A study of an online cyber identity course designed on the basis of the community of inquiry model

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Highlights	Abstract
• SSC commented mostly on the triggering event and discovery sub-dimensions of cognitive presence and teaching presence, and less frequently on the social presence dimension. • Student-centered activities may have supported students more in the triggering phase of cognitive presence, enabling students to form more positive perceptions about teaching presence. • The significant and positive change in students' self-efficacy perception in technology integration reveal a result consistent with the high cognitive and teaching presence levels perceived by students during the process.	The current study examines whether an online cyber identity course, which was based on the community of inquiry model, significantly affected the self-efficacy perception of school counselor candidates (SCC) in terms of technology integration. Forty-four SCC, selected using the criterion sampling method, participated in a mixed-method design study by taking a one-week online cyber identity course. The online version of the Computer Technology Integration Survey (CTIS) was used as a pre and post-test measure to collect quantitative data. Two subscales are used in the survey to measure the self-efficacy of participants. Qualitative data was collected through the use of a structured interview form which included open-ended questions regarding the social, cognitive, and teaching presence of the community of inquiry model. T-tests were conducted to detect any significant differences between the pre and post-test scores of the CTIS subscales. The results of these tests revealed that the online cyber identity course created significant differences in both SCC's self-efficacy perception of the computer technology capabilities and strategies, and the external influences of computer technology uses. Moreover, qualitative analysis results showed that students reflected more on cognitive and teaching presence than on social presence.

1. Introduction

Cyber identity refers to the entire range of meanings that exist in our presentation and definition of ourselves to others in the digital world (Sancar, 2022). More concisely, cyber identity can be defined as a digitally mediated identity (Davis, 2016). In this study, cyber identity is used to refer to an inclusive concept which ranges from cyberpsychology, cyberbullying and cyber addiction, to safe internet use and media literacy. Now that onset of online teaching, and the technologies used in the process, have become a common feature of daily life, safety, awareness, conscious production, and consumerism issues have increased in

significance for teachers, students, and parents. As more time is being spent in the digital world, so there has been a corresponding increase in the importance of cyber identity, cyber addiction, and cyberbullying, both in our country and globally.

The 2023 education vision of the Republic of Turkey Ministry of National Education (MoNE) lists the concepts of safe internet, cyber security, cyberbullying, and data security as being important goals and objectives of primary school lessons. Moreover, MoNE advocates training and workshops for the development of teachers' understanding and awareness of these issues (MEB, 2020). There is no doubt that the transformation in teaching and learning activities, processes, and environments, as well as in technological innovations, have all greatly increased the integration of technology in education. As many forms of education continues to be carried out remotely due to the Covid 19 pandemic, it is imperative to conduct a thorough investigation of the integration of technology into teaching and learning processes.

In terms of schools, both teachers and school counselors should effectively support students in increasing awareness of cyber identity. In order to do this, school counselors must have in-depth knowledge of cyber identity, cyber addiction, and cyberbullying, as well as the ability to integrate the technology needed to support students. Moreover, it is essential for school counselors to be aware of current technologies, and to be able to decide what, why, where, and how to apply them. In the literature, this process is commonly referred to as technology integration, as is defined by Keengwe et al. (2009) as a process in which technology is engaged in teaching-learning to reach learning goals effectively and productively. Okojie et al. (2006) suggest that technology integration contains the technological skills and abilities to employ pedagogical knowledge based on incorporating technology into the teaching and learning process, while Cennamo et al. (2013) suggest that the term refers to the ability of using technology effectively and the selection of the appropriate technology for any specific learning conditions, needs, and problems. This study corresponds to the above definitions and refers to technology integration as an awareness of both old and new technologies, and the appropriate selection for their use in teaching-learning activities.

The technology integration process is complex, dynamic, and multidimensional, with extensive details and models being provided in the literature (Atman Uslu & Koçak Usluel, 2019). One of the important variables which affect the technology integration process are the attitudes, motivation, knowledge, skills, and self-efficacy of teachers towards technology (Afshari et al., 2009). Moreover, it is suggested that the use of technology by teachers, as well as their skills and capabilities, pedagogical beliefs, and self-efficacy are significant predictors of the effectiveness of the technology integration process (Kaya & Koçak Usluel, 2011). These factors are described by Yılmaz (2019) as the self-efficacy perceptions of teachers.

Through a consideration of the above insights, the online cyber identity course detailed in this study is designed to provide in-depth knowledge and the acquisition of relevant skills by school counselor candidates (SCC) in the areas of cyber identity, cyber addiction, and cyberbullying. A further goal of this online course is for participants to be able to enhance their ability to integrate technology effectively, efficiently, and in a way that captures the attention of students.

