INVESTIGATION OF COMMUNITY OF INQUIRY FRAMEWORK IN REGARD TO SELF-REGULATION, METACOGNITION, AND MOTIVATION

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ABSTRACT

INVESTIGATION OF COMMUNITY OF INQUIRY FRAMEWORK IN REGARD TO SELF-REGULATION, METACOGNITION, AND MOTIVATION

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With the prevalence of online learning, studies have also increased gradually. A more recent attempt is the development of Community of Inquiry framework developed by Garrison, Anderson and Archer in 2000. It explains educational experience with the intersection of three constructs: teaching presence, cognitive presence and social presence with the emphasis on creating a community and developing critical thinking skills by increasing collaboration to create effective online learning. Since it has not been known completely especially in regard to cognitive presence because of being developed more recently, it still requires further elaboration. Therefore, this mixed-method study, specifically designed as an embedded study aims to investigate community of inquiry framework and its three-presence by discovering the effects of self-regulation, metacognition and motivation of students in online course context, particularly focusing on cognitive presence. Both quantitative and qualitative data are collected from the students enrolled in online courses in a well-known public university in Ankara, Turkey. The primary data quantitative were collected from 1740 students selected based on convenience sampling and analyzed via both descriptive and inferential statistics. Qualitative data were collected via online asynchronous discussions from 162 students enrolled in a fully online associate degree program

selected based on cluster sampling, and interview protocol via 24 students selected based on purposive sampling. Findings indicated self-regulation was crucial factor and suggested to add in the framework as a new presence named regulatory presence. Motivation was also found essential for online learners to attain better learning experience.

Keywords: Social presence, cognitive presence, teaching presence, community of inquiry, self-regulation, metacognition, motivation

ÖZ

SORGULAYICI ÖĞRENME TOPLULUĞU MODELİNİN ÖZ-DÜZENLEME, ÜSTBİLİŞ VE GÜDÜLENME AÇISINDAN İNCELENMESİ

Kilis, Selcan
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Çevrimiçi öğrenmenin hızla yayılmasıyla bu alandaki çalışmalar da giderek artmaktadır. Bu alana dair son gelişmelerden biri ise 2000 yılında Garrison, Anderson ve Archer tarafından geliştirilen Sorgulayıcı Öğrenme Topluluğu Modeli'dir. Bu model, çevrimiçi öğrenme deneyimini sosyal bulunuşluk, bilişsel bulunuşluk ve öğretimsel bulunuşluk olmak üzere 3 temel başlık altında açıklamaktadır. Modelin temel dayanağı, etkili bir çevrimiçi öğrenme sağlamak için işbirliğini artırarak eleştirel düşünme becerilerinin geliştirilmesini sağlayacak bir öğrenme topluluğu oluşturmaya dayanmaktadır. Son yıllarda geliştirildiği için özellikle bilişsel bulunuşlukla ilgili eksik yönleri olan bu modelle ilgili daha fazla araştırmaya ihtiyaç duyulmaktadır ve bilişsel bulunuşluk bileşeninin daha iyi anlaşılması gerekmektedir. Dolayısıyla, iç içe karma yönteme göre tasarlanan bu çalışmanın amacı çevrimiçi öğrenme ortamlarında öğrencilerin öz-düzenleme, üstbiliş ve güdülenme seviyelerinin etkisini ortaya çıkararak sorgulayıcı öğrenme topluluğu modeli ve bileşenlerini incelemektir. Bu çalışmada daha çok bilişsel bulunuşluk üzerine odaklanılmıştır. Nicel ve nitel veriler Türkiye'nin Ankara ilinde bulunan tanınmış bir devlet üniversitesinde çevrimiçi ders alan öğrencilerden toplanmıştır. Asıl veri kaynağı olan nicel veriler elverişli örneklemeye göre seçilmiş 1740 öğrenciden toplanmış ve betimleyici ve çıkarımsal istatistikî yöntemlerle analiz edilmiştir. Nitel veriler, tamamen çevrimiçi öğretimle

eğitim yapılan ve kümeleme örnekleme yöntemine göre seçilen 162 öğrenciden çevrimiçi asenkron tartışma iletileri ve bu öğrenciler arasından amaçlı örneklemeye göre seçilen 24 öğrenci ile görüşmeler yapılmıştır. Bulgular, öz-düzenleme becerilerinin önemli rol oynadığını göstermiş ve modele düzenleyici bulunuşluk bileşeni olarak eklenmesi önerilmiştir. Ayrıca güdülenmenin etkili bir öğrenme deneyimi elde edebilmek için çevrimiçi öğrenciler için önemli olduğu görülmüştür.

Anahtar Kelimeler: Sosyal bulunuşluk, bilişsel bulunuşluk, öğretimsel bulunuşluk, sorgulayıcı öğrenme topluluğu modeli, öz-düzenleme, üstbiliş, güdülenme

To My Beloved Little Brother,

Samet Kilis

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LIST OF ABBREVIATIONS

DE	Distance Education
www	World Wide Web
E-Learning	Electronic Learning
OCL	Online Collaborative Learning
ODE	Online Distance Education
OC	Online Courseware
CoI	Community of Inquiry
TP	Teaching Presence
SP	Social Presence
CP	Cognitive Presence
LP	Learning Presence
PI	Practical Inquiry
ICT	Information Communication Technology
SRL	Self-Regulated Learning
ARCS	Attention-Relevance-Confidence-Satisfaction
3D	Three-Dimensional
LMS	Learning Management System
Moodle	Modular Object Oriented Dynamic Learning Environment
EFA	Exploratory Factor Analysis
CFA	Confirmatory Factor Analysis
PCA	Principal Component Analysis
ICT-I	Information and Communication Technologies - I
MDS	Medical Documentation and Secretary
ECDL	European Computer Driving License
DA	Discussion Activity
SLP	Social-Learning Presence
STP	Social-Teaching Presence

SCP	Socio-Cognitive Presence
SNS	Social Networking Sites

CHAPTER 1

INTRODUCTION

This chapter provides a general background of the study starting the value of community building and inquiry in online learning environments. Moreover, the purpose and significance of the study based on previous researches and related literature are explained. The research questions that give rise to this study are also presented. Finally, the definitions of key terms used in the whole study are provided at the end of this chapter.

1.1 Introduction

The rapid rise in Internet access and technological innovations have brought a new insight to the education. Distance education was started with the first attempts via e-mail or printed materials, followed by television and radio. The investment has grown and open universities has been established. With the technological innovations, teleconferencing and radio broadcasting has benefitted in distance education. Hence, distance education gained new forms including electronic learning, blended learning, etc. Thanks to Internet and Web technologies, online education has been established. Since it provides many advantages, the interest and demand for online enrollment has accordingly accrued. However, providing an effective learning is still a problematic issue. In 21st century, critical thinking skills, collaboration and social interaction have gained importance. New research, theories, pedagogies, etc. have been administered to have a better learning outcome and efficient learning. One remarkable development in this regard is the development of a model *Community of Inquiry* for online learning. The main focus of this model is to have an effective learning with increasing collaboration, social interaction and critical thinking skills. It explains an educational experience with the intersection of three constructs *teaching presence, cognitive presence and social presence.* It has been studied too much up to date, but still there are unknown and unexplained parts in the model and its elements. With this purpose, Community of Inquiry framework and its three-presence are investigated from

different aspects including self-regulation, metacognition, motivation and other potential factors throughout this study.

1.2 Background of the Study

Distance education is defined as "teaching and planned learning in which teaching normally occurs in a different place than learning, requiring communication through technologies as well as special institutional organization" (Moore & Kearsley; 2011, p.2). It basically means that students and teachers are in different places for all or most of the time during learning thanks to communication technologies. It evolved into learning on the Web by the mid-1990s as correspondence courses and grew into educational television during the 20th century (Perry & Pilati, 2011). Correspondence is achieved with a number of tools that allow synchronous and asynchronous communication and collaboration. It causes difficulty to develop a generic definition since some authors use different terminologies and names according to the technology used as a delivery tool for learning and teaching. Different terminologies used for the concept are distance education, electronic learning (e-learning), distributed learning, web-based learning, networked learning, tele-learning, virtual learning, etc. (Anderson, 2008). However, they are different though some authors use interchangeably. The difference among different terminologies is explained in second chapter in detail. The scope of this study is online learning. Online learning is based on distance education as a basis, but differs to some extent. Its focus is on content delivery and independent learning. The nature of online learning is based on more interaction.

Online learning has many promises both for the learners and teachers. According to Cole (2000), it permits the participants to collapse time and space. That means it overcomes travel and time constraints (Bach, Haynes & Lewis Smith, 2006; Gülbahar, 2012). Students can access to learning materials from anywhere at any time only having with Internet access (Anderson, 2008). That means, it offers flexibility and convenience in terms of time and space (Gülbahar, 2012; Matthews, 1999). Moreover, it enhances the capacity of educational system and improves the quality of existing educational structures. As the authors stated, it also balances inequalities between age groups. There are more benefits it offers and therefore, became a major element in higher education in a short time. However; in order to take advantages of online

learning at higher levels, it must be done in a proper way such as designing instructional materials properly, supporting learners adequately, etc. (Rosse, 2002).

Extensive use of online learning opens new directions for the research with the purpose of enhancing the concept of online learning, taking more benefits, removing borders or limitations, and solving difficulties that are faced by students and teachers. In the literature, one of the most remarkable point in recent times regarding the online learning is the model *Community of Inquiry* developed by Garrison, Anderson and Archer in 2000. The main purpose of this model is to provide coherent perspective to enhance the complex dynamics of collaborative online learning environments (Garrison & Akyol, 2015). Historical development of the model is based on a statement that online discussions have considerable potential to facilitate higher learning (Garrison & Anderson, 2003). However, they are not necessarily effective at supporting critical, creative, and complex thinking skills. In order to achieve higher levels of learning in online environments, the perspectives of teaching and learning beyond only sharing and comparing of opinions should be enhanced (Kanuka & Garrison, 2004). Students should be provided with the opportunities not to just discuss what they have learned and but also apply those knowledge into new ones. They learn by reflecting what they already know, considering ideas from multiple perspectives, and analyzing their experience with alternative interpretive frameworks (Wiske, Franz, Breit; 2005). Also, collaborating with other learners enriches their capacity to develop and apply ideas. From this point, based on collaboration together with social interaction and critical thinking skills in an online community, Garrison, Anderson and Archer developed the Community of Inquiry (CoI) framework in 2000.

