Asian Journal of Distance Education

The Influence of Online CoI Presences on Learner Satisfaction in Higher Education

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Abstract: In this study, the influence of the community of inquiry (CoI) presences on learner satisfaction levels of students attending an online graduate course at a private university in Istanbul, Turkey was analyzed. Forty-eight students who are taking a master's degree course participated in the study. The purpose of the study was to analyze the relationship between CoI online presences -which are categorized as teaching, social, and cognitive presences- and learner satisfaction. In order to analyze the data, correlation analysis, and descriptive statistics were conducted. Thematic qualitative analysis was also employed to analyze the answers to two open-ended questions in the survey. Forty-eight graduate students (26 female and 22 male) participated during the 14-week semester of Fall 2020. The findings of the study show that presences have a statistically significant impact on learner satisfaction. When they are compared, teaching presence has the most important role in learner satisfaction and performance in a learning environment during the pandemic. Accordingly, findings suggest implications for creating online collaborative courses. They also indicate that teachers' positive attitude towards the course and participants and up-to-date course content might increase learner satisfaction.

Keywords: online collaborative learning, community of inquiry, online presences, instructional strategies, sense of community

Highlights

What literature already suggests:

- The three presences have a major impact on student satisfaction with their online learning experience, but successful learning environment is only associated with teaching and cognitive presences, omitting social presence.
- Teaching presence has an influence on social presence and cognitive presence.

What this paper contributes to the literature:

- Social presence has the most significant role in providing learner satisfaction and improving performance in a pandemic learning environment.
- Teachers' positive attitude towards the course and participants increase learner satisfaction.
- Up-to-date course content has a positive influence on learner satisfaction.
- Feedback sessions promote and enhance learner satisfaction.

Implications for theory, practice and/or policy:

- Learner satisfaction was found to be significantly influenced by teaching presence, which included instructional design and direct instruction.
- Course designers and instructors should think about giving members of the online community more information about interactive online teaching strategies and including possibilities for continuing interaction and discussion.

Published by EdTechReview (ETR), New Delhi, India
ISSN 1347-9008 http://www.asianjde.com
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Introduction

The COVID-19 catastrophe has interrupted education for nearly 1.6 billion learners around the world (United Nations [UN], 2020). When the Covid-19 pandemic began in Turkey, it was the middle of the spring term and as in many other countries all around the world; therefore, universities and schools had to turn quickly to online and interactive education platforms, embracing remote forms of teaching and learning as school closures were implemented (Liman Kaban & Aşçı, 2021). Bozkurt (2019) defines distance education as the activities which are applied in formal, informal, or non-formal domains facilitated by information and communication technologies to diminish remoteness not only physically but also psychologically. The purpose of this study is to analyze the literature and help create a mind map to design an online course for educators who would like to increase collaboration in their classes.

Technology not only promotes independent learning environment (Horvat et al., 2015) but also supplies personalization (Kompen et al., 2019). Moore and Anderson, (2003) report that “research on online learning can be traced back to earlier distance education and telecommunication endeavors”. The majority of these studies were aimed at providing practical tips for online course development environments (Sunal et al., 2003) and there are limited number of studies on remote teaching in the graduate courses. Since the creation of the CoI survey, the instrument has been used in various settings (Stenbom, 2018). To have some self-directed, lifelong learners in the current technology-driven knowledge age (Barron, 2006; Scardamalia & Bereiter 2006), it is valuable to convert our instructions from an instructor-led to a collaboration driven mode of learning in higher education settings. However, creating a collaborative online learning environment can be challenging as it is a complex, multidimensional issue. Thus, this phenomenon needs to be analyzed from multiple perspectives. Ouyand and Scharber (2017) also support this view by stressing the difficulties of designing and maintaining online connections in online higher education courses.

Literature

The Community of Inquiry (CoI) Elements in Emergency Remote Teaching Environments

Emergency remote teaching refers to the type of remote teaching model which came out in 2020 as in one night educators all around the world had to change their instruction from face-to-face to online environment. Due to the sudden change, there was not enough time to carefully plan and organize instruction. One common challenge faced by educators around Turkey regarding the online learning environment was fostering online collaboration (Liman Kaban & Aşcı, 2020). Literature clearly shows that the success rates in online learning is generally related to the presence of a supportive online learning community (Garrison & Akyol, 2013). This learning community is formed collectively. Teacher and the learners build and share knowledge and reply to and reflect on each other’s remarks to achieve collaboration. In any learning environment there needs to be ongoing interaction between the teacher, student(s), and the content.

