

**The Wikification of Online Learning: Can Wikis Increase Students' Perception of Social Presence?**

A White Paper Exploring the Possibility of Increased Collaboration and Learning Outcomes

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## Introduction

One of the keys for online learning in higher education is providing students with collaborative learning experiences (Kim & Bonk, 2006; Alliance for Higher Education Competitiveness, 2005). A survey report, “Future of Higher Education - How technology will shape learning,” (New Media Consortium, 2008), indicates that 52% of survey respondents state that online collaboration tools would make the greatest contribution in terms of improving educational quality over the next five years.

As one of the many ways students collaborate online, social media tools are gaining attention as a means in higher education to foster richer collaborative learning and community building. Social media, in this context, refers to online tools and services that allow any learner to create and publish content, not just the author, and create a social presence. Reuben (2008) reviewed Brian Solis and Thomas’s conversation Prism and Brian’s discussions on social media (2008), and stated social media “social media comprises of activities that involve socializing and networking online through words, pictures and videos... It is about dialog – two way discussions bringing people together to discover and share information.” (Reuben, 2008, The Use of Social Media in Higher Education for Marketing and Communication section, ¶ 1).

The Horizon Report first noted the emergence of social networking (part of social media) as a viable educational tool in 2005 (Johnson & Smith, 2005) and has continued to refine this discussion in each subsequent annual report (Johnson, Levine, & Smith, 2006, 2007, 2008, 2009). The annual [21st-Century Campus Report](#), which is a national survey of more than 1,000 college students, faculty and IT staff members also indicates that 64% of students use social media to connect with classmates to study or work on class assignments several times per month.

Social interaction and social presence are critical features to a successful online learning experience for many distance education students. According to Short, Williams and Christie (as cited in Poellhuber & Anderson, 2011), social presence is defined as the degree of connection between people within an interaction, or the sense of being there if at a distance. The importance of this sense of presence has been established between student perceptions of negative experience such as social isolation and high dropout rates in e-learning (Carr, 2000). Further, among the many factors that foster a sense of community in online courses, social presence has been found to be one of the most significant (Cobb, 2009; Gunawardena & Zittle, 1997) and is emerging as a key concept in online learning experiences. Thus, in order to facilitate a deeper learning experience for students, there is a great need to foster a sense of community in online courses.

Thus, the purpose of this research paper is to review the literature surrounding social media and

propose a possible research study using wikis as next steps. We are defining social presence as the ability of participants in a community to project themselves, socially and emotionally, as real people through a medium of communication. Using the Community of Inquiry theoretical framework (Garrison, Anderson & Archer, 2000), this paper will link the framework to the use of wikis in online learning.

Proposed research questions may include:

1. Does the use of a social media tool influence student-to-student collaboration on team projects in an online course?
2. Does the student's perception of social presence change due to the use of a social media tool as a collaborative tool?

## **Literature Review**

Scholars have suggested that social presence provides a valuable framework to describe and understand how people socially interact in distance learning and online learning environments (Picciano, 2002; Lowenthal, 2010; Mackey, 2010). Starting from the development of Short, Williams, and Christie's social presence theory, which was developed to explain the effect of telecommunications media on communication (Moore & Kearsley, 2012), Lowenthal (2010) outlines the evolution of the construct of social presence with three major phases. In Phase I, the period of 1970s, the focus of research was on telecommunication, in which social presence is described as degree of salience, i.e. quality of state of being there. The focus on the research in this phase was to compare people's attitudes toward different communication media. In Phase II, the period of 1980s-early 1990s, the focus was the pre-deterministic attribute of computer-mediated communication (CMC) in terms of social presence. Many of researchers in this phase concluded that CMC was antisocial and impersonal due to the filtering of the social cues. In Phase III, the period of early/mid 1990s-present, the focus is shifted to the social affordance of CMC, and on online learning.

