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Determination of perception of community of inquiry

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Community of inquiry (CoI) is the conceptual framework which describes critical prerequisite factors for deep and meaningful learning in online learning environments. Based on the literature concerning the CoI framework, it can be observed that studies in which three factors in the model (cognitive, social and teaching presence) were investigated have been increased as scales to determine perception towards CoI have been developed, which thus made it possible to work on relatively larger sampling groups effectively and to increase generalizability of findings. In this context, within the scope of the present research, by investigating different data collection tools developed by different researchers, studies aiming to determine CoI perception by means of a scale were investigated in detail. Research results reveals that CoI survey instrument developed by Arbaugh et al. (2008) has been widely accepted in the literature; and that the instrument has been adapted to number of languages such as Turkish, Korean and Arabic; and employed in diverse disciplines such as education, business and health care.

Key words: Community of inquiry, cognitive presence, social presence, teaching presence.

INTRODUCTION

Community of inquiry (CoI) framework suggested by Garrison et al. (2000) in their study for deep and meaningful learning in online learning environments is a conceptual framework which describes critical prerequisite elements for successful education outcome in higher education. According to the review of the relevant literature, it was observed that the precursor study conducted by Garrison et al. (2000) has attracted the attention of number of scholars who especially work on distance education and this has been cited 2,975 times according to Google Scholar data (as of January 1st, 2016). Since its introduction, the CoI framework has been verified structurally by various studies (Akyol and Garrison, 2008; Arbaugh, 2007; Arbaugh et al., 2008; Garrison et al., 2004, 2010; Kozan and Richardson, 2014; Yu and Richardson, 2015); and it is claimed that learning could be enhanced by developing interaction among these three basic elements of cognitive, social and teaching presence (Garrison et al., 2000).

According to the review of studies investigating the CoI framework, number of studies examining all three elements included in the model has been increased, while numbers of survey instruments allowing determination of CoI perception have been increased. Thus, it has been possible to work with larger sampling groups more effectively and to increase generalizability of findings. In this context, along the next sections of the study, in addition to information regarding the CoI framework and its basic components, studies on determination of degree of CoI perception by means of

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Table 1. Community of inquiry coding template.

Elements	Categories	Indicators (examples only)
Cognitive Presence	Triggering Event	Sense of puzzlement
	Exploration	Information exchange
	Integration	Connecting ideas
	Resolution	Apply new ideas
Social Presence	Emotional Expression	Emotions
	Open Communication	Risk-free expression
	Group Cohesion	Encouraging collaboration
Teaching Presence	Instructional Management	Defining and initiating discussion topics
	Building Understanding	Sharing personal meaning
	Direct Instruction	Focusing discussion

various scales were presented; and finally, result and suggestions were reported based on investigated researches.

COMMUNITY OF INQUIRY FRAMEWORK

In the study of Garrison et al. (2000), categories and sample indicators are developed as a coding template to investigate basic elements in the CoI for convenient application and sensitivity concerns (Table 1). Indicators in the coding template are composed of keywords, frequently repeated expressions or their synonyms.

According to Table 1, within the CoI framework coding template, categories regarding cognitive, social and teaching presence and sample indicator relevant with each individual category are presented. These elements in the CoI framework can either increase or decrease quality of learning outputs and educational experience according to authors. Accordingly, one of the issues that can be faced by educators can be CoI in virtual environments (Garrison et al., 2000).

Cognitive presence

Cognitive presence is described as one of the three elements in the CoI framework; but, there is critical thinking on its foundation and it is functionalized through practical inquiry model (Garrison et al., 2001). Critical thinking concept utilized from this point is structured by making use of Dewey's (1933) reflective thinking model. For Dewey, it has practical value which deepens meaning of our reflective or critical thinking experiences (Garrison and Anderson, 2003). In this regard, the critical thinking approach utilized at this point is comprehensive; and it includes creativity, problem solving, intuition and insight (Garrison and Archer, 2000; As cited in Garrison et al., 2001). In Figure 1, two-dimensional and practical research model is structured on experience (Dewey, 1933; As cited in Garrison and Anderson, 2003). Whereas, the first dimension of the model reflects the continuity between action and thinking about it, the second dimension represents the transition between concrete and abstract universes (Garrison et al., 2001).

