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A Close Look at Trust Among Team Members in Online Learning Communities

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ABSTRACT

Trust is one of the important factors either fostering or damaging students' online teamwork learning experience. Building trust among team members has become a necessary step for a successful collaboration experience. The purpose of the article was to understand students' learning and teamwork experiences and further to investigate the relationships of learner-centered instructions, team trust, and social presence in an online learning community. Also, this article adds to the research on the role of social presence in promoting cognitive and affective trust. The results indicated there were positive correlations between learner-centered instructions and trust, between learner-centered instructions and social presence, and between trust and social presence. The study could provide suggestions for instructors teaching online courses for the implementation of learner-centered instructions and the importance of creating a social presence and building trust for students in a collaborative online learning environment.

Keywords

Collaborative Learning, Learner-Centered Instruction, Learning Communities, Social Presence, Teamwork Trust

INTRODUCTION

In the online learning environment, students are taking increased responsibility in the learning process and they are at the center of learning when all kind of activities and tasks are taking place. Learner-centered teaching approach includes but not limited to constructivist learning theories, authentic learning, and collaborative learning. Each has its own objectives and goals. For faculty who teach fully online courses, collaborative learning is considered to be an effective pedagogical practice and teaching strategy. A well-designed project that requires collaborative and team effects encourages students and faculty to work together, share, and exchange ideas (Xu, Du, & Fan, 2015). However, Hsu, Ju, Yen, and Chang (2007), and Ridings,

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Gefen, and Arinze (2002) have argued that due to the drawback of fully online courses, as known as limited opportunity of communication and interaction, students' cohesion and relationship in a fully online course are more fragile than on campus courses. Therefore, online instructors should also develop students' effective collaboration skills, such as clear communication, team trust building, decision making, and organization (Cheng & Macaulay, 2014; Kleinsasser & Hong, 2016).

Many studies showed that students' online teamwork learning experience was positively related to team trust. (Cheng & Macaulay, 2014; Taylor, Santuzzi, & Cogburn, 2013). In addition, team members' relationship is associated with group climate and a sense of community. Lee (2004) studied students' sense of community in an online collaborative learning environment and discovered that once a sense of community was established, trust was developed among team members. This study intended to investigate the effect of learner-centered instruction on the trust amongst virtual collaborative teams and to understand students' teamwork experiences and their perceptions of social presence in an online learning community. Moreover, this study sought to investigate the role of social presence in facilitating cognitive and affective trust. Not much has been done regarding social presence in virtual team setting. In real world practices, the questions remain as to whether social presence actually takes place in virtual collaborative teams and whether learner-centered instruction may influence online students' perceptions of trust.

This study began with addressing this gap in research by reviewing literature on trust in virtual collaborative teams and how interaction and relationship amongst team members would influence trust building. Also, this study reviewed literature on learner-centered instruction and social presence and their influence on changing the dynamic of collaborative trust.

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THEORITICAL FRAMEWORK

Trust in Collaborative Teams

In online learning environment, trust has been identified as an important parameter (Anwar & Greer, 2012; Pelet & Papadopoulou, 2012). Group information elaboration and learning can be effectively improved by persistently building and maintaining team trust (Peñarroja, Orengo, Zornoza, Sánchez, & Ripoll, 2015). Schilke and Cook (2013) specified trust as “a process theory is based on a narrative explaining the temporal sequence in which change occurs to produce a given outcome.... It identifies separable stages and transitions between these stages...(and) consists of explanations of how, why, and in what sequence a process unfolds over time” (p. 283). This appropriately described the characteristics of trust in the ongoing group developmental process. A group climate or collaborative learning environment is centered on trust and it provides necessary factors for the development of group cohesion (Coogan & Graham, 2013) and an establishment of sense of belonging at the earliest state of group development (Geroski & Kraus, 2010; Haines, 2014; Wise, 2013).

