Teaching Presence Influencing Online Students' Course Satisfaction at an Institution of Higher Education

Mohd Khalid M. N.[1] & Don Quick[2]

[1] Department of Teaching and Learning Innovation, Faculty of Education, Universiti Kebangsaan Malaysia, Bangi, Malaysia

[2] School of Education, Colorado State University, Colorado, USA

Correspondence: Mohd Khalid M. N., Department of Teaching and Learning Innovation, Faculty of Education, Universiti Kebangsaan Malaysia (UKM), Bangi, Malaysia. Tel: 603-8921-7102. E-mail: mdkhalid@ukm.edu.my

Abstract

This paper discusses the association between online students' interaction through the Learning Management System (LMS) discussion forum and their reported course satisfaction. The participants in the study reported here were selected from several faculties in one university in Malaysia who were enrolled in at least one hybrid or fully online course. The Community of Inquiry (CoI) framework, its instrument and satisfaction scale were employed in this study via a Qualtrics online survey. Teaching presence in the CoI was used to find out how strong it correlated with students' course satisfaction. The results showed that both variables were significantly positively associated with each other; indicating that students who enjoyed a relatively high teaching presence in online discussions were very likely to report higher course satisfaction.

Keywords: course satisfaction, online learning, teaching presence

1. Introduction

Many courses are now being offered online by institutions of higher education. In the United States, for example, more than seven million students were enrolled in at least one online course in 2013 (Allen & Seaman, 2014). However, not many online courses are successful in meeting students' needs and the course objectives (Allen & Seaman, 2014; Conrad & Donaldson, 2012; Duffy & Kirkley, 2004; Rovai, 2008; Rovai & Downey, 2010). Researchers have been investigating factors that could improve the quality of interaction in online courses, for instance issues of isolation, boredom, withdrawal from or dropping courses (Bowers & Kumar, 2015; Rovai, 2008; Tirrel & Quick, 2012), and student dissatisfaction (Robyler & Wiencke, 2003; Steinman, 2007; Swan, 2001). One of the very significant aspects that needs to be investigated further is students' interaction with their online instructors, known as teaching presence (Angelino, William, & Natvig, 2007; Garrison et al., 2000, 2010b; Khalid & Quick, 2014a, 2014b; Moore, 2001; Rovai, 2008; Rovai & Downey, 2010; Spiro, 2012).

The growth in enrolment in online courses offered by private universities in Malaysia increased to nearly 160,000 students from 2009 to 2012 (Malaysia Ministry of Higher Education, 2013). These universities include: Open University Malaysia (OUM), Wawasan Open University, Asia e-University, Al-Madinah International University, University Tun Abdul Razak, and Pusat Pendidikan Kewangan Islam Antarabangsa. Rubin et al. (2013) discovered that active participation by an e-instructor (e-tutor) showed a significantly strong positive association with course satisfaction. Many researchers (Bowers & Kumar, 2015; Andersen, 2013; Sher, 2009; Denson, Loveday, & Dalton, 2010; Moore, 1989) agree that the e-instructor's participation, defined by Garrison, Anderson and Archer (2000) as teaching presence, plays an essential role in sustaining attention in online courses.

Teaching presence is embedded in the Garrison's Community of Inquiry (CoI) model (2000) which emphasizes the quality of an e-instructor's ability in designing, facilitating, and instructing learning via online learning technologies (Bowers & Kumar, 2015; Sugar, Martindale, & Crawley, 2007). Based on interviews with 12 instructors experienced in teaching online courses, Kanuka, Collett, and Caswell (2002) found two additional important factors regarding the immediacy of instructor input: determining the right amount of time to wait before providing feedback to a group to allow members to support one another, and the need for instructors to

receive feedback from students to make sure they are communicating the content messages effectively. This points to the significance of teaching presence in the online classroom. Teaching presence and pedagogical skills are important for student success (Croxton 2014; Spears, 2012). Garrison and Anderson (2003) posited that teaching presence is the most valued type of collaboration by students, and Battalio (2007) concluded that student-instructor communication repeatedly rates high in online research studies.