Practical inquiry model consists of four stages with respect to educational context and especially to describe cognitive presence in online learning. Details on each stage in the practical inquiry model were explained below (Garrison et al., 2001).

The first stage of the model reflects beginning step for the critical research; and it is referred as triggering event. At this step, status of problem or dilemma based on experiences is defined. It is preferred that problem or dilemma that will be defined at this step are related to previous studies or experiences of students (Garrison and Anderson, 2003). In educational context, lecturers can create triggering events by means of difficulties in learning or tasks. Additionally, in more democratic and non-hierarchal practices such as computer conferencing, any group member can also add a triggering event on purpose or indirectly. In this process, role of the teacher is to commence and form triggering events; and in some cases, is to ensure that focuses of learners to remain on path to the target education outputs by eliminating potentially distracting ones.

The second step of the model is exploration. Students, at this stage, try to understand every nature of the problem first; then, they make possible explanations and do research for appropriate information. This research can be conducted through more special activities such as group activities and brain storming or literature review (Garrison and Anderson, 2003). Students, at the end of this stage, will start to be more selective regarding what is more appropriate as subject or what is appropriate for problem.

The third stage is integration. At this stage, a meaning is constructed based on the opinions manufactured at the

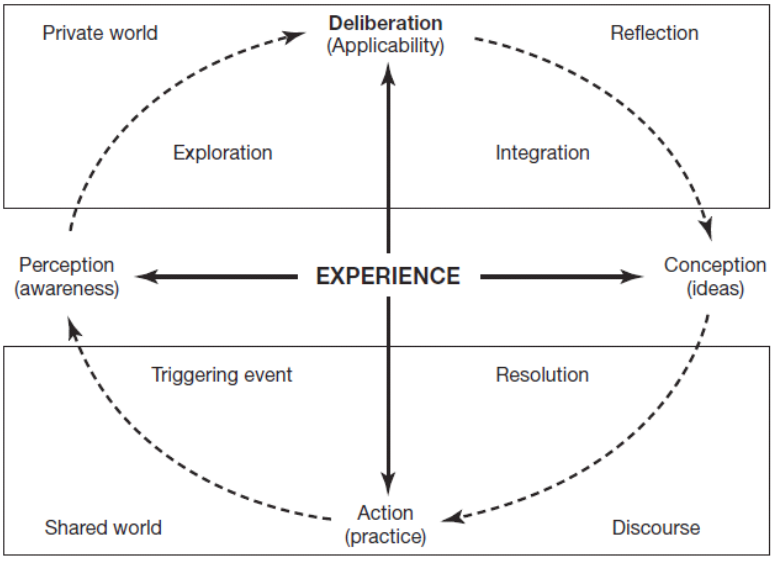

Figure 1. Practical inquiry model.

exploration step. Students, at the transition period from exploration step, would take how to describe and integrate the subject or event into consideration; and would start assessing applicability of opinions. This is the stage most difficult to determine in terms of teaching or research. Evidences for integration of opinions and structuring of meaning can be deducted from the communication in the CoI. This stage requires an effective teaching presence so that it could be a model for critical thinking process; and provide additional information so as to determine misconceptions, to probe and secure maintenance of commenting and cognitive development.

The fourth and final stage of the practical inquiry model is resolution. Students put information that they acquired at this stage into practice directly or indirectly. Progress toward the fourth stage necessitates exposure of expectations deliberately and opportunity for students to test the information they have just gained. Moreover, results at the resolution stage could yield new problems and create new triggering events. Then, this process restarts from the beginning for new triggering events; and thus, continuous learning is incented on continuous base.

In sum, practical inquiry model reflects critical thinking process. This means creating a cognitive presence (Garrison et al., 2001). In this context, cognitive presence can be described as a research process to describe problem, searching for appropriate content and opinions, integration of opinions created within a meaningful structure or solution, and testing usefulness of output directly or indirectly (Garrison, 2006). Moreover, it is also important to understand that unlike special personal learning outputs, higher order thinking process is focused on cognitive presence (Garrison et al., 2001), the most difficult to create and to develop with respect to other elements within the CoI framework in online courses (Garrison and Arbaugh, 2007). Similarly, in the study of Akyol and Garrison (2011), it is reported that establishing and maintaining deep learning and cognitive presence online and blended learning environments depend on the dynamic balance among cognitive, social and teaching presence. Results of the study reported by Shea and Bidjerano (2009) indicate that experiences of students regarding teaching presence affect their perception toward social presence directly; and social and teaching presence contributes directly to quality of students' cognitive presence. Archibald's (2010) study employs the CoI survey instrument developed by Arbaugh et al. (2008) as well; and the results suggest that teaching and social presence explain 69% of the variance in cognitive presence.