There are two major perspectives on the evolution of social presence: (1) the media richness perspective, and (2) the relational view (Kehrwald, 2008). Initially, social presence has been explored as a media attribute, which is used as a selection criterion to determine which media is more rich in conveying information as in a face-to-face interaction. Later, as the exploration on social presence evolved, social presence has been viewed as a "quality of relational systems" (Kehrwald, 2008, p. 91). The emphasis is on the relational aspect of communication, how people perceive themselves as real, and how they connect others through the mediated communication (Gunwardena, 1995; Rourke, Anderson, Garrison & Archer, 2001; Tu, 2002).

Social presence is also part of the Community of Inquiry framework, which identifies prerequisites for student success in online learning and creating a deep and meaningful learning experience through the development of three interdependent elements - social, cognitive and teaching presence (Garrison, Anderson & Archer, 2000). Social presence is the degree to which participants are able to present themselves as “real” people (p. 89). Cognitive presence is an important part of critical thinking and is key to higher education success. Teaching presence includes course design and organization, facilitating discourse, and instruction (p. 90).

The concept of social presence as the quality of a relational system reflecting personal relations instead of the passive concept molded by the medium, has been investigated through its relation with the development of the community of learners. Social presence is a core element of the Community of Inquiry (COI) Model. The COI model emphasizes social presence as being composed of three factors, which are affective expression, open communication and group cohesion (Arbaugh, Blevland-Innes, Diaz, Garrison, Ice, Richardson, and Swan, 2008; Garrison, Anderson & Archer, 2000).

Over the past decade research on social presence has explored a number of different topics: (1) the measurement of social presence (Biocca & Harms, 2002; Tu, 2002; Lin, 2004; Kim, 2010), (2) exploration of factors that contribute to social presence, such as different types of social expression, creation of a shared social identity, the use of different technological tools (Kim, 2011), (3) the impacts of social learning, such as the relationship between the perceived social presence and satisfaction of online courses (Garrison, Anderson & Archer, 2000; Rourke, Anderson, Garrison & Archer, 2001), (4) the relationship between the perceived social presence and perceived learning (Richardson & Swan, 2003), (5) the relationship between the perceived social presence and the development of a community of learners (Rovai, 2002; Lowenthal, 2010), and (6) tools to improve social presence, including social media tools that engage students in communication activities, learning activities that allow people co-construct products, and awareness tools that show the status of participants (who is here, who does what, what has been changed, what is new, etc).

The past research on social presence has paved a way for us to better define social presence and understand how to measure and assess social presence. Lin’s work (2004) gives us a tool to measure student’s perception of social presence from different aspects. While we are looking into whether the use of the wiki influences a student’s perception of social presence, the research on the tools to improve social presence provides us with some specific aspects to examine the wiki tool that students will be using in their collaboration.

## **Proposed Research Study**

## Wikis as a Social Media Tool to Explore Increased Collaboration

Wiki means “quick” in the Hawaiian language and its originator, Ward Cunningham, described the wiki as an extremely simple online database (Leuf & Cunningham, 2001). Wikis are interlinked web pages based on the hypertext system of storing and modifying information. Each page can store information and is easily viewed, edited, and commented on by other people using a web browser. Functionally, a wiki is meant to engage individuals to regularly update wiki pages in a collaborative fashion, to add new information, and to create links between pages.

Wikis provide a number of benefits to collaboration in online courses for distance education. First, they reduce feelings of isolation in the online environment, thus increasing perception of social presence (Bibeau, 2001). Second, they increase coordination of collaboration (student-to-student and student-to-teacher). Third, they offer instant publication - work can be instantly available to a world-wide audience. Fourth, according to Larusson and Alterman (2009):

The *malleability* of wikis enables both teachers and students to do further adaptations to the environment so that it better aligns with the requirements of a particular class or the specifics of a given student or learning activity. The wiki control structure is mostly *non-hierarchical*: There is not a centralized authority that controls the changes and addition to content. Students feel as if they work within a student-owned and centered workspace. (p. 373)

Finally, wikis bring an ease of group work to another level by keeping just one version of the document, while version history is tracked and allows multiple simultaneous editors.

