I See You: Using the Affordances of Google+ to Increase Social and Teaching Presence in an Online Undergraduate Teacher Education Course

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Abstract

The purpose of this study was to investigate whether the affordances of Google+, specifically the ability to create asynchronous video posts and conduct synchronous videoconferencing, would more effectively help develop teaching and social presence when compared with the university’s current text-based WebCT discussion platform in an online teacher education course. At the beginning of the semester, undergraduate students in a teacher technology course were randomly assigned to either the text-based WebCT discussion platform or to the Google+ platform. Halfway through the semester the students switched platforms. Questionnaires administered at the end of the semester indicated that feelings of social and teaching presence were higher when using Google+. These quantitative results were corroborated by six student interviews. Implications of the added value of video, both in synchronous and asynchronous contexts, are discussed.

Keywords: Google+, online discussions, videoconferencing, video posts, social presence, teaching presence, online learning

Introduction

Today online learning, learning which occurs at a distance where the learner uses some type of technology to interact with the instructor and other learners (Anderson, 2004), is no longer relegated to non-traditional students. Enrollment levels at predominantly online schools such as the University of Phoenix, Kaplan University, and Western Governors University are influencing traditional institutions to increase their number of online offerings (Burnsed, 2011). MOOCs, massively open online courses, are adding to the pressure to increase online courses as states such as California seek to reduce the cost and time required by students to obtain post-secondary degrees, which is expected to help increase graduation rates (Fain, 2013).

Unfortunately, online instruction does not appear to increase graduation rates as attrition rates are significantly higher for online students than those for students attending traditional classrooms (Doherty, 2006). At one college, the dropout rate for Master of Business Administration students was six times higher and the rate for students in the Master in Communication Sciences and Disorder program was seven times higher compared to students attending their face-to-face counterparts (Patterson & McFadden, 2009). Time constraints as well as work and family obligations were cited as posing limitations on the amount of time online students could devote to the courses.

Isolation can also be a factor for online students (Rovai A., 2003). Responses pertaining to a university web-based teacher education course demonstrated feelings of loneliness and isolation. Students expressed that, even though they preferred the convenience of an online course, they felt alone and missed attending a class with other students (Dickey, 2004). In relation to student retention, Liu, Gomez, and Yen (2009) found that the odds of students persisting in a course were positively related to their feelings of social presence, “the ability of participants...to project their personal characteristics into the community, thereby presenting themselves to the other
participants as real people” (Garrison, Anderson, & Archer, 2000, p. 89). Students were more likely to stay in the course as feelings of social presence increased.

It is important that online instructors utilize methods that will help reduce students’ feelings of isolation. The purpose of this study was to determine whether a particular technology tool, the use of Google+, would help limit feelings of isolation and increase feelings of social and teaching presence. Google+ launched in June 2011 (Kaste, 2011) as a free social networking site based on the concept of “Circles”. Circles allow members to group people they follow on Google+ into categories, thereby providing the means to target comments to specific audiences. Hangout, the name for the videoconferencing feature of Google+, was initiated in August 2011 and the ability to create video posts directly on Google+ was added in January 2012. All three features, Circles, Hangout, and video posts, can be used to form a discussion platform and collaborative space for an online course. Google+ can be accessed from mobile devices thereby allowing students to interact when it is most convenient for them, helping to alleviate the time constraint issues described by Patterson & McFadden (2009). Google+ was chosen for this study because it is a cloud-based social networking site that can be used on any operating system. Google+ is user friendly and free, making it a tool that can be used globally by any online instructor and any student.

This paper will begin with an overview of the theoretical perspective relating to social and teaching presence. A mixed-methods action research approach was used to evaluate whether Google+ was more effective at helping develop teaching and social presence when compared with the university’s text-based platform, WebCT. This research method was chosen as the quantitative data allows the results to be generalized while the qualitative data provides a deeper exploration of the concepts under consideration and allows for a more thorough interpretation (Creswell, 2008). The research questions guiding this study:

1) Will the synchronous and asynchronous affordances of Google+ result in greater social presence when compared with the text-based discussion platform WebCT?
2) Will the synchronous and asynchronous affordances of Google+ result in greater teaching presence when compared with the text-based discussion platform WebCT?”

Community of Inquiry, Social Presence, and Teaching Presence

The theoretical framework for social and teaching presence guiding this study has been drawn from the Community of Inquiry (CoI) model developed by Garrison, Anderson, and Archer (2000). The basic elements of the model are Social Presence, Teaching Presence, and Cognitive Presence. Social presence is “the ability of participants in the Community of Inquiry to project their personal characteristics into the community, thereby presenting themselves to the other participants as real people” (Garrison, et al, 2000, p. 89). Teaching presence consists of three areas; instructional design, facilitation of discussion and direct instruction, along with displays of personality that demonstrate humanity (Nowak, 2001). Cognitive presence is “…the extent to which the participants of a community of inquiry are able to construct meaning through sustained communication” (Garrison, et al., 2000, p. 89). Cognitive presence is supported by both teaching and social presence. Both are required in order to create the environment needed to sustain the communication necessary to construct meaning. Discussion boards are the prevalent form of
communication between students and instructors for online courses and therefore are the main source for the creation of social and teaching presence in those courses.

**Online Discussion Boards and Presence**

Text-based discussion platforms have been shown to lead to teaching and social presence (Gunawardena & Zittle, 1997; Nagel & Kotze, 2010; Nowak, 2001), however it is time consuming and complex due to the lack of non-verbal social clues (Rovai A., 2001). Enabling students to see their peers by using video, even though the presence is not real and is mediated by a computer, allows participants to experience each other as actual humans rather than text on a screen. This form of presence is “a psychological state in which virtual objects are experienced as actual objects in either sensory or nonsensory ways” (Lee, 2004, p. 27). Lombard (1995) demonstrated this capability using human reaction to news broadcasts featuring individual newscasters. Some of the viewer responses to the broadcasts were direct and involved complex interactions. Lombard reasoned that human beings had not yet evolved to be able to distinguish between reality and symbols. During human development it was less risky to consider the symbol real than to be mistaken and not recognize the threat of possible injury or death. This social interaction with mediated reality will help students feel teaching and social presence even though they are interacting with the instructor and fellow classmates via video rather than the instructor and classmates themselves.

Recent studies have supported Lombard’s conclusions concerning text-based versus video interaction. Skylar (2009) found student performance improved slightly for students participating in the synchronous Elluminate Live interactive sessions when compared with those who learned the same material using the WebCT text-based materials. Moallen, Pastore, and Martin (2011) found similar results when they investigated learning outcomes associated with different online interaction types. A combination of asynchronous communication, allowing for reflective thinking, and synchronous live videoconferencing communication, providing immediate social interaction and co-construction of knowledge, resulted in higher learning outcomes than either asynchronous communication or videoconferencing communication alone.