Student satisfaction is defined as "an emotional response that can be induced by actual product, service, or process quality or some combination of product and service quality" (O'Leary & Quinlan, 2007, p. 135), and also as "a concept that reflects outcomes and reciprocity that occur between students and an instructor" (Thurmond, Wambach, Connors, & Frey, 2002, p. 176). As evidenced by research (Bolliger & Martindale, 2004; Howell, Jeffrey, & Buck, 2012; Roblyer & Wiencke, 2003; Swan, 2001), student satisfaction is critical to the success of an online course, and to reach goals of the learning environment, instructors and institutions must meet the needs of their students.

Additionally, teaching presence is essential to satisfy students in online courses. The lack of immediate feedback from instructors and peers contribute to dissatisfaction with the course (Northrup, Lee, & Burgess, 2002; Robyler & Wiencke, 2003; Swan, 2001). Dissatisfaction can arise from factors relating to the use of interaction, including the lack of immediate feedback, discomfort with collaborating with unknown peers, and with expressing views in a public forum discussion (Rovai, 2008; Rovai & Downey, 2010; Grady, 2013; Garcia et al., 2014).

Croxton (2014) reviewed literature through the lens of Bandura's social cognitive theory, Anderson's interaction equivalency theorem, and Tinto's social integration theory regarding presences in online course design. Croxton noticed, as Spears did (2012), that teaching presence served as a very significant factor that influenced student satisfaction and persistence in online learning (Estelami, 2012; Harrison, Gemmell, & Reed, 2014; Kranzow, 2013). The review by Croxton was uncertain about student satisfaction and course satisfaction, both of which have their own components (Arbaugh, 2000; Artino, 2008, Gunawardena & Zittle, 1997; Keeler, 2006; Lee et al., 2011) and further caution is needed in understanding and interpreting the relationship between teaching presence and satisfaction.

In an exploratory case study, Seaton and Schwier (2014) identified factors associated with instructor presence in online courses and potential barriers when teaching online at the University of Saskatchewan, with less than half of their students participating and interviewed in the study. They found that experience and technological comforts were among the factors that influenced presence, which concerned the online instructor, which could add to Kranzow's (2013) finding. Grady (2013) focused on action research to find out causes for a decrease in course satisfaction by students (n = 338) enrolled in a mid-south university school of education in the United States with a compressed-timeline online course compared to satisfaction in previous courses. The researcher noticed that teaching presence and the number of assignments indicated that satisfaction was influenced by these changes. As for other variables, there is lack of evidence that age (Alman, Frey, & Tomer, 2012; Bulu, 2012; Croxton, 2014; Sorden & Munene, 2013; Wahab, 2007), number of prior courses, and number of courses completed (Hostetter & Busch, 2006; Cobb, 2011; Spears, 2012) could also influence the level of learning satisfaction, and further investigation is required.

Garcia et al. (2014) extended their previous survey with a focus group to examine methods to improve instructional delivery for graduate students (n = 48) in an educational leadership course in a Master of Education program in a university located in South Texas, United States. Their study indicated that course content was a significant factor that affected student learning, as established by other studies (Garrison et al., 2010a; Garrison et al., 2010b). Currently, the Malaysia Critical Agenda Project (CAP) is in the process of revising the *Dasar e-Pembelajaran Negara (DePAN) (The National E-learning Policy)* to enhance the quality of online pedagogy which implies that teaching presence is one of the essential elements that needs to be taken into account (Malaysia Ministry of Higher Education [MMOHE], 2015) that could decrease dropout rates (Bowers & Kumar, 2015).

The purpose of the study reported here was to determine the association between teaching presence, age, number of online courses completed prior to taking the current online courses, and number of online courses just completed in an online learning environment and students' course satisfaction in a selected university in Malaysia. Concurrently, it also explored these variables that may influence student's satisfaction.