Wikis offer an online space for collaborative authorship and writing and offers the ability to interact with an evolving document over time (Duffy & Bruns, 2006). In the education field, one of the uses of wikis is for group writing projects (Tonkin 2005; University of Delaware, 2008; West & West, 2009). Wikis are ideal platforms for collaborative authorship. Students can work together for a research paper or a presentation and can engage in different stages of writing, including outlining, drafting, editing, revising, and finalizing. Throughout this process, students formulate the flow and structure to develop and organize themes through integrative writing, and then review and comment on each other’s input to refine the final group paper or presentation. In a report of different uses of wikis at the University of Delaware (<http://udel.edu/~mathieu/wiki/>), one of the examples provided is a wiki which provides a space for teammates to prepare their presentation material in a foreign language.

It is important for students to establish the common goals among the team members by

identifying what the wiki project is about and what the final project entails. They also have to define the roles and responsibilities of each team member to work together on the learning tasks to achieve with the wiki project. Students need to engage in a social negotiation process, in which they participate in discussions, and clarification and evaluation of ideas, part of the collaborative learning activities that Totten Sills, Digby and Russ (1991) identified to foster critical thinking.

When they incorporated the use of wikis into a blended learning statistics course, Newmann & Hood (2009) found the following: “Students who used the wiki to write the practice report gave higher ratings on engagement with other students and cognitive engagement than the students who wrote the practice report individually” (p.392). They also commented that “From a sociocultural perspective on learning, a wiki provides a communication medium through which students can work together to construct knowledge and share ideas” (p. 392). They suggested from the results from their study that wikis support collaboration among students, and that through this collaboration, the students became more cognitively engaged in the subject matter, a finding consistent with the notion that Harasim (1990) had through working with others can enhance involvement in the intellectual components of the learning process.

### **Proposed Methodology:**

This research proposal falls into one of the topics covered in the literature review on social presence, that is the exploration of the tools, specifically the use of wiki as a collaborative writing tool. Previously, researchers have carried out studies to explore whether the use of social media will create a positive social presence learning experience in online courses. For example, the research by Dunlap & Lowenthal (2009, 2010) shows that the use of Twitter enhances social presence in online courses. However, in a study by DeSchryver, Mishra, Koehler, and Francis (2009), the authors compared measurements of social presence between the Facebook and Moodle groups, and found no significant differences on the overall social presence survey. Also, although their study suggested that Ning can be used most effectively in distance education courses as a technological tool for improved online communications among students in higher distance education courses, some results did suggest that social networking sites (SNSs) may not fully support an online community of practice or the development of a strong sense of social presence (Brady, Holcomb & Smith, 2010).

To address the proposed research questions, it is suggested that we examine the use of wikis in an undergraduate general education course. The current structure of an undergraduate psychology course requires students to construct three profile assignments. The objectives of the profile assignments are for students to make a personal connection to the course materials at higher level than they normally would individually, to collaborate with team members, and to

use their collective knowledge to construct a realistic profile that appropriately represents the issues in lesson material.

The students are currently assigned to teams and they are to work collaboratively to construct a realistic profile of their client/patient. The students are provided with a discussion forum for collaboration, however, they have provided feedback that there were issues with version control of the document that was being worked on in the discussion forum. Also, instead of working collaboratively on the document, they would split up the work and never actually work as a team. Since the students would split up the work and never work as team, the main objective mentioned above for these three assignments was missed.

We propose studying whether the use of a wiki instead of the discussion forum will influence the way students collaborate on profile assignments. In using a wiki, the students will have one online space where they can collaboratively add, edit, outline, draft and finalize their profile.