CoI framework and in accordingly this research have grounded in John Dewey's progressive understanding of education and also collaborative and social-constructivist orientations. According to this theoretical lens, learning stems from learners' interaction in a socio-cultural context through a sense-making process and the remarkable issue is the learning process rather than learning outcomes (Akyol & Garrison, 2011; Kozan & Garrison, 2014; Swan, Garrison, Richardson, 2009). The main objective is to understand and solve the complexities of online collaborative learning environments so as to facilitate learning more by constituting a community with an emphasis on the processes of instructional conversations that are likely to lead to epistemic engagement (Shea & Bidjerano, 2009). Moreover, it articulates the

behaviors and processes required to nurture knowledge construction through the cultivation of various forms of ‘‘presence”. It also provides educators with a process that can assist with ICT integration to support meaningful learning experiences and permits to create global learning experiences (Redmon & Lock, 2006).

CoI is simply a process model of online learning which views the online learning experience as the intersection of three presences: social presence, teaching presence and cognitive presence (Swan, Garrison, Richardson, 2009). The first construct *social presence* is the mediating variable between teaching presence and cognitive presence (Garrison, Cleveland-Innes, Fung; 2010). That means that it is a responsibility of teaching presence and a condition for creating cognitive presence. The categories of social presence are open communication, group cohesion and affective expression. The research to date revealed that social presence enhances learning (Richardson & Swan, 2003) by social interaction and for this reason, it is important to build an online community of inquiry (Garrison, Anderson & Archer; 2000). However, social presence still requires more research and important for improving cognitive presence (Garrison & Arbaugh, 2007; Garrison, Cleveland-Innes, Fung, 2010; Ke, 2010; Richardson, Swan; 2003; Shea & Bidjerano, 2009).

The second construct of CoI framework *cognitive presence* reflects the learning and inquiry process and operationalized in Practical Inquiry (PI) Model as functionalized in four phases; triggering event, exploration, integration and resolution (Garrison, Anderson, Archer; 2000). According to Garrison and Anderson (2003), it is the central to successful higher education. However, it is also the least known element in this framework because of its nature and complexity. Since enhancing cognitive presence requires higher levels of learning and critical thinking skills. This is because the focus of cognitive presence is higher-order thinking skills (Garrison, Anderson, Archer; 2001). It is a developmental model and needs more elaboration (Garrison, Anderson, Archer, 2010). Moreover, up to date, the maximum explained account of social presence and teaching presence together to the cognitive presence was 69% (Archibald, 2010; Shea & Bidjerano, 2009). Other contributing factors for remaining parts to account cognitive presence are not known for now. For this reason, more research is needed to know about other contributing factors that have an impact on cognitive presence and also the ways to enhance cognitive presence which give rise to this study.

The third construct of CoI framework *teaching presence* includes design and organization, facilitation discourse and direct instruction (Anderson, Rourke, Garrison & Archer; 2001). It was found as a remarkable descriptor for the sense of community and learning (Garrison & Arbaugh; 2007). Teaching presence was contended as compulsory to transition from social presence to cognitive presence (Garrison & Cleveland-Inness, 2005; Tran, 2011).

The other dimension that is investigated in this study is Self-Regulated Learning (SRL) that has been emerged as a new important construct in education (Boekaerts, 1999). It has been highly cited in the research focusing on community of inquiry framework. In consequence, the theoretical lens of this study is also based on Zimmerman's and Schunk's Self-Regulated Learning. SRL is defined by Zimmerman and Schunk (1989) as the inclusion of self-generated thoughts, feelings, and actions that are systematically oriented toward the attainment of learners' own goals. This construct has been heavily studied up to date. Although there are many studies about the effect of self-regulation in the nature of online community of inquiry, there is still a need to explore that self-regulation skills are necessary for effective online learning (Chmiliar, 2011; Pintrich, 1999) and effects on three constructs in CoI framework together with the motivation of learners. The effects of students' self-regulation, metacognition and motivation levels on three constructs of CoI model are also investigated in this study. Their effect have not been studied altogether neither on the CoI framework overall not it's three-presence separately until to date. Furthermore, as possible, the remaining part -31%- of cognitive presence that is still unknown is tried to explore. For this reason, it is highly expected to make contribution to the literature that makes this study valuable and perhaps open new directions for further research.

Another dimension is investigated in this study metacognition which is defined as "a higher-order, executive process that monitors and coordinates other cognitive processes engaged during learning, such as recall, rehearsal, or problem solving" (Tobias & Everson, 2009, p.108). It is socially situated and an internal activity and thus, an important aspect of higher and effective learning, especially for inquiry (Akyol & Garrison, 2011). Critical thinking means thinking about thinking and metacognitive than cognitive (Sharma & Hannafin, 2004). It is found inherently in the structure of inquiry. Without practicing critical thinking in the form of metacognitive knowledge and skills, it is really difficult to deal with an inquiry (White, Frederiksen, & Collins,

2009). In the context of online learning community, metacognition is composed of three interdependent dimensions: knowledge of cognition, monitoring of cognition, and regulation of cognition (Akyol & Garrison, 2011). In the development of CoI framework, as the authors declared, metacognition is operationalized and assessed within an online learning community. It is also found at the intersection of the cognitive and teaching presence of CoI model. Moreover, the research into metacognition suggest that learners having with metacognitive awareness and ability are more successful (Stewart, Cooper, & Moulding, 2007; Young & Fry; 2008). There is a discrepancy about enhancing or refining the CoI framework with respect to assessing metacognition. However, Akyol and Garrison (2011) concluded that rather than enhancing or refining CoI model, metacognition is congruent with the assumptions and elements of CoI model and they developed an instrument to measure metacognition in online learning community more explicitly. Moreover, since CoI model put the emphasis on personal (reflective) and shared (collaborative), it is consonant with the constructing and integrating of the personal and shared metacognition (Akyol & Garrison, 2011; Garrison & Akyol, 2013; Garrison & Akyol, 2015). There is still a requirement for future research on metacognitive construct and validate the metacognition instrument in different settings (Garrison & Akyol, 2015) and that gives rise to this research.

Motivation is also examined in this study. Motivation is what moves people to act, why people think and behave as they do (Graham & Weiner, 1996). It simply explores all the aspects of an organism's needs and the processes and structures that relate those needs to behavior and concerned with the answer of why questions (Edward & Ryan, 1985). It was studied so much regarding the traditional, online classroom and virtual learning environments. In a three-dimensional (3D) virtual learning environment, motivational factors like giving feedback and positive reinforcement to the students after completing the task during the learning made students more motivated and in turns, enhances their cognitive presence (Reisoğlu, 2014). However, it was not examined in terms of the effect on three constructs of CoI framework in an online learning community in depth. There is only two research (Polat, 2013; Kim, 2015) founding opposite results about its effect and therefore, its effect should be investigated further regarding with CoI framework and its three constructs.

Finally, since community of inquiry framework is a developmental model and still requires further elaboration, in order to have a more complete understanding and elaboration, other potential factors are also discovered in this study.

1.3 Problem Statement

There is an emerging rise in the research about the CoI framework up to this date. The most common finding is that three constructs of CoI are interrelated and they affect each other positively (Akyol, 2009; Polat, 2013). In terms of the constructs, teaching presence encompasses the basis to create an online community of inquiry. It is paramount to support social presence, which in turn fosters cognitive presence (Archibald, 2010; Garrison, Cleveland-Innes, Fung, 2010; Shea & Bidjerano, 2009). In order to transition from social presence to cognitive presence, teaching presence must be available, either from the facilitator or the other students (Tran, 2011). It is the most known element in CoI model. Social presence was found indirectly related with cognitive presence, but with having significant effect on it (Kozan & Richardson, 2014; Polat 2013; Rourk, Anderson & Garrison, 1999). It can be improved with encouraging cognitive presence through social interaction. Finally, the third construct *cognitive presence* which is the most challenging to study in the model is the least known element in the framework (Akyol, 2009). The maximum explained variance of cognitive presence by social presence and teaching presence together with some other factors from the earlier studies was 69% (Archibald, 2010; Shea & Bidjerano, 2009) and thus, there is still a need for more research. With this gap in the literature, this study is focused on cognitive presence particularly, besides social presence and teaching presence. On the other hand, self-regulation is a crucial factor to be successful especially in online learning, even in traditional learning. There are some controversy about the model related with self-regulation and metacognition. Some authors suggested adding fourth construct named as learning presence to the model claiming the lack of self-regulation in the CoI model and requirement for its existence (Shea, Hayes, Smith, Vickers, Bidjerano, Picket, et al., 2012). However, the original creators of the model do not accept this argument and claimed that it is already found in the core of model (Garrison & Akyol, 2013). Therefore, this issue should require more research. Moreover, the effect of motivation on overall CoI framework or on its three components separately has been studied only in two studies and their results were in the opposite from each other, and they suggested for further elaboration. In order to

fulfill this gap in the literature, this study is also investigate the effect of motivation on CoI and on its three constructs.

1.4 Purpose of the Study

The main purpose of this study is to investigate the perceptions of students toward community of inquiry and its three-presence in the online course context to understand in depth and to learn about the ways to enhance its three-presence more. The effect of self-regulation, metacognition and motivation on the CoI and its three presence are examined to discover the ways to facilitate three-presence of students in the online course context. Another main purpose of this study is to investigate cognitive presence explicitly because of not completely clarified. Moreover, discovering the associations and contributions of self-regulation, metacognition and motivation levels of students on their perpcetions of three-presence of the CoI framework to come up with useful hints to improve their social presence, teaching presence and cognitive presence are aimed in this study. The other aim is to validate and prove the metacognitive construct in the structure of CoI model with assessing students' metacognition levels in the online course context. Furthermore, other potential factors are tried to be revealed regarding with both positive and negative effects on social presence, cognitive presence and teaching presence of the students in the online course context as well as receiving their suggestions.

1.5 Research Questions

With respect to the purpose of the study, the research questions that are investigated throughout this study are in the followings.

1. What are the students' perceived levels of CoI, social presence, cognitive presence, teaching presence, self-regulation, metacognition and motivation in the online course context?
2. How do students' perceived levels of self-regulation, metacognition, and motivation levels in the online course context predict their perception in regard of
    a. CoI?
    b. Social presence?
    c. Cognitive presence?
    d. Teaching presence?