2. Method

This study utilized a quantitative research design using a survey administered to the target population (theoretical population) which includes all online students in Malaysia. Therefore, the accessible population (sampling

frame) as a convenient sample for this study included all online students (n = 3,000) enrolled in all courses in a private online university. This sample came from forty-eight learning centers nationwide that were running online courses in the January semester of 2014 for undergraduate and graduate students. The criterion for selection of participants was that they were online students who had just completed at least one hybrid or fully online course from the various courses offered during the January semester for the twelve weeks of study, including Malaysia Qualification Agency (MQA) courses, university courses, basic courses, core courses, and elective courses.

The study used the Community of Inquiry (CoI) survey designed by Garrison et al. (2010a), Garrison et al. (2010b) to measure Teaching Presence using scales which have been found to be a reliable and validated measure (Garrison et al., 2010a, 2010b; Yu & Richardson, 2015; Wicks, Craft, Mason, Gritter & Bolding, 2015) and course satisfaction scales used by Arbaugh (2000), Artino (2008), Lee et al. (2011), and Keeler (2006) to guide, interpret, and analyze data. A *Qualtric* web survey service provider was employed as a method of data collection to distribute the survey questionnaire to every online and hybrid Malaysian student participating in the study in that particular semester.

3. Results

The completed survey yielded a 2.4% response rate (n = 73), which is within the acceptable range for a web survey, depending on the actual size of the target population. Theoretically, the greater the sample size, the smaller the response rate would be (Hamilton, 2009; Ho et al., 2013; Nulty, 2008).

Although the instrument has been found to be reliable and valid in previous studies (Arbaugh, 2008a, 2008b; Bangert, 2009; Swan et al., 2008; Garrison et al., 2010a, 2010b), the value of reliability was re-estimated in this study by computing Cronbach's Alpha (α) to report the internal consistency. The alpha value of Teaching Presence and Course Satisfaction is .97 and .93 respectively (see Table 1). In addition, Table 2 shows the reliability for the Teaching Presence Sub-Scale; Design and Organization, Facilitation, and Direct Instruction ranging from .90 to .95.

Table 1. The reliability for teaching presence and course satisfaction scale

Variables (Scale)	Number of Items	Cronbach's Alpha (α)
Teaching Presence	14	0.97
Course Satisfaction	5	0.93

Table 2. The reliability for teaching presence sub-scale

Teaching Presence (Sub-Scale)	Number of Items	Cronbach's Alpha (α)
Design and Organization	4	0.93
Facilitation	6	0.95
Direct Instruction	4	0.90
Overall/Total	14	0.97