Curtis and Lawson (2001) stated that the existing literature provided evidence for the effectiveness of collaborative learning however there was a gap in terms of the effectiveness of online practices. That is why they examined the impacts of including online collaborative learning activities in classrooms and it was found that students’ contributions proved the importance of that in the online environment. It was concluded that the positive outcomes of collaboration in face-to-face education are also achievable in online environments. Zhu (2012) emphasizes the fact that collaborative learning environments foster social interaction that enables students and teachers to share and exchange their ideas and try to find the best solutions for the problems assigned to them. In such environments learners and teachers are offered an opportunity to share what they know and to construct new knowledge.

With the help of the developments in technology and advancements in learning practices, a lot of studies investigated the impacts of online collaborative practices in learning environments. The implications of

a study conducted by Al Rawahi and Moh'd Al-Mekhlafi (2015) showed that providing learners with collaborative practices promoted not only sharing information but also constructing new ones. It is suggested by the researchers that teachers are expected to monitor the process of collaborative activities and provide constructive feedback to learners during it. Ku et al. (2013) reported that students are willing to engage in collaborative activities in online environments since most of them believe these practices enhance both learning processes and outcomes. The findings of the study revealed the importance of implementing collaborative learning into teaching practices in terms of pedagogical implications and learners' attitudes (Ku et al., 2013). However, the utilization of collaborative applications may not always ensure the desired proficiency level, the quality of the outcomes may differ from learner o learner (Abe, 2020). That is why educators need to provide learners with an environment in which the focus is on the interaction

Garrison et al. (2000), who created the Community of Inquiry (CoI) framework were inspired by the main principles of constructivism. In CoI framework, inquiry and community are the central elements supporting John Dewey's view that individual development requires community (Swan, Garrison, & Richardson, 2009). CoI incorporates the educator's part in course plan and assistance (teacher presence), the students' feeling of network and having a place (social presence), and their intellectual commitment via the course content (cognitive presence) (Garrison et al., 2003). According to Garrison et al. (2009), CoI model combines the role of the instructor while designing the course and facilitating learners' sense of community and belonging, and their cognitive engagement with the course content. Collaboration and participation of students have become an even bigger concern for educators since distance education entered to our lives (Liman Kaban & Ascı, 2021), therefore rendering CoI an essential framework that can be used to increase the sense of belonging and engagement throughout this type of learning process. On the other hand, Shea et al. (2012) resist that the current structure might not sufficiently speak to the full scope of instructional endeavors in distance education. Specifically, the researchers distinguished learner talk as a dependable construct that isn't considered in most earlier frameworks. Thus, they recommended learner presence as an extension to the structure to mirror understudies' self-administrative practices. According to Garrison and Akyol (2013), this position, in any case, is countered as a suspicion towards the CoI structure, since CoI conditions based on collective constructivist approaches are naturally comprehensive of learning environments both self-managed and co-controlled by encounters.

As mentioned above, CoI framework has three elements: social, cognitive, and teaching presence. Social presence is often explained as the capability of learners, through projecting their individual identities, to connect with the group, interact purposefully in a welcoming atmosphere, and establish inter-personal relationships. Social presence can be viewed as helpful while building cognitive presence, as it gives students a relationship-cultivating climate for meaning negotiation, collaborative information formation, and basic reasoning (Garrison et al., 2010; Szeto, 2015). Garrison et al. (2000) state that social presence has three categories, and these categories are: emotional expression, open communication, and group cohesion. According to Anderson et al. (2001), the next element of CoI, cognitive presence can be explained as the ability to construct and affirm meaning via sustained reflection, as shown in the Practical Inquiry Model (PIM) developed by Garrison et al. (2000). The PIM includes four phases: a triggering event, exploration, integration, and resolution (Garrison et al., 2000). And finally, Garrison et al., (2000) describe teaching presence as "the design, facilitation, and direction of cognitive and social processes to support learning" (p.2). Anderson et al. (2001) separate teaching presence into three parts which are: instructional design and organization, facilitating discourse, and direct instruction.

The purpose of the study is to understand the relationship between CoI online presences -teaching, social, cognitive presences- and learner satisfaction, looking for answers to the following questions:

1. How do community of inquiry presences associate with the overall learner satisfaction in a graduate level online course?

2. What are students' experiences with online collaborative learning?

Design for Community of Inquiry in a Fully Online Course

For the purposes of this study, a graduate level online collaborative course named "Online Collaborative Learning (OCL)" was designed in a private university in Istanbul, Turkey. This course comprised ten topics including cooperative and collaborative learning, online collaborative learning, CoI, learner centered e-learning, instructors' role in e-learning environment, supporting distributed problem-based learning: the use of feedback mechanisms in online learning, and interactions in online discussions. The reading list of this courses was compiled of materials from recently published books and articles which were related to the aforementioned topics of focus. The study was completed in one semester. The online course integrated some effective learning features which were intended to facilitate online presence of the participants. Each week the instructor held three hours of synchronous class. In these three hours, collaborative synchronous discussions (some of these discussions were designed by the instructor and others were designed by course participants) were held.