3. What are the posting patterns of students' teaching presence, social presence and cognitive presence in the online course context?
4. What are the other potential factors that affect students' social presence, teaching presence and cognitive presence both positively and negatively in the online course context?
5. What are the suggestions of students in terms of facilitating their social presence, teaching presence and cognitive presence in the online course context?

1.6 Significance of the Study

Based on the fact that CoI framework is still being a developmental model and has incomplete parts especially in the sense of cognitive presence, it still requires elaboration (Garrison, Anderson, Archer; 2010). In the sense of CoI framework, cognitive presence of students in online learning environments was explained up to almost 69% including all the contributing factors with the research conducted till 2015 (Archibald, 2010; Shea & Bidjerano, 2009). Since this research seek to explain the social presence, cognitive presence teaching presence in a more detailed way, it is highly expected to make contribution to the related literature with discovering the effect and contributions of self-regulation, metacognition and motivation as well as other potential factors. It is also guide the instructors and designers about the ways for how to enhance students' social presence, cognitive presence, and teaching presence in the online community during learning. It could also open new directions in this sense for further research.

In addition, the impact of self-regulatory skills, metacognition levels and motivation of the students on their social presence, cognitive presence and teaching presence are examined in this study. There is a gwoing debate about the self-regulation in the scope of CoI framework. More recently, some authors claim it is lack in the model and should be added to the model as a new construct. However, the developers of CoI framework do not agree with this argument. On the contrary, the lack of self-regulation is highly addressed in more recent studies. In order to understand its effect on the CoI and its three-presence, such a study on a huge sample could provide useful directions and might provide a consensus.

In regard to motivation, altough it has been over-increasingly studied in both formal and online learning settings, the literature is so poor that there is only two studies

examining the influence of motivation in the scope of CoI framework. The first study contended with no significant effect (Polat, 2013) whereas the second study found significant effect of motivation (Kim, 2015). It is clear that the effect of motivation has not been agreed by researchers. For this reason, this study is expected to make valuable contribution to the literature with discovering the effect of motivation studying on a huge sample.

In terms of metacognition, ıt has been just started to be examined in the scope of CoI framework. More recently, the developers of CoI model support proof for the existence of metacogniton at the intersection of cognitive presence and teaching presence and developed a questionnaire for its easier measurement. However, there are some authors that do not accept this claim. Moreover, the influence of metacognition on the CoI and its three-presence is not known in the studies up to date. For this reason, the effect of metacognition is investigated in this study as the first time. also, with respect to the discrepancy about CoI model, like enhancing or refining the model or updating test items or using instruments for metacognition, this research settle the conflict and contribute the literature.

Based on the findings, some suggestions are offered for online instructors and instructional designers. This research also provides a better understanding of three-presence of the CoI framework revealing the effect and contribution of motivation which has not been studied except two-study founding opposite results. Therefore, this study is highly worthwhile since one of the aims of this study is to explore the effect of motivation of the students on three core elements of CoI.

In addition, this study is conducted in a well-known public university in Ankara, Turkey on a huge sample and therefore collects huge data and obtains more generalizable results. It is the first study in Turkey that investigates both community of inquiry framework and its three-presence, specifically focusing on cognitive presence in a complete manner including students' self-regulatory skills, metacognition, and motivation levels together with other potential factors. Finally, since this study collects both quantitative and qualitative data in regard of research questions that guide the study on a huge sample from diverse backgrounds and perspectives, it is highly expected to provide more explanation, elaboration, support and proof.

1.7 Definitions of Terms

Online learning is a type of learning delivered by using asynchronous and synchronous communication technologies. That means teaching and learning occurs at different places via communication technologies.

Community is defined as "a way of talking about the social configurations in which the enterprises are defined as worth pursuing and the participation is recognizable as competence" (Wenger, 1999, p.5).

Social presence is the ability of learners to project themselves socially and emotionally thereby representing themselves as "real people" in a community of inquiry (Garrison, Anderson, & Archer; 2000).

Cognitive presence is the extent to which the participants in any particular configuration of a community of inquiry are able to construct meaning through sustained communication (Garrison, Anderson, & Archer; 2000).

Teaching presence is the design and managing learning sequences, providing subject matter expertise, and facilitating active learning (Garrison, Anderson, & Archer; 2000).

Self-regulation is the composition of "self-generated thought, feelings and actions that are planned and cyclically adapted to the attainment of personal goals" (Zimmerman, 2000, p.14). Zimmerman defined three phases of self-regulation; namely, forethought, performance or volitional control and self-reflection. It is the interaction of personal, behavioral and environmental triadic processes in the sense of social-cognitive theory (Bandura, 1986).

Metacognition is defined by Flavell (1979) as "knowledge or beliefs about what factors or variables act and interact in what ways to affect the course and outcome of cognitive enterprises" (p.9) Although differentiation in the definition of metacognition, the consensus is that metacognition is "knowledge of one's knowledge, processes, and cognitive and affective states; and the ability to consciously and deliberately monitor and regulate one's knowledge, processes and cognitive and affective states" (Hacker, 1998, p.11). Basically, it is an essential cognitive ability to acquire deep and meaningful learning (Garrison & Akyol, 2015).

Critical thinking is “reflective and reasonable thinking that is focused on deciding what to believe or do” (Ennis, 1985, p.45).

Motivation is a general construct including the entire directive and activating functions that move one to an action (Bandura, 1991).

CHAPTER 2

REVIEW OF RELATED LITERATURE

The theoretical lens of this study is composed of collaborative and socio-constructivist theory, John Dewey's work of progressive understanding of education specifically emphasis on collaborative constructivism and practical inquiry, Community of Inquiry Model of Garrison, Anderson and Archer, self-regulated learning of Zimmerman and Schunk and also Pintrich's work, and motivational basis based on Pintrich. In this regard, this chapter provides a review of related literature on the theoretical basis, the community of inquiry framework and three elements of the framework: social presence, teaching presence and cognitive presence separately. Earlier research about the community of inquiry framework, its three-presence, self-regulation, metacognition and motivation in the online learning environments particularly in the sense of community of inquiry framework are reviewed under each related section. The recommended versions of the community of inquiry framework and also the summary of the chapter are provided.

2.1 Introduction

Technology has enabled communication and linked with intentional collaboration which is essential for learning and development (Harasim, 2012). Education has gained a new perspective with the technological improvements and computer networking and distance education has started in which learning occurs at a distance. With a rapid development in technology and computer-mediated communication, distance education is shaped in a new aspect *online education* to have better educational experience from distance. It has been still continues to evolve and so the trend toward online education is getting stronger (Cook & Grant-Davie, 2005). With the more investment, more resources and content, enhancing technological affordances, etc. are not solely adequate for effective learning. Besides, new theories and pedagogies should be required when existed ones are not suitable for new trend in online educational environments. There are some models developed only for online learning contexts. They are online collaborative learning (OCL), online distance

education (ODE) and online courseware (OC) as defined by Harasim (2012). In regard of this study, a framework *Community of Inquiry* developed based on OCL and some other elements crucial for effective learning in online learning contexts are investigated. With this purpose, the evolvement of online learning beginning with distance education to the model itself and its elements will be explained in continuing parts benefitting from the earlier studies.

2.2 Underlying Theoretical Approaches

The theoretical approaches behind this study which investigates Community of Inquiry framework includes John Dewey's work of progressive understanding of education, inquiry-based learning, constructivist and social-constructivist orientations, self-regulated learning of Zimmerman and Schunk and also Pintrich's work, and motivational basis based on Pintrich's work. The parts about self-regulation and motivation are explained in related sections. In this part, the starting points that initiates the Community of Inquiry (CoI) are provided.

Constructivism has evolved from Piaget's theory of cognitive development, followed by Vygotsky's sociocultural theory which emphasizes the social environment as a facilitator of development and learning, discovery learning of Bruner (1961) which allows learners to obtain knowledge for themselves through problem solving, and one of the forms of discovery learning, namely inquiry based learning (Collins, 1977; Collins, Stevens, 1983), and fed also some of self-regulation and motivation which are also other main basis of this study and explained in detail based on Zimmerman and Schunk's work and also Pintrich work as well as Keller's model.

In the constructivist orientation, knowledge is formed inside people, rather than the outside. It highlihts the interaction of people and situations in the acquisition of refinement of sknowledge and skills (Cobb, Bowers, 1999). Its main assumptions is that learners are active and develop and construct meaning and knowledge for themselves studying from multiple perspectives of the topic. The aim is also to challenge the learners' thinking and force them to rearrange their beliefs. Hence, it highlights the reflective thinking which is one of the main basis of CoI framework. Instructors should structure situations for the learners to make them throughly active, involved with content and social interaction rather than teaching as in traditional methods of instruction (Schunk, 1995).

Social constructivist models (e.g.Vygotsky) further emphasize the importance of social interactions in acquisition of skills and knowledge. The important issue for social-constructivists are social group learning and peer collaboration which are another main basis of CoI framework. In this way, learners experience higher self-efficacy by observing each other (Schunk, 1995) which is the other main basis of this study in accordance with self-regulation.

Inquiry-Based Learning (IBL) is particularly developed to teach learners how we think. It was evolved from the early work of John Dewey (1916) and Jerome Bruner (1960, 1961). It has been developed during the discovery learning initiates as a response to traditional forms of instruction especially memorization. It is particularly based on Socratic teaching method in which learners make reasoning, derive general principles and rules, and apply them to the new situations (Collins, 1977; Collins, Stevens, 1983). It addresses the development of thinking skills. Its theoretical orientation is particularly based on constructivism.

In an inquiry-based learning setting, two main tasks are required in the preparation and design of the course including determining goals and identifying a suitable problem for inquiry. The important thing here is that the problem should be launched as a discrepant event which means puzzling situations making students surprised, sparked their curiosity, and motivate them to engage in inquiry (Arends, 2012). Therefore, instructors are likely a coach, guider or faciliator. In fact, inquiry-based learning are driven by the learners, and can operationalized in any age group of learners.

Learning outcomes in inquiry based teaching involves gaining knowledge about inquiry focus, developing thinking and reasoning skills, developing metacognitive skills, and also developing positive attitudes toward inquiry and appreciation for the tentativeness of knowledge.

With the contribution of Lipman (1991) work which is based on Dewey's progressive understanding of education, inquiry was the initial point behind the CoI framework. Dewey declared inquiry is a social activity and goes to the essence of an educational experience. Fedding from inquiry, collaboration and social-constructivist orientations, community of inquiry was developed which is explained in detail under its related part.