Breuer, Hüffmeier, & Hertel (2016) used the random effects, meta-analytic methods to assess findings from 52 studies representing 12,615 individuals in 1,850 teams to examine the relationship between team trust and team effectiveness criteria (team-related attitudes, information processing in teams, and team performance). Their results revealed a positive overall relationship between team trust and team effectiveness criteria ($p = .33$). Moreover, team trust was also positively related with team commitment and team-related effort intentions. In a current study, Alsharo, Gregg, and Ramirez (2017) conducted a structural equation model to investigate the relationship between knowledge sharing and trust from 193 virtual team members who worked in an organization setting. Their findings indicated that there was significantly and

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positively relationship between knowledge sharing and trust. Moreover, the results of the post hoc analysis confirmed that trust did play an important role in the overall effectiveness of a team.

McAllister (1995) noted that trust should be defined as both affective and cognitive, and these two types of trust are different in nature in affecting team dynamics. Affective trust, McAllister argued, is grounded in reciprocated interpersonal care and concern or emotional bonds, which is essential in measuring the quality of social exchange and interpersonal relationship among team members (Schaubroeck, Lam, & Peng, 2011; Yang, Mossholder, & Peng, 2009). It has also been noted to influence perception, and interpretation of information generated through conflict, and behavior (Brosch, Pourtois, & Sander, 2010; Parayitam & Dooley, 2009). On the other hand, cognitive trust is grounded in individual beliefs about peer reliability and dependability as well as competence that is essential in the early relational stage. Cognitive trust would influence how confident the student is in their team members' ability in completing team tasks and projects collaboratively, which could have impacts on their team performance in a positive or negative way.

Current studies that investigated affective and cognitive trust focus more on business collaborations (Jarratt & Ceric, 2015), managerial leadership (Zhu, Newman, Miao, & Hooke, 2013), and organizational management (Chua, Ingram, & Morris, 2008). For example, Zhu, Newman, Miao, and Hooke's study intended to examine if cognitive and affective trust have mediating effects on the relationship between followers' perceptions of transformational leadership behavior and their work outcomes. Survey data were collected from a total of 318 supervisor-subordinate dyads in a firm located in Hangzhou, China. The result revealed that affective trust positively mediated the impact of transformational leadership on followers' job performance. In contrast, cognitive trust negatively mediated the relationship between

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transformational leadership and job performance. In conclusion, they stated that positive work and leader-subordinate relationship could be enhanced by predominant social exchange and collaborative communication, which in turn developed affective trust.

The effects of affective and cognitive trust in team dynamic and performance in collaborative learning environment have not been studied much. Especially, the impacts of both affective trust and cognitive trust on virtual teams are still not thoroughly examined.

Kanawattanachai and Yoo (2002) empirically examined the changing patterns of trust at the early, middle, and late stages of a project and they found that high-performing teams were better at developing and maintaining a higher level of trust. In addition, virtual teams relied more on a cognitive than an affective element of trust. Robert (2016) studied whether monitoring (internal and external) can facilitate or hinder the growth of trust of 57 virtual teams. The results indicated that affective trust was associated with increase in performance when internal monitoring was high. In addition, both types of monitoring reduced the strong positive relationship between cognitive trust and the performance of virtual teams.

Learner-centered Instruction

What would a learner-centered classroom be like? Weimer (2002) characterized five key changes on this paradigm shift and these characteristics were further described by Harris and Cullen (2010): the balance of power (when teachers share powers with students by providing more choices in regards to assignments or teaching strategies), the function of content (when teachers let students link their existing knowledge to the new knowledge), the role of the teacher (when teacher's role is to coach), the responsibility for learning (motivate students to accept responsibility for their learning), and the purpose and processes of assessment (when teachers apply both formative and summative assessment to evaluate student learning). In Weimer's

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(2013) revised version of *Learner-Centered Teaching: Five Key Changes to Practice*, she stated that current teachers continue to be lecture-focused and she asked why teachers are resistant to change in the classroom.

Furthermore, Huba and Freed (2000) compared teacher-centered and learner-centered paradigms and proposed a clear example of the principles of these two paradigms. The first principle of the learner-centered paradigm stated that students constructed their own knowledge through “gathering and synthesizing information and integrating it with the general skills of inquiry, communication, critical thinking, problem solving and so on” (p. 5). The American Philosophical Association (1990) has defined critical thinking as “the process of purposeful, self-regulatory judgment. The process gives reasoned consideration to evidence, contexts, conceptualizations, methods, and criteria” (p. 3). Students no longer receive information from instructors passively with no control as to what and how they will learn. Instead, students become actively involved in the learning process. They can make decisions themselves on searching the resources or information and then transform the information to make it more meaningful to them.

