware of the scholarship and empirical research on social media and their implications for higher education (Rowan-Kenyon et al., 2016) as means to shape policies and practices that are successful for teaching and learning.

Theoretical Foundations

Social Media & Community of Inquiry

With the advances in mobile and online technologies, many higher education institutions have improved their IT infrastructure, adopting technologies that provide flexibility in how, when, and where students learn (Adams Becker, Cummins, Davis, Freeman, Hall Giesinger, & Ananthanarayanan, 2017). Most of these technologies are already part of students' lives. In fact, according to a Pew Research Center study, the majority of Millennials (92%) own smartphones and most of them (85%) use social media tools (Jiang, 2018). Social media tools are mainly used to enable social interaction (Davis, Deil-Amen, Rios-Aguilar, & González Canché, 2014). People use social media for different purposes, including communication, collaboration, and creative self-expression (Debbagh & Rio, 2011). Given the possibilities of social media, Davis and colleagues (2014) urge postsecondary educators to explore the potential of such tools to serve students' needs.

The Community of Inquiry (CoI) framework is defined as an online educational experience as consisting of three presences: (a) *social presence*, which can be defined as the learner's ability to present himself or herself as a 'real person' (Rourke, Anderson, Garrison, & Archer, 2001), (b) *cognitive presence*, defined as the degree to which learners can create meaning through sustained communication (Garrison, Anderson, & Archer, 2000), and (c) *teaching presence*, defined as the design and facilitation of instruction, including direct instruction for the purpose of creating social and cognitive processes to facilitate deep and meaningful learning (Anderson, Rourke, Garrison, & Archer, 2001). These three presences overlap to create an effective learning experience. The CoI framework has been widely used and researched in online learning settings. The analysis of the presences, specifically in online environments, has been the foundation of the CoI framework. For the purposes of this study, the social presence between students will be further examined.

One way that social media tools can meet the needs of students is in online education settings. A common issue in online learning is the feeling of isolation that students may have (Johnson, 2006) due to lack of social presence from their instructor and peers (Oyarzun, Barreto, & Conklin, 2018). Thus, using social media tools to establish interactions between students and instructors can lead to deeper and more personal communications (Fraustino, Briones, & Janoske, 2015). Additionally, social networking profiles can demonstrate a personal side of the instructor, including insights into their lives outside the classroom (Waters & Bortree, 2011). Moreover, students who used Facebook over a common Learning Management System (LMS) platform, such as Moodle, reported higher social presence (Kazanidis, Pellas, Fotaris, & Tsinakos, 2018). Social presence was also noted in Facebook groups with pre-service teachers, and indicators of three main social presence categories (i.e., affective expression, open communication and group cohesion) were found (Izmirli, 2017). Additionally, in a comparison study of the development of a CoI in a face-to-face and a blended learning context using Facebook, Kucuk and Sahin (2013) found no statistically significant differences in the three main categories of social



presence, except for the group cohesion, which was more frequent in blended courses. Indeed, prominent characteristics of communication and socialization in social media tools such as Facebook can contribute to the social presence (Keles, 2018). As Johannesen, Øgrim, and Smørðal (2016) pointed out, Facebook can build a sense of intimacy and immediacy as students are aware of the online presence of others and the dialogues within this medium emulate physical conversations with short response times. Social presence was also observed with other social media tools such as Twitter discussions in an asynchronous online undergraduate course (Baisley-Nodine, Ritzhaupt, & Antonenko, 2018).

Yellowdig: A Social Media Tool for Student Engagement

Yellowdig is a student engagement tool similar to Facebook and Twitter that affords students the opportunity to engage with peers in a manner that is comfortable and familiar, mimicking the same rules and structure of traditional social media outlets. Unlike traditional discussion boards in an LMS, students can subscribe to a feed rather than a discussion thread. Students also have the ability to comment, like, love, and boost other students' posts through these methods. It offers students and faculty a dynamic method to interact with one another. Yellowdig also offers an app for smartphones that allow students to easily access their feeds. The concept behind Yellowdig is that students can interact with one another to achieve higher levels of learning and engagement in a manner that is more organic and familiar to the users' social media tendencies (Gruber, 2016).