2.3 Distance Education

Distance education has changed on a large scale with the pervasive of information communication technologies and tools. With the evolvements, different designations like distance education, electronic learning (e-learning), distributed learning, web-based learning, networked learning, tele-learning, virtual learning, etc. (Anderson, 2008) have arisen by different authors. Moore and Kearsley (2011) defines distance education as "teaching and planned learning in which teaching normally occurs I a different place from learning, requiring communication through technologies as well as special organization" (p.2). According to Bates (2005), there are three kinds of distance education. The first evolution is what is known as distance education in which student interaction is lack and a single technology is used predominantly. This generation was print-based correspondence education. Also education with television and radio can fits with this generation. Second generation is characterized by multiple media *print and broadcasting.* Examples of second generation are British Open University, Anadolu Open University in Turkey, etc. Finally the third generation is characterized by two-way communication media like video conferencing or Internet and in particular World Wide Web (www). It is described by economies of scope *customized courses, low initial investment and quickly produced.* It provides enhancement of learner control and increase of thinking skills. This generation is referred as online learning. Some authors use e-learning interchangeably with online learning. In fact, online learning means specifically use of Internet and www while e-learning includes any kind of telecommunications and computer-based learning. E-learning has a wider scope than distance education (Bates, 2005). However, Moore and Kearsley then revised the generations of DE and classified its history in five generations (Figure 2.1).

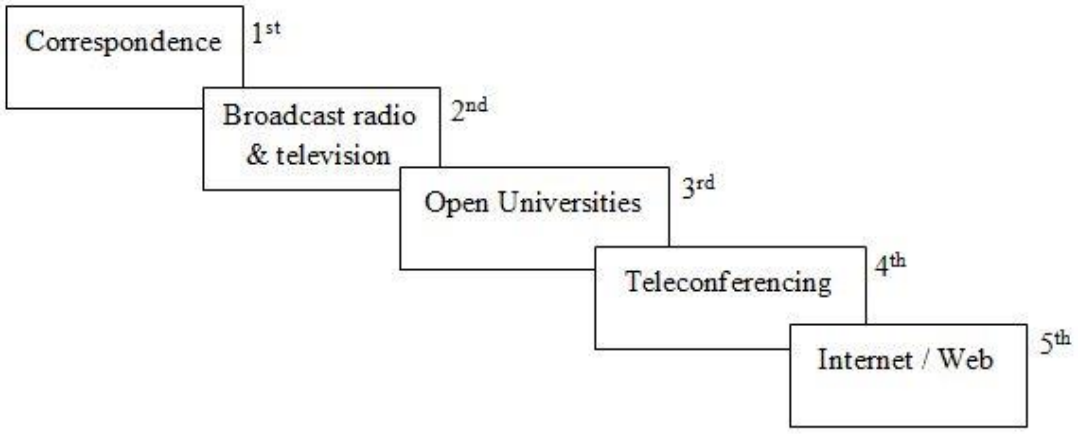

Figure 2.1 Five Generations of Distance Education (Moore & Kearsley; 2011, p.24)

The history of distance education is classified in five main groups which are generally named based on the technology used in that period (See Figure 2.1). It begins with the e-mail that is called correspondence or independent study by the universities. In the early 1880s, online instruction was delivered via first distant teacher with the spread of railway networks (Moore & Kearsley; 2011). It was the foundation of individualized instruction at a distance. Then, a new technology *radio* has appeared in the early part of twentieth century and started to be used for learning purposes. Educational television was developed in 1934 and television broadcasts started to be used. Broadcast radio and television compose the second generation of online learning. It can be said that it is parallel with the first generation defined by Bates (2005). Third generation is called open universities in which period a dramatically change occurred in the nature of online learning in 1960s and 1970s. There were two big experiments in this period: University of Wisconsin's AIM Project and Great Britain's Open University that gives his name to this period because of leading to explosion of interest in DE. It can be said parallel with the second generation defined by Bates (2005). Fourth generation is the period in which interactive video-conferencing by audio, video and computer was launched and used. This period brings the first real-time interaction among learners and learners and instructors. The fifth and last period is the use of Internet and Web. Computer- and Internet-based virtual classes have been created and with this innovation, online learning has gained a new scope since it has led to big worldwide explosion of interest to online learning together with new organizational structures, collaborative constructivist learning methods and also the aggregation of text, audio, video only on a single platform (Moore & Kearsley; 2011).

The fourth and fifth generations are the same with the third generation defined by Bates (2005).

In Turkey, distance education firstly launched in 7th December, 1960 in the form of correspondence courses as trial (Özdil, 1986). In 1991, Ministry of National Education established correspondence school (Gülbahar, 2012). After this first attempt, these innovations were organized to establish the first general management and distribute. The official foundation of correspondence school and general directorate of technical broadcasting were in 26th December, 1966. Based on 21st principle of 1961 constitution, Turkish Radio and Television Corporation was reorganized and education with radio or television increased (Alkan, 1996; İşman, 2011). In a short time, at higher education level, first Open University was launched within the body of Anadolu University in 1982. Then, these initiatives were launched at a wider range including elementary and high school level. In 1992, open education high school was set up. Moreover, open elementary school was set up in 1998. With the rapid development in technology, new technology and tools were used in open education initiatives. Teleconferencing provided first dual communication whereas satellite broadcasting provided interaction. In 21st century, the Internet and Web technologies were benefitted to increase the quality of open education settings (Gülbahar, 2012). These developments increase the number of open-distance education institutions and students, and accordingly they evolved over time including different kinds such as electronic learning, blended learning, etc.

Electronic learning (e-learning) is defined as electronically mediated asynchronous and synchronous communication for learning purposes (Garrison, 2011). It came into use in the mid-1990s along with the developments in www and interest in asynchronous discussion groups. E-learning encompasses blended learning and online learning. Blended learning is the most prevalent form of e-learning in traditional HE institutions. Online learning is a type of distance education, but has more interactive nature (Garrison, 2011). Online learning integrates asynchronous online communication with interaction that overcomes time and space constraints. With entrench of new methods, much investment, new technology and tools, benefits that offered to the learners and teachers; the interest and demand for online learning has increased.

2.4 Online Learning

Educational adaptation of computer networking is referred in 21th century as online education or online learning (Harasim, 2012). It can be traced to the late 1970s and early 1980s. It was developed by a few educational innovators such as professors in post-secondary education, educators in training sectors etc. technological innovations gave also rise to the development of online learning. All the factors that drive to online learning are depicted in Figure 2.2.

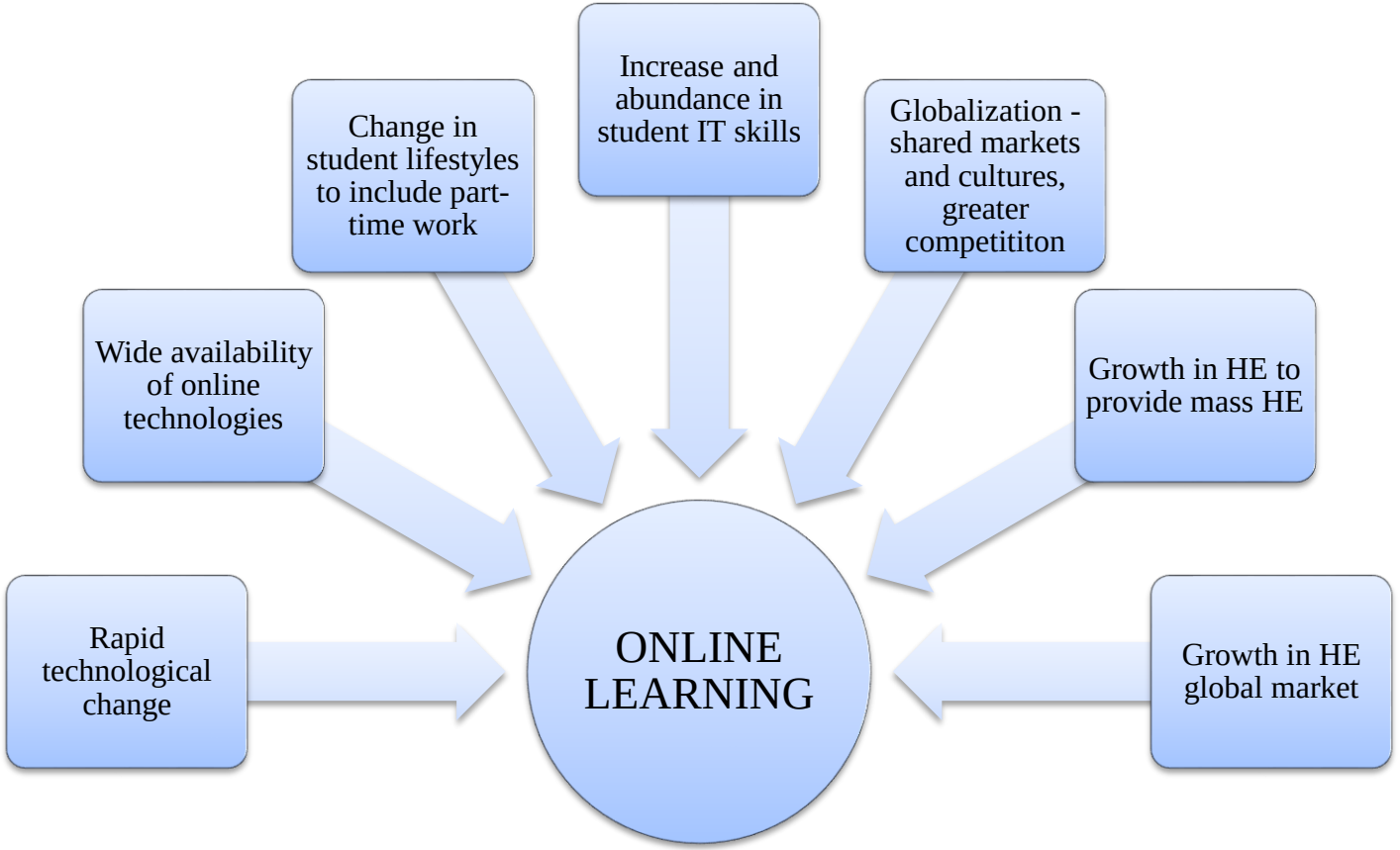

Figure 2.2 Drivers to Online Learning (Bach, Haynes & Lewis Smith, 2006, p.30)

As seen from figure above, rapid technological innovations, wide access to technology, Internet and tools, some changes in students' lifestyle and as a consequence growth in higher education and globalization warranted online learning. However, the nature of online learning is poorly understood and has been saddled with a variety of contradictory definitions in a way that any educational activity using Internet, just e-mail or even simple posting of course materials or students' grades are referred as online learning (Harasim, 2012). Since online learning is not solely about distance learning. The impact of online learning goes much wider (Bach, Haynes & Lewis Smith, 2006). Therefore, identifying the nature of online learning by identifying different and contradictory online learning models encompassed within the term is fundamental. Within this purpose, the underlying theories or models for online learning should be examined. It is presented in continuing parts of the chapter. The evolution of online learning is outlined in Table 2.1.