The second principle of the learner-centered paradigm stated that students should have the opportunity to learn new knowledge related to “enduring and emerging issues and problems in real-life contexts” (Huba & Freed, 2000, p. 5). The learning environment has widened globally, with competitions and challenges coming from everywhere in the world. Thus, the purpose of learning is not only pursuit of knowledge for personal but also for professional reasons. Students become focused on the aspects of a lesson most useful and related to them in their work and in their real life. Instructors should create real-world authentic activities that promote students to become “immersed in problem solving within realistic situations resembling

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the contexts where the knowledge they are acquiring will eventually be applied” (Herrington, Oliver, & Reeves, 2003, p. 235).

Another important principle, according to Huba and Freed (2000) was the aspect of learning assessment. Traditionally, learning was assessed indirectly through the test scores that only could assess students’ knowledge and comprehension levels. However, in real-world situation nowadays, students are required to have higher-level thinking and decision-making skills in order to resolve complex problems. Thus, assessment should be used as a positive tool to “promote and diagnose learning” (Huba & Freed, 2000, p. 5).

Learning Community and Social Presence

In terms of learning community, McConnell (2006) defines it as “A cohesive community that embodies a culture of learning and members are involved a collective effort of understanding.” (p. 19). Learning in an online learning community can bond students together by providing them with an authority environment that can be trusted and a collaborative environment that can build partnership of their learning. To be more specific, social presence has been discovered as a vital factor in many online learning studies that it is positively associated with learning experience (Hayes, Uzuner-Smith, & Shea, 2015; Miller, Hahs-Vaughn, & Zygouris-Coe, 2014), learning outcomes (Hosterrer, 2013) and engagement (Ma, Han, Yang, & Cheng, 2015). According to Joksimovic’, Gašević’, Kovanovic’, Riecke, and Hatala (2015), indicators of social presence can be used for early detection for students at the risk of failing a course because of its positive relationships with learning motivation and student’s academic performance. Moreover, in a teamwork learning situation, social presence can maintain positive relational dynamics and enhance self- and collective efficacy which will let team members focus

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more on developing better group projects and on accomplishing shared goals (Remesal & Colomina, 2013).

Garrison (2009) defined social presence as “the ability of participants to identify with the community, communicate purposefully in a trusting environment, and develop inter-personal relationships by way of projecting their individual personalities” (p. 352). Garrison, Anderson, and Archer’s (2000) Community of Inquiry (CoI) framework was adapted to understand how online students learn in a dynamic online environment and how they collaborate with one another. Without social presence, learning interaction suffers. This has negative effects on learning performance (Wei, Chen, & Kinshuk, 2012). Zhan and Mei (2013) studied 257 undergraduate students’ social presence in face-to-face (FTF) and online courses. The results revealed that social presence is an important factor on learning achievement and online students are in a greater need of higher-level social than FTF students. Furthermore, Schouten et al. (2017) addressed that social presence can facilitate collaborative teamwork and support formation of meaningful social connections in a virtual learning environment. Studies had characterized it as the elements of *affective expression*, “where learners share personal experiences of emotion, feelings, beliefs, and values”; *open communication*, “where learners build and sustain a sense of group commitment”; and *group cohesion*, “where learners interact around common intellectual activities and tasks” (Swan, Garrison, & Richardson, 2009, p. 52).

Most of the conducted research on the CoI framework was focused on asynchronous online learning (Garrison, Anderson, & Archer, 2010). It is no longer sufficient to examine whether social presence exists in an online learning environment; rather, we need to learn whether the existence of social presence matters for team members’ relationship and trust building. Garrison and Arbaugh (2007) summarized findings for social presence studies and

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concluded that collaborative learning activities can develop social presence and promote a greater sense of online community. Zhao, Sullivan, and Mellenius (2014) examined collaboration in six peer review groups within an asynchronous computer conferencing and they emphasized that collaboration does not occur automatically in this context. Moreover, the results indicated that social presence could promote team collaboration because it helps team members to establish a warm and collegial learning community.