Teacher presence has also been shown to increase through the use of video posts. Voice Thread, a web-based application that creates asynchronous video posts, was used as the communication tool for a teacher preparation courses conducted at a large institution (Borup, West, & Graham, 2012). Students indicated watching instructors’ video posts helped them to see their instructors as real people, leading to feelings they were talking to their professors even though the video was asynchronous.

In addition to the primary objective of improved learning outcomes, one of the reasons for creating teaching and social presence is improve student retention. Isolation can result in a lack of persistence for online students (Rovai & Wighting, 2005). Responses pertaining to a university web-based teacher education course demonstrated feelings of loneliness and isolation. Students expressed “…missing being in a class with other students” as well as “I liked the convenience of the class but I felt like I was alone” (Dickey, 2004, p. 281). In relation to student retention, Liu, et al. (2009) also found that the odds of students persisting in a course were positively related to their feelings of social presence and that as feelings of social presence increased, the more likely students were to stay in the course.
Several studies have related lack of persistence with lack of community engagement (Doherty, 2006; Joo, Kim, & Kim, 2011; Morris, Finnegan, & S., 2005). It has been found that learner satisfaction has a significant effect on persistence (Joo, et al., 2011) and that social integration has a positive effect on learner satisfaction (Rovai A., 2003). Students’ participation level in online discussions, demonstrating social connectedness, resulted in an increase in persistence in their online classes (Morris, et al., 2005). Teacher presence played an important part as well, as the teacher acts as facilitator in developing the learning community for his or her class (Doherty, 2006; Joo, Kim, & Kim, 2011).

While these studies acknowledged that factors leading to attrition are complex, they all pointed to the importance of social integration as a primary factor. As this is a factor that an instructor can help develop, it could help provide a framework to guide the development of a learning community. Online instructors therefore need to help students cultivate social presence which enables the development of a community of inquiry. This CoI will help facilitate the learning process and lead to increased persistence (Garrison, Anderson, & Archer, 2000; Tinto, 1997). In the present study we investigated the use of video tools as means to help develop teaching and social presence. The hypotheses for this research are 1) that Google+ will help develop higher social presence than text-based WebCT, and 2) that Google+ will help develop higher teacher presence than text-based WebCT.

**Method**

**Participants**

Undergraduate preservice teachers enrolled in an online teacher technology course at a large, urban university in a southwestern state were recruited to participate in this study. The course introduces students to educational uses of technology and is a requirement for graduation. Informed consent forms were completed by 21 of 26 students prior to the start of the semester’s coursework, with five students electing not to participate in the study. An additional five students did not complete the course and were therefore unavailable to respond to the surveys. Of the 16 students included in the study, one student was Pacific Islander, two students were Hispanic, and 13 students were white. Six of the students were male, 10 were female, and all students were seeking degrees in secondary education.

**Quantitative Instruments**

**Social Presence Instrument.** A modified combined version of Kreijns, Kirschner, Jochems, and Burren’s (2004) Sociability Scale, Social Presence Scale, and Social Space Scale was used to measure social presence. The theoretical framework for these scales includes an ecological approach, where the social affordances of the media are viewed as “…properties of a computer support collaborative learning (CSCL) environment that act as social-contextual facilitators relevant for the learners’ social interactions” (Kreijns, Kirschner, & Jochems, 2002, p. 13).

According to the literature, there has not been a consistent effort to develop instruments for measuring social presence and sociability (Gunawardena & Zittle, 1997; Kreijns, Kirschner, Jochems, & Burren, 2004; Rourke & Anderson, 2002). While there are instruments available (Gunawardena & Zittle, 1997; Rourke & Anderson, 2002), it is not clear which construct a particular instrument is measuring. Items in the instrument developed by Gunawardena overlap
and there is inconsistent use of terminology in the instrument developed by Rourke: “social climate” and “social presence” were used interchangeably (Kreijns, et al., 2004). Kreijns, et al. (2004) addressed these inconsistencies during the development of their three scales: Sociability Scale, Social Presence Scale, and Social Space Scale.

In order to establish content validity for these scales, face-validity was used as items were developed during a computer mediated communication (CMC) social interaction literature review, with the items assessed by the authors. Cronbach’s alpha measures were determined for each of the three scales and the results for the Sociability Scale, Social Presence Scale, and Social Space Scale respectively were 0.92, 0.81, and 0.91. Principal factor analysis with varimax rotation was used to confirm the uniqueness of each scale.

In this study, two surveys were created and the questions contained in the three scales were adapted for use with the present online course. Most of the adaptation involved changing terminology for Google+ (Appendix A and Appendix B).

**Teaching Presence Instrument.** The instrument used to measure teaching presence is the Teaching Presence scale first developed by Rovai (2002) as part of the Classroom Community Index. Shea, Li, and Pickett (2006) used the instrument to investigate perceived differences in community when comparing face-to-face classes and online courses with respect to teaching presence. A principal component analysis was performed to verify that the construct measured was teaching presence and the correlation coefficient for each item was greater than 0.30. A reliability analysis indicated there was internal consistency of the learning community measure and the teaching presence scales. Cronbach’s alpha values were calculated for the learning community scale, connectedness, and learning subscales and found to be 0.93, 0.91, and 0.90 respectively. For this study, the teaching survey was adapted by including Google+ terminology (Appendix A and Appendix B) and the questions were included at the end of the Social Presence survey items for each platform.

**Qualitative Instruments**
A standardized open-ended interview method was used to obtain a more in-depth analysis of student perception of social and teaching presence associated with the two platforms. This technique uses structured questions where each participant is asked the same question, but allows response flexibility in regards to the answers due to the open-ended nature of the question (Gall, Gall, & Borg, 2003). The survey contains questions that ask about perceived differences between the use of Google+ and WebCT in relation to the course and the instructor experience (Appendix C).

**Procedure**
During the fall 2012 semester of a similar online teacher technology course, the instructor, who is also the one of the authors of this paper, conducted a pilot study in order to determine whether Google+ could effectively be implemented as a discussion board in an undergraduate online course. That experience, as well as an extensive literature review, informed the procedures used for this study.
A preliminary technology survey was administered the first week of the spring 2013 semester in order to determine student technology comfort level and gauge their experience with Web 2.0 applications (Appendix D). The results of the survey indicated that most students had self-efficacy in their ability to learn and apply technology skills. It also indicated that all participants owned the hardware necessary to successfully complete the basic requirements of the course as well as the ability to participate in video posts and videoconferencing. Students were also asked if they have or have had contact with other students enrolled in the current online course. Five students indicated they have or have had contact with some of their peers.