Summary of Instructional Activities for Community of Inquiry

The CoI strategies used in this fully online course are shown in Table 1 in detail with the hope of being of help to practitioners who would like to design an effective online collaborative learning environment. As online collaboration is a critical tool for building an online community, it requires effective planning. Table 1 below, adapted from Fiock (2020), and based on other literature, summarizes how the researcher incorporated CoI elements into the fully online course during which the study was conducted, followed by Table 2, which details the assessment components of the course.

Table 1. The integration of Community of Inquiry components into the fully online course

Community of Inquiry presences	Categories	Indicators	Instructional Activities in the Online Course	Literature
Teaching Presence	Instructional management	Defining and introducing Setting	In the OCL course syllabus, learning objectives, assignments, assessment criteria and course rules were introduced before the course started.	Instructor recognizes big ideas for learners to take from the course and develops course activities inside the course (Richardson et al., 2009).
	Design & Organization	Curriculum & Methods		Instructor spots vital information, skills, and attitudes learners should acquire and improve with course activities and evaluation of the performance of the learner (Richardson et al., 2009).
	Building understanding Direct Instruction	Discussion topics, Sharing personalized examples	Course instructor provided content related discussion topics for the course participants.	Instructor actively participates in course discussions but is mindful that contributing their viewpoints early might spoil student discussion (Lowenthal & Parscal, 2008; Oz Dal et al., 2021; Watson et al., 2017). Instructor establishes a suitable, welcoming atmosphere for in-group and cross-group communication that helps to nurture learning experiences (Stephens & Roberts, 2017; Szeto, 2015). Instructor should have a sense of humor and employ it (Dunlap & Lowenthal, 2018).

				Instructor should not be too active in online discussions (Richardson et al., 2009).
Social presence	Open communication	Risk free expression	Instructor supplied weekly synchronous discussions sessions and this gave the instructor a chance to evaluate and understand learners' emotions. Welcome message was shared by the instructor and students also introduced themselves before the course started. By providing a separate discussion forum for each group, group members could hold discussions and contribute to their project work. In the chat box there were some emoticon options for the participants to react to posts/replies.	Instructor creates connections early in the course to ensure all students feel comfortable communicating with them and each other (Dunlap & Lowenthal, 2018). Instructor encourages students to share experiences and beliefs in online discussion to show multiple perspectives (Oz Dal et al., 2021; Richardson et al., 2009; Stephens & Roberts, 2017). Instructor creates a "Meet Your Classmates" part in the course page where not only the instructor but also the students introduce themselves to one another (Richardson et al., 2009). Instructor uses short videos to introduce the course syllabus (Seckman, 2018).
	Grup work	Encouraging collaboration		
	Emotional expression	Embracing emotions		Instructor considers containing synchronous communications using tools such as interactive video, text, or virtual messaging (Lowenthal & Dunlap, 2018; Seckman, 2018). Instructor designs a learning environment where students can communicate with each other (student discussion tab, virtual social café, etc.; Peacock & Cowan, 2016; Stewart, 2017). Instructor establishes a suitable social environment for in-group and cross-group communication that helps to nurture learning experiences (Stephens & Roberts, 2017; Szeto, 2015).
Cognitive presence	Triggering event	Sense of puzzlement	In order to establish variety, this course was comprised of ten topics including cooperative and collaborative learning, online collaborative learning, community of inquiry, learner centered e-learning, instructors' role in e-learning environment, supporting distributed problem-based learning: the use of feedback mechanisms in online learning, and interactions in online discussions.	Instructor uses not only the content but also a process to support the discourse to scaffold (Richardson et al., 2009).
	Exploration			

