

## Examining the Effect of Structured Roles on Social Presence

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### Abstract

The aim of this paper is to evaluate the effect of discussions carried out with structured roles for participants in an online learning environment, on social presence within the framework of the Community of Inquiry (CoI). The study was conducted with qualitative approach. Study participants consisted of 12 bachelors who were doing a Computer Operating course at a Public Education Center. Discussions continued for eight weeks and data were collected throughout this period. Data was obtained performed by analyzing the discussion board, assessing based on participants' role performances, and analyzing the participants' views on the process. It was found that the participants fulfilled the requirements of their respective roles. Structured roles indicated a positive effect on social presence.

**Keywords:** Online learning, social presence, asynchronous discussions, structured roles.

### Çevrimiçi Öğrenme Ortamında Yapılandırılmış Rollerin Sosyal Buradalık Üzerindeki Etkisi Öz

Çevrimiçi öğrenme için en iyi uygulamaların araştırılmasına ihtiyaç olduğu alanyazında vurgulanmaktadır. Bu çalışmada çevrimiçi öğrenme ortamında, katılımcılar için yapılandırılmış rollerle gerçekleştirilen tartışma etkinliklerinin sorgulama topluluğu (Community of Inquiry-CoI), sosyal buradalık bileşeni çerçevesinde etkisini değerlendirmek hedeflenmiştir. Çalışmada nitel yaklaşım benimsenmiştir. Çalışmanın katılımcıları, Halk Eğitim Merkezi'nde, Bilgisayar İşletmenliği kursuna devam eden, lisans mezunu 12 öğrencidir. Sekiz hafta boyunca sürdürülen tartışma süreci ve sonunda elde edilen veriler incelenmiştir. Tartışma panosu analiz edilmiş, katılımcılar üstlendikleri rollere bağlı olarak haftalık olarak diğer katılımcılar tarafından değerlendirilmiş ve sürece dair görüşleri alınmıştır. Sonuç olarak, farklı rollere bürünen katılımcıların üstlendikleri rollerin gereğini yerine getirdikleri görülmüştür. Elde edilen veriler, yapılandırılmış rollerin sosyal buradalık üzerindeki olumlu etkisine işaret etmiştir. Katılımcılar, çevrimiçi tartışma ortamında etkileşimin sağlandığını ve yeni öğrenmelerin gerçekleştiğini bildirmiştir.

**Anahtar kelimeler:** Çevrimiçi öğrenme, sosyal buradalık, eşzamanlı tartışmalar, yapılandırılmış roller.



## INTRODUCTION

Online learning is becoming increasingly common at all levels of education. Online learning, which is predominantly involved in higher education and beyond, is defined as planned teaching and learning activities provided by using a communication channel within an institutional organization without time and place limitations. Discussion sessions in online learning environments offer students various communication or interaction opportunities with synchronous and asynchronous tools (Wolverton, 2018; Butz & Stupnisky, 2017; Keleş, 2018). Most online learning research focuses on asynchronous forms of interaction that enable text-based discussion to take place. With the increasing prevalence of online learning, researchers are shifting more emphasis on the question of how interactions should be designed in an online learning environment. In this context, community of inquiry (CoI) is widely used as a conceptual framework by researchers of online learning. CoI provides a framework for integrating the constructivist approach into the course design, implementation and assessment process. First put forward by Garrison et al. (2000), CoI is widely used by researchers as a theoretical framework in analyzing online learning environments (Garrison et al., 2000; Huang et al., 2019). CoI comprises three components: cognitive, social and teaching presence.

According to Garrison et al. (2000), social presence refers to the ability of participants to identify themselves with the community, communicate purposefully in a safe environment, and develop interpersonal relationships by preserving their individual identities. Cognitive presence is the extent to which learners can construct and validate meaning through continuous reflection and discourse. The teaching presence means the design, facilitation, and direction of cognitive and social processes in order to achieve individually meaningful, educationally useful learning outcomes. This study particularly deals with social presence.

### Social Presence

Social presence is a long-debated issue, and a large number of definitions have been made so far by researchers (Annand, 2011). According to Lowenthal and Snelson (2017), researchers have provided several descriptions of social presence. Some studies describe social presence as being there, being real, reflecting, being connected and belonging. Being there is regarded as the degree of salience between two communicators, that is the quality or state of being there; being real refers to the degree to which the person is perceived as real online; reflection is one's ability to socially and emotionally project oneself into the online community; being connected refers to the degree of the feeling, perception, and reaction of being connected to another intellectual entity online; and belonging is defined as the ability to engage in online sessions and a sense of belonging, and to interact with other students and a teacher. Lowenthal and Dunlap (2018) stated that social presence is a popular construct used to describe how individuals interact in online courses. It is suggested that a strong link exists between social presence and learner satisfaction and learning outcomes (Noteboom & Claywell, 2010). It was stated that social presence is an impressive factor for the quality and success of online learning environment experiences (Calli et al., 2013) and is indispensable for collaborative discussions (Mansour et al., 2010; Wei et al., 2012; Gündüz et al., 2018).