Social presence

Social presence concept, one of the three basic elements of the CoI framework, was first used by Short et al. (1976); and it was described as "degree of perception of each person in interpersonal relationships" (As cited in: Kim et al., 2011); and it is considered as one of the core concepts in online learning (Lowenthal and Dunlap, 2010). Review of the relevant literature reveals that social presence is defined differently by various researchers (Gunawardena and Zittle, 1997; Kang et al., 2007; Tu and McIsaac, 2002); and it can especially be observed that presence feeling of individuals and degree of establishing communication with other participants in online learning environments were addressed. If social presence concept is nested within the CoI framework, it is

described as “ability of learners to project themselves socially and emotionally in the CoI” (Rourke et al., 2001). However, according to Garrison (2009), since social presence concept has been substantially differentiated from its original conceptualization over time and this description has socio-emotional structure to the great extent, it does not fully reflect presence concept in establishing a purposeful educational group. Therefore, Garrison (2009) updated the definition of the social presence concept as “the ability of participants to identify with the community (e.g., course of study), to communicate purposefully in a trusting environment, and to develop inter-personal relationships by way of expressing their individual personalities”.

Of the core elements within the CoI framework, the most extensively studied element in the relevant literature is social presence (Arbaugh, 2007). For instance, results of the study, which investigates effect of the social presence perception on student satisfaction in computer-based conference, conducted by Gunawardena and Zittle (1997) suggest that social presence perception is significant determinant in satisfaction in text-based computer conference. Moreover, positive correlation between social presence perception and students’ learning perceptions is reported by Richardson and Swan (2003); a significant correlation between social presence perception and satisfaction with online discussions is reported by Swan and Shih (2005); and social presence perception has significant influence on students’ cognitive learning, their satisfaction with learning process, with the participants of the relevant activities, and with learning outputs (Lu et at., 2007). The study of Tu and McIsaac (2002) investigates dimensions of social presence through qualitative and quantitative methods; and suggests that social presence is an essential element which affects online interactions. Additionally, there are other studies which shows that privacy could affect degree of social presence perception (Tu and McIsaac, 2002; Tu, 2001, 2002).

According to Garrison and Anderson (2003), the essential question is how to create social presence in supporting the CoI and critical reflective thinking in an online learning environment. Researchers answer this question as that it is necessary to be aware of the fact that social presence could be at the most appropriate level because group with low social presence cannot be maintained, the one with high level could prevent disagreements but this could encourage superficial comments and social chats.

Teaching presence

Another dimension within the framework of the CoI, teaching presence, is described by Anderson et al. (2001) as designing, facilitating and directing of cognitive and social processes to create meaningful personal learning and valuable learning outputs in terms of teaching. Based on this definition, teaching presence, in conformity with aimed outputs and students’ needs and talents, integrates all elements in the CoI framework by means of balanced functional relationship (Garrison and Anderson, 2003). Anderson et al. (2001) suggested that all participants can contribute to teaching presence in online courses; and therefore, instead of “teacher presence”, “teaching presence” reference was found suitable. According to Anderson et al. (2001), teaching presence commences before the course starting time (includes studies and plans related with the course); and it continues along the course period (in this process, lecturer facilitates discussions and provides direct education when necessary).

Within the computer conference context in online courses, Anderson et al. (2001), under the scope of their study on establishing and maintaining teaching presence, developed a tool to determine teaching presence and described various parameters under three main categories: “Design and Organization”, “Facilitating Discourse” and “Direct Instruction”. Based on the review of the relevant literature, it was observed that numbers of studies on teaching presence are important for a quality learning experience (Arbaugh and Hwang, 2006; Chakraborty and Nafukho, 2015; de la Varre et al., 2011; Ice et al., 2007; Morgan, 2011; Shea et al., 2003a, b, 2005, 2006, 2010); and the coding template developed by Anderson et al. (2001) was utilized by numbers of researchers (Arbaugh and Hwang, 2006; Shea et al., 2003a, b; 2006).