Educators often only consider technological tools, the interface features of learning management systems, and technical infrastructure in the design of online education processes. However, these considerations are insufficient in ensuring the effectiveness of an online course as a theoretical perspective is also required. The use of such suitable theoretical frameworks is rapidly spreading, and there are many different such teaching models in the literature. Many of these models, such as Gunawardena Lowe and Anderson's (1997) interactional analysis model, and the conceptual change model developed by Harasim (2006), consider the processes in purely online or blended (face-to-face + online) learning environments. Developed through the use of applied and theoretical research results, these models guide faculty members who are aiming for meaningful and deep learning experiences. Educational scientists who try to understand and explain the effect of individual and social characteristics on learning also benefit from these models.

One of the most widely known and best-researched approaches to online learning experiences is the community of inquiry (CoI) model, and it is this model that is used in the design process of the online cyber identity course. The aim of the concept of CoI, which was developed by Randy Garrison, Terry Anderson, and Walter Archer in 2001, was to create a more effective online learning environment. The CoI model has a tree main presence detailing in next section, teaching-learning, cognitive and social presence. The CoI model has three main presences detailed in the next section, teaching, learning, and social presence. According to Shea and Bidjerano (2010), learning presence includes elements that support self-regulation in online learners, such as self-efficacy as well as other cognitive, behavioral, and motivational characteristics. They contend that emphasizing the active actions of online learners, to be enhanced the Community of Inquiry framework's ability to both describe and explain how knowledge is formed in technologically mediated environments. Moreover, they figured out that learning presence is a theory of self-efficacy, self-control, and expanding communities of inquiry in online and mixed learning contexts. In accordance with the related literature, one of the recent and large scale research, it was found that social presence, perceived utility, and perceived ease of use had a positive impact on online learning motivation, and self-efficacy. Through social or cognitive presence, teaching presence increases the incentive for online learning (Zuo et al., 2022).

The goal of this research is to use the following questions to examine the effectiveness of an online cyber identity course based on the CoI model:

RQ1.   Does the Online Cyber Identity Course, which has been designed based on the CoI model, affect the self-efficacy perception of SCC in terms of technology integration? More specifically:

    a. Has the course significantly affected the SCC's self-efficacy in Computer Technology Capabilities and Strategies (CTCS)?

    b. Has the course significantly affected the SCC's self-efficacy in External Influences of Computer Technology Uses (EICTU)?

RQ2.   What are the student reflections on the Online Cyber Identity Course that has been designed according to the CoI model?

    a. What are the SCC's opinions about social presence?

    b. What are the SCC's opinions about the teaching presence?

    c. What are the SCC's opinions about cognitive presence?

2. The Community of Inquiry Model

Rather than planning online activities to present their students with a list of content they need to know, an educator following the CoI model aims to create a community where students work together to make meaningful connections with the content (Akyol & Garrison, 2011). This is because, according to the CoI model, knowledge is not simply transferred from teacher to student. Instead, the CoI model is based on a collaborative-based constructivist design. In other words, the model asserts that the effective assimilation of knowledge can only happen when students work effectively together (Rommie & Duckworth, 2020). Therefore, the model, which is shown in Figure 1, focuses more on the quality of education in online learning processes than on digital tools (Akyol & Garrison, 2011).
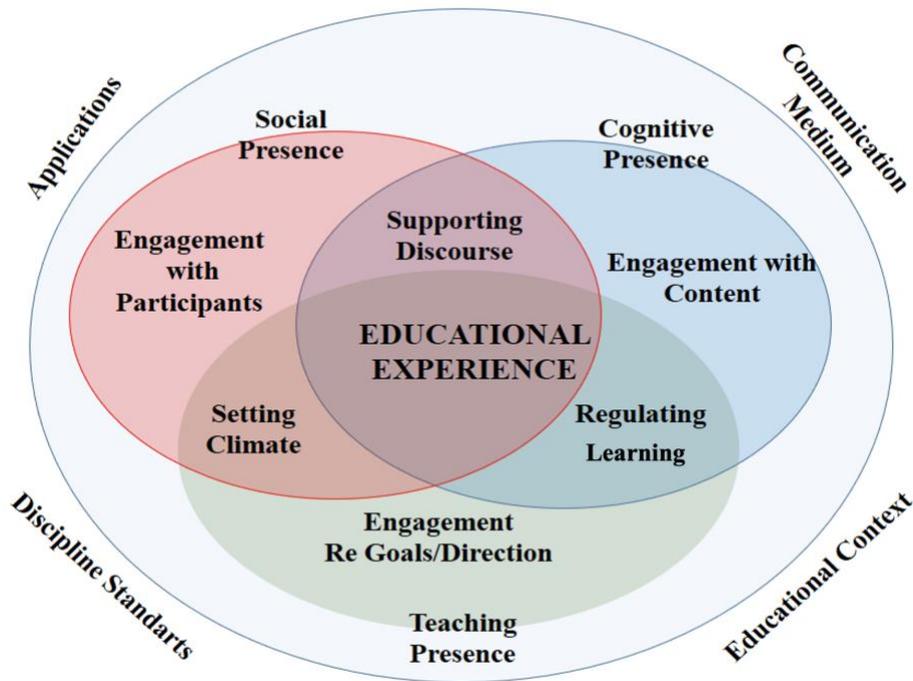
Fig. 1. The Community of Inquiry Model