Additionally, we want to determine if the use of the wiki influences student's perception of social presence. A common concern in online education is that the mediated nature of online learning might prevent students from developing a sense of belonging with other students (Swan & Shih, 2005). Social presence, as a relational indicator of communication among the learners (Kehrauld, 2008), can provide an understanding of how people perceive themselves as real and how they connect others through the use of a wiki in an online learning environment.

**Population:**

Students enrolled in this undergraduate general education course are typically enrolled in the World Campus with junior or senior year standing. A section of this course typically contains approximately 25-30 students. Students typically range in age between early 30s to early 40s. This course also usually contains more female than male students.

**Procedure and time frame:**

We propose to conduct this study over the course of one semester which is approximately 16 weeks in duration. In an effort to control as many variables as possible, we propose to survey students in only one section of the course.

The course contains three profile assignments. For the first assignment, students will work in teams and use discussion forums as the course is currently designed. For the second assignment, all students will work in the same teams and use a wiki to create and submit their profile assignment. For the third assignment, students will work in the same teams and will choose which method they wish to use - either the discussion forum or the wiki. Students will be asked

to complete a web survey after assignments 1 and 2 (see Appendix A). The survey will be hosted within the course management system.

### **Instrumentation:**

After the first two assignments, we will use the social presence questionnaire developed by Lin (2004). Lin's work was adapted from items from a social presence questionnaire developed by Picciano (2002), which itself was another work developed by Tu (2001). The questionnaire measures the students' perception of social presence from three major aspects:

- perception of the assistance of group activity to learning
- social comfort of expressing and sensing affect
- social navigation

Lin performed tests of validity and reliability on 20 questions designed to examine online collaborative learning. The purpose of Lin's study was to develop an instrument to examine social presence in online collaborative learning (Lin, 2004). The tests resulted in 12 questions determined to reflect online social presence that we propose to use as our survey instrument. The survey is included as Appendix A.

After the third assignment, we will survey the students using a questionnaire we developed that contains open-ended questions. The survey is designed to ask students to self-report why their team chose to use either the wiki or the discussion forum for the third assignment. The results from this survey are for informational purposes only - not to measure students perception of social presence. This survey is included as Appendix B.

### **Analysis plan:**

In this design, after the first assignment, we will ask the participants to take social presence questionnaire developed by Lin (2003) as a pretest as a baseline measure. Then, after the second assignment, i.e. after the students use the wiki, we will ask students to take the same questionnaire again as a post test. We will do a chi-square test to test whether we can reject the null hypothesis, to determine if there is no significant difference between the pre-test and post test result after the use of the wiki.

### **Assumptions:**

We assume that students will work differently when using the wiki than when using a discussion forum. We assume this because the functionality of each tool is so different. Wikis are designed for collaborative development. They have built-in version control options, and automatically save data about which user updated which portion of the page. Without these options, students must manage version control on a single document themselves, or pass one document around the



team for input. As indicated earlier, students in this course reported that they would split the work among team members and never actually work collaboratively on the assignment. We assume that the very nature of a wiki would encourage increased collaboration and interaction among team members, thus increasing students' perception of social presence.

Further, for the purpose of this study, we have selected the use of a wiki as it is a tool that is reported and marketed to support online collaboration and social interaction. Among all Web 2.0 social media tools that are applied to higher education, especially online education, wiki applications have been catching much of the attention from faculty and course designers. The [annual ECAR Study of Undergraduate Students and Information Technology](#) reports that 41.9% of students said that they submitted course content to a wiki. This was the second highest Web 2.0 technology used by students, falling slightly behind submitting content to video websites such as YouTube. Further, according to the [21st-Century Campus Report](#), faculty, IT, and student use of wikis is second only to digital content, which includes online textbooks, material available online for download including PDF documents, notes and other curricular materials in electronic form according to the survey, which includes online textbooks, material available online for download including PDF documents, notes and other curricular materials in electronic form according to this 2010 survey, as the most popular technology.