**Platform Assignment.** Students were randomly assigned to each platform using a random number generator in Excel. It was determined by the researchers that all students should have the opportunity to use Google+. Therefore half of the students started the semester using the text-based WebCT platform and half started the semester using the Google+ platform. There were concerns about the effect of order of the platforms on student responses on the surveys. Beginning the semester with Google+ may cause students to develop feelings of social and teaching presence that extend into their use of WebCT, thereby inflating the scores for the WebCT course. Ending the semester with Google+ may cause inflation of scores on the Google+ survey as students would currently be using that platform during the administration of that survey. Dividing the students was an attempt to balance out those possible effects. All students participated in the experimental treatment; however data of those who declined to participate were not used for the study. On the eighth week students switched platforms, and for the final week all students used the Google+ platform. This resulted in students using each platform for seven weeks prior to the administration of the surveys, which occurred near the end of week 14 of the semester.

Students were further divided into smaller groups. Group members would participate in weekly discussions with one another and work together on the course collaborative project later in the semester. Smaller groups have been shown to result in richer communication between members when using online discussion boards (Tu & McIsaac, 2002). It was also believed this would allow group members to establish the trust and comfort level necessary to collaborate effectively (Dooner, Mandzuk, & Clifton, 2008). The created groups contained a mix of gender when possible and were based on the secondary subject area students planned to teach in the future. Geographical location was also a consideration should students decide to meet face-to-face for collaborative purposes.

**Creating the Google+ Course Page and Discussion Format.** An important consideration when using a social networking site as a course discussion platform is the assumption of privacy. Social networking sites such as Facebook, Twitter, and Google+ were originally created with the premise that ideas were to be shared around the world uncensored (Rosenblum, 2007). This implies that privacy settings may not be as rigorous as some students may prefer. Therefore it was decided that a private Google+ course page should be used to provide an extra layer of security. A Gmail account, a free web-based email service developed by Google, was created using the course name to separate the student posts from the instructor’s personal Google+ page postings. A Gmail account is a necessary first step in the creation of a Google+ page. Once the Gmail account was established the course Google+ page was created.
Circles are the method Google+ uses to group people who have been granted permission to read the user’s postings. Circles allow users to have control over who sees which particular posting and to determine the level of privacy of each post. This is very important for class discussion boards as students must feel they are in a safe space in order for social presence to occur (Kreijns, Kirschner, & Jochems, 2003). Three Circles were created which included all members of the course, including the instructor. These consisted of a “help” Circle where students could ask for help, a “social” Circle where students were free to post whatever content they wished to share, and a “Clark Communique” Circle which was used to share information the instructor encountered that was relevant to the course but outside the scope of the learning modules.

Module Circles were created for the course discussion assignments. Each week students accessed the course material through WebCampus, the university’s designation for WebCT. Students were required to comment on the materials and to include at least one quote that caught their interest. Providing structure for discussions has been shown to encourage motivation to participate (Aviv, Erlich, Ravid, & Geva, 2003; Garrison, Anderson, & Archer, 2001). A discussion rubric was used to grade each week’s participation. The rubric was based on the discussion structure necessary to generate reflection and social interaction that can lead to improved learning outcomes (Greenlaw & DeLoach, 2003; Roblyer & Wiencke, 2003). The final form of the rubric was based on its use during the fall 2012 semester (Appendix E). Incorporating the discussions as part of the overall grade structure has also been shown to provide the motivation necessary to ensure student participation (Kay, 2006). In order to provide an extra layer of privacy, students were warned that any public posts would receive zero points. Public posts can be accessed by anyone with a Google+ account, regardless of the fact that the post was created on a private Google+ page. Any responses to a public post can be read as well, meaning students who responded to a public post would now also be creating public comments. Full participation consisted of one initial video/text post and three follow-up posts for each discussion and represented 22.5% of the course grade.

Google+ does not allow for threaded discussions, therefore Circles were created for all groups each week to provide a method for separating the previous week’s discussion posts. The instructor created the Circles by adding the appropriate members to each group’s Circle and then shared the Circles with those students to ensure membership was standardized. Circles were titled with the module number and the group name in order to filter the Google+ newsfeed. The newsfeed is a page which displays all posts received by a person. In Google+, newsfeeds can be filtered based on Circles.

The text-based WebCT discussion board had a similar design. Threads were created which mirrored the three all-member Circles on Google+ and students were assigned smaller discussions groups with which to interact concerning each week’s materials.

**Initiation to Google+.** At the beginning of the spring 2013 semester students were notified of their group and platform assignment via email. All students were required to access the Google+ tutorial materials and to complete a Google+ quiz during the first week. Screencasts were created by the instructor for each step required to communicate using Google+: creating a Google+ account, creating a video post, creating and sharing Circles, accepting a Circle, joining a Hangout, and starting a Hangout.
Video posts were modeled by the course instructor. Figure 2 shows an opening scene from a video post. At the beginning of each week the instructor created a video post discussing the upcoming week’s content and expectations. The video posts also included off topic conversation on unusual happenings in the community or issues preservice teachers might find interesting. Similar content was provided on the text-based platform to ensure equal participation by the instructor on the two platforms. The week’s text-based introduction post on the WebCT platform was included in a separate thread under the week’s discussion heading.

Follow-up responses for each initial video post made by students were text-based. Google+ does not allow responses to be created using their video feature and it was decided not to further burden students by requiring them to create a video response outside of the platform structure. Given that some students experienced discomfort creating video posts, or felt that video posts compromised their privacy, they were given the option to create text posts. Only two participants chose this option for the duration of the course.

Hangouts, the videoconferencing feature for Google+, were scheduled using the Event calendar. The Event calendar afforded the ability to schedule several types of events and provided reminders of upcoming events via Gmail. As indicated by the technology survey, most students were unfamiliar with Google+. The instructor used the Hangout feature in conjunction with the screenshare option to give a tour of Google+ thereby increasing the familiarity for the students. After the initial “get-to-know-Google+” time period, Hangouts were then scheduled for office hours. Students also had the option to schedule Hangouts with the instructor if they required extra help, or with fellow students for collaborative or social purposes.
Data Collection. The social presence and teaching presence surveys were administered using Google Forms. The links to the surveys were provided to the students via Gmail, the WebCT mail system, and posted to the Google+ course page. Three reminders were sent via discussion boards, Gmail, and the WebCT mail system. The surveys were administered towards the end of week 14 to ensure that both groups of students had equal time using the two different platforms.