As seen in Figure 1, the model emphasizes the importance of teaching (design, organization, and facilitation), cognitive factors (triggering event, discovery, resolution, and integration), and social presence (open communication, emotional expression, and group cohesion). In addition, this model argues that learning is provided by the relationship between these three areas (Kozan & Richardson, 2014). The structure of presence, which is one of the important concepts of the model, can be said to be formed by the mutual interaction of thoughts, feelings, and behaviors between the inner (private) and external (shared) worlds of the online learning processes (Garrison and Arbaugh, 2007). According to the model, the structure of presence, which develops with interactive semantic processes, should be handled from a psychological and social perspective (Noe, 2005).

Social presence, which is defined as a sense of belonging to the community and developing relationships with other participants in that community by reflecting their individual characteristics, is much more than just working in groups to complete assignments (Garrison, 2009). Rather, social presence, which includes students' ability to connect as real people instead of mere online usernames, is considered vital for the development of emotional attitudes and interpersonal communication skills (Rommie & Duckworth, 2020).

The second dimension of the model, cognitive presence, refers to students' perceptions of their ability to create their own meanings through deep thought and discussions with others. In other words, cognitive presence refers to online activities that gather information, develop skills and appropriate attitudes, and encourage students' personal and critical thinking (Garrison, Anderson, & Archer, 2001).

The third dimension of the model is teaching presence, planning, facilitating and managing the cognitive and social processes that realize learning outcomes that have meaningful and educational value in the online learning processes. In other words, this dimension refers to a teacher's attempts to create and maintain cognitive and social components. Such teacher support enables students to work together actively to gather information, as well as develop skills and effective attitudes. In other words, teaching presence refers to, in addition to direct teaching, the development and editing of online components, as well as facilitating the course.

The CoI model, like the constructivist approach, has higher aims than the mere attaining of knowledge. Instead, this model focuses on a process that supports students' active participation and cooperation in the creation of learner communities which enable research and the creation of meaning (Akyol & Garrison, 2011). It is for this reason that the CoI model used by many instructional designers in the planning and evaluation online learning environments can also be effective in designing emergency remote teaching processes (Çakıroğlu & Kılıç, 2020).

3. Methodology

3.1. Research Design

Since the current study required both quantitative and qualitative methods, an explanatory mixed research design was used (Fraenkel et al., 2012). In terms of quantitative evaluation, a one group pretest-posttest poor experimental design was used to examine whether the online course significantly impacts the SSC's perceptions of technology integration. In terms of qualitative evaluation, participants were asked structured open-ended questions to gauge their views and experiences in regard to the contribution of the online course.

3.2. Data Collecting Tools

The Computer Technology Integration Survey (CTIS) and a structured interview form were utilized to collect data. CTIS was developed to measure self-efficacy perception regarding technology integration (Wang et al., 2004) and were adapted into Turkish by Ünal and Teker in 2018. The original version has 2-factor structures [Factor 1: Computer Technology Capabilities and Strategies (CTCS) and Factor 2: External Influences of Computer Technology Uses (EICTU)], which include 21 items rated on a five-point Likert scale ranging from 1: strongly disagree to 5: strongly agree. The Turkish version has the same factor structure with 19 items. The scale developer preferred to report Cronbach alpha for the whole scale, rather than use the subscales of the original study. Following two calculations in pre and post-test measures, the findings were 0.94 and 0.96 (Wang et al., 2004). In the Turkish adaptation study, Cronbach alphas for CTCS, EICTU, and the whole scale were 0.91, 0.87., and 0.94, respectively (Ünal & Teker, 2018).

The researchers developed a structured interview form that included both closed and open-ended questions about participants' experiences and views regarding the contribution made by the course. The form has two sections. The first section includes demographic information, while the second section includes questions about the social, cognitive, and teaching presence dimensions of the CoI model. Some of the sample questions are as follows: Could you evaluate the course in terms of communication and cooperation? Why is it important to learn digital technologies? What was the most challenging aspect of this course? Could you evaluate the course in terms of teaching-learning efficiency?