Yellowdig posits that this closed system tool will increase student engagement through the ability to share videos, tag posts, like posts, or share articles and websites. Many instructors seek alternative communication strategies to discussion boards (Gruber, 2016) with the expectation that students will naturally connect using an educational social media platform similar to how they connect naturally with other social media platforms such as Facebook, Instagram, Twitter, and many others. Traditional social media platforms have been attempted, yet students may not want to intertwine their personal and educational environments (see Jones, Blackey, Fitzgibbon, & Chew, 2010; Johannesen, Øgrim & Smørðal, 2016). Therefore, Yellowdig offered a social media platform in a closed system that could be integrated into the LMS. This closed system separates students' personal accounts from their educational accounts. As stated above, Yellowdig can be utilized in many ways such as replacing discussion boards with "pins" or allowing students to share resources as means to contribute to an individual or group project.

Further research needs to be conducted to determine if social media affects social presence among students. Thus, the purpose of this study was to determine whether the use of a social media tool could increase social presence in online educational environments.



Method

This quantitative research sought to determine students' engagement and social presence using a closed social media platform. The research questions guiding this study were: does the incorporation of social media tools increase student engagement and consequently social presence among the students? The study was conducted in a mid-sized university during Fall 2017. Participants of this study included undergraduate and graduate students enrolled in online courses as well as faculty teaching those courses.

Students were asked to complete an electronic questionnaire through Qualtrics using the social presence scales from the CoI instrument. The questionnaire included twenty-three items to measure social presence: eight for affective expression, eight for open communication, and seven for group cohesion (Lowenthal & Dunlap, 2014; Swan, Richardson, Ice, Garrison, Cleveland-Innes, & Arbaugh, 2008). The questionnaire was modified based on recommendations from Lowenthal and Dunlap (2014) (see Table 1). The students received twenty-three Likert scale questions (strongly disagree - strongly agree) to measure emotional/affective expression, open/interactive communication, and group cohesion. Thirty-nine students completed the questionnaire (17% response rate). A total of nine courses participated in the pilot of Yellowdig. Of those nine courses, students from four courses (44%) responded to the survey.

CoIQ Instrument for Students

The students were given a modified version of the CoI. The original CoI questionnaire (CoIQ) was designed to determine observable instances of social presence in threaded discussion boards. Lowenthal and Dunlap (2014) stated that the CoIQ should be updated and aligned with current research. Therefore, the CoIQ was updated and modified to reflect social media instead of discussion boards. Since social presence was the focus of this research, questions pertaining to social presence were the only questions used. The questions were modified from the following:

Table 1. Comparison of the original CoIQ (social presence) to the modified version (social presence)

Original CoIQ (social presence)	Modified CoIQ (social presence)
Emotional/Affective Expression	
<ul style="list-style-type: none"> • Getting to know other course participants gave me a sense of belonging in the course. • I was able to form distinct impressions of some course participants. • Online or web-based communication is an excellent medium for social interaction. 	<ul style="list-style-type: none"> • I formed distinct impressions of some course participants; • I projected who I am to other course participants; • I expressed emotions in this course; • I used humor in this course; • I self-disclosed information about life outside of class; • Others expressed emotions in this course; • Others used humor in this course; • Others self-disclosed personal information in the course;
Open/Interactive Communication	
<ul style="list-style-type: none"> • I felt comfortable conversing through the online medium; • I felt comfortable participating in the course discussions; • I felt comfortable interacting with other course participants. 	<ul style="list-style-type: none"> • I expressed agreement or disagreement with others or the content of others' messages; • I complimented others or the content of their messages; • I asked questions; • I directly referred to the content of others posts; • I communicated effectively using online communication tools (e.g. threaded discussions, email, and instant messaging); Others communicated effectively with me using online communication tools (e.g. threaded discussions, email, and instant messaging); • I felt comfortable participating in online threaded discussions; • I felt comfortable interacting with others.