Table 2.1 Phases in the Development of Online Learning (Bach, Haynes & Lewis Smith, 2006, p.41)

Phase	**Aspects**
Pioneer phase	A few academics invest hugely in experimenting with online learning, but the majority is skeptical.
Community of practice phase	Pioneers begin to cluster ad mutually support each other; best practice is identified and grows.
Standardization phase	University managers recognize the best practice and seek to implement it with all academic staff.

As shown in table above, first some universities in the 1990s allowed their academic staff to take initiative in developing ICT integration to the education and this period is named as pioneer phase (Bach, Haynes & Lewis Smith, 2006). Then, academic staff started to work individually or in small groups, but they found themselves isolated. Next, they began to cluster and mutually support each other to have a best practice. This period is called community of practice phase. And in the final stage, with the increase of online students having good ICT skills, more demands, resources and

content; best practices were succeeded. Also all staff tried to implement the best practices in online learning. This final stage is called the standardization phase by Bach, Haynes and Lewis Smith (2006).

When the nature of online learning is examined, there are many aspects included in online learning (Figure 2.3).

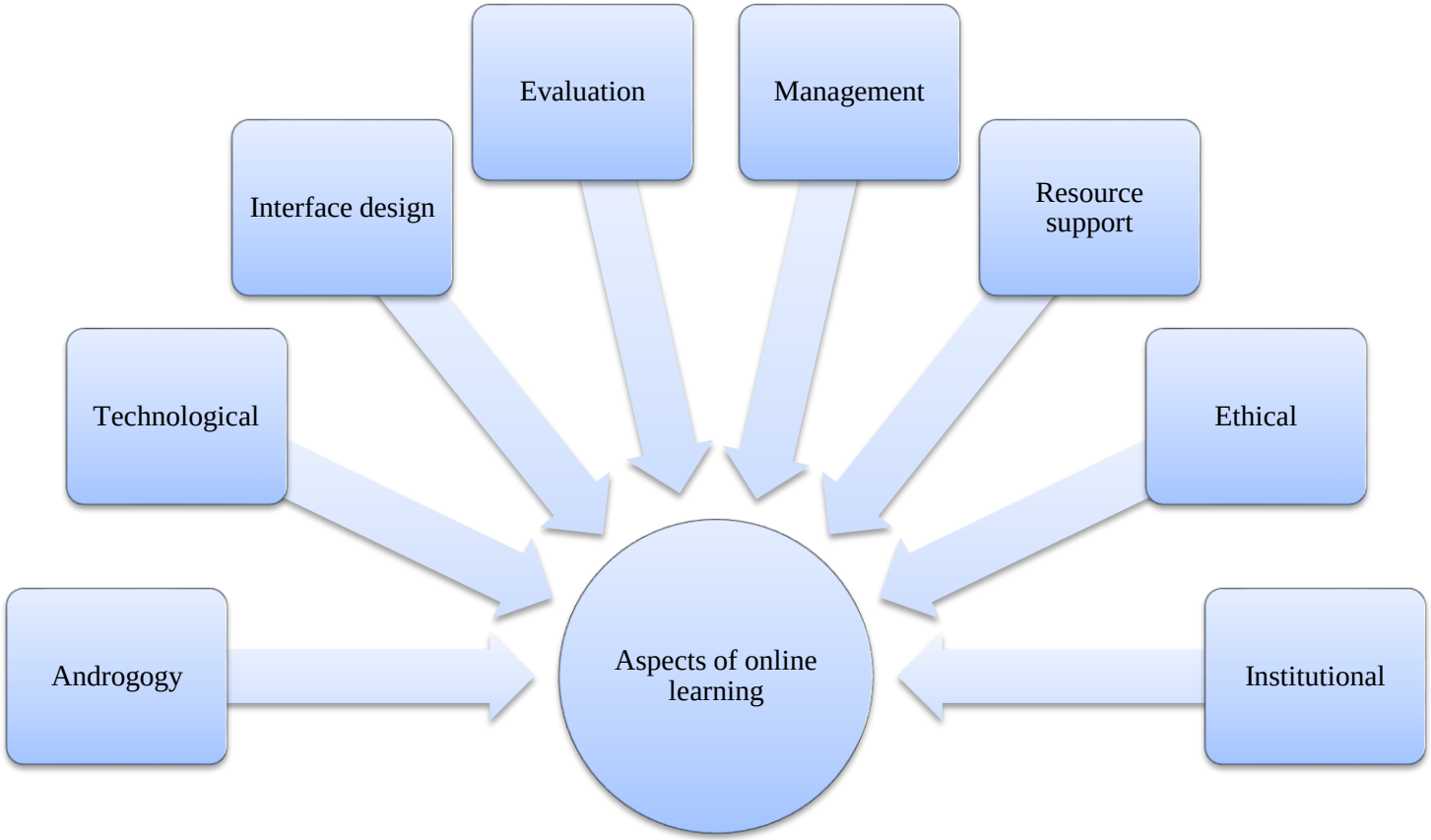

Figure 2.3 Aspects of Online Learning (Bach, Haynes & Lewis Smith, 2006, p.61)

The enrollment in online learning has grown strikingly in a short time due to the benefits offered both to the students and teachers (Gülbahar, 2012). Online learning both produces new and dynamic approaches to the presentation of content, and also offers new ways to interact and share the learning (Bach, Haynes & Lewis Smith, 2006). It provides flexibility and convenience in the sense of time and space (Anderson, 2008; Cole, 2000; Matthews, 1999). Moreover, it enhances the chance to continue education during full-time working. In addition, it allows the teachers to be more purposeful in their teaching and giving more opportunities to the students to interact with the learning materials (Perry & Pilati, 2011). Teachers can focus on individual learning styles and issues (Muir, 2001). It also prevents visual or physical handicaps. It gives a chance to create global classrooms with the access of great variety of people and resources. Furthermore, it can be referred as more democratic than traditional classrooms due to breaking down the barriers such as economic issues, many personality roles like having a child and working in the same time, etc. (Yükseltürk & Bulut, 2009).

As parallel to the phases in the development of online learning, Zawacki-Richter (2009) made classification of research areas in distance education to organize the body of knowledge in all types of distance education and contribute to the researchers classifying main research areas to feed further research. He divided research areas into three groups; namely macro level, meso level and micro level. Macro level includes the access, equity and ethics, globalization of education and cross-cultural aspects, distance teaching systems and institutions, theories and models, and also research methods in distance education and knowledge transfer. Meso level incorporates management and organization, costs and benefits, educational technology, innovation and change, professional development and faculty support, learner support services, and quality assurance. Finally, micro level includes the instructional design, interaction and communication in learning communities, and learner characteristics (Zawacki-Richter, 2009).

Based on the research in the nature of online learning, the most striking point is the requirement of a change in the roles of instructors and students. Learners are required to practice more autonomy, self-motivated and self-control in e-learning (Anderson, 2008; Perry & Pilati, 2011). Teachers should become more facilitator or guide in place of directing instruction. Due to the nature of online learning environment; providing

and sustaining motivation, satisfaction, social interaction, communication, collaboration, and participation causes some difficulties for the instructors and for this reason, instruction should be designed properly (Rosse, 2002). Moore (1989, 1990) was one of the first authors focusing on interaction in the scope of online learning. Other studies also concluded in similarly that interaction appears to be an important factor for the students to build knowledge (Anderson & Garrison, 1997; Barbera, 2006; Harasim, 1993; Haythornthwaite, 2002; Lowenthal, Dunlap, 2014; Pea & Gomez, 1992). The other issue is that collaboration and critical thinking skills in online learning. Some studies concluded with the potential of online discussion with the purpose of cultivating and developing learners' critical thinking skills and collaboration (Aviv, 2000; Hara, Bonk, & Angeli, 2000; Meyer, 2003; Thomas, 2002). At that point, to capitalize the potential of online learning, a qualitative shift in the nature of social interaction and collaboration would be considered. With this purpose, Community of Inquiry Model has been manifested by Garrison, Anderson and Archer (2000).

2.5 Models for Online Learning

Harasim (2012) defines three distinct models for online learning: online collaborative learning (OCL), online distance education (ODE) and online courseware (OC). All three models use Internet and Web for the education; however their methods, pedagogy and technologies are different. OCL puts emphasis on student discourse and collaboration, and a significant instructor role. It is based on peer discourse and puts emphasis on conceptual understanding and knowledge products. ODE is particularly based on traditional correspondence models. It is then replaced cheaper and faster e-mails delivery of course materials and instructor feedback. It follows a correspondence model of course delivery, self-study and individual communication and interaction with the instructor. Then, many institutions shifted from ODE to OCL. Finally OC that is known also online computer-based training depends on individualized learning with courseware-prepackaged content- without instructor or peer interaction and based on cognitive learning theory.

Table 2.2 Three Types of Online Learning (Harasim, 2012, p.89)

Online Collaborative Learning	**Online Distance Education**	**Online Courseware**
Online discourse	Online delivery	Online presentation
Group learning	Individualized learning	Individualized learning
Instructor-led	Tutor support	Computer assessment
Asynchronous	Asynchronous	Asynchronous
Place-independent	Place-independent	Place-independent
Text-based	Text-based	Multimedia
Internet-mediated discourse	Internet-mediated delivery	Internet-mediated presentation

OCL theory provides a model of learning in which students are encouraged to work together to build knowledge and explore new innovative ways by being activated and engaged in learning process. OCL encompasses self-regulation, individualized learning, collaboration, discourse and knowledge building which have gained more importance in this century. For this reason, the theoretical lens of this study is particularly based on OCL. Within this regard and focusing on collaborative constructivism, Garrison Anderson, and Archer developed a framework *Community of Inquiry* for online learning in 2000. It is explained in detail in the following.