3.3. Participants

The participants of this study were selected using the criterion sampling method. Inclusion criteria were being a third or fourth-grade university student in the Psychological Counseling and Guidance department, having a computer, internet access and basic computer skills, and making a declaration of full participation in all of the lectures and workshops. Forty-four students (35 female, 9 male) participated in the study. Twenty-two of the students were in the third grade, and 22 were in the fourth grade.

3.4. Data Analysis

In this study, both quantitative and qualitative data analysis was performed. The first step was to screen the data, after which three of the participants were excluded from the quantitative analysis because they hadn't completed the pre and post-test measures appropriately. Secondly, necessary assumptions for conducting the repeated measures t-test were checked. Thirdly, the repeated measures t-test was used to examine whether the course made a significant difference in the self-efficacy perceptions of the participants in terms

of information technology learning motivation and technology integration. Fourthly, content analysis was used to analyze the qualitative data. As suggested by Lecompte and Goetz (1982), two researchers analyzed the quantitative data separately to increase internal reliability, before coming together to review the codes and themes and check whether their coding was consistent with each other. It was found that the two researchers experienced very similar coding and themes, and that there was a large degree of overlap. After the themes and codes had been specified, direct quotations were made from the participants' answers.

3.5. Research Procedures

Before data was collected, researchers obtained consent from and explained the purpose of the study to participants, particularly the anonymity and voluntary participation principles, as well as how the information gathered will be used for scientific research. Before starting the course, the survey's web link was shared with the participants as a pre-test. It took an average of 10 minutes for the participants to complete the online survey. This was followed by a one-week online course on cyber identity, at the end of which the participants took approximately 20 minutes to complete both the same online survey as a post-test, as well as a structured interview form. The whole data collection procedure was completed within one week.

4. Results

4.1. The perceptions of the participants of technology integration

The current study is based on the CoI model and was carried out as part of the Cyber Identity Awareness in The Digital World with Teachers project, which is a TUBITAK (The Scientific and Technological Research Council of Turkey) initiative. The aim of the study was to examine the effectiveness of the online cyber identity course.

Skewness and Kurtosis values were examined to check the normality assumptions and the findings are summarized in Table 1. When these values are in the range of ±1, the normality assumption is met (Büyüköztürk, 2002). Table 1 shows that the normality assumption for the parametric t-test was met by all groups.

Table 1.

Skewness and Kurtosis Values for Computer Technology Integration Survey (CTIS) Subscales

	Pre-Test CTCS	Pre-Test EICTU	Post-Test CTCS	Post-Test EICTU
N	39	39	39	39
Skewness	-0.353	-0.0272	-0.624	-0.869
Kurtosis	-0.185	-0.350	-0.460	-0.479
Shapiro-Wilk W	0.976	0.977	0.928	0.854
Shapiro-Wilk p	0.572	0.594	0.015	< .001

Table 2 summarizes the descriptive statistics for pre and post-tests scores of the Computer Technology Integration Survey (CTIS) subscales.

Table 2.

Descriptive Statistics for Pre and Post Tests Scores of Computer Technology Integration Survey (CTIS) Subscales

	N	Mean	Median	SD	SE
Pre-Test CTCS	39	20.3	20.0	3.84	0.615
Post-Test CTCS	39	26.4	27.0	2.65	0.425
Pre-Test EICTU	39	50.3	51.0	7.89	1.264
Post-Test EICTU	39	60.5	62.0	4.70	0.753

In order to examine whether there is a significant difference between participants' Pre-Test CTCS scores and Post-Test CTCS scores, researchers performed a t-test. Results indicate that there is a significant difference between Pre-Test CTCS (M =20.3; SD =3.84) and Post-Test CTCS (M =26.4; SD =2.65), t(38) = -9.08, $p < .001$, $\eta^2 = 0.69$). There was a moderate effect size (Cohen, 1992).

A further t-test was performed to check for any significant differences between Pre-Test EICTU scores and Post-Test EICTU scores. Results revealed a significant difference between Pre-Test EICTU (M =50.3; SD =7.89) and Post-Test EICTU (M =60.5; SD =4.70), t(38) = -8.46, $p < 0.001$, $\eta^2 = 0.65$). There was a moderate effect size (Cohen, 1992).

4.2. The SCC's reflections on the online cyber identity course designed on the basis of CoI

The aim of this research is to reveal the SCC's reflections about CoI from answers given at the end of the course. The reflections of SCSs on CoI are shown in Table 3.

Table 3.