Six students were interviewed during finals week via Google Hangout On Air. Google Hangout On Air allows Hangout sessions to be digitally recorded and stored on the user’s YouTube account. YouTube is a web-based video-sharing password protected site that allows users to store, upload, edit, and share videos. The interview videos were stored with “private” selected for the sharing level. The “private” level requires the user’s password in order to view the video. As several of the interview questions pertained to the teaching presence of the instructor, interviews were conducted by two faculty members unknown to the students to prevent bias from affecting their responses to the questions. The interviews were transcribed using the YouTube voice-to-text transcription feature and checked for correctness by the one of the research members.

Results

Quantitative Results

Given the ordinal, dependent nature of the data it was determined that the Wilcoxon Signed-rank test would be used to compare the means in order to test the hypotheses. The Wilcoxon Signed-rank test uses the sign function of the difference between the means and the sum of the ranks in order to determine whether the population means are significantly different. Participants received both surveys simultaneously and responses were matched using the time stamp provided with the responses. The three constructs contained in the Kreijns et al. (2004) instrument, the Sociability Scale, Social Presence Scale, and Social Space Scale, were analyzed separately, as was the Teaching Presence data.

Sociability Measure. Overall the results, shown in Table 1, indicate that students felt the interactions that occurred on Google+ (G+) provided higher levels of sociability, defined as feeling part of a group, than similar interactions on WebCampus (WC). Students were more likely to select “strongly agree” with items that indicated sociability on the Google+ survey, whereas most students selected between “disagree” and “NA/ND”, indicating indifference as to the effect on sociability, on the WebCampus survey. The frequency distributions for the results for all sections of the survey results can be found in Appendix F. The result for this section of the surveys is significant as the Wilcoxon Signed-rank test indicated that Google+ interactions resulted in higher levels of Sociability ($Mdn = 5$) than WebCampus interactions ($Mdn = 2.5$), $Z = -8.93 , p < .0005$. 


Table 1

Wilcoxon Signed-rank test Sociability Measure

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Test Statistics

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a. Wilcoxon Signed Ranks Test
b. Based on negative ranks.

d. Wilcoxon Signed-rank test Social Presence Measure

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<td>Positive Ranks</td>
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<td>Ties</td>
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</table>

a. Wilcoxon Signed Ranks Test
b. Based on negative ranks.

d. Wilcoxon Signed-rank test Social Space Measure

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a. Wilcoxon Signed Ranks Test
b. Based on negative ranks.

d. Social Presence Measure. As can be seen in Table 2, the results indicate that students experienced higher feelings of social presence when interacting with Google+ compared to WebCampus. Students were more likely to choose “strongly agree” when answering items on the Google+ survey and “NA/ND” on the WebCampus survey. Results for this section of the surveys are significant as the Wilcoxon Signed-rank test indicated that Google+ interactions resulted in higher levels of Social Presence (Mdn = 5) than WebCampus interactions (Mdn = 3), Z = -5.76, p < .0005.

d. Social Space Measure. Google+ also appeared to be more effective at developing a social space, “characterized by effective work relationships, strong group cohesiveness, trust, respect and belonging, satisfaction, and strong sense of community” (Kreijns, et al., 2004, p. 157), than WebCampus. The results for this section of the surveys, shown in Table 3, are significant as a Wilcoxon Signed-rank test indicated that Google+ interactions resulted in higher levels of Social Space (Mdn = 5) than WebCampus interactions (Mdn = 2), Z = -8.44, p < .0005. Students were more likely to select “strongly agree” when answering items whereas with WebCampus they were more likely to select “disagree”.
Table 3

Wilcoxon Signed-rank test Social Space Measure

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Test Statistics

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<th>G+ - WC</th>
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<td>-8.439</td>
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</table>

a. Wilcoxon Signed Ranks Test  
b. Based on negative ranks.

teaching Presence Measure. The results for Teaching Presence were not as strong as for the previous three measures. Students were more likely to select “strongly agree” on items measuring teaching presence for both Google+ and WebCampus surveys. However, the Wilcoxon Signed-rank test indicated that Google+ interactions resulted in significantly higher levels of Teaching Presence ($Mdn = 5$) than WebCampus interactions ($Mdn = 5$), $Z = -3.11$, $p < .002$, and results are shown in Table 4.

Table 4

Wilcoxon Signed-rank test Teaching Presence

<table>
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<td>Ties</td>
<td>131</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>176</td>
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</table>

Test Statistics

<table>
<thead>
<tr>
<th>G+ - WC</th>
<th>Z</th>
<th>Asymp. Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-3.110</td>
<td>.002</td>
</tr>
</tbody>
</table>

a. Wilcoxon Signed Ranks Test  
b. Based on negative ranks.

Qualitative Results

Analysis of the qualitative data was informed by Garrison, et al. (2000) community of inquiry construct. NVivo, a qualitative analysis software package, was used to help code the transcripts derived from the six student interviews. The purpose of the interviews was to corroborate the survey responses as well as provide a more detailed interpretation as to the meaning behind those responses. Therefore initial codes were developed based on the definitions of social and teaching presence, as well as the factor descriptions for sociability and social space contained in the Kreijns, et al., (2004) instrument. A member of the research team coded all six interviews, consisting of two female and four male participants, using a pre-established code table which was “modified as the exposure to the data increased” (O’Donoghue & Punch, 2003, p. 89). After analyzing the data using a constant comparison coding method, the following coding schemes were developed; Social Space, Social Presence, Sociability, and Teaching Presence. Teaching
Presence included three subcategories; Connectedness, Facilitation Discussion, and Directing Cognitive Processes. Descriptions and definitions for these codes can be found in Appendix C.

The six student interview transcripts were reviewed for specific examples of each category and subcategory where applicable and analyzed to see whether those statements were in agreement with the empirical results from the survey. Pseudonyms were used in the following interview analysis.

**Social Space.** All of the participants interviewed expressed feeling part of a community. Three students commented on how they felt “part of a class” similar to the feelings of attending a face-to-face course. Ann stated “I’ve taken many online classes but…this is the first time I’ve actually felt that I was in a class”, and John noted “I feel like it gets more into that traditional classroom type feel…this is not a typical online class.” The term “connectedness” was mentioned by all but one of the participants, and it was mentioned more than once by four of the participants.

This feeling of social space contributed to a willingness to participate in the course assignments, particularly the discussion posts. Bill remarked that he looked forward to the discussion posts each week: “You kind of wanted to do your posts and you kind of wanted to watch the other posts as well. I really enjoyed it”. Participants talked about how having seen one another on video, or conversing synchronously in videoconferences, helped to create more effective collaborative environments. Jane felt that Google+ allowed her group to get to know one another well enough to understand individual strengths and weaknesses when it came to assigning responsibilities for the group project. Bill felt that being able to discuss responsibilities synchronously using Hangout ensured group members collaborated on various assignments prevented confusion as to responsibilities later. As he noted, “There wasn’t a debate of ‘oh, I didn’t get that email, why didn’t somebody tell me?’”