2.6 Community of Inquiry

Community is defined by Wenger (1999) as "a way of talking about the social configurations in which the enterprises are defined as worth pursuing and the participation is recognizable as competence" (p.5). Creating a community is so important that it creates the social fabric of learning and learning includes a matter of belonging and intellectual process. A strong community enhances the interactions and relationships based on mutual respect and trust, increment a willingness to share, encourages collaboration, etc. (Wenger, McDermott & Snyder; 2002). Concisely, as the authors declared community is critical to an effective knowledge structure. From that point together with the inquiry and online collaborative learning, Garrison,

Anderson, and Archer in 2000 developed Community of Inquiry (CoI) framework. CoI is a process model of online learning (Swan, Garrison, Richardson, 2009). The name of community of inquiry was borrowed from Lipman (1991) of that work was also based on John Dewey's work of progressive understanding of education. Dewey stated inquiry is a social activity and goes to the essence of an educational experience. It has been emerged in the specific context of computer conferencing in higher education and capitalizes on the ease and abundance of interaction with media like computer conferencing (Rourke, Anderson, Garrison, & Archer, 2007). It is a generic model and conceptually grounded in teaching and learning theories in higher education, specifically collaborative and social-constructivist orientations that are theoretical lens of this study. It has been generated firstly for online discussion platforms, however; with the developments of synchronous and asynchronous technologies, started to be used in online, blended and three dimensional (3D) virtual learning environments (Bulu, 2012; Reisoğlu, 2014). Moreover, with the movement in online learning, a shift from behavioristic to constructivist side (Tolu & Evans, 2012). At that point, CoI has gained importance. Since the framework originated from John Dewey's work and is consistent with constructivist approaches to learning in higher education (Garrison, Anderson, & Archer, 2010). The underpinning of this framework is effective learning occur within a community and the interaction of three core elements to facilitate higher learning. In an educational experience, three core elements of this framework are (Fig. 2.4) – social, teaching and cognitive presence – as well as categories and indicators to define each presence and to guide the coding of transcripts (Table 2.3).

Figure 2.4 Community of Inquiry Framework (Garrison, Anderson, Archer, 2000, p.88)

As shown in Figure 2.4, of three components of CoI framework, the first component in the model is social presence. Garrison, Anderson, & Archer (2000) define social presence as the ability of learners to project themselves socially and emotionally in a community of inquiry. The function of this element is to support the cognitive and affective objectives of learning. The second component is cognitive presence, which defined as "the extent to which the participants in any particular configuration of a community of inquiry are able to construct meaning through sustained communication" (p.89). The third component is teaching presence, which includes designing and managing learning sequences, providing subject matter expertise, and facilitating active learning.

Table 2.3 Community of Inquiry Elements, Categories and Indicators (Garrison & Arbaugh, 2007, p.159)

ELEMENTS	**CATEGORIES**	**INDICATORS** (examples only
Social presence	Open Communication	Risk-free expression
	Group Cohesion	Encourage collaboration
	Affective Expression	Emoticons
Cognitive presence	Triggering Event	Sense of puzzlement
	Exploration	Information exchange
	Integration	Connecting ideas
	Resolution	Apply new ideas
Teaching presence	Design & Organization	Setting curriculum & methods
	Facilitating Discourse	Sharing personal meaning
	Direct Instruction	Focusing discussion

As seen from table above, the categories of social presence are open communication, group cohesion and affective expression. Cognitive presence incorporates triggering event, exploration, integration and resolution. The categories of teaching presence includes design and organization, facilitation discourse and direct instruction. Sample indicators are also also presented in table above. All of them are explained in detail below. Other than these points, the research about community of inquiry framework are summarized.

In terms of earlier studies focusing on the CoI framework, they have focused generally on the functionality of CoI framework, three core elements, their relationship and effects on each other. The most common finding is that three core elements of CoI are interrelated and they effect each other positively (Polat, 2013; Akyol, 2009). However, there are conflicting results to some extent and also remaining parts that are unknown and unidentified in these three presences, especially in cognitive presence, and their relationship and effect on each other.

In terms of overall CoI framework, since it is referred as a developmental model, studies have continued to explore and examine. The model is found as parsimonious in online collaborative learning community in many studies. However, there is a

controversy regarding with the updating and refining the model by adding the fourth construct called as learner presence. Shea, Hayes, Smith, Vickers, Bidjerano, Picket, et al. (2012) in their study questioned whether CoI model explains the effective learning behavior or not and they ended up with a proposal of a new construct, learner presence to reflect self-regulation behaviors to add in the model. However, Garrison and Akyol (2013) argued against this suggestion in that the rationale behind the creating a new construct that do not explicitly recognize the importance of co-regulation or reflect the collaborative nature of an online learning community is really difficult. Since the concept of self-regulation and co-regulation are already inherent in the original conceptualization of CoI framework and at the intersection of three constructs. Moreover, this suggestion violates the fundamental assumptions of the model (Akyol & Garrison, 2013). In the sense of CoI model, learners are not isolated and not totally responsible for their learning. Thus, there is a need for moving beyond self-regulation behaviors in a socially shared online learning community. It can be accomplished via put the emphasis on the dynamic relationship of self and co-regulation of learning concurrently which refers to the metacognition. However, it has not been studied up to date and needs to be investigated in the nature of community of inquiry framework. The authors also proposed to further elaboration of the intersection of three presences in order to have a better understanding of the dynamics of metacognition in CoI model. From this point, the original of CoI model is used in this study since there is still a need for more elaboration of the model and intersection of three constructs. This study is worth of notify discovering the effect of self-regulation, metacognition and motivation as well as other potential factors having both positive and negative effects. In the continuing part, three-presence of CoI framework and related research are presented respectively.

2.6.1 Social Presence

The construct of social presence can be traced back to Mehrabian's (1969) concept of immediacy. He defined immediacy as "those communication behaviors that enhance closeness to and nonverbal interaction with another" (p. 203). He stated that nonverbal cues such as facial expressions, body movements, and eye contact increase the sensory stimulation and in turn cause more intense, affective and immediate interactions. His work was followed up the research about a variety of media including facsimile machines, voice mail, and audio-teleconferencing in organizational settings. As

Mehrabian reported, Short, Williams, and Christie (1976) also postulated that these media were inadequate to transmit nonverbal cues and so would have a negative effect on interpersonal communication. Then, they first introduced and defined the term social presence as "the salience of the other in a mediated communication and the consequent salience of their interpersonal interactions" (p. 65).

Social presence in online learning has been described as the ability of learners to project themselves socially and emotionally (Garrison, & Arbaugh, 2007; Gunawardena & Zittle, 1997; Short, Williams & Christie, 1976). The role of this element is to support the cognitive and affective objectives of learning. It contributes to cognitive objectives through its ability to instigate, sustain, and support critical thinking in a community of learners. It contributes to affective objectives by making the group interactions appealing, engaging, and thus intrinsically rewarding, leading to an increase in academic, social, and institutional integration and resulting in increased persistence and course completion (Tinto, 1987).

There categories of social presence defined by Garrison, Anderson, & Archer (2000) are open communication, group cohesion and affective expression. The indicators of three categories of social presence as provided by Rourke, Anderson, Garrison, and Archer (2001) are as follows:

Category 1: Affective responses

- ✓ Expression of emotions
- ✓ Use of humor
- ✓ Self-disclosure

Category 2: Open communication

- ✓ Continuing a thread
- ✓ Quoting from other's messages
- ✓ Referring explicitly to each other's messages
- ✓ Asking questions
- ✓ Complimenting/expressing appreciation
- ✓ Expressing agreement

Category 3: Cohesive responses

- ✓ Vocatives
- ✓ Referring to group using inclusive pronouns (e.g. we, you, us)
- ✓ Phatics/salutations

Based on the literature, earlier studies contended that in order to establish a community of inquiry, social presence was essential that some form of SP would be developed (Garrison, Anderson, & Archer, 2000). Since social presence has an impact on learning due to the social interaction (Tu & McIsaac, 2002; Richardson & Swan, 2003; Swan &Shih, 2005). Akyol (2009) maintained that social presence is a predictor for the perceptions of cognitive presence. Moreover, SP can be developed in online learning settings with the help of different elements of medium and a better course design. She found also using collaborative activities, more discussion, and final projects and creating a comfortable and easy social climate increment social presence of students. Polat (2013) claimed that that social presence effects cognitive presence indirectly. According to Kozan and Richardson (2014), social presence has significantly related with cognitive presence. Similarly, Rourk, Anderson and Garrison (1999) ended up with a study that SP supports CP through its ability to instigate, sustain, and support critical thinking in a community of online learners. Social presence can be enhanced via encouraging cognitive presence through social interaction. Also, the efforts to facilitate cognitive presence also increment social presence to a certain degree. Overall, the most common results from the earlier studies is that social presence significantly and positively contributed to cognitive presence and therefore, important for the cognitive presence. (Garrison, Cleveland-Innes, Fung, 2010; Ke, 2010; Shea & Bidjerano, 2009). Due to the being central to CoI, it requires more attention to establish and maintain in the nature of online learning communities (Garrison & Arbaugh, 2007). Teaching presence was found significantly correlated with social presence (Arbaugh, 2007; Akyol, 2009; Garrison & Arbaugh, 2007; Garrison & Cleveland-Innes, 2005; Garrison, Cleveland-Innes et al., 2010; Kozan & Richardson, 2014; Rourk, Anderson & Garrison, 1999; Shea & Bidjerano, 2009).

Considering self-regulation, prior studies noted its importance for any of three presences of the CoI. Shea and Bidjerano (2010) declared that self-regulation was an important mediator of the links among three-presence of the CoI framework. Başdoğan

investigated the effect of self-regulation based on its six-factor and concluded with only two sub-factor *goal setting and self-evaluation* having significant association with the SP. The trend in recent work is about learning presence addressing learners' self-regulation. However, the claim was based on the community of inquiry overall, rather than solely any of three-presence. So, the literature is limited in this sense. The other factor, one of the focus of this study is metacognition was only proven its existence and its effect on social presence has not studied up to date. Therefore, this is the first study that reveals the effect of metacognition on social presence as well as the overall CoI and other two presences. Finally, considering motivation, Polat (2013) concluded with no significant relationship whereas Kim (2015) revealed significant relationship between social presence and motivation.