### Online Discussions

Discussion is an essential technique for students, particularly in the online environment. It is thought that discussions in communities in the online learning environment allow the creation of in-depth meaning and help build students' understanding (Ding et al., 2017). Being asynchronous emancipates students from the constraints of time and space and provides more time for reflection (Hawkes, 2006). Asynchronous online discussions support students' higher-order thinking and active participation (Ding et al., 2017; Rovai, 2007). The most distinctive aspects of asynchronous discussion environments are listed as not allowing loss of data by recording individual messages online, allowing students to send their responses at any time they want, to take their time to read the messages and to review their own messages before and after sending them. In addition, this feature is described as an advantage compared to other environments (Hew et al., 2010). Another benefit of asynchronous discussion environments is that students have enough time to reflect on their own comments as well as their peers' comments while structuring their own thoughts and views (Murphy & Coleman, 2004). In some studies, the feeling of isolation is reported as a challenge faced by learners. Kara et al. (2019) draw attention to the consideration of individual differences in overcoming the difficulties related to learners, ensuring the participation of students in online courses, providing flexible learning opportunities, and employing strategies or techniques that will increase learner-learner interactions.

## Structured Roles in Online Discussions

Interaction in asynchronous online environments can be enhanced with specially designed participation protocols such as assigned or structured roles. Assigning roles bear beneficial results in online discussions by providing discussion guidance, taking responsibility for their own learning, and encouraging peer interactions (Jiang, 2017). The roles encourage students to take more responsibility for their own learning by responding to discussion questions, interacting with peers, constructing knowledge, and discussing and negotiating within the time limit available throughout the learning process (De Wever et al., 2008; Strijbos et al., 2004). Moreover, the role assumed by peers in online discussions can encourage students to ask questions and freely challenge the statements of others without being hindered or intimidated (Rourke & Anderson, 2002). Appointing specific roles in discussions helps the teacher without compromising learning (Rourke & Anderson, 2002).

According to Xie et al. (2014), "Appointing students as moderators to lead group activities is a common practice by classroom teachers purely for pedagogical purposes or managing large groups." (p. 12). This common practice requires research into how students work by taking part in discussions. Correia and Davis (2007) found that peer moderation, as opposed to instructor moderation, in online discussions is the most popular collaborative design preferred by online learners. While the majority of research has been on instructor moderation strategies, a limited number of researchers have looked into peer moderation context. Baran and Correia (2009) underline the importance of studies to be carried out based on this. The literature indicates the current need for studies that examine the effects of structured roles for students in online discussions (Xie et al., 2017).

It is of interest to researchers how to design instruction in an online learning environment, and the facilitator role of the learner or constructing a role for the learner is one of these methods. The students can need support when solving a problem or fulfilling a task and they can mutually benefit from each other's knowledge, skills or abilities. There are studies that reveal positive effects of designs that encourage collaboration among students in the online learning environment. In this regard, it was attempted to describe the relationship between structured roles and the social presence component of CoI.

## Research Questions

The aim of this study is to analyse the effect of structured roles in an asynchronous online discussion environment for students in terms of the social presence component of the CoI framework. To this end, answer was sought to the following questions:

1. What is the relationship between structured participant roles and social presence in asynchronous online discussions?
2. What are the views of the participants about the discussions taking place around structured roles?

## METHOD

### Participants

The participants of this study consisted of 12 people (8 women and 4 men) enrolled in a Computer Operating course in a Public Education Center. Their age ranges between 23-27 and they are graduates of different disciplines (undergraduate). They have basic technology literacy skills. Demographic data of the participants are given in Table 1. This study was approved by Social and Human Sciences Scientific Research and Publication Ethics Committee.

Table 1. Demographic Data of the Participants

Code Name	Gender	Occupation	Age
P1	Male	Econometrics	25
P2	Male	Economics	23
P3	Female	International Affairs	25
P4	Male	Labor Economics	24
P5	Female	Science Teaching	24
P6	Female	Finance	25
P7	Female	Social Services	24

P8	Female	Turkish Language and Literature	27
P9	Female	Turkish Language and Literature	25
P10	Male	Economics	25
P11	Female	Business Administration	24
P12	Female	Business Administration	23

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### Research Model

This study was carried out in case study model among qualitative research methods. According to Creswell (2012), case study is an approach in which the researcher explores one or more limited situations over time by using the detailed and comprehensive data gathered from many sources, and subsequently reports the themes related to the situation by describing the situation. A case study is preferable compared to many other research methods as it makes it possible to carry out an in-depth examination of various aspects of education, especially when seeking answers to the questions of “what,” “how,” and “why” (Kaleli-Yilmaz, 2014). The method was used in this study due to this characteristic.

### Procedure

This study was implemented using the Moodle platform. The detailed explanations were provided for the students on how to use Moodle and its mobile version as well as the scope of their roles.