METHODOLOGY

How to determine community of inquiry perception?

This section reports on the researches aiming at assessing the CoI perception through a scale, a method different from the content analysis, as a result of a literature review on assessment of the CoI perception (Arbaugh, 2007; Arbaugh et al., 2008; Garrison et al., 2004) in a chronological order. The first research obtained in this scope was study of Garrison et al. (2004). In this preliminary study reported by them, on the basis of the CoI model developed by Garrison et al. (2000), a scale consisted of 28 items which also includes three basic elements (cognitive, social and teaching presence) in the CoI framework was developed. Five response choices were provided ranging from much better to much worse. The developed scale was applied to 65 students from 2 different graduate programs at the Athabasca University; and obtained results were analyzed through exploratory factor analysis. Although, exploratory factor analysis results confirm the structure with three factors in the CoI framework, it was reported that some items are related to more than one factor. The small sample size used for this exploratory analysis may have been responsible for the failure of Garrison, Cleveland-Innes and Fung’s questionnaire items to clearly load on their intended factors.

Arbaugh (2007) developed a scale in his study by utilizing from various studies (Garrison et al., 2001; Gunawardena and Zittle, 1997; Richardson and Swan, 2003; Sheaet al., 2003; Short et al., 1976); and used a seven-point Likert scale in the study including answer options in the range of “strongly agree” and “strongly disagree”. The study data was collected from 667 graduate students

taking different courses at an MBA program from 55 different universities across the United States during the period between February 2004 and January 2006. At the end of the research, the scale used was confirmed as four-factor structured (teaching presence, cognitive presence, social presence and course design and organization). Although “course design and organization,” as one of the sub-dimensions in teaching presence, was conceptualized, it was stated as a result of this study, that it was standing out as an individual factor.

Arbaugh et al. (2008) aimed to develop a reliable and valid instrument for the CoI in their study as well. Within this scope, it was suggested that generability of studies conducted over a single institution would be limited; and in the summer season of 2007, 287 graduate students from educational sciences and business management majors in four different education institutions providing online education in the United States and Canada were included in the study. In scoring of the scale consisted of 34 items developed by researchers, point degree between (0=Certainly Disagree) and (4=Certainly Agree) was used. Conducted analyses confirmed that conceptual framework of the CoI composed of cognitive, social and teaching presence. It was reported that this developed scale can be employed in assessment of the education given by various stakeholders such as course designers, program administrators and lecturers. According to detailed examination of conducted studies so far, it can be observed that the instrument used in the study of Swan et al., (2008) and the one used in the study of Arbaugh et al., (2008) were same. This is because of different articles published about the subject by researchers who used to be member of the instrument development team. However, in the development process of this survey instrument, if the study published by Arbaugh et al. (2007) is taken into consideration, it is possible to claim that the original instrument was developed by Arbaugh et al. (2008). Additionally the study conducted by Arbaugh et al. (2008) has been cited 254 times according to Google Scholar data (Feb 24, 2016). The CoI survey instrument developed by Arbaugh et al. (2008) caught attention of several researchers working on distance education. Beyond this point, different versions of the instrument, related studies and disciplines are explained related to CoI Survey instrument.

Arbaugh et al. (2010) investigated differences among cognitive, social and teaching presence perceptions of students from different disciplines. In collection of data within the scope of research, Arbaugh et al.'s (2008) CoI survey instrument was employed with seven-point degree. In this context, data was collected from 1,582 students from two different education institutions in the U.S. during the period between fall semesters of 2007 and 2008. Students in the sampling group were from both undergraduate and graduate levels in different majors; and they study either blended or fully online learning environments. Researchers were supported concerning practicability of the CoI model in terms of disciplinary differences. Study results reveal that there are remarkable opportunities for potential studies in the future in examining how CoI framework’s elements could be effective and and be influenced by other various academic disciplines. Additionally, how this framework could be advanced or upgraded in order to explain course efficiency in core disciplines.