**Social Presence.** Feelings of social presence were mentioned in all six of the participants’ interviews. Tom discussed how he preferred using Google+ to WebCampus “because you can hear somebody’s voice and see them talking.” Ann relayed a particularly effective example about the difference between text-based communication and video communication. During her interview she described how her opinion changed about a classmate she at first thought to be “really uptight” based on his scholarly-type discussion posts in WebCampus. As she viewed his video, and participated in Hangout sessions with Bill, she found him to be “personable and just a funny guy”. She pointed out at that “you can get a misconception when you just read.” Greg’s statement summarizes the overall feelings about the difference between WebCampus and Google+: “I preferred it [Google+] because you can hear somebody’s voice…After you do a few Hangouts…you get a lot better feel for them...You know them a lot better than you do just by reading some text. There’s no emotion in text.”

**Sociability.** Sociability concerns the affordances contained in a computer-supported collaborative learning (CSCL) environment. All six participants referred to the video features of Google+ in relation to its importance at creating social space and social presence within the online course. Tom felt that the video features of Google+ “made you feel like you’re in class instead of just being online.” This is opposite of the feelings expressed by John had towards WebCampus. He found the lack of video led to a lack of connectedness due to the fact that “you
don’t see someone.” This was a recurring theme in the interviews, the lack of connectedness when participating in a strictly text-based communication discussion board.

Three of the interview participants had conducted Hangouts during the semester and found these to be quite effective at helping to create a social climate in the course. Bill spoke of noticing “something in the background of somebody I chatted with” and how it provided context to start a conversation that allowed them to get to know one another on a more personal level. Ann felt she established a friendship with Bill during their Hangouts as they discussed their group project and she began to learn about his personal life, something that had never happened in her face-to-face classes.

One student however, Tom, went back and forth on whether Google+ was more effective for communication than WebCampus. He appeared to prefer Google+ based on some of his responses, but in others he would state “that there was no difference between WebCampus and Google+, they were both equally effective.” He did recommend that future instructors incorporate Google+ into their courses.

**Teaching Presence.** All of the participants interviewed felt that Google+ provided a better platform to communicate with the instructor. Tom stated that it was “very simple to talk to her.” Ann relayed how she enjoyed the weekly “coming up” posts. “It’s nice to have your teacher physically telling you, ‘okay, hi everybody’, versus just reading it.”

The participants felt the video features helped to create a sense of connection with the instructor. Jane noted she “got a lot better feel for her” as concepts in the class were explained and discussed during instructor video posts. Greg discussed how he “felt extremely connected to my professor”. When comparing this course to other online courses he stated that other “professors would send emails and reminders this is due here…it was pretty impersonal.” This was also echoed by John when making a comparison between this course and other online courses he had taken in the past; “before when I just had WebCampus and you just kind of know your teachers, they’re just kind of anonymous beings.” When asked if other instructors should consider using Google+, Jane advocated its use as a means to “get that more in depth relationship with your students.”

**Discussion and Conclusion**

Social and teaching presence surveys, combined with student interviews, showed that video-enabled Google+ was more effective at helping to create social and teaching presence when compared with text-based WebCT. Google+ was rated significantly higher than WebCT for all three social scale measures: sociability, social presence, and social space. Google+ was also rated significantly higher for teaching presence.

Participant interviews corroborated the empirical results. Interviewees talked about feelings of “connectedness” with their classmates as Google+ provided the ability to “see their faces”, indicating feelings of isolation were less compared with other online courses. These results are consistent with the findings demonstrated by Dickey (2004); that technology can be used to help reduce feelings of isolation among online students. One student was so enthusiastic that he
I SEE YOU: USING THE AFFORDANCES OF GOOGLE+

recommended Google+ be used for all courses that used online discussion boards, regardless of whether the courses met face-to-face or online. Participants also indicated Google+ Hangout made collaboration much easier and more productive as it was possible to “know” your group mates as well as their strengths and weaknesses. The video features of Google+ provided the ability to see both verbal and non-verbal social clues, helping develop feelings of trust and belonging which were demonstrated by Kreijns, Kirschner, and Jochems (2003) to be crucial for group cohesion. Some of the participants had used Google+ Hangout to brainstorm ideas and assign duties and responsibilities and felt this would help eliminate any misunderstandings in the future, leading to a feeling of trust within the group.

Google+ was shown to influence the creation of social and teaching presence to a greater extent than WebCT, although the empirical results indicated the difference in teaching presence was much less than the social presence results. This was probably due to the fact that the instructor ensured her interactions were equal between both platforms. As with social presence, interviewees talked about feelings of “connectedness” with the instructor. One participant spoke of how the instructor’s video posts helped her understand the instructor by “how she would explain things and talk about them”. Ease of communication was a second theme during the interviews, particularly given both the synchronous and asynchronous nature of Google+.

The topic of creating video posts was also discussed during the interviews. Many of the students spoke about their discomfort level at the beginning, or the difficulty in uploading the posts. Even though they were uncomfortable at first, students were willing to overcome their initial reservations in order to create a more inclusive classroom experience. Once students had created a few videos, they described the process as “easy”. There were two students, neither of whom participated in the interviews, who created text-only posts throughout most of the course. One student created two video posts at the beginning of the semester and participated in two Hangouts, but decided it was too uncomfortable to continue posting using the video feature. The second student was uncomfortable with social networking sites and never created a video post.

The primary reason for the creation of social presence and teaching presence is to support cognitive presence and increase persistence in online courses (Doherty, 2006; Garrison, Anderson, & Archer, 2000; Morris, Finnegan, & S., 2005; Shea, Li, & Pickett, 2006). While it was not a goal of this study to measure cognitive presence, examples of cognitive presence in the course were evident during the interviews. One participant provided an example of how teacher presence was created that could lead to motivation to learn: “Whereas Professor Clark, she’s like, wow, that is some crazy weather we had last week. Like this was real time, this was ‘I am committed to your education’. I think it makes you feel like she takes you more seriously, she’s invested”. Two other students spoke directly on how they felt Google+ enhanced their learning experience. One participant stated, “I feel like I learned more with the Google+ interaction…you were able to see them and react to things.” Another said “it was easier to retain information when I’m actually watching something…as opposed to reading it”. The experiences and thoughts shared by the students indicate that the video affordances of Google+ were effective at creating a classroom environment where students and instructor connected and where learning occurred.