Integration	Information exchange	Learners were required to read and reply to at least one post from other course participants.	Instructor reflects on student-teacher collaborations (Redmond, 2014). Reflection is an important feature of the community of inquiry model and assists learners to rise their cognitive presence as Redmond (2014) states, "reflecting on learning content and outcomes relates to knowledge acquisition where learners identify their increased knowledge and skills in the subject area" (p. 50).
	Idea connection	In the chat box, learners were asked to contribute via reactions (with emoticons) and comments.	
Resolution	Knowledge transfer	Learners created images of the topics they discuss and compared the images.	Instructor provides student's opinions and commentaries in conversations (Stewart, 2017). Instructor supplies opportunities for higher order thinking skills and experiential learning to involve learners (Akay et al., 2021; Dunlap & Lowenthal, 2018). Instructor develops rubrics for grading which reinforces the desired cognitive behaviors (Richardson et al., 2009).
		End of year project also helped the learners to transfer the things they learned throughout the course.	Instructor recognizes big ideas for learners to take from the course and develops course activities inside of the course (Richardson et al., 2009). Instructor identifies vital information, skills, and attitudes students need to acquire and create course activities around their assessment (Richardson et al., 2009). Instructor encourages investigation, divergent thinking, and various viewpoints in discussion through provoking, open-ended questions (Akay et al., 2021; Oz Dal et al. 2021; Stephens & Roberts, 2017). The course requires discussion summaries that categorize stages in the knowledge creation process (Richardson et al., 2009). The instructor uses peer assessment of discussion posts form replies (Richardson et al., 2009; Stephens & Roberts, 2017).

Table 2. The illustration of the activities and grading in the fully online course

Course Activities	Percentage	Description	Grading policy
Assignments	30 %	The course included two assignments: Assignment 1. Online Collaborative Learning Tools (Individual): Students were asked to apply the theoretical and pedagogical knowledge they had learned in the course and use this information to evaluate an online collaborative tool.	15 x 2=30 pts

		Assignment 2. Students were required to submit research questions, literature review, methods, results, findings and discussion as a group project.	
Weekly Reflection Summaries	20 %	Students were required to complete weekly discussion summaries every week. They summarized the things that were discussed each week in a paragraph.	10 x 2 =20 pts
Final Project	40 %	Each group was required to submit and present a manuscript at the end of the term.	Research Questions 5 pts Literature Review 5 pts Results 10 pts Discussion and Conclusion 5 pts Quality of the Manuscript 10 pts Language of the Manuscript 5 pts
Individual Presentation	10%	Each course participant was assigned an article to present through thought-provoking questions.	Criteria in the rubric used: Knowledge of Subject Matter (3 pts) Communication Skills/Clarity (3 pts) Interaction / Use of Audio-Visuals (3 pts) Demonstrations (1 pt)

Methodology

The study employed quantitative cross-sectional survey design. Both quantitative and qualitative data analysis methods were used to explore the influence of online collaborative learning environments. Online Collaborative Learning was the name of the master's course. The fully online course was carried out online on asynchronous and synchronous platforms with course participants who were interested in Online Collaborative Learning. Materials, online 30-minute weekly feedback sessions, and weekly three-hour synchronous sessions were designed to help the participants in the study to recognize a research focus and carry out a collaborative study. Finally, the participants shared their findings in the synchronous sessions at the end of the course. The setting of the research was a master's level online course which was titled "Online Collaborative Learning" at a private university in Istanbul, Turkey. The focus of the course was the theories of online collaborative learning and best practices in building online learning communities. Forty-eight graduate students (26 female and 22 male) enrolled in the course during the 14-week semester of Fall 2020. The instructor held this online course through an online learning management system called *itslearning.*

Data Collection Tools

To analyze the perception of the participants in this course, which was designed by incorporating CoI elements, the CoI survey that was created by Arbaugh et al. (2008) was adopted. The last two items (Items 35 and 36), learner satisfaction item and learning item were adopted from Akyol and Garrison (2008) and added to the CoI survey. Therefore, CoI survey in this study involved 13 items to analyze teaching presence, 9 items to analyze social presence, 12 items to analyze cognitive presence, and 2 items to analyze perceived learner satisfaction. The 36 item CoI survey instrument used in the study is a 5-point scale ranging from *strongly disagree* to *strongly agree* (1 to 5 on the scale). Overall, 55 teachers (as student participants) had registered for the course. On the other hand, 50 participants continued through all of the 14 weeks and completed all the tasks. Among these 50 participants, 48 of them volunteered to join the survey.

Sampling or Study Group

This course was held as a part of a master's program in a private university in Istanbul, Turkey. The students enrolled in the program are also teaching practitioners and graduate courses offer fourteen weeks of collaborative online learning environment for those who are enrolled to the program. Out of the 55 participants enrolled, 50 continued with the course and 48 participants volunteered to participate

in the study. Of these 48 MA students, 76,7% were female, 23.3% were male. 66,7 % of the participants were in the age range of 24 – 30; 30% were in the age range of 31– 40; and 3,3% were in the age range of 41 – 55. 3.3 % of the participants are practitioners at preschools, 56,7% at primary schools, 6.7 % at secondary schools, 3.3 % at high schools, 26.7 % at higher education institutions, and 3.3% at other institutions teaching adult learners.