The purpose of the study conducted by Bangert (2009) was to test the validity of the CoI survey instrument developed by Arbaugh et al. (2008). To that end, the CoI survey instrument suggested by Arbaugh et al. (2008) was applied to 1,173 undergraduate and graduate level students in the blended or fully online learning environments in primarily educational science departments of medium sized universities located in the western part of the United States during spring semester of 2008 academic year. Different from the original scale, ordinal responses were scored using the scale (1=Strongly Disagree) to (6=Strongly Agree). Finally, it was reported that the CoI survey instrument was suitable tool to determine and to enhance educational quality of faculties. Beside, since Garrison and Vaughn (2007) indicates that CoI model is appropriate for blended online courses, within the scope of the present research, unlike the preliminary research where the original scale was developed, data was collected from students who receive fully online education in addition to the ones receiving blended online education.

In the study conducted by Shea and Bidjerano (2009), it was aimed to assess practicability of the CoI framework in definition, explanation and ultimately development of learning in online education environments. In data collection process, Arbaugh et al.'s (2008) CoI survey instrument was employed. However, 12th item was used differently than the original scale. In scoring of scale items, degree from (1=Strongly Agree) to (5= Strongly Disagree) was used. Moreover, for each item, the participants had the option to indicate that they choose not to answer the question by selecting ‘‘N/A”. Collected data was screed for missing values, univariate and multivariate outliers; and they were downsized from 2,605 to 2,159 by 17% reduction. The research results indicate that survey items conform to the structures specified in the CoI framework. Moreover, it was reported that structures related with the cognitive, social and teaching presence and the CoI framework were useful model in description, explanation and development of online education.

Noteboom and Claywell (2010) reported in their study that results of Shea and Bidjerano's (2009) study were supporting the CoI framework, but it is not open for generalizations to the disciplines such as health care. Therefore, the aim of this study was to assess students’ perceptions of cognitive, social and teaching presence. Within the research scope, the version of the CoI survey instrument employed by Shea and Bidjerano (2009) was used; and data collected from 337 students who are registered with several online health care programs in the United States was studied. When Noteboom and Claywell (2010) conducted a factor analysis, they ended up with similar results of the study by Shea and Bidjerano (2009). The only difference that they found was two items, which loaded, unexpectedly in a different factor. An item had loaded on social presence instead of teaching presence, and another item had loaded on cognitive presence rather than social presence.

The primary purpose of the study of Carlon et al. (2012) was to confirm the structure of the CoI model with health care discipline. To that end, students receiving 38 different online courses from graduate and undergraduate programs of nursing, physical therapy and health care administration (including health information management students) were asked to respond the version of the CoI survey instrument published by Shea and Bidjerano (2009) and to provide some relevant demographical information. In the end, totally 330 valid respond were collected from these students. Study results confirmed the survey instrument in the health care discipline. However, conducted additional factor analyses suggested that there is potential fourth factor in the model. This finding conforms to other studies reported in the literature (Bangert, 2009; Díaz, Swan, Ice, and Kupczynski, 2010; Shea and Bidjerano, 2009). In aforesaid studies, while evidences concerning the fact that teaching presence has two-factored structure were provided, in the scope of the present study, it was indicated that the structure of the social presence would include two-factors: social comfort and social experience as well.

Boston et al. (2009) stated in their study that attrition rates in online learning programs were higher with respect to face-to-face programs; and the correlation between CoI framework parameters and student persistence was investigated. Aforesaid research was conducted on 28,877 students in the American Public University System (APUS is an online, for-profit university) who receive bachelor or associate level courses and who filled in CoI survey instrument. When items in the CoI survey instrument employed in the research scope were considered, it can be seen that there are certain differences with respect to the CoI survey instrument developed by Arbaugh et al. (2008); and that it possesses the same items used in the CoI survey instrument developed by Díaz et al.

(2010).

Discrepantly from previous studies, Díaz et al. (2010) did not only tested validity of CoI survey instrument, but also respondents were asked to express their opinions concerning significance of each item; then, obtained data was analyzed. Within the scope of the study, CoI survey instrument developed by Arbaugh et al. (2008) was taken as the basis; however, some amendments made on certain items in the scale (12^{th} and 28^{th} items). Within the scope of this study, totally 412 undergraduate and graduate degree students from four different institutions in the United States were included in the study. Items in the scale were scored through 5-point conventional Likert scale (1=Strongly Disagree) to (5=Strongly Agree), while item importance ratings utilized an ordinal scale with the same range of quantitative values (1=Unimportant; 2=Somewhat Important; 3=Important; 4=Very Important; 5=Extremely Important). Research results confirmed triple-structure of the CoI framework.