There are limitations to this study. The sample size was very small, sixteen students. The participants were enrolled in a teacher technology course and were more motivated to learn how to use technology than typical online higher education students. Several participants indicated
they planned to use Google+ in their future classrooms which may have provided motivation to continue to learn and use Google+. The instructor had been using Google+ since it was in beta, was very familiar with Hangout and the video features of Google+, and had preconceived beliefs as to its effectiveness at promoting feelings of presence in an online course.

There are several areas for further study with Google+. While research has already shown the effectiveness of video in promoting social and teaching presence (Borup, West, & Graham, 2012; Skylar, 2009), most of the studies have been conducted using asynchronous video applications. As Moallem, et al., (2011) demonstrated, a blend of both asynchronous and synchronous video may result in increased outcomes over either format alone. Google+ could be used to extend this research. Participants mentioned other features of Google+ that were not part of the study which they preferred to WebCT. For example, students found outside video and document sharing much easier with Google+ than with WebCT. Google+ also provided greater flexibility due to its mobile application. Students could receive notifications on their mobile devices and respond whenever and wherever they were. An ecological study of this or another social networking site, as compared to the typical learning management system (LMS), could be conducted in order to identify features that could help improve learning outcomes.

Finally, perhaps it is time to look at “student presence” from the viewpoint of the instructor. The instructor for this course noticed a difference in feelings of connection between students she interacted with online and those she interacted with on Google+. It is suspected that online instructors could be subject to feelings of isolation as well. Google+ could be used to investigate if synchronous and asynchronous video increases online instructors’ connection to their students, and if this connection leads to increased course effectiveness and learning outcomes. Online learning is fast becoming an integral part of education. It is important that more tools be identified that can help students and instructors experience success in this environment.
References


Rovai, A. (2003). In search of higher persistence rates in distance education online programs. *Internet and Higher Education, 6*, 1 - 16.


Appendix A

WebCampus Social and Teaching Presence Survey

The purpose of this survey is to evaluate the effectiveness of WebCampus as communication platform for your online course, EDU 214S. You will be answering these survey questions twice; once in relation to your experience with WebCampus and a second time in relation to your experience with Google+. Your responses will be anonymous; when you respond the spreadsheet will list the time of the response but no identifying information will be provided.

It is understandable that it will be difficult to separate your WebCampus communications versus the Google+ communications. Just do the best you can when answering.

WEBCAMPUS

This following set of questions refers to your experience using WebCampus for your class communications.

Scale of 0 to 5, with 0 = I choose not to answer this question or does not apply; 1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; 5 = strongly agree

Social Aspect Survey (Kreijns, et al., 2004)

Part I

1. This environment enables me to easily contact my group members.
2. I do not feel lonely in this environment.
3. This environment enables me to get a good impression of my group members.
4. This environment allows spontaneous informal conversations.
5. This environment enables us to develop into a well performing team.
6. This environment enables me to develop good work relationships with my group members.
7. This environment enables me to identify myself with my group.
8. I feel comfortable with this environment.
9. This environment allows for non task-related conversations.
10. This environment enables me to make close friendships with my group members.

Social Presence Scale

Part II

11. When I have real-time conversations in this environment (for example, using the WebCampus chat feature or posting simultaneously on the WebCampus discussion board), I have my communication partner in my mind’s eye.
12. When I have asynchronous conversations in this environment, I also have my communication partner in my mind’s eye.
13. When I have real-time conversations in this environment, I feel that I deal with very real persons and not with abstract anonymous persons.

14. When I have asynchronous conversations in this environment, I also feel that I deal with very real persons and not with abstract anonymous persons.

15. Real-time conversations in this environment can hardly be distinguished from face-to-face conversations.

Social Space Scale

Part III

16. Group members felt free to challenge the ideas, statements, and/or opinions of others.

17. We reached a good understanding of how we had to function.

18. Group members ensured that we kept in touch with each other.

19. We worked hard on the group assignment.

20. I maintained contact with all other group members.

21. Group members gave personal information on themselves.

22. The group conducted open and lively conversations and/or discussions.

23. Group members took the initiative to get in touch with others.

24. Group members spontaneously started conversations with others.

25. Group members asked others how the work was going.

26. Group members felt that they were attacked personally when their ideas, statements, and/or opinions were criticized.

Teaching Presence (When answering the following questions, reflect on communication on WebCampus only).

Part IV

27. Overall, the instructor for this course was helpful in identifying areas of agreement and disagreement on course topics that assisted me to learn.

28. Overall, the instructor for this course was helpful in guiding the class towards understanding course topics in a way that assisted me to learn.

29. Overall, the instructor for this course acknowledged student participation in the course (for example, replied in a positive, encouraging manner to student submissions).

30. Overall, the instructor for this course encouraged students to explore new concepts in this course (for example, encouraged “thinking out loud” or the exploration of new ideas).

31. Overall, the instructor for this course helped to keep students engaged and participating in productive dialog.

32. Overall, the instructor for this course helped keep the participants on task in a way that assisted me to learn.

33. Overall, the instructor for this course presented content or questions that helped me to learn.

34. Overall, the instructor for this course helped to focus discussion on relevant issues in a way that assisted me to learn.
35. Overall, the instructor for this course provided explanatory feedback that assisted me to learn (for example, responded helpfully to discussion comments or course assignments).

36. Overall, the instructor for this course helped me to revise my thinking (for example, correct misunderstandings) in a way that helped me to learn.

37. Overall, the instructor for this course provided useful information from a variety of sources that assisted me to learn (for example, references to articles, textbooks, personal experiences or links to relevant external websites).

38. Is there anything more you would like to add about your experience as a student using the WebCampus Discussion boards for this course?
Appendix B

Google+ Social and Teaching Presence Survey

The purpose of this survey is to evaluate the effectiveness of Google+ as a communication platform for your online course, EDU 214S. You will be answering these survey questions twice; once in relation to your experience with WebCampus and a second time in relation to your experience with Google+. Your responses will be anonymous; when you respond the spreadsheet will list the time of the response but no identifying information will be provided.

It is understandable that it will be difficult to separate your WebCampus communications versus the Google+ communications. Just do the best you can when answering.

GOOGLE+

This following set of questions refers to your experience using Google+ for your class communications.