Frequency of reflections on CoI

The CoI components	Categories	Positive reflection	Negative reflection	Frequency
Social Presence	Emotional expression	66	10	76
	Open communication	76	0	76
	Group cohesion	12	1	13
	Subtotal of social presence	*154*	*11*	*165*
Teaching Presence	Instructional management	114	55	169
	Building understanding	108	6	114
	Direct instruction	39	0	39
	Subtotal of teaching presence	*261*	*61*	*322*
Cognitive Presence	Triggering event	139	45	184
	Exploration	113	7	120
	Integration	89	4	93
	Resolution	67	3	70
	Subtotal of cognitive presence	*411*	*56*	*467*
Total		826	128	954

According to Table 3, about half of the reflections on CoI focused on cognitive presence (n=467). In this component, the triggering event (n=184) and exploration (n=120) were the categories most reflected in SCC's comments. Second, SCC focused on teaching presence (n=322). Comments made on instructional management (n=169) and building understanding (n=114) were of particular note, while social presence was observed as being the least reflected on component of CoI (n=165). In this category, the resolution was the least reflected dimension (n=70). Moreover, among all categories, group cohesion was seen as the CoI

category that was emphasized the least by SCC. The positive and negative reflections made by SCC on each component of CoI are shown below.

4.3. Positive reflections and challenges regarding the cognitive presence

The SCC's reflections on cognitive presence can be seen in Figure 2.
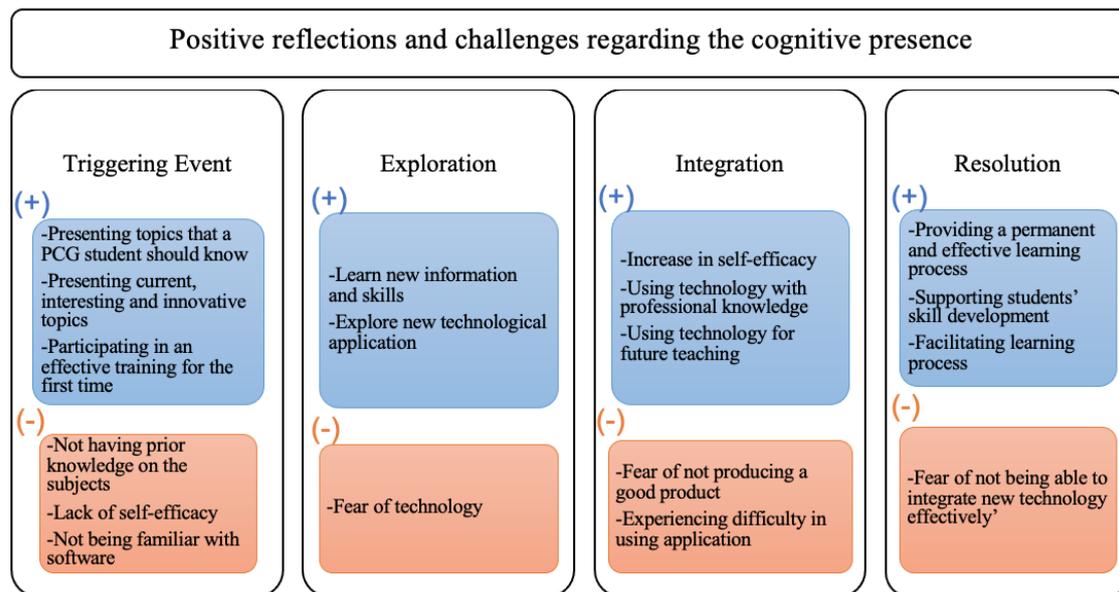

Fig. 2. SCC's positive reflections and challenges regarding the cognitive presence

Most of the SCC's comments received by the end of the study were in regard to cognitive presence (Seen in Table 1). It can therefore be inferred that online learning triggered SCC's cognitive structures, particularly in regard to content and the methods used. For example, according to many SCC, the content consisted of topics that should be known by PCS students. In addition, the current, innovative, and interesting technologies used in training were thought to be motivating. For instance, according to P-7, *"All of the topics we learned were very up-to-date and interesting, and some of them were related to the problems often faced in daily life. ... I think these should be learnt by every PCR student (context and technologies)."*

In addition to being motivated by the process, SCC were able to learn new information, discover new technological applications, and share explanations with others both individually and collaboratively. All of these advantages allowed them to reduce problems and other deficiencies during the online course with the help of trainers. One SCC made the following comment in regard to motivation: *"I really liked and enjoyed learning new concepts, such as technostress and techno positivism, as well as being able to develop products in the workshop by using new technologies." (P-2).*

Although not as common as comments regarding exploration, there were also some reflections about the integrative dimension of the cognitive presence. It was seen in these reflections that SCC particularly focused on building meanings and establishing solutions throughout the course. This self-efficacy allowed participants to learn how to integrate appropriate technologies into their fields and use them effectively in support of future teaching. This was shown by one candidate who stated:

> *"The more I saw that I could do this, the more confident I felt about using it in the future… Now I know how to effectively use what I have learned, both in my student and in my professional life." (P-22)*

Finally, as a result of the analysis, it was determined that there were several SCC who had reached the resolution dimension. At the end of the course, these SCC believed they were now able to apply the acquired knowledge and skills to any teaching problem and support the future development of students with permanent and effective learning through the use of new ideas and solutions. One SCC commented that: "*I gained very important information about the professional future of our field. What I have learned will make me more useful to my students." (P-39)*.