Remesal and Colomina (2013) conducted a qualitative research that sought to understand the importance of social presence in computer supported collaborative learning environment (CSCL). They found that social presence in group work is an essential component and it promotes the maintenance of positive relational dynamic and can enhance self- and collective efficacy in front of the learning task. Most importantly, they argued that social presence is no longer conceived as a post-hoc individual perception, but as the interactive construction among the learners who intend to accomplish shared, collaborative learning goals. In addition, according to Kazemitabar and Lajoie (2017), such presence in a virtual learning environment might even facilitate positive social-emotional interactions among team members, which can lead teams to reach higher levels of mutual trust. The review of existing literature indicated a lack of studies investigating the influence of social presence on virtual teams and to what extent it can impact teamwork trust.

The purpose of the study was to understand students' learning and teamwork experiences and their perceptions of social presence in an online learning community. First, the researchers attempted to understand students' perceptions of learner-centered approach in an online setting. Next, the researchers investigated the relationships between students' perceptions of learner-

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centered approach and teamwork trust (affective trust and cognitive trust) and social presence.

Based on prior research and review on literature, we hypothesized that:

Hypothesis H1a. Students' perceptions of learner-centered approach were positively related to affective trust.

Hypothesis H1b. Students' perceptions of learner-centered approach were positively related to cognitive trust.

Hypothesis H1c. Students' perceptions of learner-centered approach were positively related to social presence.

Furthermore, the researchers intended to investigate how well social presences in a collaborative learning environment can promote the building of teamwork trust among team members by asking the following research question: How did students' perceptions of social presence affect their teamwork trust?

METHODOLOGY

Participants and Research Design

Participants in this study were graduate students enrolled in two fully online courses at a southern university. During the first week, the instructor randomly assigned 4 students to each collaboration team and 7 teams were consequently formed. A "drawing names out of a hat" method was used for the random assignment. First, all students were asked to write down their names on a paper and put it in a hat. Then, each student would draw a paper out of the hat for selecting his/her team member.

To answer the research hypotheses and question mentioned above, a quasi-experimental research design was used. In this quantitative research, we examined our proposed research

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questions analyzing primary survey data that were collected from the *Learner-Centered Approach Survey*, *CoI survey - Social Presence Scale*, and *Affective and Cognitive Trust Scale*.

During the last two weeks of the semester, the three surveys were distributed in an online survey format and links were sent to students. All surveys were expected to take about 20 minutes to complete. Twenty students (14 female and 6 male) completed all three surveys during the last week of the semester with a response rate of 71.4%. The majority of respondents were 18-29 years old (75%). Among the students, 10 (50%) had less than 5 years, 7 (35%) had 5-10 years, and 3 (15%) had 10-15 years of teaching experience. Moreover, 7 (35%) of them had completed 1-5 online courses and 5 (25%) had completed 6-10 online courses.

In terms of the data analyses involved in this study, the multivariate correlational analysis was conducted to examine the relationships between students' perceptions of learner-centered approach, social presence, and teamwork trust (H1a, H1b, and H1c). Multiple regression analysis was conducted to investigate the effect of social presence subscales on the teamwork trust. IBM SPSS Statistic 22.0 was utilized to perform the data analysis.

Online Course Format and Design

The two fully online courses in the present study were designed and taught by applying Weimer's (2002) five key characteristics of learner-centered teaching: the balance of power, the function of content, the role of the teacher, the responsibility for learning, and the purpose and processes of assessment. Collaborative and authentic learning tasks were designed to foster students' creativities and critical thinking skills. Problem-based learning strategies were facilitated to promote students' abilities on solving ill-defined problems. The instructor acted as guide, facilitator, consultants, and helped students to effectively connect their culturally- and community-based knowledge to the learning experiences. Thus, students were the center and

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decision maker of their own learning and they were challenged to gather relevant information to find a better answer.