The roles vary in the discussions held in the online learning environment. Beuchot and Bullen (2005) examined the interactions and behaviours of 16 PhD students in an asynchronous online discussion environment. They observed certain types of behaviours including giving support, opposing, revealing/withdrawing, praising, punishing, making/telling jokes, mocking, questioning, defending, offering an opinion, giving advice, asking questions, and requesting. Bardakçı et al. (2014) also analysed the recorded postings made by the participants in an online learning environment throughout a 12-week period, and they identified eight roles as administrator, atmosphere constructor, reminder, information provider, tutorial, opinion provider, problem maker and problem solver. The present study delved into these roles, the prominent roles in the literature (De Wever et al., 2010; Gu et al., 2015; Yilmaz & Karaoglan-Yilmaz, 2019) were taken into account, and the participants' roles were appointed based on their age and education level. These roles are “moderator,” “questioner,” “source searcher,” and “summarise.”

Before the main implementation phase, the study was piloted for one week. The discussions started on the first day of the week and ended on the last day. The students drew a lottery to distribute the roles every week and then launched the discussions. Then, they uploaded the task distribution list to the system. The participants who participated in the discussions set up a meeting under the leadership of the moderator before the discussion started so that they could exchange views on what to share and which questions would be appropriate to ask. Then, the source searcher was supposed to determine the materials (video, news, digital document, etc.) related to the subject and consult with other group members. The process continued with the uploading of the materials by the source searcher and the posting of the questions about the discussion on the subject by the questioner. The moderator initiated the discussions. At the end of the discussion, the summariser summarized the topic before winding up the weekly discussion session. During the discussions, the instructor acted as the guide and counsellor, checked the relevance of the uploaded documents, intervened the problems related to the learning management system, and followed up the discussions. The weekly discussion sessions were concluded after the other participants scored/assessed the performance of their peers by using the system.

### Data Collection

#### Interview Form

An interview form was drafted after reviewing the related literature (Yilmaz & Karaoglan-Yilmaz, 2019) and obtaining expert opinions. The interview form contained open-ended items in order to examine social presence in an asynchronous online learning environment, and these items were prepared based on social presence components and indicators (Garrison & Arbaugh, 2007).

### Participant Roles Assessment Questionnaire

A questionnaire was designed to rate each participant's role performance from 0 to 5. By using this grid, 5 (five) points were given to refer to excellent performance, while 0 (zero) was given to for inadequate or poor performance.

### Discussion Board

For eight weeks, the postings/shares of the participants on the moodle system were analyzed as data. To assess the content and results of discussion boards, which are considered as an important component of online learning, frequency calculation is a widely used technique (Marra et al., 2004). Therefore, the participants' messages were checked and reported with regard to frequency.

### Research Ethics

It was made by the Social and Human Sciences Research and Publication Ethics Committee of our university, and the decision approved your study numbered E-81614018-000-233 dated 09.03.2021.

## FINDINGS

The findings are presented under relevant headings in the same order as the research questions.

### Relationship Between Structured Student Roles and Social Presence

It was found that the online learning environment allowed the participants to send shares about the discussion topics. The findings in this regard are shown in Table 2. The materials shared by the resource seekers in the discussions were classified as documents, photographs, videos, and news. The source searcher, moderator, questioner, and summariser completed the discussions by fulfilling their duties and responsibilities.

Also, it was seen that the moderator chaired the discussion by leading the process, the source searcher shared the relevant materials, and the questioner posted the discussion questions. Other participants joined in the discussions by making contributions as relevant. In other words, the participants provided feedback on all postings the discussion group members sent. Specifically, the questioner's questions were useful for triggering discussions.

Table 2. Findings on Discussion Topics and Shares

Discussion Topic	Document	Video	News Report	No of Questions	No of Persons	No of Comments
Communication Technologies	-	1	1	7	12	66
Protection of Personal Data and Privacy	1	3	1	6	10	57
Protection against Cyber Threats	1	3	3	4	12	43
Security on Mobile Devices	-	3	-	5	12	61
Intellectual Property Rights	-	4	-	6	12	56
Ethics Concerning Artificial Intelligence	-	6	-	5	11	78
The Internet and Network Security	-	5	-	6	12	75
Digital Footprints and Algorithm	1	1	-	6	12	72

The findings reached from the analysis of the Social Presence Assessment Grid are presented in Table 3. The frequencies obtained from this tool revealed that the postings during the earlier weeks mostly fell under the category "affective". In particular, statements suggesting the expression of emotions and self-disclosure were prominent. As another finding, "interactive" and "cohesive" indicators among social presence indicators were rare during the discussions in the earlier weeks, yet an increase was seen under these categories in the following weeks.

The postings of this type were seen to have even a larger weight across the discussions in the 6<sup>th</sup> week and afterwards.