Study of Kozan and Richardson (2014) aims to investigate factor structure of adapted version of the CoI survey instrument developed by Arbaugh et al. (2008). To that end, the CoI survey instrument suggested by Díaz et al. (2010) was employed to assess students' cognitive, social and teaching presence perceptions. The research data were collected from graduate students pursuing a fully online Learning, Design, and Technology Master of Science Program in a College of Education. In this regard, totally 643 answered the survey appropriately; and obtained answers were randomly divided into two groups for the EFAs (N=352) and CFAs (N=291). However, since some students were enrolled in multiple courses, repeating answers were substracted and EFAs (N=219) and CFAs (N=178) were conducted on basis of answers received from singular respondents. Results of the study validated the CoI. However, it was emphasized that it should be reminded during the assessment that only students in one university were participated in the study. Furthermore, since only students receiving online courses were included in this study, it will be possible to obtain better understanding of the CoI survey instrument if participation of students receiving courses in blended learning environments and inclusion of students from different educational institutions could be ensured in the future studies.

In the study of Alaulamie (2014), it was investigated that whether cognitive, social and teaching presence were significant predictors of satisfaction of students in online programs offered by the prominent Saudi universities. In determination of students' cognitive, social and teaching presence perceptions, Arbaugh et al.'s (2008) CoI survey instrument was utilized after it was adapted to the Arabic. Answer options of the survey instrument items were consisted of "Strongly Agree", "Agree", "Neutral", "Disagree" and "Strongly Disagree". Data employed within the scope of the research were collected from 2,442 students who answered questions in data collection tool appropriately. Research findings suggest that Arabic version of the CoI survey was valid and reliable. Factor analysis showed that items were loading appropriately in the expected factor. Only one item in the instrument, which is item 24, was showing a cross loading issue. This item could be dropped for future uses or it may need more investigation by researchers.

Yu and Richardson's (2015) study aims to investigate validity and reliability of Korean version of the CoI survey instrument for online learning. To that end, the CoI survey developed by Arbaugh et al. (2008) was translated into Korean; and it was structured according to 5-point Likert scale with degrees from (1=Strongly Disagree) to (5=Strongly Agree). This survey was applied on 995 undergraduate students who were attending fully online courses at the Cyber University in Korea. Study results suggest that internal consistency reliability of the Korean version of the CoI survey was high and that three-factor structure was supported.

Arbaugh et al.'s (2008) CoI survey instrument was adapted into Turkish by various researchers (Horzum, 2015; Küçük, 2013; Öztürk, 2012). The study reported by Öztürk (2012) was including 140 students who study at computer and educational technologies teaching departments from faculties of educational science at four different public universities during the academic year between 2010 and 2011 in Turkey. The survey instrument was developed in four-point Likert model with degrees from "Strongly Disagree(1), Disagree(2), Agree(3) and Strongly Agree(4)". Collected data during research was incurred in confirmatory factor analysis; finally, three-factored structure in the original scale was verified on basis of conducted reliability and validity analyses. Regarding Turkish version of the survey, a survey composed of 34 items under three sub-factors was obtained. The study reported by Küçük (2013) was conducted according to the data collected from 241 students who attend faculty of educational sciences and registered with computer course provided in blended learning environment. Answer options of the survey instrument items were consisted of "Strongly Disagree, Disagree, Not Sure, Agree and Strongly Agree". According to the analyses conducted based on the data collected during research, the three-factored structure of the original survey was verified; and a survey composed of 34 items under three sub-factors was obtained in the Turkish format of the survey. The sampling group of the study of Horzum (2015) was consisted of 277 online graduate students from nine different programs at a public university. The survey items were scored using the scale from (1=Strongly Disagree) to (5=Strongly Agree). According to the analyses conducted based on data collected during the research, the three-factored structure of the original survey was verified; and a survey composed of 34 items under three sub-factors was obtained in the Turkish format of the survey.