On the other hand, there were also some more negative comments in regard to some of the challenges that limit the cognitive processes of SCC. As seen in Figure 1, SCC's individual barriers were noticeable handicaps in nearly every dimension of cognitive presence. Some examples of these barriers, which limited ability to act and explore, are 'a lack of prior knowledge of the subject', 'low perceptions of self-efficacy', or 'a fear of technology'. In addition, the fear of 'not being able to produce a good product' and of 'not being able to integrate new technologies effectively' were seen to be restricting potential for the creation and dissemination of effective materials in the future. This concern can be seen in the following comments by two SCC: "*In this process, I sometimes felt fear and anxiety that I wasn't able to perform the practices. But that disappeared when I saw what I could do". (P-3). "The video development aspect of the workshops was a challenge. I struggled to use an application that I had never used or even heard of before."(P-21)*.

4.4. Positive reflections and challenges regarding the teaching presence

Reflections written by the SCC in regard to teaching presence can be seen in Figure 3.
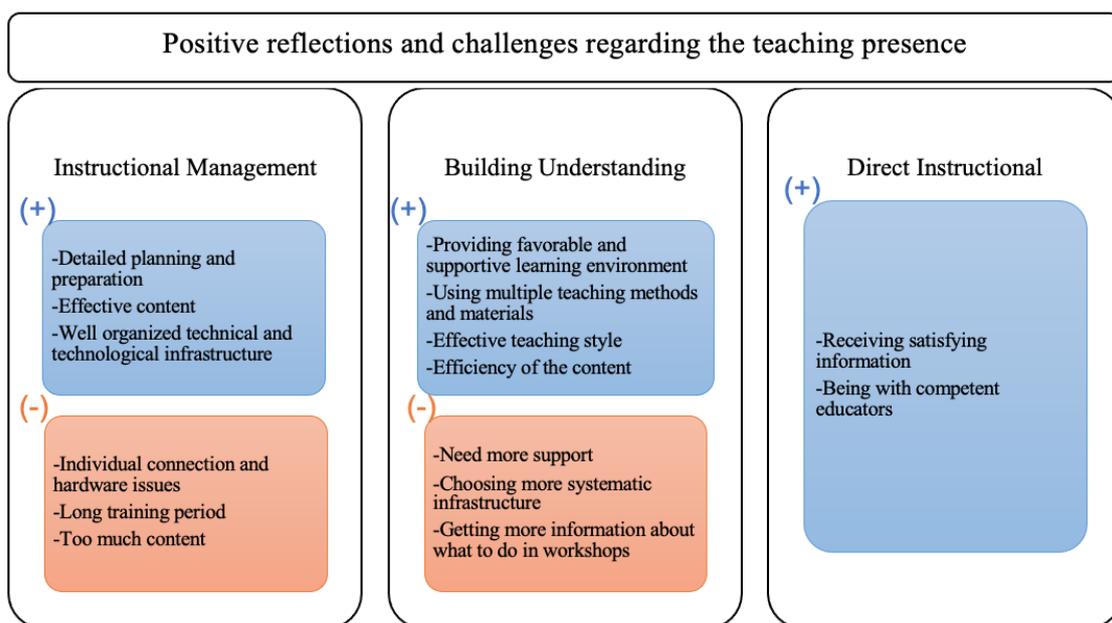

Fig. 3. SCC's positive reflections and challenges regarding the teaching presence

According to comments made by the SCC, the online course was planned in detail, its technical and technological infrastructure was well organized and suitable content was selected. Comments also indicated that such effective preparation meant that the process was implemented effectively and that the teaching was well managed. For instance, one SCC said that: "*The training process was well planned and there were no disruptions, the infrastructure of the training was very well prepared*" (P-18). However, according to some SCCs, the training period was too long and there was too much content which reduced attention and learning. This could be seen by one comment: "*Sometimes I got bored and tired from time to time because the training was too long, and this caused some difficulties in my daily life*" (P-5).