All of the participants who were registered to this online course were teachers with less than 5 years of (42%) teaching experience, 40% of the participant teachers have 6 to 10 years of teaching experience, and 18% percent of the participants have more than 10 years of teaching experience. 90% of the participants reported that they do not have enough experience in online collaborative learning environments. In addition, a huge portion of the participants (90%) stated that this was going to be their first online learning experience.

Data Analysis

In this study, qualitative and quantitative measures were used to analyze the data. The Likert scale items were analyzed using descriptive statistics. Means of items, modes and standard deviations were analyzed and reported. Quantitative data was analyzed through not only measures such as means, modes and standard deviations, but also through the Spearman Rank Correlation Coefficient using SPSS to explore the correlation between the degree to which each of the three presences correlated with learner satisfaction and learning. The Spearman's rank correlation coefficient rho is used for categorical data (Begg, 2009). When the data being handled is not continuous, but it may be divided into categories, which are then called ordinal data if they are ordered, as is the case with the data in this study. When the Spearman's rho is calculated, it can be determined whether there is a correlation between the variables (the rho is not zero) and whether the correlation is positive, negative, strong, or weak. According to Cohen et al. (2003), the Spearman's rank coefficient can range from -1, indicating that the variables are negatively correlated, to 0 indicating no connection, and finally 1 indicating that the variables are positively correlated.

In the questionnaire there were two open-ended questions to collect qualitative data. In the questionnaire there were three open-ended questions to collect qualitative data. The analysis and subsequent coding of transcripts revealed some common themes and the findings below are presented under these themes. In order to support the content of the themes, direct quotations from the participants were included. The emerging themes will be presented under two sections as advantages and disadvantages of taking an online collaborative course.

Validity and Reliability

The reliability of the CoI questionnaire was calculated through Cronbach's alpha which generated an alpha level of 0.96 (α = .96). When the score is more than 0.7, it means it has high internal reliability, hence rendering the findings consistent.

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N-1) \cdot \bar{c}}$$

Figure 1. Cronbach's Alpha formula

As for the qualitative data, the researcher and two field experts coded the data separately to ensure inter-rater reliability. The reliability of research was calculated using the Miles and Huberman formula (Reliability = consensus /consensus+disagreement) and 85 percent in comparisons of the numbers of

consensus and disagreement. Miles and Huberman's (1994) formula was used in this study, the agreement between coders which is sufficient to indicate inter-rater reliability is 70 %.

Ethical Considerations

Even though this study did not look at sensitive information about the participants that could violate their privacy, anonymity is being kept. All participants were asked for their consent to take part in the study before they filled in the survey. They were informed about the nature of the study (in English) and were informed that they could withdraw from the study at any time.

Findings

This section shows the findings based on the research questions. Findings are presented as both quantitative (COI Questionnaire) and Qualitative (open ended questions) data. While the first research question focuses on teachers' perceptions of online education by addressing Community of Inquiry elements and items, the second research question aimed to reveal students' experiences of collaborative practices in online education.

Findings of the research question 1

To determine the effect of the Community of Inquiry model on the online teaching experience of the students, descriptive statistics with means and standard deviation examined for overall COI and COI elements. Table 3 below summarizes the data analysis conducted for the 36-item Likert scale survey participants responded to ranging from *strongly disagree* (1) to *strongly agree* (5).

Table 3. Summary of learners' CoI presences

Learners' CoI Presences	Mean	SD
Social Presence Items		
1. Getting to know other course participants gave me a sense of belonging in the course.	4.43	0.94
2. I was able to form distinct impressions of some course participants.	4.5	0.73
3. Online or web-based communication is an excellent medium for social interaction.	4.16	0.99
4. I felt comfortable conversing through the online medium.	4.3	1.02
5. I felt comfortable participating in the course discussions.	4.53	0.82
6. I felt comfortable interacting with other course participants.	4.43	0.77
7. I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.	4	1.14
8. Discussions on the live sessions with other course participants helped me to develop a sense of collaboration.	4.6	0.72
9. I felt that my point of view was acknowledged by other course participants.	4.46	0.82
Cognitive Presence Items		
10. Problems posed increased my interest in course issues.	4.56	0.63
11. Course activities piqued my curiosity.	4.6	0.72
12. I felt motivated to explore content-related questions.	4.56	0.73
13. I utilized a variety of information sources to explore the problems posed in this course.	4.43	0.77
14. Brainstorming and finding relevant information helped me resolve content-related questions.	4.5	0.97
15. Online discussions were valuable in helping me appreciate different perspectives.	4.7	0.47
16. Combining new information helped me answer questions raised in course activities.	4.66	0.61
17. Learning activities helped me construct explanations/solutions.	4.6	0.67
18. Reflection on course content and discussions helped me understand fundamental concepts in this class.	4.63	0.67
19. I can describe ways to test and apply the knowledge created in this course.	4.56	0.68
20. I have developed solutions to course problems that can be applied in practice.	4.63	0.61
21. I can apply the knowledge created in this course to my work or other non-class related activities.	4.56	0.82
Teaching Presence Items		
22. The instructor clearly communicated important course topics.	4.93	0.25
23. The instructor clearly communicated important course goals.	4.93	0.25
24. The instructor provided clear instructions on how to participate in course learning activities.	4.96	0.18
25. The instructor clearly communicated important due dates/time frames for learning activities.	4.96	0.18