The Learning Management Systems (LMS), Blackboard, was utilized to manage group learning activities, presentations, and evaluation of a specific learning process. Course materials, assignments, and assessments were designed to guide students to become self-regulating learners and encourage them to be responsible for their own learning. Students were encouraged to use discussion board, wiki, Blackboard Collaborate and other tools to communicate and interact with group members when working on group projects. Moreover, LiveText online assessment system was also used to document students' portfolios and learning outcomes.

The experiment took place after mid-term and last to the end of the semester with duration from approximately six to seven weeks. Students in the same team were asked to design, implement if possible, and evaluate five written instructional design units collaboratively. Each unit should utilize a variety of instructional methods to meet learners' needs. Because the emphasis of this project was collaborative planning, each team should work with a K-12 classroom teacher to develop the learning units. The team and the collaborating classroom teacher decided on the length of the unit; however, a minimum of 5 days for each unit is required. All technologies (e.g., Blackboard IM, Blackboard Collaborate, Google Doc) that can be utilized to facilitate effective communication, document editing, and collaboration were encouraged by the instructor; a work logs of the dates and times of collaborations were required. The students provided feedback to and received feedback from their team members, revised their drafts based on the peer feedback, and posted their revised final drafts. At the end of the semester, each team shared and presented (approximate 30 minutes) their learning unit to all class members using Blackboard collaborate.

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Measures

Learner-centered approach survey. In this study, online students' perceptions of learner-centered approach were measured using a 13-item survey developed by Harpe and Phipps (2008). The survey was designed based on Weimer's (2002) description of the five principles of learner-centered teaching. All items were measured on a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The questions in the survey included, for example, "I was provided with increased opportunities to demonstrate that I had learned the material," "I was able to focus on learning rather than just getting a good grade on an exam or assignment," and "I found that completing the assignments helped reinforce the material presented in class more than studying alone." In this study, Cronbach's Alpha coefficient was .92.

Community of Inquiry (CoI) survey. The *CoI survey* was developed and validated by Arbaugh et al., (2008). The survey captures three dimensions of presence and contains 34 items (e.g., 13 for Teaching Presence, 12 for Cognitive Presence, and 9 for Social Presence). All 9 items that measured the social presence were adopted in this present study and were measured on a 5-point Likert type scale, ranging from 1 (Strongly disagree) to 5 (Strongly agree). Base on the current sample, the internal consistency (Cronbach's Alpha) of social presence was .89.

Affective and cognitive trust scales. Affective trust and cognitive trust were measured using McAllister's (1995) affect-based and cognition-based trust scales. Five survey items were created to measure affective trust and 6 survey items to measure cognitive trust. Survey items were revised in order to reflect the team setting of this study. Respondents were asked to rank their responses on a scale from 1 (Strongly disagree) to 5 (Strongly agree). Questions on affective trust included, for example, "We have a sharing relationship. We can both freely share our ideas, feelings, and hopes," and "We would both feel a sense of loss if one of us was

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transferred and we could no longer work together.” Questions on cognitive trust were, for example, “My team member approaches his/her job with professionalism and dedication,” and “I can rely on my team member not to make job more difficult by careless work.” The Cronbach’s Alphas for affective trust and cognitive trust were .93 and .96, respectively.

RESULTS

Students’ Perceptions of Learner-centered Approach

The results of the learner-centered approach survey revealed an overall positive agreement ($M = 4.24$, $SD = .63$) regarding students’ experiences on learner-centered learning (see Table 1). The following statements were the three highest-rated items in the survey: “I found that completing the assignments helped reinforce the material presented in class more than studying alone” ($M = 4.11$, $SD = .47$, Strongly Agree & Agree – 100%), “I felt I was able to learn the material and obtain the grade I desired” ($M = 4.65$, $SD = .61$, Strongly Agree & Agree – 95%), and “My ability to learn the material presented was enhanced” ($M = 4.47$, $SD = .80$, Strongly Agree & Agree – 95%). On the other hand, the two lowest-rated statements were “I felt less pressure to perform well on every exam or assignment” ($M = 3.71$, $SD = 1.10$, Strongly Agree & Agree – 55%) and “I studied differently for exams” ($M = 3.59$, $SD = .87$, Strongly Agree & Agree – 55%).