Scale of 0 to 5, with 0 = I choose not to answer this question or does not apply; 1 = strongly disagree; 3 = disagree; 3 = neutral; 4 = agree; 5 = strongly agree

Social Aspect Survey (Kreijns, et al., 2004)

Part I

1. This environment enables me to easily contact my group members.
2. I do not feel lonely in this environment.
3. This environment enables me to get a good impression of my group members.
4. This environment allows spontaneous informal conversations.
5. This environment enables us to develop into a well performing team.
6. This environment enables me to develop good work relationships with my group members.
7. This environment enables me to identify myself with my group.
8. I feel comfortable with this environment.
9. This environment allows for non task-related conversations.
10. This environment enables me to make close friendships with my group members.

Social Presence Scale

Part II

11. When I have real-time conversations in this environment (for example, using Hangout or posting simultaneously on Google+), I have my communication partner in my mind’s eye.
12. When I have asynchronous conversations in this environment, I also have my communication partner in my mind’s eye.
13. When I have real-time conversations in this environment, I feel that I deal with very real persons and not with abstract anonymous persons.
14. When I have asynchronous conversations in this environment, I also feel that I deal with very real persons and not with abstract anonymous persons.
15. Real-time conversations in this environment can hardly be distinguished from face-to-face conversations.

**Social Space Scale**

**Part III**

16. Group members felt free to challenge the ideas, statements, and/or opinions of others.
17. We reached a good understanding of how we had to function.
18. Group members ensured that we kept in touch with each other.
19. We worked hard on the group assignment.
20. I maintained contact with all other group members.
21. Group members gave personal information on themselves.
22. The group conducted open and lively conversations and/or discussions.
23. Group members took the initiative to get in touch with others.
24. Group members spontaneously started conversations with others.
25. Group members asked others how the work was going.
26. Group members felt that they were attacked personally when their ideas, statements, and/or opinions were criticized.

**Teaching Presence** (When answering the following questions, reflect on communication on Google+ only).

**Part IV**

27. Overall, the instructor for this course was helpful in identifying areas of agreement and disagreement on course topics that assisted me to learn.
28. Overall, the instructor for this course was helpful in guiding the class towards understanding course topics in a way that assisted me to learn.
29. Overall, the instructor in this course acknowledged student participation in the course (for example, replied in a positive, encouraging manner to student submissions).
30. Overall, the instructor for this course encouraged students to explore new concepts in this course (for example, encouraged “thinking out loud” or the exploration of new ideas).
31. Overall, the instructor for this course helped to keep students engaged and participating in productive dialog.
32. Overall, the instructor for this course helped keep the participants on task in a way that assisted me to learn.
33. Overall, the instructor for this course presented content or questions that helped me to learn.
34. Overall, the instructor for this course helped to focus discussion on relevant issues in a way that assisted me to learn.
35. Overall, the instructor for this course provided explanatory feedback that assisted me to learn (for example, responded helpfully to discussion comments or course assignments).

36. Overall, the instructor for this course helped me to revise my thinking (for example, correct misunderstandings) in a way that helped me to learn.

37. Overall, the instructor for this course provided useful information from a variety of sources that assisted me to learn (for example, references to articles, textbooks, personal experiences or links to relevant external websites).

38. Is there anything more you would like to add about your experience as a student using the Google+ for this course?
## Appendix C

### Social and Teaching Presence Coding Categories and Definitions

<table>
<thead>
<tr>
<th>Code Category</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social Space</strong></td>
<td>A social space is “characterized by effective work relationships, strong group cohesiveness, trust, respect and belonging, satisfaction, strong sense of community” (Kreijns, et al., 2004, p. 157).</td>
</tr>
<tr>
<td><strong>Social Presence</strong></td>
<td>Social presence refers to “the degree of illusion that the other in the communication appears to be a ‘real physical person’” (Kreijns, et al., 2004, p. 157).</td>
</tr>
<tr>
<td><strong>Sociability</strong></td>
<td>“…the extent to which a social space” arises based upon “the quality of the set of social affordances” contained in the CSCL environment. (Kreijns, et al., 2002, p. 13).</td>
</tr>
<tr>
<td><strong>Teaching Presence</strong></td>
<td>“…effective design, facilitation, and direction of cognitive and social processes on the part of the online instructors” (Shea, et al., 2006, p. 177).</td>
</tr>
<tr>
<td><strong>Connectedness</strong></td>
<td>Expressions of connectedness to the instructor.</td>
</tr>
<tr>
<td><strong>Facilitating discussion</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Directing cognitive processes</strong></td>
<td>Expressions that instructor helped guide and direct discussions and is interested in learning outcomes of students.</td>
</tr>
</tbody>
</table>
Appendix D

Google+ Interview Protocol

Thank you for your time and participation in this study, I See You: Using the Affordances of Google+ to Increase Social and Teaching Presence in an Online Undergraduate Teacher Education Course. The purpose of this study is to compare WebCampus and Google+ to help determine which provides a better online course experience for students. The following questions refer to your experience with the two discussion platforms used for your EDU 214 online course, WebCampus and Google+. This Hangout will be taped to allow for analysis at a later time, and the tape will be stored in a password protected site.

Questions:

1. How did your use of the two platforms affect your learning experience for this course? Did you have a preference, and if so describe what it was about that platform that caused you to prefer its use.

2. How did your use of the two platforms affect your experience with the course instructor? Did you have a preference in your dealings with the course instructor, and if so, why?

3. Did you feel differently towards classmates you saw on video versus classmates who communicated solely with text? If yes, describe those differences.

4. During the wiki Innovations mini-teach, what methods of communication did you use with your group members and why?

5. Did you feel connected to your classmates and to your professor? If so, what characteristics of the course do you believe led to that feeling of connection? If not, what characteristics of the course do your believe led to that feeling of disconnection?

6. How did your feelings towards you classmates in this online course compare with your feelings towards classmates in other online courses? Compared to your face-to-face courses?

7. What advice would you give to other instructors considering the use of Google+ as part of their courses?

8. Is there anything else you would like to add?

Thank you for your participation in this study. If you have any further questions, feel free to contact Ms. Clark on the course Google+ page.
Appendix E

EDU 214S Technology Survey

Please indicate how much you agree with the following statements. Use this scale to indicate your level of agreement – Strongly Disagree (1), Slightly Disagree (2), Neither agree nor Disagree (3), Slightly Agree (4), Strongly Agree (5).

NOTE: Technology is a broad concept that can mean a lot of different things. For the purpose of this questionnaire, technology is referring to digital technology/technologies. That is, the digital tools we use such as computers, laptops, tablets, Smartphones, interactive whiteboards, software programs, websites, etc.