26. The instructor was helpful in identifying areas of agreement and disagreement on course topics that helped me to learn.	4.86	0.35
27. The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.	4.93	0.25
28. The instructor helped to keep course participants engaged and participating in productive dialogue.	5	0
29. The instructor helped keep the course participants on task in a way that helped me to learn.	4.86	0.35
30. The instructor encouraged course participants to explore new concepts in this course.	4.8	0.41
31. Instructor actions reinforced the development of a sense of community among course participants.	4.83	0.38
32. The instructor helped to focus discussion on relevant issues in a way that helped me to learn.	4.9	0.31
33. The instructor provided feedback that helped me understand my strengths and weaknesses relative to the course's goals and objectives.	4.63	0.85
34. The instructor provided feedback in a timely fashion.	4.8	0.55
35. Overall, I was satisfied with this course.	4.86	0.35
36. I learned much in this course.	4.8	0.55

The findings reported in Table 3, clearly show a high level of teaching presence (4.7 out of 5), cognitive presence (4.5 out of 5), and social presence (4.3 out of 5). Learning satisfaction collectively yielded a mean score of 4.86. When considering all students' ratings, perceived learning collectively yielded a mean score of 4.8. According to Matthews et al. (2013), items on the CoI survey that scored less than 3.75, or slightly less than agree (4) on average, would not be considered a successful learning community. Standard deviation shows whether responses are concentrated around a value or are scattered, indicating a larger level of differences in participant responses. The fact that the mean scores of cognitive, teaching, and social presences in this study were over 3.75 indicates positive implications. Descriptive analysis of the data shows that lowest mean score belongs to item 11 and the highest mean score belongs to Item 28. The course instructor encouraged the participants to communicate and created a comfortable environment. Item number 7 has the highest standard deviations (S.D.= 1.14), showing higher level of variances between participant responses, and item number 24 and 25 has the lowest (S.D.= 0.18), illustrating a lower level of difference between participant responses. Keeping in mind that standard deviation shows whether response is clustered around a value or response is scattered showing a higher level of differences in participant responses, the fact that the mean scores of cognitive, teaching, and social presences in this study were above 3.75 indicates positive trends. Consequently, these findings imply that participants reported positive perceptions and remarked that there was an effective learning community in the present study.

Table 4. Summary of the correlation between CoI presences and overall course satisfaction

	Learning	Learning Satisfaction	Teaching Presence	Social Presence	Cognitive Presence
Learning	1,0	1,0	,86*	,39*	,51**
Learning Satisfaction	1,0	1,0	,90*	,39*	,51**
Teaching Presence	,76*	,46*	1,00	,76**	,90**
Social Presence	,72*	,39*	,76**	1,0	,91**
Cognitive Presence	,85**	,50**	,85**	,81**	1,0

** Correlation is significant at the 0.05 level (2-tailed).*
***Correlation is significant at the 0.01 level (2-tailed).*

Table 4 above shows the more detailed findings of the study regarding the correlations between CoI presences, perceived learning, and learner satisfaction. The purpose of the CoI survey is to understand the associations among presences quantitatively in addition to examining the relationships between each of the presences and overall course satisfaction. To explain the first research question, participants level of learning and satisfaction were evaluated. The association between cognitive presence, teaching presence, social presence, and perceived learning and satisfaction with the course was investigated using the Spearman Rank Correlation Coefficient. Table 4 summarizes the correlation between CoI presences and overall perceived learning and satisfaction.

On the correlation measurement, where Spearman's rank coefficient was analyzed, the results are shown in Table 4. It shows that there is a statistically significant positive relationship between the teaching presence and learning satisfaction. Teaching presence and learning satisfaction (r=.90, p=.03), teaching presence and cognitive presence (r=.85, p=.00), social and cognitive presences (r=.91, p=.03), and teaching presence and learning (r=.86, p=.02) were all determined to be significant using the Spearman Rank Correlation Coefficient. These results are consistent with previous study, which identified teaching presence as a driver of social and cognitive processes that improve learning outcomes (Akay et al., 2021; Kozan, 2016).