Table 1
Student perceptions of Learner-Centered Approach Survey

<i>Survey Items</i>	<i>Mean (SD)</i>	<i>Rank</i>	<i>Strongly Agree & Agree</i>
I found that completing the assignments helped reinforce the material presented in class more than studying alone.	4.71 (.47)	1	100%
I felt I was able to learn the material and obtain the grade I desired.	4.65 (.61)	2	95%
My ability to learn the material presented was enhanced.	4.47 (.80)	3	95%

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I was provided with increased opportunities to demonstrate mastery of course material.	4.47 (.94)	3	85%
I prepared differently for class.	4.29 (.69)	5	85%
I was able to focus on learning rather than just getting a good grade in the course.	4.29 (.85)	5	85%
I felt I had more control in determining my overall course grade.	4.29 (.85)	5	90%
I was provided adequate feedback to guide my learning throughout the course.	4.24 (1.03)	8	75%
I was provided with increased opportunities to demonstrate that I had learned the material.	4.18 (1.19)	9	85%
I was able to focus on learning rather than just getting a good grade on an exam or assignment.	4.18 (.88)	9	85%
I felt I was in a less stressful learning environment.	4.06 (.83)	11	85%
I felt less pressure to perform well on every exam or assignment.	3.71 (1.10)	12	55%
I studied differently for exams.	3.59 (.87)	13	55%
Overall	4.24 (.63)		

The Relationships between Students' Perceptions of Learner-centered Approach, Social Presence, and Teamwork Trust

Table 2 displayed the means, standard deviation, and correlations of variables studied in this research. The findings showed that participants reported high mean score in cognitive trust ($M = 4.65$, $SD = .58$) and affective trust ($M = 4.44$, $SD = .77$). A positive and significant correlation was found between students' perceptions of learner-centered approach and overall social presence ($r = .65$, $p < .01$). In regards to three subscales of social presence, the results revealed that there were significant relationships between learner-centered approach and affective expression ($r = .54$, $p < .05$), open communication ($r = .64$, $p < .01$), and group cohesion ($r = .61$, $p < .01$). The results also revealed that students' perceptions of social presence

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was positively correlated with affective and cognitive trust ($r = .85$, $r = .77$, respectively).

Moreover, positive and significant correlations were also found between learner-centered approach and affective trust ($r = .79$, $p < .01$) and cognitive trust ($r = .78$, $p < .01$).

Table 2

Inter-correlations of the Learner-Centered Approach, Social presence, and Affective and Cognitive Trust

<i>Variables</i>	<i>Mean</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
1. Learner-Centered Approach	4.24	.63	—	.79**	.78**	.65**	.54*	.64**	.61**
2. Affective Trust	4.44	.77		—	.93**	.85**	.73**	.70**	.82**
3. Cognitive Trust	4.65	.58			—	.77**	.63**	.61**	.78**
4. Overall Social Presence	4.37	.61				—	.87**	.89**	.96**
5. Affective Expression	4.33	.61					—	.69**	.71**
6. Open Communication	4.47	.73						—	.85**
7. Group Cohesion	4.38	.66							—

* $p < .05$ ** $p < .01$

The Effect of Social Presence Subscales (e.g., Affective Expression, Open Communication and Group Cohesion) on the Teamwork Trust

Multiple regression analysis was conducted and with the two dimensions of teamwork trust as the dependent variable and the three subscales of social presence as the independent variable. The results (see Table 3) indicated that three subscales of social presence plays a significant role in explaining the affective and cognitive trust. It also showed that three subscales explained 72.2% of the variance in the affective trust, $R^2 = .722$, $F(3, 16) = 11.25$, $p < .05$ and 63.3% of the variance in the cognitive trust, $R^2 = .633$, $F(3, 16) = 7.47$, $p < .05$. Post-hoc coefficient examination further indicated that group cohesion was effective explanatory variable of affective trust, $t(16) = 2.33$, $p < .05$; and cognitive trust, $t(16) = 2.53$, $p < .05$.