The participants' messages related to affective qualities were analysed for the corresponding indicators. Firstly, "expression of emotions (A1)" was elicited as evidenced in a statement by participant P9, who was not on duty in Week 1: *"There is an increasing need for computers. The price increase is a very sad situation."* This respondent was again off duty in Week 2 and said, *"I have never been concerned in that regard."* These statements imply the presence of expression of emotions. Secondly, "use of humor (A2)" emerged as an indicator in discussions. For example, P4 was off duty in Week 8 and said, *"Downplaying access to digital footprints is like burn your house to fright the mouse away."* Nevertheless, this indicator occurred less frequently than the other affective sub-categories. Thirdly, "self-disclosure (A3)" occurred during the discussions, and it had the highest frequency of all sub-categories of "affective". As an example, P9 was off-duty in Week 2 and said, *"I don't trust, but this is not a topic of interest to me. It is obvious that it is shared with third parties and institutions, but unfortunately I ignore it."*

In the following weeks, it was seen that the frequencies of interactive and cohesive messages were gradually increasing. Under the category "interactive", the increase was more marked in sub-categories of "continuing a thread" and "expressing agreement". Similarly, higher frequencies were noted under the category of "cohesive" with regard to "vocatives" and "addresses or refers to the group using inclusive pronouns". Since the participants created a chain thread in response to the other participants' comments and posted their comments under such a thread, the indicator of "continuing a thread (I1)" was obvious. As an example, during Week 1, in reply to the source searcher (P5), the questioner (P12) wrote, *"I don't do any advanced research either. Brand and processor are more important to me."* This comment shows continuing of a thread. As another indicator, "quoting from others' messages (I2)", occurred during Week 8 only. For example, P6, who assumed no specific role, said, *"Although my friends say that it is possible with a VPN address, I do not think that VPN addresses are that secure either."* Likewise, "referring explicitly to others' messages (I3)" was seen in the context of clarification during Week 6. As evidence, P5, as the summariser, referred to another participant's message for clarification as follows: *"P8, I would like to say the following on your response of justice, tolerance."* As another indicator, asking questions (I4) was observed in all weeks. The frequency of this indicator was higher as the questioner and moderator asked questions during the earlier weeks and off-duty participants addressed questions starting from Week 6. An example quotation was recorded during Week 7. An off-duty participant, P6, wrote, *"How are VPN programs different from the applications we use?"* Another indicator was "complimenting, expressing appreciation (I5)". As an example, in Week 7, P9 said, *"P8, thank you so much for the video, it was a very useful one, I downloaded the application immediately and tried it out, it was really reliable, thanks again."* The last indicator of "interactive" was "agreeing (I6)". This indicator was prevalent during Week 6 and Week 8. For example, P12 as an off-duty participant in Week 6 wrote the following: *"P3, yes, we agree on this issue, I agree with the information you wrote and I think in the same way."*

The last category, "cohesive", was completed with three indicators. Firstly, "vocatives (C1)" was intensely used starting from Week 6, when participants called out each other by name in their messages. To exemplify, P9 as the moderator in Week 8 wrote the following: *"As P4 said, it would be a useful thing in terms of detecting various terrorist organizations."* The second indicator, "addresses or refers to the group using inclusive pronouns (C2)" was seen starting with Week 5. During this week, the questioner, P8, wrote, *"This program will not be very functional for us then."* Likewise, P9 as an off-duty participant, said, *"It is very nice to have such videos; they show what is right even to those who are not curious like us."* The use of pronouns reveals that they felt like a group. Lastly, "phatics and salutations (C3)", as "Hello everyone!" greetings and closures expressions were not observed in any of the discussions.

Table 3 shows the participants' roles week by week, the corresponding indicators of social presence as participants with no specified roles in discussions, and the frequencies of the participants' postings in discussions.

Table 3. Social Presence Indicators and Frequencies of Participants' Shares

	Affective																												Interactive												Cohesive			Total						
	Indicator	Moderator (P4)	Questioner (P12)	Source searcher (P5)	Summariser (P8)	P1	P2	P3	P6	P7	P9	P10	P11	Moderator (P3)	Questioner (P2)	Source searcher(P11)	Summariser (P10)	P1	P4	P5	P6	P7	P8	P9	P12	Moderator (P12)	Questioner (P4)	Source searcher (P8)	Summariser (P6)	P1	P2	P3	P5	P7	P9	P10	P11	Moderator (P9)	Questioner (P10)	Source searcher (P3)	Summariser (P1)	P2	P4		P5	P6	P7	P8	P11	P12
Affective	A1									1														1													1													
	A2		1						1		1													1			1				4	2				2	1		1			1					1			
	A3	4	6	3	10	8	1		3	14	7	3	1	11	11		4	3	7	11	8			10	7	7	3	5	10	3	2	8	5	7	7	4	2	2	9	4	7	5	7	4	9	9	9	21	5	2
Interactive	I1		1	2	2																																2	1			1	2			1	2				
	I2																																																	
	I3																																																	
	I4	2	7											6												1	4									2	5													
	I5																																																	
	I6			2	1				1																			2					3										1							
Cohesive	C1																																																	
	C2	2								1								1									3									1	4		1					2						
	C3																																																	