Most of the SCC stated that although they were not familiar with many of the technologies and applications taught in the online course, they felt that they were able to improve themselves with the positive and

continuous support provided, as well as the effective teaching methods and materials, and that the whole process was generally motivating. One student said: *"Our teachers helped and supported us through individual attention that helped us learn collaboratively in a positive, communicative environment" (K-25)*. In addition, while evaluating the effectiveness and efficiency of the process, students particularly emphasized the competence of the educators and their satisfaction with the information provided. For example, one SCC said: *"The expertise of the teachers and their guidance have been the biggest factors facilitating the learning process." (K-20)*. Such comments are clear evidence of general satisfaction with teachers in their ability to build understanding, and with the direct instructional dimension of this online community.

However, some SCC did feel that their learning was negatively affected by what they felt was limited support and a problematic infrastructure. This was particularly evident at the beginning of the course due to perceived connection and communication problems caused by the infrastructure. *"Frankly, we had some technical and infrastructure problems." (P-32)*. Some SCC also suggested that more explanation about the workshop and more support could have been provided, especially during the teaching process. *"A booklet (pdf) with the main topics and tools that will be covered in each lesson would have been great" (P-37)*.

4.5. Positive reflections and challenges regarding the social presence

Although they were less common than feedback on cognitive and teaching presence, there were some reflections focused on social presence. These can be seen in Figure 4.
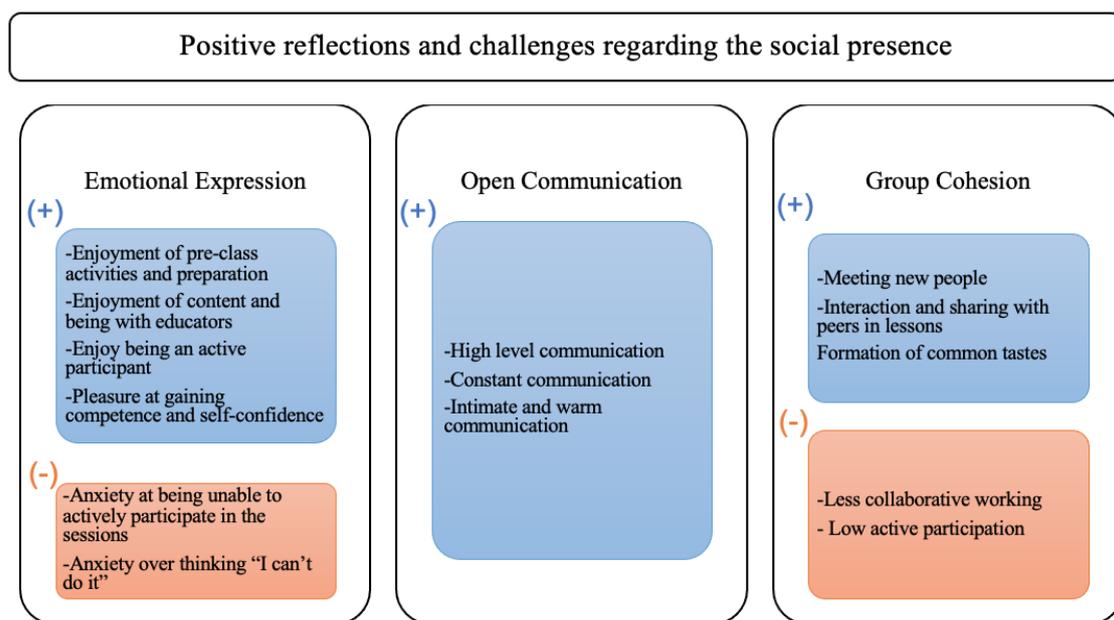

Fig. 4. SCC's positive reflections and challenges regarding the social presence

Of particular note in the above table is how the SCC reported their emotional reaction in terms of preparation, context, educators, and gaining from the learning process. Before the theoretical lessons, ice-breaking activities with drama techniques helped participants to meet each other and created a warm environment at the beginning of the course. To maintain this positive environment, all subsequent lessons on the course began with energetic music to improve focus and the general mood. This positive reaction is seen in the comment of one SCC who said that *"Both the music provided in the breaks or during the course of the lesson was quite energetic and fun." (P-9)*.

It was generally stated by the SCC that a constant, intimate, and warm communicative environment was created during the online course, and that the participants really felt like they were part of a team. For instance, one SCC said that: *"Even though it was very difficult to get up in the morning and focus on a*

study effectively because my sleep pattern was disrupted during the pandemic, I was able to attend classes in a focused way because I felt as if I was in a well-communicating team." (P-31).