### **Significance of the Research**

Due to intense competition in online education, instructional designers in higher education have been challenged to identify factors critical to developing effective online courses and enhancing students' satisfaction of online courses. Social presence has been identified in the literature as one of the key factors that impacts student satisfaction of online learning and the development of learning communities (Garrison, Anderson & Archer, 2000; Lowenthal, 2010). This research proposal proposes to examine the relationship of social presence and the implementation of a wiki tool as a collaborative writing space. We could potentially demonstrate the increase in students' perception of social presence by using wikis in the online classroom, and could potentially show how the use of this tool helps eliminate feelings of isolation in the online classroom. Also, as collaborative learning is a major part of pedagogical approach of online education, it is important to examine the relationship between the use of social media tools, such as wikis, and the factors that foster a sense of learning community, such as social presence, so that we can enhance student online learning experience.

In summary, the purpose of this study is two-fold: First, to understand if the use of a wiki influences collaboration among students; and, second, to determine if the students' perception of social presence changes by using a wiki for the project instead of using only the discussion

forum.

## Appendices

### Appendix A = Survey Instrument

**Overview:** Thank you for taking the time to complete this survey. Your feedback is important to us, and will help improve the course for future students. This survey should only take about 5 minutes of your time. Your answers will be completely anonymous.

**INSTRUCTIONS:** Please rate how strongly you agree or disagree with each of the following statements by selecting the appropriate box.

#### **Factor 1: Perception of the assistance of group activity to learning:**

**1. I felt like I was a member of a group during this past week's activities**

Strongly Agree    Agree    Neither agree nor disagree    Disagree    Strongly Disagree

**2. I felt comfortable participating in this past week's online group activities.**

Strongly Agree  Agree  Neither agree nor disagree  Disagree  Strongly Disagree

**3. I felt I came to know the other students in this past week's online group activities**

Strongly Agree  Agree  Neither agree nor disagree  Disagree  Strongly Disagree

**4. This past week's online group activities helped me accomplish the assignment with higher quality than if I were working alone.**

Strongly Agree  Agree  Neither agree nor disagree  Disagree  Strongly Disagree

**5. This past week's online group activities helped me learn more efficiently than if I were working alone.**

Strongly Agree  Agree  Neither agree nor disagree  Disagree  Strongly Disagree

**Factor 2: Social comfort of expressing and sensing affect:**

**1. I felt comfortable expressing my feelings during this past week's activities.**

Strongly Agree  Agree  Neither agree nor disagree  Disagree  Strongly Disagree

**2. I felt comfortable expressing my humor.**

Strongly Agree  Agree  Neither agree nor disagree  Disagree  Strongly Disagree

**3. I was able to appreciate the humor of members of the group.**

Strongly Agree  Agree  Neither agree nor disagree  Disagree  Strongly Disagree

**4. I was able to form distinct individual impressions of some group members during the online group activities.**

Strongly Agree  Agree  Neither agree nor disagree  Disagree  Strongly Disagree

**Factor 3: Social navigation:**

**1. Actions by other members of my group usually influenced me to do further work.**

Strongly Agree  Agree  Neither agree nor disagree  Disagree  Strongly Disagree

**2. Knowing that other members of my group were aware of my work influenced the frequency and/or quality of my work.**

Strongly Agree    Agree    Neither agree nor disagree    Disagree    Strongly Disagree

**3. Knowing what other members of the group did helped me know what to do.**

Strongly Agree    Agree    Neither agree nor disagree    Disagree    Strongly Disagree

## **Appendix B = Questionnaire Instrument**

**INSTRUCTIONS:** Thank you for taking the time to complete this survey. Your feedback is important to us, and will help improve the course for future students. This survey should only take about 5-10 minutes of your time. Your answers will be completely anonymous. Please answer the following questions:

1. Which option did you choose for the third assignment?
  - a. Discussion Forum
  - b. Wiki
2. Why did you choose this option?
3. How did your team coordinate working together?
4. How did your team work differently using each tool?
5. Would you choose this tool again in the future? Why or why not?
6. Is there anything else you would like to share about this experience?



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