WEEK 5												WEEK 6												WEEK 7												WEEK 8																			
	Affective												Interactive												Cohesive																														
	Indicator	Moderator (P5)	Questioner (P8)	Source searcher (P7)	Summariser (P4)	P1	P2	P3	P6	P9	P10	P11	P12	Moderator (P11)	Questioner (P9)	Source searcher (P1)	Summariser (P2)	P3	P4	P5	P6	P7	P8	P10	P12	Moderator (P6)	Questioner (P7)	Source searcher(p12)	Summariser (P5)	P1	P2	P3	P4	P8	P9	P10	P11	Moderator (P10)	Questioner (P3)	Source searcher (P2)	Summariser (P9)	P1	P4	P5	P6	P7	P8	P11	P12						
A1	3	1							3				1		1	1	1							2	1	1		1				2	2		3	2			1		1		6				3	1	1						
A2			1			1									1		1	1	1	1				3	1							1								3							1								
A3	1	1	1						1						3				1		1		3			4	1	2			6		2	2	4	1				1	3					1	1								
I1								1							4		3	4	4	3	2		4	1	3	1	1			1		1	5	4			1	2			1	2	1		2	3		1							
I2																																																		1					
I3																	1																																						
I4	1	5						1							5				1				1			5	5				1							2	5	2			1												
I5																																																							1
I6																6	1	2	3	2	1	2				3	4	1								1			1	2	3	2	1	2	3	1	1	5	2	5					
C1																6		3	4	9	3	3		4	1	4	1	1			1		2	5	3					2	1	1	1	1		2	3	1	1						
C2	3							1	3				2	1	1		4	1	13	5	1		15			1	1	1	1					6				2	3	3	5		8	4			14	1	3						
C3																																																							
Total	2	12	1	2	0	1	0	1	9	0	0	3	1	27	2	15	13	31	14	9	K	32	0	7	22	10	6	1	0	12	2	5	21	15	1	0	7	12	12	11	3	23	9	2	5	29	6	12							
A1: Expression of emotions A2: Use of humor A3: Self-disclosure I1: Continuing a thread I2: Quoting from others' messages I3: Referring explicitly to others' messages I4: Asking questions I5: Complimenting, expressing appreciation I6:Expressing agreement C1: Vocatives C2: Addresses or refers to the group using inclusive pronouns C3: Phatics, salutations K: Did not participate																																																							

The participants' weekly social presence scores were calculated by counting the weeks when they were on duty and off duty. The results are presented in Table 4. As the table shows, social presence scores of seven participants that had specific roles in discussions (P2, P3, P6, P9, P10, and P12), were higher than the scores obtained from weeks when they took part as ordinary participants. Average scores of these participants during their on-duty weeks were partly higher than the other weeks. It can be said that role-taking has a positive effect on the social presence scores of these participants. P1, P3, and P10 had lower mean social presence scores than the others.

Table 4. Participants' Weekly Social Presence Scores

Participant	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Average Social Presence Scores
P1	8 O	3 O	2 O	5 S	0 O	2 Ss	0 O	3 M	2,87
P2	1 O	17 Q	12 O	8 O	1 O	15 S	12 O	12 Ss	9,75
P3	0 O	11 M	7 O	12 Ss	0 O	13 O	2 O	12 Q	7,12
P4	8 M	8 O	13 Q	6 O	2 S	31 O	5 O	23 O	12
P5	8 Ss	11 O	10 O	13 O	2 M	14 O	1 S	9 O	8,5
P6	5 O	8 O	3 S	10 O	1 O	9 O	22 M	2 O	7,5
P7	14 O	0 O	8 O	10 O	1 Ss	0 O	10 Q	5 O	8
P8	12 S	11 O	12 Ss	27 O	12 Q	32 O	21 O	29 O	19,5
P9	10 O	8 O	4 O	15 M	9 O	27 Q	15 O	11 S	12,37
P10	3 O	4 S	4 O	11 Q	0 O	0 O	1 O	7 O	3,75
P11	1 O	0 Ss	3 O	6 O	0 O	1 M	0 O	6 O	2,42
P12	14 Q	7 O	4 M	2 O	3 O	7 O	6 Ss	12 O	6,87

M: Moderator    Q: Questioner    Ss: Source searcher    S: Summariser    O: Other Participant

On the other hand, P4, P5, P7, and P8 obtained higher social presence scores during the weeks when they did not have specific roles. Also, their average social presence scores were partially higher than the other participants. It was found that structured roles did not affect the social presence scores of these participants. In other words, they showed more social presence in their postings compared to the other participants regardless of their position in group discussions. It was seen that questioner tended to yield the highest positive impact on social presence. It was followed by the roles of moderator, source searcher and summariser, respectively. In connection with the last role on the list, three of the participants (P4, P5, P6) got lower social presence points when they acted as summariser. Thus, it can be suggested that summariser was the least influential role in the discussions.