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Table 3

The regression results of three subscales of social presence on teamwork trust

Model	Unstandardized Coefficients <i>B</i>	Unstandardized Standard Error <i>SE B</i>	Standardized Coefficients <i>β</i>	<i>Sig.</i>
<i>IV = Subscales of social presence and DV = Affective trust</i>				
Affective Express	.39	.27	.31	.001
Open Communication	-.11	.30	-.10	
Group Cohesion	.81	.35	.69*	
<i>IV = Subscales of social presence and DV = Cognitive trust</i>				
Affective Express	.17	.23	.18	.004
Open Communication	-.19	.26	-.25	
Group Cohesion	.75	.30	.86*	

* $p < .05$

CONCLUSION

The purpose of this study was to understand students' perceptions of learner-centered approach and to examine the relationships between students' perceptions of learner-centered instructional approach, social presence, and affective and cognitive trust. The responses of the learner-centered approach survey from students indicated and perceived that the two online courses they were enrolled in utilized learner-centered instructions, which encompassed the learner-centered approach principles – balance of power, function of content, role of the teacher, responsibility for learning and purpose and processes of assessment (Weimer, 2002). When students are given more power on their own learning and provided with flexible learning schedules and technologies, they are more likely to concentrate more on retrieving meaningful knowledge rather than meeting the minimum passing requirements. It is no doubt that students feel more empowered to learning while the instructor gives more flexibility and opportunities for students to be in charge of their own learning. Learner-centered instructions not only encourage instructors to identify learning opportunities that could help students achieve primary learning

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objectives but also to design active tasks that promote deeper learning and foster students' higher-order thinking.

The hypotheses of positive relationships between students' perceptions of learner-centered approach and cognitive trust, affective trust, and social presence were supported. The results also show that learner-centered instructions contribute to the building of collaborative team's affective and cognitive trust, which are considered as an important factor for creating a successful online learning environment (Anwar & Greer, 2012; Pelet & Papadopoulou, 2012). The emphasis of the learner-centered paradigm is on how students learn and on how they interact with content, the instructor, and peers. Students can focus on and be responsible for their own learning, and then they will learn the importance of community-building and trust-building. Moreover, social exchanges must happen frequently in virtual teams and every team member should increase their own well-being by maximizing their profits that originated from exchanging resources with others in order for team trust to be built rigidly (Liu, Chen, Liu, Lin, & Chan, 2010).

The findings also suggest that social presence should have positive relationship with team's affective and cognitive trust. This evidence is in line with Delello and McWhorter's (2014) notion that social presence gives virtual team members a sense of identity and attachment that develop through interaction. That is, when involving in collaborative activities, team members develop an openness and active expression to share their opinions and outlook that foster trust building. Moreover, this study found that three elements (*affective expression, open communication and group cohesion*) of social presence play an important role in promoting the teamwork trust (72.2% of the variance in the affective trust explained and 63.3% of the variance in the cognitive trust explained in this study). Social presence is an important indicator for trust

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building. Allowing students to identify themselves with the online learning community, to keep smooth communication with community members, and to feel the sense of belonging to the community is essential in an online learning environment to enhance learning through building team trust.

Limitation and Implication

The study could provide suggestions for instructors teaching online courses on the implementation of learner-centered instructions and on the importance of creating social presence and building trust for students in a collaborative online learning environment. According to the results of the study, the researchers suggest that instructors utilize learner-centered approach to design and teach online courses, allowing students to interact and involve in decision-making with their peers. The center of learning should be switched to students instead of instructors. Instructors should act as a facilitator and catalyst in students' social interaction to foster teamwork trust-building. Group projects should be implemented so students will be able to work together and learn through communication, interaction, and collaboration. During the learning process, instructors should encourage each group to start with building team trust. To build team trust, instructors should design activities for team members to know each other, develop communication channels, and set up team goals at the beginning of the course. This way, students could learn better in the online learning environment.

Our findings provide empirical support for the educational and practical value on learning; moreover, the research designs also provide guidance to teachers who plan to design and teach effectively. The implications from the study aside, there are some limitations that might decrease the possibility of generalization such as smaller sample size, limited course subjects and variables, and time constraints. Thus, for future research, a bigger sample size could

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be used and investigation could be done in different fields and different regions of the nation/world for a longer term. Also, the effects of learner-centered approach on students' cognitive and affective learning outcomes could be investigated.

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