SCC also said that they were very pleased to have the opportunity to meet, work and chat with other students and educators from various universities. Furthermore, they believed that being able to create scenarios together, and even choose songs according to the tastes of the participants, helped the formation of group cohesion in the course. One SCC said: *"We didn't know each other at all, but when we finally completed the process, it felt like we had been working together for forty years." (P-3)*

However, there were some challenges that did negatively affect SCC's social presence. For instance, it was reported by some that less collaborative working and low active participation restricted collaborative work. In addition, an inability to actively participate in the sessions and a belief of being unable to perform certain required tasks created anxiety and fear during the course. For instance, one SCC said: *"Fear of being successful at first prevented me from enjoying the process" (P-9).*

5. Discussion and Conclusion

The research aims to examine the effectiveness of an online cyber identity course based on the CoI model which was implemented as part of TUBITAK's (The Scientific and Technological Research Council of Turkey) Cyber Identity Awareness in The Digital World with Teachers project. The online course had forty-four participants and was implemented over a week. The research process was of a mixed research design, and the survey and opinion form were implemented as pre and post-tests. The quantitative research findings indicated significant differences between the pre and post-test scores of two factors of CTIS. The T-test scores showed that there was a positive rise in two factors of CTIS: computer technology capabilities and strategies (CTCS), and the external influences of computer technology use (EICTU). This demonstrates that the self-efficacy perceptions of SCC who took part in the online cyber identity course were supported both in the use of IT, and in helping others to use IT during the course procedure.

Content analysis results showed that SSC commented mostly on the triggering event and discovery sub-dimensions of cognitive presence and teaching presence, and less frequently on the social presence dimension. However, cognitive presence is often associated with social presence in the literature. For example, Rolim et al. (2019) also remark on a significant relationship between the triggering event and discovery sub-dimensions of cognitive presence and social presence in the online asynchronous learning processes. Similarly, Akyol and Garrison (2011) emphasize that social presence is a precursor for cognitive and teaching presence, while Akyol et al. (2009) claim that cooperation plays a crucial role in opening critical discussions, and social presence in cooperation. Moreover, Garrison and Anderson (2003) suggest that social presence is the most important antecedent for achieving cognitive processes in which critical thinking is initiated, sustained, and supported in a learning community. However, when the opinions of the SCSs who participated in the online cyber identity course were examined, it was understood that the triggering event and discovery sub-dimensions of the cognitive presence and the evaluations of the teaching presence were more common than the perception of the social presence. This resulted in a different outcome from the CoI model, which prioritized the effect of social presence in the emergence of cognitive presence. This unexpected situation may stem from the fact that the time foreseen in the literature for the formation of social presence was not provided to the SSC in the current study. In addition, due to the short duration of the course, the design elements related to the teaching presence were emphasized, and so the students may have perceived a more positive teaching presence. For example, through diversified lesson designs and student-centered activities, including drama, brainstorming and workshops, the students perceive teaching presence more effectively. It can therefore be claimed that student-centered activities designed and conducted by educators may have supported students more in the triggering phase of cognitive presence, enabling students to form more positive perceptions about teaching presence. This view is also supported by the many researchers who have claimed that cognitive presence is more related to teaching presence (Annand, 2011; Gorsky & Blau, 2009; Shea & Bidjerano, 2008, 2009, 2010).

Some researchers have stated that the effect of social presence on learning is exaggerated, and they argue that the key role in the inquiry of the community model belongs to teaching presence, not social presence (Shea & Bidjerano, 2008, 2009, 2010). Kuşcu and Ömerustaoğlu (2021) reach a similar conclusion and also report that the relationship between teaching presence and cognitive presence is stronger than the relationship between social presence and cognitive presence.

The significant and positive change in students' self-efficacy perceptions in technology integration reveal a result consistent with the high cognitive and teaching presence levels perceived by students during the process. Although the online course has is very short and intense, the voluntary participation of the students and the feeling of being selected may have contributed positively to the development of their self-efficacy perception in technology integration by reinforcing both the teaching and cognitive presence.

6. Limitations and Recommendations

This study has several limitations. Firstly, the duration of the online course was only seven days, which may not have been enough to have a positive effect on SCC's self-efficacy perception about technology integration. Moreover, since the course was conducted as a part of the project, the number of participants was limited to just 40. Therefore, to achieve more accurate results, a similar teaching process could be conducted over a longer period with more candidates. Secondly, this study aimed to examine the effectiveness of the online cyber identity course based on the CoI model. However, indicators of the CoI were gathered only from the reflections of the candidates. To obtain more reliable results, the data should be supported with quantitative findings which would allow the online behavior patterns of the candidates in the system to be examined. Also, it should be considered for implementation processes that the educators who are teaching online courses, to minimize isolation during online learning, educators can purposefully plan and set up social learning activities including online conversation, the reactions of emotions, group sessions, and peer evaluation. While designing the learning process, educators should take into account the social features that will promote interactive online activities.

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