In summary, further research is required to have a complete understanding of social presence and discover the potential ways to enhance it. Moreover, other potential factors are revealed in this study for more elaboration of social presence and a more complete understanding. For this reason, this study collecting both quantitative and quantitative data from a huge sample is paramount to feed the literature discovering the effect metacognition, self-regulation and motivation besides other potential factors effecting social presence both positively and negatively and offering suggestions.

2.6.2 Cognitive Presence

Cognitive presence was defined by Garrison, Anderson, & Archer (2001) as the extent to which the participants in any particular configuration of a community of inquiry are able to construct meaning through sustained communication, reflection and discourse. It is simply a reflection of a collaborative educational experience. Dewey believed that "inquiry was a social activity and went to the essence of an educational experience" (as cited in Garrison, Anderson, Archer; 2010, p.6). From this point of view, the perspective of cognitive presence in CoI framework was derived particularly from Dewey's work on reflective thought.

This construct is, though defined in CoI framework, grounded particularly in critical-thinking and functionalized on a parsimonious model named as practical inquiry model in which four-phases of inquiry are operationalized by Garrison, Anderson and Archer (2000). Practical inquiry encompasses by the deliberation–action and perception–conception dimensions at structural level. That means it is "the iterative process of

reflection and discourse and analysis (insight) and synthesis (understanding) as learners work their way through the phases of inquiry" (Akyol & Garrison, 2011a, p.186).

Practical inquiry model (Figure 2.5) resulted in a four-phase process, namely; triggering event, exploration, integration and resolution *(*Garrison, Anderson, and Archer; 2000). The first process is a triggering event, where some issue or problem is identified for further inquiry. In the second process exploration, students explore the issue both individually and corporately through critical reflection and discourse. The third process integration refers to the construction of the meaning from the ideas developed during the exploration phase. Garrison et al. (2001) also proposed that the integration phase typically requires enhanced teaching presence to probe and diagnose ideas so that learners will move to higher level thinking in developing their ideas. The fourth process is the resolution in which phase students apply the newly gained knowledge to the educational contexts or workplace settings (Garrison & Arbaugh, 2007). With this inquiry process, learners construct meaning from a collaborative educational experience (Akyol & Garrison, 2011a). In order to achieve this, they should be aware cognitivitely and understand inquiry process.

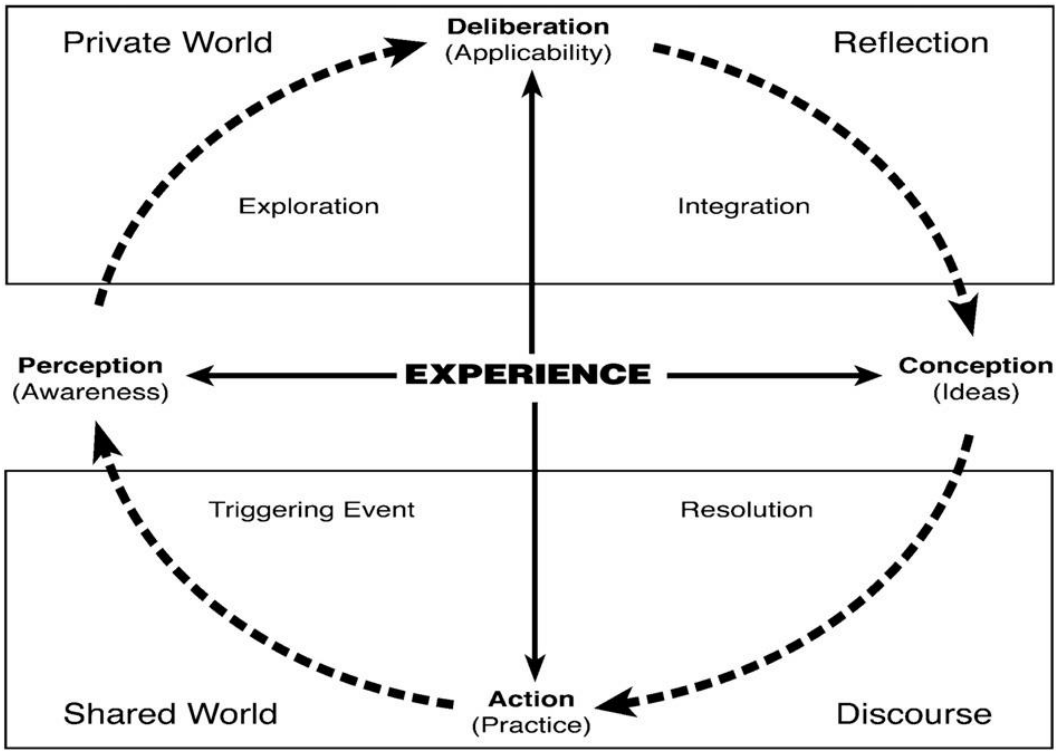

Figure 2.5 Practical Inquiry Model (Garrison, Anderson, and Archer; 2000, p.89)

The descriptors-four phases- and indicators of cognitive presence, as provided in Garrison, Anderson, and Archer (2000) are given in Table 2.4.

Table 2.4 Descriptors and Indicators of Cognitive Presence *(*Garrison, Anderson, and Archer; 2000, p.89)

Phase	**Descriptor**	**Indicator**
Triggering Event	Evocative (inductive)	Recognize problem
		Puzzle statement
Exploration	Inquisitive (divergent)	Divergence
		Information exchange
		Suggestions
		Brainstorming
		Intuitive leaps
Integration	Tentative (convergent)	Convergence
		Synthesis
		Solutions
Resolution	Committed (deductive)	Apply
		Test
		Defend

Table 2.4 presents the descriptors and indicators of four-category of cognitive presence. Triggering event is as the starting phase and includes the recognizing the problem, sense of puzzlement and environment facilitating curiosity, motivation and problem-based approach. The second exploration is inquisitive and includes the exploration of relevant information about the problem, information exchange, collaborative exploration of content, brainstorming, suggestions for consideration, and leaps to a conclusion. The third integration is tentative and includes the convergence among community members, connecting ideas and synthesis, and sustained critical reflection. The last category of cognitive presence is resolution including applying and testing knowledge, vicarious applications of knowledge in real-life problems, and defending solutions.

In summary, cognitive presence includes four categories namely, triggering event, exploration, integration, and resolutions. It is referred by Garrison, Anderson and

Archer (2010) as clearly a developmental model consistent with the CoI framework that defines the dynamics of a worthwhile educational experience and for this reason, still requires more research and elaboration. In order to reveal this requirement, examining earlier research would be better.

Considering the earlier studies about the cognitive presence, the most remarkable point of those studies is that cognitive presence is likely the most challenging to study as Akyol (2009) stated and develop in online courses among three components of CoI framework, since it is like a form of a cycle of practical inquiry in which learners move deliberately from understanding the problem or issue through to exploration, integration and application (Garrison & Arbaugh, 2007) and students had great difficulty arriving at resolution phase (Garrison et al., 2001; McKlin, Harmon, Evans, & Jones, 2002; Vaughan & Garrison, 2005). In this issue, Meyer (2003) suggested instructors should be more directive in the assignments since integration and resolution require much more time for reflection. Another study conducted by Celentin (2007) contended that the reason why learners could not reach to the resolution phase is due to the instructors' role particularly. This result is also discovered in other studies (Garrison et al., 2001; Luebeck & Bice, 2005). The other reason claimed by Archibald (2010) is that many of the discussion postings demonstrated exploration and integration; however few were considered to be at the level of resolution. The author also suggested that students can reach to resolution dealing with a project, paper or may be a research proposal. Moreover he/she concluded that time is crucial to reach resolution since it requires both the development of critical thinking and application of an idea or a solution. Archer (2010) also stated term papers can be beneficial to achieve higher levels. Furthermore, the other issue, prior online learning experience as an explanatory variable on cognitive presence is still conflicting among the researchers and suggested to elaboration in further research.

With regard to elements of community of inquiry framework, earlier studied contended that social presence had a positive and direct effect on cognitive presence and learning (Akyol, 2009; Kozan & Richardson, 2014; Richardson & Swan, 2003; Rourk, Anderson, Garrison, 1999; Lee, 2014; Swan & Shih, 2005; Tu & McIsaac, 2002; Wanstreet & Stein, 201). However, Polat found the opposite result claiming its effect was indirect (2013). Teaching presence, is similarly found with its significant positive effect on CP (Archibald, 2000; Garrison & Cleveland-Innes, 2005; Garrison,

Cleveland-Innes, et al. 2010; Shea & Bidjerano, 2009). Overall, social presence together with teaching presence have contributed significantly and positively to the cognitive presence and thus, important to cognitive presence (Garrison & Arbaugh, 2007; Garrison & Cleveland-Innes, 2005). However, the maximum account of social presence and teaching presence to the cognitive presence, from the earlier studies was 69% (Archibald, 2010; Shea & Bidjerano, 2009) and hence, there is still a need for further research focusing on cognitive presence (Akyol, 2009). Taking into account that CP is called by Garrison, Anderson and Archer (2010) as clearly a developmental model consistent with the CoI framework that defines the dynamics of a valuable educational experience.

Self-regulation was cited as providing important links among three-presence by Shea and Bidjerano (2010). In further elaboration, they concluded with a new dimension named learning presence which includes learners' self-regulation behaviors and strategies (Shea, Hayes, Smith, Vickers, Bidjerano, Gozza-Cohen, Jian, Pickett, Wilde & Tseng; 2013) which brings new debates to the field. In terms of the effect of self-regulation on cognitive presence, Başdoğan (2015) contended although two sub-constructs of self-regulation specifically environment structuring and goal setting were correlated with the CP and explained 30% of total variability; as a composite score, it was not a significant predictor. Metacognition was only studied by Garrison and Akyol (2013) in this sense, but their study was the first attempt. They proved the existence of metacognition at the intersection of teaching and cognitive presence and developed metacognition questionnaire for an easier measurement. Therefore, its existence and effect should be studied. On the other side, in terms of motivation, two studies were conducted, but they found opposite findings. The first study conducted by Polat (2013) found no significant effect whilst Kim (2015) found vice versa. Therefore, the effect of motivation on cognitive presence should be clearly revealed.

Taken together, further research is required to have a complete understanding of cognitive presence and discover the potential ways to improve it. Moreover, other potential factors are revealed in this study for more elaboration of cognitive presence and to close a more complete understanding. For this reason, this mixed-method study is paramount to feed the literature discovering the effect metacognition, self-regulation and motivation with a huge sample as well as other potential factors effecting cognitive presence both positively and negatively and offering suggestions.