Both scale variables were checked to meet all the assumptions. Pearson correlations were computed to examine the intercorrelations of the variables. Teaching presence significantly correlated with course satisfaction, $r(71) = 0.77$, $p < 0.001$. Both showed strong positive correlation, which would be considered a very large effect size according to Cohen (1988). These indicate that students who had relatively high teaching presence scales were very likely to have high course satisfaction scales. Age was found to be significantly correlated with course satisfaction, $r(71) = 0.31$, $p < 0.001$ which showed the weakest positive correlation and a medium effect size (Cohen, 1988). In contrast, two independent variables—number of online courses completed prior to taking this course, and number of online courses just completed—did not statistically show any correlation with course satisfaction (as visualized by the scatter plots in Figure 1).
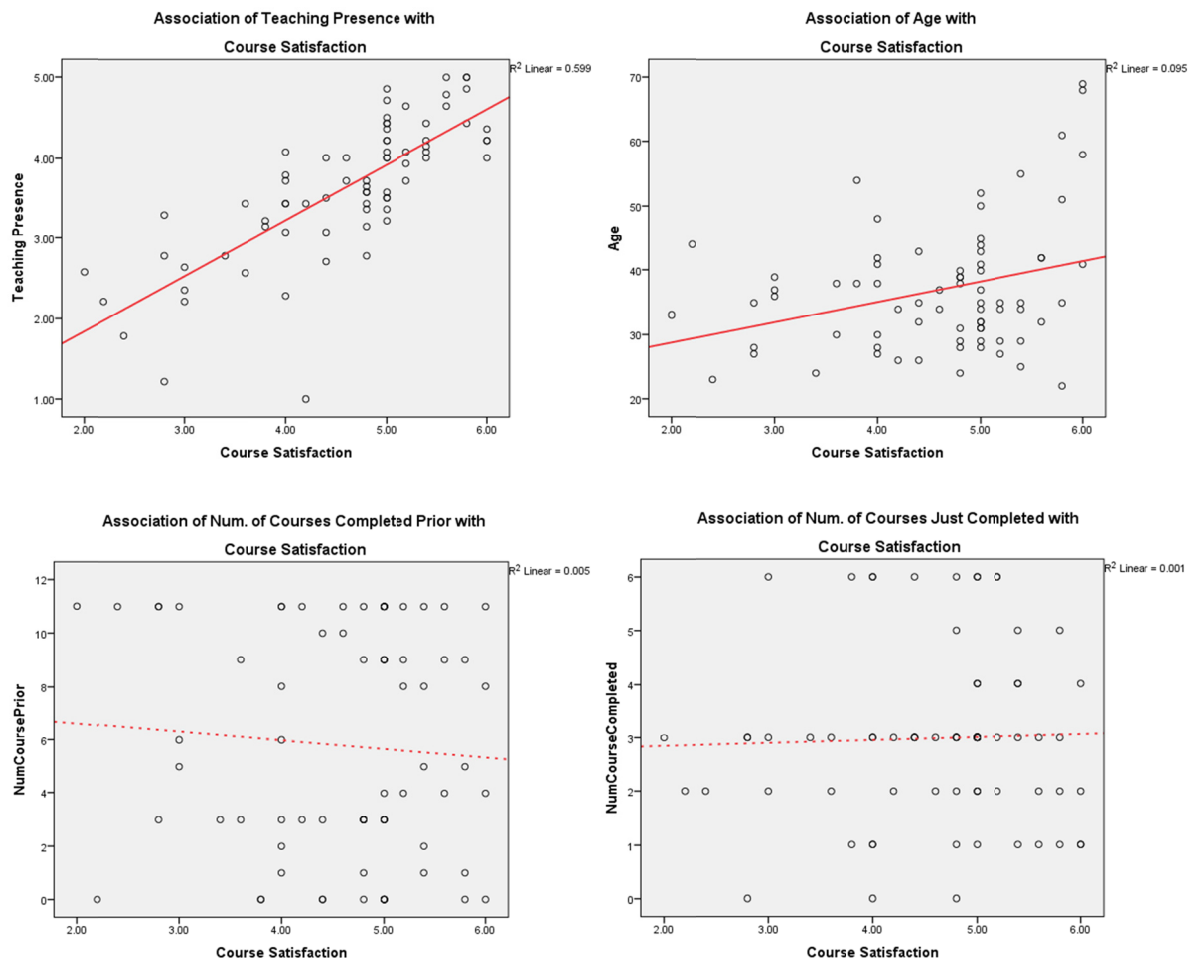
Figure 1. Association between teaching presence, age, number of prior online courses completed, and number of online courses just completed with course satisfaction

To examine how well the teaching presence scales predicted course satisfaction—after controlling for age, number of prior courses, and number of courses just completed—a series of two-step hierarchical linear regressions were computed. The assumptions of linearity and normality were checked and met. The tolerance values were well over 0.32; 1- R^2 (Morgan et al., 2009), all values of the Variance Inflation Factor (VIF) for independent variables fell between 1.02 and 1.15, which is still less than the maximum VIF values of 5 (Rogerson, 2001) or even 4 (Pan & Jackson, 2008). This shows that the independent variables were not affected by multicollinearity. Therefore, the leverage statistic and Cook's distance calculation indicated that two participants were potentially outliers and influencing the model (Field, 2009; Field & Miles, 2012).