TK (Technology Knowledge)

1. I know how to solve my own technical problems (1 – 5)
2. I can learn technology easily (1 – 5)
3. I keep up with important new technologies (1 – 5)
4. I frequently play around with technology (1 – 5)
5. I know about a lot of different technologies (1 – 5)
6. I have the technical skills I need to use technology (1 – 5)
7. I have had sufficient opportunities to work with different technologies (1 – 5)

TPK (Technological Pedagogical Content Knowledge)

8. I can choose technologies that enhance the teaching approaches for a lesson. (1 – 5)
9. I can choose technologies that enhance students’ learning for a lesson (1 – 5)
10. My teacher education program has caused me to think more deeply about how technology could influence the teaching approaches I use in my classroom (1 – 5)
11. I am thinking critically about how to use technology in my classroom (1 – 5)
12. I can adapt the use of the technologies that I am learning about to different teaching activities (1 – 5).

Hardware and Use

13. Which of the following pieces of technology do you own or have regular access to? Check all that apply.
   a. Desktop computer
   b. Laptop computer
   c. Smartphone (Android, Windows, or iPhone)
   d. Cell phone (not a Smartphone)
   e. Tablet (Android or iPad)
   f. iTouch
   g. iPod
   h. eReader (Kindle, Nook, etc)
   i. I do not own any technology devices
14. How often do you use the computer labs at UNLV?
   a. Never
   b. Once a week
   c. 2 to 3 times a week
   d. 4 or more times a week

15. Of the technology device(s) you have access to, which of the following features do they have?
   a. Microphone
   b. Web cam
   c. Front facing camera (camera faces you so that others may see you while you are using the device).
   d. Microphone and front facing camera
   e. My technology device(s) does/do not have a microphone or front facing camera

16. How often do you use your technology device(s)?
   a. Never
   b. Almost never
   c. Once a week
   d. 2 to 3 times a week
   e. Once a day
   f. A few times a day
   g. Almost constantly

17. When you access the internet, what browser do you prefer?
   a. Internet Explorer
   b. Safari
   c. Firefox
   d. Chrome
   e. Other

18. How comfortable are you at solving technical difficulties when you experience problems with your technology device?
   a. I have no idea how to troubleshoot when problems occur.
   b. “Turn it off and on again” is the only tool in my “toolkit”.
   c. I know how to check for internet functionality and whether or not my microphone and camera are working properly.
   d. I can pretty much fix anything that goes wrong with my computer.

Social Networking and Use

19. How comfortable are you when it comes to using social networking sites?
   a. I don’t feel comfortable using them at all.
   b. I see them as a necessary evil, but I am not always comfortable using them.
   c. I don’t feel one way or the other.
   d. I am comfortable using them.
   e. I love using social networking sites!

20. Which of the following social network sites have you had experience with?
   a. Facebook
   b. Google+
c. Twitter
d. LinkedIn
e. YouTube
f. Blogster
g. Ning
h. Diigo
i. Wordpress
j. Flickr
k. Tumblr
l. Meetup
m. Xanga
n. Reddit
o. Other

21. How frequently do you access social networking sites?
   a. Never
   b. Once a week
   c. A couple of times a week
   d. Once a day
   e. 2 to 3 times a day
   f. Several times a day
   g. All of the time!

22. How quickly were you able to learn and navigate the social networking site(s)?
   a. I never could figure them out.
   b. I had to have friends/family help me figure out how the site(s) worked.
   c. It took a little time, but I was able to figure out how to use the site(s) after finding some instructions.
   d. I felt the site was intuitive and did not have trouble using it after a couple of trials.
   e. I was able to use the site immediately and had no problem figuring out the features.

23. How would you describe your digital presence on the internet? (Have you defined yourself as a “brand” by using a consistent profile between sites, do you use different profiles for different types of social networking sites, do you set up profiles haphazardly, or do you have no digital presence? You may use your own words to answer this question.)

24. Is there anything else I should know about your technology use, social networking use, or both?
Appendix F

Google+ Discussion Rubric

*(Don’t forget – any post that is shared publicly will receive a score of “0”. Make sure you choose the correct Circle or person.)*

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Unacceptable</th>
<th>Acceptable 1 Point</th>
<th>Good 2 Points</th>
<th>Excellent 3 Points</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial post: Clarity &amp; Mechanics</strong></td>
<td>Video post contains unorganized or rude content that may contain multiple errors or may be inappropriate. Does not cover the discussion content requested.</td>
<td>Communicates in courteous manner. Contributes some information to the discussion with some errors in clarity (spelling for WebCampus) or grammatical speaking/writing errors. Does not always stay on topic. Covers some of the discussion content requested.</td>
<td>Communicates in courteous manner. Contributes valuable information to discussion with minor clarity (spelling for WebCampus) or grammatical speaking/writing errors. Stays on topic. Covers most of the discussion content requested.</td>
<td>Communicates in courteous manner. Contributes to discussion with concise comments that are clear and have no grammatical speaking/writing errors. References specific subtopics of the readings and uses those to extend the concepts covered. Covers all discussion content requested.</td>
</tr>
<tr>
<td><strong>References &amp; Support</strong></td>
<td>Includes no references or supporting experience.</td>
<td>Uses personal experience, but no references to readings or research.</td>
<td>Incorporates some references from literature and personal experience.</td>
<td>Uses references to literature, readings, or personal experience to support comments.</td>
</tr>
<tr>
<td><strong>Follow-Up Post Quantity</strong></td>
<td>No participation</td>
<td>Contributes 1 follow-up post (2 pts)</td>
<td>Contributes 2 follow-up posts (4 pts)</td>
<td>Contributes 3 or more follow-up posts (6 pts)</td>
</tr>
<tr>
<td><em>(This category counts as double pts)</em></td>
<td></td>
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</tr>
<tr>
<td><strong>Follow-Up Posting Quality</strong></td>
<td>Does not post at all or uses one or two words, i.e. &quot;cool&quot;, or &quot;I agree&quot;, or there are multiple errors in clarity and mechanics.</td>
<td>Posts shallow contribution to discussion (e.g., agrees or disagrees); does not enrich discussion. Minor errors in clarity and mechanics.</td>
<td>Elaborates on an existing posting with further comment or observation. Post has minor clarity and/or mechanical errors.</td>
<td>Demonstrates analysis of others’ posts; extends meaningful discussion by building on previous posts. Post is free of grammatical or spelling errors.</td>
</tr>
</tbody>
</table>
Appendix G

Survey Response Frequency Graphs

Figure 5: Frequency Comparison of Sociability Measure

Figure 6: Frequency Comparison of Social Presence Measure
Figure 7: Frequency Comparison of Social Space Measure

![WebCampus Social Space Measure](image1)

![Google+ Social Space Measure](image2)

Figure 8: Frequency Comparison of Teaching Presence Measure

![WebCampus Teaching Presence Measure](image3)

![Google+ Teaching Presence Measure](image4)