The findings obtained from the Participant Roles Assessment Questionnaires are given in Table 5. As the table shows, the participants were given average scores by their group mates in a range of 2.6 to 4.8 points. The lowest score was earned by P11 as the moderator during Week 6. By contrast, the highest score was received by P8 as the summariser during Week 1. When all of the participants were compared, it was seen that P8 had the highest average. In a similar vein, the highest average score of social presence was also taken by P8. On the contrary side, the lowest average score was calculated for P11. When the social presence scores were compared,

it was seen that the lowest average belonged to the same participant (P11). These findings reveal a concordance between the participants' role assessment scores and their social presence score averages.

Table 5. Participant Roles Assessment Questionnaire Scores by Week

		Week 1				Week 2				Week 3				Week 4			
Role	M	Ss	Q	S	M	Ss	Q	S	M	Ss	Q	S	M	Ss	Q	S	
	Participant	P4	P5	P12	P8	P3	P11	P2	P10	P12	P8	P4	P6	P9	P3	P10	P1
		Score	4,2	4,7	4,7	4,8	3,8	4,5	4,2	4,4	4	4,7	4,2	4,5	4,7	4,5	4,6
		Week 5				Week 6				Week 7				Week 8			
Role	M	Ss	Q	S	M	Ss	Q	S	M	Ss	Q	S	M	Ss	Q	S	
	Participant	P5	P7	P8	P4	P11	P1	P9	P2	P6	P12	P7	P5	P1	P2	P3	P9
		Score	4	4,1	4	4,5	2,6	3,9	4,4	4,3	4,5	4,5	4,2	4,5	4,3	3,9	4,5

### Participants' Views on Discussions in the Asynchronous Learning Environment

As a result of the analysis of the participants' views regarding the asynchronous discussions, five themes, codes and related frequencies were elicited. The themes were "role", "role rotation", "learning", "feelings", and "interaction" and explained in relation with codes. The findings are presented in Table 6.

#### Role

Under the first theme, the participants' views on fulfilling their own structured roles during discussions were presented. While some participants defended that they were more active in the discussion sessions they took part in (8), some said the opposite (2), and some others reported being neutral (2). For example, P4 said, "*I was focused on my duty so I couldn't spend much time on the discussion part in the sessions where I took a role, but when I was just a participant, I think that I completely adjusted myself to the discussion and participated very well.*" On the other hand, P1 said, "*I believe that I was more effective in the discussions in which I took a role.*" Lastly, P11 and P12 stated that their position in the discussions did not make a difference to their performances across weeks. P11's opinion was as follows: "*The discussion went on flawlessly in the sessions where I took and didn't take a role. There was no setback.*"

Table 6. Participants' Views on Asynchronous Discussions

Role	F	Role Rotation	F	Learning	F	Feelings	F	Interaction	F
Taking a role	8	Assuming responsibility	3	Comments	6	Excited/Amused	5	Exchanging ideas	11
Not taking a role	2	Management skill	3	Contents	7	Relaxed	2	Comparing ideas	12

Neutral	2	Learning the topic	6	Role	4	Responsible	4	Convergence of ideas	12
		Researching	5			Fine/Happy	4		
		Thinking skill	2			Curious	3		
		Ability to interpret	2			Uneasy	2		
						Distressed/Sad	2		

### Role Rotation

This theme was used to summate the participants' views regarding fulfilment of different roles in different discussion sessions. Some respondents found roles' rotating helpful for learning the topics (6), whereas some benefited it in researching (5). This aspect was also approached from other perspectives such as assuming responsibility (3), management skills (3), ability to interpret (2), and thinking skill (2). Each of these points of view is exemplified with quotations below. To start with, P8 said, *"I think it is beneficial for having command of the topics as there is a new topic in every role."* Another participant, P7 said, *"Working on different things contributed to my self-development because some roles required more research and some required more thought."* P11 said, *"Giving a role to the participants provides both a sense of responsibility and the ability to manage the discussion with a different perspective."* Finally, P2 said, *"Being in different roles had effects that led to development and diversity in the mindset."*

### Learning

The theme learning was elicited from the views regarding the factors affecting the participants' learning. Some participants claimed that their learning was improved thanks to the contents shared (7), some classified the comments shared as elements facilitating learning (6), and some others pointed to the effect of their given role on learning (4). The following remarks support these sub-themes. P11 said, *"It was instructive because the topics were taught in videos."* P10 said, *"There were mutual questions and answers in the discussions. Also, thanks to the roles, I was able to learn the topics with the opportunity to research"*.