RESULTS AND DISCUSSION

Finally, it is observed that different data collection tools have been developed by various researchers in assessment of CoI perception (Arbaugh, 2007; Arbaugh et al., 2008; Garrison et al., 2004). However, of these data collection tools, it is possible to state that the most frequently used and the one adopted the most commonly in the literature is the CoI survey instrument developed by Arbaugh et al. (2008). It was also observed that Arbaugh et al.'s (2008) CoI survey was adapted into various languages such as Turkish, Korean and Arabic (Alaulamie, 2014; Horzum, 2015; Küçük, 2013; Öztürk, 2012; Yu and Richardson, 2015); and that it has been employed in various disciplines such as educational sciences, business management, and health care (Arbaugh et al., 2010; Arbaugh, 2013; Bangert, 2009; Carlon et al., 2012).

On the basis of detailed investigation of studies utilized from CoI survey developed by Arbaugh et al. (2008);

(i) Majority of these studies were conducted in the United States and Canada,
(ii) Studies were conducted on various sampling groups with different sizes from both single or multiple institutions,
(iii) Studies included students from different degrees (bachelor, associate, undergraduate and graduate) who receive courses in fully online or blended online learning environments,
(iv) As answer options of items included in survey instruments, various scale ranges were utilized (0-4; 1-4; 1-5; 1-6; 1-7 etc.),

(v) It was observed that students take different variables tought to be relevant with CoI perception such as education level (undergraduate, graduate etc.), grade level, number of online course, online course implementation (fully online or blended), major discipline, gender and age into consideration.

Accordingly, in the future researches, new studies, which investigate differences mentioned above, can be planned. Additionally, further research is called for to explore the dynamic relationships among the presences across disciplines and institutions as well as understand the existence and role of the specific sub-elements (categories) of each presence.

The CoI survey instrument was developed in the study of Arbaugh et al. (2008) conducted on 287 graduate level students, who receive fully online courses, while this survey utilized a degree system between (0=Strongly Disagree) and (4=Strongly Agree). In the study of Bangert (2009), the CoI survey developed by Arbaugh et al. (2008) was conducted on 1,173 undergraduate and graduate students who study in blended or fully online learning environments. Furthermore, unlike the original survey, ordinal responses were scored using the scale (1=strongly disagree) to (6=strongly agree). Shea and Bidjerano (2009) employed the CoI survey developed by Arbaugh et al. (2008) as well. However, 12th item in the original survey was amended. In scoring of the items in the survey, degrees from 1 (strongly agree) to 5 (strongly disagree) were used; and "the participants had the option to indicate that they choose not to answer the question by selecting 'N/A'" used as an option for each item. When items in the CoI survey was shared in the interactive website of https://coi.athabascau.ca, which aims to share and discuss researches on the CoI framework (CoI Survey, 2015) are examined, it can be observed that they were the same with the ones used in the scope of this research; but their scoring was different. Whereas this research used degrees from (1=strongly agree) to (5=strongly disagree); and it offered respondents to avoid items, in the CoI survey published in the website, 5-point Likert degree from (1=strongly disagree) to (5=strongly agree) was used. Díaz et al. (2010) employed the CoI survey developed by Arbaugh et al. (2008) as basis; but, some items (12th and 28th) in the survey were amended. Items in the survey were degreed between (1=strongly disagree) and (5=strongly agree). Items used in this research were referred and exhibited in Appendix A at the end of the article under the title "Community of Inquiry Survey Instrument" (draft v15) developed by Ben Arbaugh, Marti Cleveland-Innes, Sebastian Diaz, Randy Garrison, Phil Ice, Jennifer Richardson, Peter Shea and Karen Swan. Since the CoI survey ("CoI Survey," 2015) was referred in the website in which postings were published and relevant to the CoI framework, it is possible to state that the survey employed within the scope of this research can be considered as newer draft.

Therefore, for the studies that would be conducted in the future, amendments on the original survey developed by Arbaugh et al. (2008) could be taken into consideration so that new researches can be conducted in which different versions of the survey are compared. Moreover, by taking changes in survey items and scoring system of items into consideration, new studies can be planned on adaptation of CoI survey instrument to different languages.

Conflict of Interests

The authors have not declared any conflicts of interest.

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