Group Cohesion

<ul style="list-style-type: none"> • I felt comfortable disagreeing with other course participants while still maintaining a sense of trust. • I felt that my point of view was acknowledged by other course participants. • Online discussions help me to develop a sense of collaboration. 	<ul style="list-style-type: none"> • I was able to develop a sense of collaboration with my peers; • I used greetings and salutations; • Others used greetings and salutations; • I referred to other participants by their first name; • Others addressed me by my first name; • I addressed the group using inclusive pronouns; • Others addressed the group using inclusive pronouns.
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Data Analysis

Independent t-tests were conducted to explore whether statistically significant differences existed between the courses in terms of each category of social presence (affective expression, open communication, and group cohesion). Independent t-tests are one of the most common and reliable tests for the CoIQ (Stenbom, 2018).

Results

Student demographics

Thirty-seven students (17% response rate) and four instructors (44% response rate) participated in the study. The majority of the students who responded the questionnaire were female (N=30). Most participants were young adults, with approximately 51% of the participants aged between 25-34.

Table 2. Student demographics who participated using Yellowdig

		Frequency	Percent	Valid Percent
Gender	Male	8	18.6	21.1
	Female	30	69.8	78.9

Age	19-24	2	4.7	5.1
	25-34	20	46.5	51.3
	35-44	10	23.3	25.6
	45-54	6	14.0	15.4
	55-64	1	2.3	2.6

CoIQ Results

Within the CoIQ, questions are grouped by categories: affective expression, open communication, and group cohesion. The questions were grouped into these categories as independent variables to compare the mean for each category. The overall mean for each section of social presence scale is presented in Table 3.

Table 3. Overall Mean of social presence from all students

	N	Mean	Std. Deviation
Affective	37	2.5729	.92271
Interactive	37	1.9831	.73490
Cohesive	37	2.0270	.87754
Valid N (listwise)	37		

Affective expression had the highest mean (M= 2.57) and the interactive expression had the lowest mean (M=1.98). The mean was then analyzed by course for each category.

Table 4. Overall Mean of social presence for each course

		N	Mean	Std. Deviation
Course 1	Affective	15	2.5000	1.02426
	Interactive	15	1.8250	.67942
	Cohesive	15	1.8833	.80104
Course 2	Affective	16	2.6641	.80715
	Interactive	16	2.0781	.79040
	Cohesive	16	2.2188	.96986
Course 3	Affective	1	1.5714	
	Interactive	1	1.3750	
	Cohesive	1	1.0000	
Course 4	Affective	5	2.7000	1.10609
	Interactive	5	2.2750	.75726
	Cohesive	5	2.0500	.81777

Course 3 and course 4 were dropped from the analysis due to low student participation. Course 1 (M=2.50) and course 2 (M=2.66) had a comparable mean regarding the affective expression; yet in course 1, the mean was lower for interactive expression (M=1.82) and cohesive expression (M=1.82) than course 2. An independent-t test was utilized to compare the mean scores of the two courses (see Table 5).

Table 5. t-Test Independent Samples for categories of social presence in Courses 1 and 2

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference
Affective	Equal variances assumed	.567	.458	-.497	29	.623	-.16406
Interactive	Equal variances assumed	.006	.939	-.953	29	.348	-.25313
Cohesive	Equal variances assumed	.015	.904	-1.046	29	.304	-.33542

An independent-samples t-test was conducted to compare the affective, interaction, and cohesion scores for course 1 and course 2. The results of the t-test indicated that there was no significant difference in **affective** scores for the course 1 (M = 2.66, SD = .81) and course 2 (M = 2.5, SD = 1.02); $t(29) = -.497, p = .46$, (two-tailed). There was also no significant difference in **interactive** scores for course 1 (M = 2.08, SD = .79) and course 2 (M = 1.8, SD = .68); $t(29) = -.953, p = .35$, (two-tailed). And there was no significant difference in **cohesion** scores for course 1 (M = 2.21, SD = .95) and course 2 (M = 1.88, SD = .80); $t(29) = -1.046, p = .30$, (two-tailed).