### Feelings

This theme was used to reflect the feels the participants had during the discussions. The participants reported a number of feelings such as excited/amused (5), relaxed (2), responsible (4), fine/happy (4), and curious (3). Some negative feelings were also noted such as uneasy (2) and distressed/sad (2). In this regard, P2's view is as follows: *"Sometimes we got tired but we joined and learned in by having fun."* P6 said, *"I felt responsible for the discussion, I joined in the discussion almost every day, I was curious about and followed the replies of my friends and wrote replies to them."* Lastly, P7 said, *"Overall, I participated in a relaxed and calm manner. There were times when I was stressed out and sad that I wasn't able to participate adequately some weeks due to other responsibilities in my life."*

### Interaction

As the last theme, the discussions gave away opinions on the content of the interactions between the participants. All of the participants stated that the discussions led by specific roles let them compare different ideas (12) and experience convergence of ideas (12). Almost all of the respondents said that the asynchronous discussion environment allowed for the exchanging of ideas (11). In this regard, P12 said, *"In my opinion, everyone's interaction was good. We shared ideas. We exchanged ideas on how to do this and that, how to do things better. We already responded by commenting on ideas. In reaching the main idea, our summariser was wrapping up the topic. And we were reading this and reaching the conclusion."*

## DISCUSSION & CONCLUSION

According to the results of this study, the participants carried out shared tasks cooperatively, referred to each other's ideas and acted as responsible for each other's learning in sessions when they undertook structured roles. As required by their roles, the participants posted content, including videos, news reports, and documents, and generated and exchanged ideas on these contents. In studies in which social presence is questioned, it is seen

that students use similar content as a source (Keleş, 2018). The literature on online learning environments states that the number of participants affects social presence. Effective communication among a few participants is important for developing social presence (Stodel et al., 2006). In fact, the small size of participants in this study may have facilitated social presence. In the study by Öztürk (2009) on the effect of social presence in online discussions, it was suggested that large groups of students inconvenience online discussions, and thus, future implementations should be conducted with fewer students for higher effectiveness. Role assignment and group size are important design considerations for conducting effective asynchronous online discussion (Luo et al., 2023).

According to Luo et al. (2023), in their comparison of small and medium-sized groups by assigning roles in the online learning environment, found that there was no significant difference in students' overall participation and experiences in asynchronous online discussions. According to Rovai (2007), the ideal number of participants should vary between seven and twelve for the most effective interaction possible in online learning environments. In the current study, the number of participants remained within the recommended limits.

A close look was taken at the social presence scores from the 8-week discussions held in the asynchronous online learning environment after assigning roles. Some participants finished with higher scores than others, and it was noticed that these participants had higher social presence scores regardless of their role-taking status. However, the participants with lower average social presence scores exited with slightly increased social presence scores when they were on duty compared to the rest of the discussion weeks. Unlike those mentioned above, the participants with a medium average social presence score showed a slight increase during the weeks when they were on duty.

Some participants consistently completed the implementation with higher social presence scores in all cases. It was understood that those participants were mostly those who actively participated in discussions and addressed questions. Gündüz et al. (2018) pointed out that the level of social presence differs according to certain variables, such as occupations. In a similar vein, Enfiyeci and Filiz (2019) researched whether social presence changes depending on different occupations, and they found that social presence levels were higher among certain professionals, such as teachers and customer representatives. They thought one possible explanation might be the strong communication skills in those professions. Likewise, in the present study, science teachers, Turkish language and literature teachers, and econometrists obtained higher social presence scores every week, no matter if they were appointed to a specific role.

During the early weeks, the affective category of social presence was more prevalent in the discussion environment. However, it was replaced by interactive and cohesive categories as time progressed. The most frequent indicator throughout the discussions was "self-disclosure" affiliated with the affective social presence category. In the following weeks, the other categories, interactive and cohesive, came to the forefront. Specifically, the most widespread interactive social presence sub-categories were "continuing a thread" and "expressing agreement" and the cohesive ones emerged as "vocatives" and "addresses or refers to the group using inclusive pronouns". The participants acted in cooperation in groups. It is predicted to have pushed the social presence scores upwards. Peterson (2006) found that such responsibilities boost social presence in learning activities. Moreover, the participants' interest increased and they felt responsible for completing the task when they were appointed specific roles (Schifter et al., 2012). Consequently, in this study, the participants were more socially more visible during their "on-duty" weeks compared to the "off-duty" weeks. It was also seen that the questioners enlivened the process, especially by asking questions that encouraged the participants to join in the debates. This, in return, promoted social presence. It must also be noted that the biggest contribution to social presence was lent by the questioner and the most modest contribution by the summariser.

During discussions, emotional interaction develops, enabling the participants to interact and communicate sincerely and helps the participants to undertake collaborative work while fulfilling their responsibilities required by the assigned roles (Baykara-Pehlivan, 2005). Similarly, in this study, the participants often posted messages implying affective, interactive and cohesive categories and indicators during the discussions.