Findings of the research question 2

After completing the quantitative phase of the study with a questionnaire, answers of the three openeded questions were analyzed. The data obtained with openended questions were coded by the researchers, and then categories and themes were created. The findings of the qualitative data analysis are given below in connection with the second research question.

Advantages of Taking an Online Collaborative Course

The first theme emerging from the open-ended question response data was about the content of the course. 45 participants found the course content up-to-date. Below are some excerpts from open-ended question responses regarding these findings:

> *[…] Unique and up-to-date educational information related to collaborative online teaching and learning…*
> *[…] I learned a lot. I read a lot, I learned a lot. This course also helped me to understand the other courses and the content was up-to-date.*
> *[…] Learned about latest developments and trends. I also learned about some web tools that I did not know before.*
> *[…] I learned lots of activities that I can use in my class. The content of this course is up-to-date.*

These excerpts also illustrate the importance of up-to-date content for the learning environment. The participants stated they were more actively engaged in the course and most of the students talked about the confidence and motivation they acquired.

40 participants found the atmosphere friendly and comfortable as can be seen from the following participant responses:

> *[…] Having great and friendly atmosphere in which I could express myself without any consideration and also learned a lot thing to apply them in my own lessons at school.*
> *[…] The atmosphere was very friendly thanks to our instructor …*

These responses indicate that participants also contended that they preferred a friendly environment to express themselves freely.

In open-ended questions, 40 participants talked about the importance of the positive attitude by the instructor. Here are some participant responses:

> *[…] It made me realize that in online education, being there as a real person is important…*
> *[…] Realizing the importance of positive attitude from our instructor…*
> *[…] She has great energy and she was positive during the course…*

[…] I feel so self-confident with my instructor about her attitudes. Also, learning online has contributed positively to my master education…

These examples clearly show the importance of the positive attitude of the instructor in terms of fostering learner satisfaction and involvement.

30 participants stated that meaningful activities during the lesson also helped them to understand the collaborative learning environments better.

[…] We become more aware of our teaching. Also, I have learned a lot of useful activities and OCLA to implement in my lessons…
[…] We learned practices that we can apply in our classroom settings. It is so valuable. I feel More confident in my online lessons. I know what to apply to my learners by knowing the theoretical reasons…
[…] Exploring the nature of collaborative learning and applying them into real life…

The above responses reveal that online collaborative learning environments offered them to discover new ways of learning. In addition, it could also be concluded that they were willing to use the knowledge they acquired and create collaborative learning environments because they realized the necessity to make use of technology in teaching and had already witnessed its benefits especially in terms of motivating the students.

10 of the participants pointed out that they liked being a decision maker inside of the class.

[…] At the beginning of the term instructor discussed the syllabus with us and edited the syllabus together…
[…] I wanted to mention that having summary instead of midterm exam was a great idea to get rid of exam stress…

Overall, participant teachers seem to favor being a decision maker in the class, suggesting positive implications for more learner involvement in the syllabus design in some minor ways such as creating classroom rules and choosing the book or presentation type, which would make them feel that they have a voice and would encourage more learner engagement and motivation.

Disadvantages of Taking an Online Collaborative Course

Most of the participants (35 of them) reported that there were no disadvantages of taking an online collaborative course, whereas five of the participants emphasized the importance of small class sizes. Participants stated that they would like to be in less populated classes while learning in a collaborative environment. The following response is an example:

[…] If there were less participants, we would have more chance to speak up and we could feel a cozy environment…

Overall, participant teachers seem to favor online collaborative learning environments and the only disadvantage they mention is the large number of students in the class.

Discussion and Conclusion

As a result of the study, teaching presence and learning satisfaction was found significantly correlated (r=.76, p=.00), there is a correlation among teaching presence and cognitive presence (r=.85, p=.00), social and cognitive presences (r=.81, p=.00) and between teaching presence and perceived learning satisfaction (r=.76, p=.03). The findings are in line with Garrison et al. (2000) as their model shows that

intersecting three presences are essential to promote effective learning. Caskurlu et al. (2020) claim that teaching presence predicts positive student outcomes in online learning environments. Based on the results, it is possible to say that this situation is valid in also pandemic remote learning environments. Furthermore, findings of the current study based on Spearman Rank Correlation Coefficient show that teaching and cognitive presence degrees are correlated with perceived learner satisfaction. There is a statistically significant relationship between cognitive presence and perceived learner satisfaction (r=.51, p=.01) as well as between social presence and perceived learner satisfaction (r=.39, p=.05), indicating that students who are exposed to higher levels of teaching, social and cognitive presences also have higher levels of learner satisfaction. The results are parallel with previous study findings which have shown teaching presence as a driver for social and cognitive processes to improve learning outcomes (Kozan, 2016; Akay et al., 2021, Gokturk Saglam & Dikilitas, 2020). There is a positive correlation among teaching presence, cognitive presence, social presence, students' perceived learning, and course satisfaction in a course (Akyol & Garrison, 2008). As McAleavy and Gorgen, (2020) emphasize, teacher presence is vital to overcome the probable for expanded school closures in many parts of the world because of COVID-19.