To further investigate, the two-step hierarchical linear regressions were recomputed without outliers. In the first step, when age, number of prior courses, and number of courses completed were entered, only age significantly predicted course satisfaction scale, $F(3, 67) = 3.35$, $p <0.024$, adjusted $R^2 = 0.09$ ($R^2 = .13$). However, as indicated by the adjusted R^2, only 9% of the variance in course satisfaction could be predicted by knowing the student's age. In the second step, when the other variables were added to the model, one out of four variables showed the improvement of the prediction, R^2 change $= 0.68$, $F(4, 66) = 34.98$, $p <0.001$, age no longer remained a significant predictor.

The entire group of variables significantly predicted course satisfaction, $F(4, 66) = 34.98$, $p < 0.001$, adjusted $R^2 = 0.66$ ($R^2 = 0.68$). This means 66% of variance in course satisfaction was explained by the model; the remaining 34% was explained by unknown factor(s). This is a very large effect according to Cohen (1988). The beta weights and significance values, presented in Table 3, indicate which variable(s) contributes most to predicting course satisfaction, when age, number of prior courses, number of courses completed, and teaching presence were entered

together as predictors. Age was no longer significant. Number of prior courses, number of courses completed, and age seem to be affected slightly in the equation and were retained.

Table 3. Hierarchical multiple regression analysis summary for teaching presence, and age predicting course satisfaction (n = 71) (after removing two outliers)

Variable	B	$SE\ B$	β	R^2	ΔR^2
Step 1				0.13	0.13
Age	0.03	0.01	0.36*		
Num. Prior Courses	-0.02	0.03	-0.09		
Num. Courses Completed	0.11	0.07	0.18		
Constant	3.18	0.53			
Step 2				0.68	0.66
Age	0.01	0.01	0.14		
Num. Prior Courses	-0.03	0.02	-0.13		
Num. Courses Completed	0.05	0.04	0.10		
Teaching Presence	0.93	0.09	0.77**		
Constant	0.72	0.40			

Note. *p<0.05, **p<0.001.

4. Discussion

In examining an association between teaching presence and course satisfaction in an online course, this study revealed that teaching presence was a significantly strong positive factor associated with course satisfaction; when one tends to increase or decrease, so does the other. This means that online students who have a high degree of communication with their tutors (instructors) tend to have higher degrees of satisfaction with online courses. This finding was consistent with Rubin et al. (2013), who studied graduate students and instructors. The sample of this study was derived from both undergraduates and graduate online students who are Malaysian whereas Rubin's were American, so this result adds to the knowledge base.

In a similar research conducted with students who enrolled in elective courses, Joo, Lim, and Kim (2011) also reported that there was a significant relationship between teaching presence and course satisfaction. The study reported here did not rely only on elective courses but major courses as well. The studies by Draus et al. (2014), Denoyelles (2014), Shea and Bidjerano (2008) concluded that two sub-scales in teaching presence (facilitation, design and organization) had a noticeable impact on satisfaction. This is consistent with the findings of our study, which adds another sub-scale (direct instruction) that also has a significant influence on student satisfaction.

The results of our study also resonate with the results of research conducted by other scholars (Andersen, 2013; Sher, 2009; Keeler, 2006; Bolliger & Martindale, 2004; Denson et al., 2010; Moore, 1989) who used a different term, *student-instructor interaction*, and various instruments different from CoI, which clearly focused on tutors' capability as communicated, designed, organized, facilitated, and taught online or hybrid. Hence, this study has determined that the construct of teaching presence in the CoI framework is vital in sustaining course satisfaction.

In contrast, Abas and Fadzil (2009) found a low level of teaching presence in the CoI related to high course satisfaction due to the use of mathematical symbols that could not be used directly in a discussion forum. This shows that tutors' involvement with the use of symbols and formula in different types of courses might contribute to the level of satisfaction. The interesting thing is that their study and this study were conducted at the same University with a Malaysian sample, but with dissimilar methodology: they analyzed threaded discussion from the LMS qualitatively whereas this study used a survey. This might explain the contrasting results. Nevertheless, Teaching Presence in the CoI framework was found in our study to be an important element that clearly affects course satisfaction among Malaysian students. It is hoped that an effective online pedagogy will enhance the quality online courses as envisioned in The National E-learning Policy (MMOHE, 2015).

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