The results reached in this study reveal that social presence was realized to a considerable extent. One possible reason can be the fact that the participants were attending a face to face, formal Computer Operating class at the Public Education Center besides the online sessions required by this study. It is known from previous research that it is better to meet face to face as a means of creating social presence in online environments. Lowenthal and Dunlap (2020) stated that participants who were in contact outside online sessions could adapt to

the online environment more easily than the others, and that previous acquaintance with group members enhanced social presence in online courses. It is possible that group members who have spent time beforehand might get to know each other better, facilitating the establishment and maintaining of social presence within groups (Lowenthal & Dunlap, 2018). The findings of this study are in congruence with the abovementioned research.

In the discussions conducted by participants with structured roles in the asynchronous collaborative online learning environment, the indicators of social presence were mostly revealed. It was demonstrated that meaningful dialogue was stimulated, participation was ensured, and high-quality discourse could be produced around weekly discussion topics. The participants' views showed that all of them found the discussions productive. In addition, they expressed their opinions freely and felt the responsibility of expressing their opinions during the sessions.

Garrison et al. (2010) describe social presence as the ability of participants to identify with the community, communicate consciously in an environment of trust, and develop interpersonal relationships by reflecting their individual personalities. Most of the participants stated that they were comfortable expressing themselves in the discussion sessions. It can be suggested that carrying out discussions in the asynchronous online learning environment by appointing roles can be a powerful means of active participation, generating ideas, sharing/exchanging ideas, comparing ideas, convergence of ideas, and meaningful dialogue.

Jiang (2017) contends that course designs that unearth critical questions and participants' perspectives would support students' participation in online discussions. In this respect, some of the participants here stated that discussions with structured roles increased participation, made it easier for learners to express themselves, and also offered the opportunity to experience multiple perspectives, generate new ideas or rearrange their own ideas on the issue. These findings are in conformity with the conclusions of Jackson et al. (2013). According to Parker (2010), structured roles in online discussions enabled students to experience a stronger sense of commitment and learning in their online discussions. They determined that giving students different roles in online discussion environments can be effective in strengthening their social presence (Şeyh et al., 2023). In summary, the findings obtained through the current study participants' opinions are compatible with the past research mentioned above. In addition, because of the interviews conducted with the participants in our study, although most of the participants thought that role assignment was more effective in discussions, some participants stated that they could not spare time for discussions because they focused on the role in the sessions in which they were assigned a role. There were also participants who stated that they participated more actively in the discussion session when they were not assigned a role. Most of the trainees stated that assigning roles gave them responsibility and encouraged them to research.

When the participant roles assessment scores are examined, it is seen that the participants whose social presence scores were higher than the others also had higher role assessment scores, and those with lower social presence scores obtained lower role assessment scores at the same time. To sum up, there was a concordance between the role assessment scores and social presence scores of the participants.

In the scope of this study, the participants carried out their tasks jointly in discussions when they were given specific roles. Certain participants obtained the highest social presence scores every week in either case of taking or not taking a role, and they possessed the highest social presence averages within the group. On the contrary, the participants with low levels of social presence slightly increased their social presence scores if they were on duty, compared to the weeks when they were not on duty. What is more, the participants with a social presence score close to the mean value had higher levels of social presence when they had specific roles, compared to the other weeks. In earlier weeks of discussions, the indicator of "self-disclosure" was more obvious under the affective category. As weeks followed, the weight shifted towards "continuing a thread", "complimenting, expressing appreciation, and "expressing agreement" as sub-groups of interactive social presence. Similarly, cohesive social presence became more prominent in particular relation with as "vocatives" and "addresses or refers to the group using inclusive pronouns". These results suggest that social presence occurs more in cases where they are appointed roles.

The study seems to provide robust evidence that social presence can be established by discussions in a collaborative online learning environment involving participants with structured roles. It was demonstrated that meaningful dialogues were encouraged, participation was provided, and discussions were enriched as a result of participants' taking of specific roles. All of the participants appreciated the productivity of the discussions. In addition, role-guided discussion sessions allowed the participants to express their views comfortably along with attending to various standpoints, generating new ideas and comparing opposing ideas. Also, there was a correlation between the participants' role assessment scores and social presence scores.

This study exclusively dealt with communications and interactions of the participants in an asynchronous online environment. The entire duration of the Computer Operating course was eight weeks and the study had to be fit into this schedule. For this reason, not every participant was able to take on every role in online discussions. In future studies, the duration of the implementation could be modified so that every participant can experience each of the roles. Again, the template of social presence was used to judge the participants' social presence realization levels in this study. For future insight, attention can be directed at impacts of structured roles within the framework of instructional, cognitive, and especially learning presence, which has lately been a hot topic in the literature. Furthermore, it is recommended to shed light onto how participants' personality traits, self-regulation skills, and digital competencies affect their social presence in the future. A closer look can be taken at the relationships between personality traits and roles.

#### **Statements of Publication Ethics**

This study is based on the master's thesis of the first author. Thus, ethical approval was obtained.

#### **Conflict of Interest**

The author has no conflicts of interest.

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