Quality of instruction is significantly correlated with the perceived learning satisfaction of students is supported by statistical evidence based on the empirical data obtained from the student ratings. Creating a successful emergency remote teaching environment relies heavily on teacher presence (Liman Kaban & Aşçı, 2021). When the instructor is prepared and available, and presents a clear grading system, students are more likely to find the course effective. The participants of the study also stated their enjoyment of attending small group feedback sessions and getting feedback about their course performance, which adds more to the benefits of designing an online collaborative course incorporating CoI.

The COVID-19 pandemic obliged the educational system to start a new period of distance education (Bozkurt & Sharma, 2020; Hodges et al., 2020). The results demonstrate the high teaching presence intensity in online learning environments need to be acquired, both for integrative and instrumental reasons. Moreover, as learners exhibit high interest and desire to learn. This is an opportunity to expose these future teachers to a variety of options to increase their teaching presence, in particular, regular, high quality classes. The current study found that the three presences had a substantial impact on student happiness with this "forced" online learning experience, but that successful learning was only connected with teaching and cognitive presences, ignoring social presence. However, teaching presence has the most significant role in a pandemic learning environment in terms of learner satisfaction. Teacher’s positive attitude towards the course and participants increase learner satisfaction. Up-to-date content of the course also has a positive influence on learner satisfaction.

In this study, researcher found a positive correlation among the implementation of CoI and the overall student course satisfaction. According to the findings of the study, social and cognitive presences were correlated; the learner has a positive perception toward the learning environment when online collaborative tasks are used. It is possible to claim that CoI presences positively correlate with each other. When the online collaborative tasks are integrated in a learning environment, they strengthen the correlation among social, cognitive, and teaching presences of the CoI framework. Teacher’s positive attitude in online synchronous/asynchronous sessions is essential while creating online collaborative environments. The current study findings imply that Feedback sessions promote and enhance learner satisfaction and that organizing virtual office hours and feedback sessions with small groups of learners (4-5 students) can be an effective implementation of CoI to foster more learner presence as participants reported that they learned a lot by interacting with the teacher and the other learners while getting feedback. Learner satisfaction was also found to be influenced by teaching presence, which included instructional design and direct instruction. Course designers and educators should consider ensuring interactive online teaching techniques and including opportunities for dialogue. Instructors need to be a part of the classroom discussions as the more involved the instructor is the more likely the students are to be involved. Some suggested activities for improving rapport and therefore involvement could include

playing some music before the class starts or during the break times or having a small chat with the participants at the beginning/end of the class. Timely checking of assignments and immediate response to students in email, chat, or discussion is important in online collaborative courses to increase social presence of the learners. Encouraging students to ask questions and share their belief is important to foster more social presence in the class. Finally, instructor's active participation in the discussion increases teaching presence; however, this should be exercised with caution because if the instructor speaks his/ her ideas too early, the efficiency of the student discussion may decrease.

Limitations and future research

The primary limitation of this study is due to the absence of a control group. Even though we used triangulation method to compare the results of qualitative and quantitative data, a control group could have provided more opportunities to work on results of both groups over the observable impacts of online collaborative speaking practices. Finally, we could only work with 48 participants on our study which may influence the reliability of the results. For researchers who are eager to focus on the impacts of online collaborative practices on learner' sense of community and online learning readiness level, it is strongly suggested to work with a larger group of learners to increase the reliability of the study. Additionally, a control group will provide more chance for researchers to compare the differences between the experimental and control group to come up with more reliable results. On the other hands, the duration of the treatment may play essential role in observing the variances in the learners' perception. Thus, it is recommended to have longer duration for the treatment procedure. Finally, the participants of our study are adult learners. The studies that are conducted with different age groups may reveal beneficial results for the literature. Given the small size of sample in this study, further studies with larger sample sizes are needed to reinforce the findings and to provide further implications for practice.

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Suggested Citation:
Liman Kaban, A. (2021). The influence of online CoI presences on learner satisfaction in higher education. *Asian Journal of Distance Education, 16*(1), 230-246.
https://doi.org/10.5281/zenodo.5021228