Discussion

The purpose of this study was to determine if the use of social media could impact the perceived social presence of students. The social presence mean scores for the two courses ranged in the middle (MC1 = 2.66 and MC2 = 2.50). Therefore, the use of a social media tool did not affect student social presence in this study. There are many factors that could contribute to a lack of social presence using social media including the use of open systems, design of the activity, and social media technology.



Australian Educational Computing, 2019, 34(1).

Many studies (Baisley-Nodine, Ritzhaupt, & Antonenko, 2018; Johannesen, Øgrim, & Smørðal, 2016; Kazanidis, Pellas, Fotaris, & Tsinakos, 2018) use popular and familiar social media technologies such as Facebook and Twitter, which could have facilitated the perception of social presence. Students are familiar with the aforementioned technologies and most likely already have an account. Therefore, students are logging into these technologies automatically and may have a general comfort using an open and familiar system to easily connect with their peers. Additionally, Gikas and Grant (2013) reported that students found the immediacy of open systems, such as Twitter and Facebook, was easier than logging into a password protected course discussion that was not inaccessible from mobile devices.

The design of the activity is particularly important as many instructors seek to find alternative methods to discussion boards. Many instructors have attempted to use social media tools in lieu of discussion boards. Since these tools are not designed to replicate a formal written discussion, social presence may decrease due to the affordability, appropriateness and integration of the technology. For example, when a social media tool is being used for a purpose different than its original design, the experience with the tool can be distorted. Additionally, given that students might not use social media tools as formal discussions, its repurpose as an academic activity could have influenced their perceptions of social presence. Moreover, Gikas and Grant (2013) found that students preferred social media for the immediacy and pace at which they could post their thoughts, which may contradict the instructors' idea of posting thoughtful reflections.

Yellowdig is a closed system similar to an LMS. Students have to either log into Yellowdig through the LMS or use the app on their smartphones. Due to this being a closed system and a technology that is not common for the students to use, there may be low social presence. Kazanidis, Pellas, Fotaris, and Tsinakos (2018) found that students reported higher social presence when using popular open systems such as Facebook or Twitter over closed systems such as an LMS or other technologies that are solely educational based.

Finally, instructor social presence or teaching presence is crucial to the CoI model (Garrison, 2007). Low interactions from the instructors may be attributed to low social presence among the students. This study did not gauge instructor presence which could have influence on student social presence. Baisley-Nodine and colleagues (2018) conducted a similar study using Twitter and found the teaching presence to be high; yet since the instructor did not participate using Twitter, student social presence was perceived to be low.



Limitations

The limitations include a small sample size from one institution. Additionally student participation was voluntary and the researchers were not the instructor of record; therefore, there was little incentive for the student to participate in the study. Another limitation of this study is that instructor social presence was not examined. Indeed, instructor social presence has influenced the perceived social presence of the students (Oyarzun, 2016). This component could have contributed to the social presence of the students. Further research should be conducted on the influence of instructor social presence on the integration of social media tools.

Conclusions

Research on the inclusion of social media needs to continue. There are many aspects to consider including the design of the activity as well as the degree of instructor social presence. As this study has shown, simply adding a social media tool to a course does not increase social presence among students. Other factors might have a strong influence in the increase of student social presence. Overall, the use of social media in online classrooms should be used with caution as the activities need to be carefully designed to promote meaningful student interaction that leads to achievement of learning outcomes.

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