2.6.3 Teaching Presence

The third component in the CoI framework is teaching presence. It is defined as designing and managing of learning sequence, facilitation of active learning, providing subject matter expertise and direction of cognitive and social processes to realize the learning outcomes as individually meaningful and educationally worthwhile (Garrison, & Arbaugh, 2007; Garrison, Anderson, & Archer; 2000).

Anderson, Rourke, Garrison, and Archer (2001) conceptualized teaching presence in three category; namely, instructional design and organization, facilitating discourse (originally called "building understanding") and direct instruction and also defines their indicators that is used in measurement of these categories. Three categories and their indicators of teaching presence provided by Anderson et al. (2001) as follows:

Category 1: Instructional Design and organization

- ✓ Setting curriculum
- ✓ Designing methods
- ✓ Establishing time parameters
- ✓ Utilizing medium effectively
- ✓ Establishing the netiquette

Category 2: Facilitating discourse

- ✓ Identifying areas of agreement/disagreement
- ✓ Seeking to reach consensus/understanding
- ✓ Encouraging, acknowledging, or reinforcing student contributions.
- ✓ Setting climate for learning
- ✓ Drawing in participants, prompting discussions
- ✓ Assess the efficacy of the process

Category 3: Direct Instruction

- ✓ Present content/questions
- ✓ Focus the discussion on specific issues
- ✓ Summarize the discussions
- ✓ Confirm understanding through assessment and explanatory feedback
- ✓ Diagnose misconceptions

- ✓ Inject knowledge from diverse sources, e.g., textbook, articles, internet, personal experiences
- ✓ Responding to technical concerns

Research findings made a consensus about teaching presence that it is the most conceptualized among three constructs of CoI. TP is the foundation of creating an online community of inquiry. It functions as a mediating and regulatory among three core elements of CoI (Akyol, 2009) and so of great importance (Kozan & Richardson, 2014). It is paramount to support social presence, which in turn fosters cognitive presence (Archibald, 2010; Garrison, Cleveland-Innes, Fung, 2010; Shea & Bidjerano, 2009). Also, it must be available, either from the facilitator or the other students, to transition from social to cognitive presence (Garrison & Cleveland-Inness, 2005; Tran, 2011). In addition, it is a significant predictor for the sense of community and learning outcomes (Garrison & Arbaugh, 2007). Archibald (2011) found that strong and statistically significant contributions of teaching presence to explaining cognitive presence. There are similar results in many studies (Garrison & Cleveland-Innes, 2005; Garrison, Cleveland-Innes, et al., 2010; Shea & Bidjerano, 2009). Based on the earlier studies, teaching presence is the highly known element of CoI framework. However, how it can be improved, the effect of metacognition and motivation are not known up to date. Therefore, this study is paramount in this sense to feed the literature discovering the effect metacognition and motivation on a huge sample as well as other potential factors effecting teaching presence both positively and negatively and offering suggestions.

2.7 Self-regulation

In addition to collaborative and social-constructivist orientations, the theoretical lens of this study is also oriented toward self-regulated learning of Zimmerman and Schunk. English & English (1998) define self-regulation as lexical meaning is the control of one's efforts based on motives about his/her specified and subsequent goal or ideal. They also called SRL as self-control or self-discipline. In the sense of learning science, Zimmerman (2000) defines self-regulation as the composition of "self-generated thoughts, feelings and actions that are planned and cyclically adapted to the attainment of personal goals" (p.14). In general, educational and developmental psychologies define it as various ways to monitor, control and regulate the learning (Schunk & Zimmerman, 1994; Zimmerman, 1986; Zimmerman & Schunk, 1989).

Therefore, self-regulation exists as an on-going activity and a process (Pintrich, Wolters, Baxter; 2000). As parallel with this study focusing on cognitive dimension, it is the interaction of personal, behavioral and environmental triadic processes from the viewpoint of social cognitive theory (Bandura, 1986).

Self-regulated learners are defined by Zimmerman, (1989) as "metacognitively, motivationally, and behaviorally active participants in their own learning process" (p. 329). They direct their own efforts and learning to acquire knowledge and skills without depending on any member of instruction. In this context, self-regulated learning is described by Pintrich (2000) as an active, constructive process in which students set goals for their learning based on past experiences and contextual features of the current environment. Learners monitor, regulate, and control their cognition, motivation, and behavior as Rakes and Dunn stated (2010) and guided and constrained by their own goals.

The cyclical structure of self-regulation, as depicted in Figure 2.6 encompasses three cyclical stages; namely, forethought (before), performance or volitional control (during), and self-reflection (after) phases (Zimmerman, 2000).

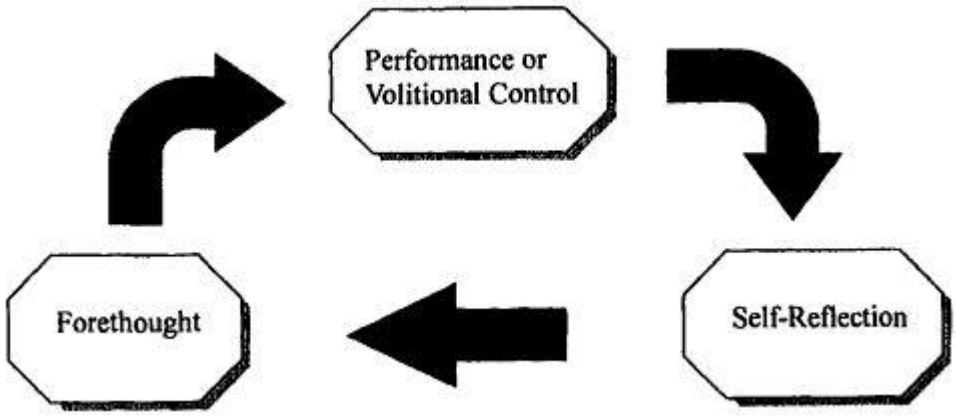

Figure 2.6 Cyclical Phases of Self-regulation (Self-regulated Learning: from Teaching to Self-reflective Practice. (p.3), by D.H. Schunk and B. J. Zimmerman (Eds.), 1998, New York: Guilford. Copyright 1998 by Guilford Press. Reprinted with permission. In Schunk & Zimmerman, B. J. (2000). A Social Cognitive Perspective. Handbook of self-regulation, 13, p.16)

Forethought phase includes task analysis and self-motivational beliefs. Performance or volitional control includes self-control and self-observation. Lastly, self-reflection

includes self-judgement and self-reaction. The details about cyclical self-regulatory phases and sub-process, as defined by Zimmerman (2000) are presented in Table 2.5.

Table 2.5 Phase Structure and Sub-processes of Self-regulation (Zimmerman, 2000, p.16)

Cyclical Self-regulatory Phases		
Forethought	**Performance/volitional control**	**Self-reflection**
Task analysis ✓ Goal setting ✓ Strategic planning	Self-control ✓ Self-instruction ✓ Imagery ✓ Attention focusing ✓ Task strategies	Self-judgment ✓ Self-evaluation ✓ Causal attribution
Self-motivational beliefs ✓ Self-efficacy ✓ Outcome expectations ✓ Intrinsic interest/value ✓ Goal orientation	Self-observation ✓ Self-recording ✓ Self-experimentation	Self-reaction ✓ Self-satisfaction/affect ✓ Adaptive-defensive

As can be seen in Table 2.5, forethought phase includes two main sub-process, namely, task analysis including goal setting and strategic planning and self-motivational beliefs including self-efficacy, outcome expectations, intrinsic interest or value and goal orientation (Sandars & Cleary, 2011; Zimmerman, 2000). This stage is like a preparatory phase and as Zimmerman argued (2000), underscores the proactive essence of self-regulatory skills. Moreover, they provide the impetus to put forth the necessary effort for the learners to engage in the self-regulation process (Sandars & Cleary, 2011). Performance or volitional control encompasses two sub-process; the first is self-control including self-instruction, imagery, attention focusing and task strategies and the second is self-observation including self-recording and self-experimentation. Finally, self-reflection contains two sub-process again, the first is self-judgement including self-evaluation and causal attribution whilst the second is self-reaction including self-satisfaction or affect and adaptive-defensive tasks. In this

stage, learners self-evaluate whether they have attained their goals and try to identify main factors providing succeed or causing or struggle.

Based on different statements about self-regulation from earlier studies, the most remarkable point that has been agreed by the majority is learner's use of various cognitive and metacognitive strategies to control and regulate their learning (Pintrich, 1999). Self-regulation is a critical factor to be successful (Shea, Hayes, Smith, et al., 2013) and to accomplish the desired goals since the nature of online learning environment is characterized by autonomy and real instructors are absent (Artino & Stephens, 2009; Barnard, Lan, To, Paton, & Lai, 2009; Dabbagh & Kitsantas, 2004, Schunk & Zimmerman, 1998). Regarding with community of inquiry framework, from the earlier studies, some researched focused on the investigation of self-regulation. Shea and Bidjerano (2010) suggested that SRL represents an important mediator of the links between TP, SP and CP. In a more recent study conducted by Shea and her colleagues (2013) they proposed to add the fourth construct named as learning presence (LP) to the CoI framework referring to SRL of online learners in an educational experience. However, recent studies continue to use the original framework because the new propose by Shea and her colleagues requires more proof.

Another study conducted by Başdoğan (2015) focused on the CoI framework as a predictor of self-regulated learning in an online certificate program. She investigated SRL with its six subscales and found positive significant relationship between subscales of SRL and three presences of CoI, except one subscale of SRL *environment structuring*. She also found that only the skills of goal setting and task strategies of learners explain 33% variance of their CoI composite score. About teaching presence, she found 16% of variance in teaching presence is associated with the goal setting. 28% of the variance in their perceived social presence is explained by the combination of goal setting and self-evaluation while 30% of the variance in cognitive presence is associated with the combination of goal setting and environment structuring. Since she examined subscales of SRL, it should be also studied as a composite score.

Overall, based on these statement and conflict, it can be inferred that SRL still requires elaboration in the sense of CoI framework due to being necessary and important variable for online learning (Chmiliar, 2011; Pintrich, 1999). Moreover, the debate still continues and more proof is required about whether the fourth construct called learning

presence addressing learners' self-regulation behaviors is added to the CoI framework or not. Furthermore and in essence, the effect of self-regulation should be investigated on a huge sample from diverse background and perspectives for better understanding and further elaboration. This study is promising to make contribution to the literature and to have a better understanding besides learn about the ways of enhancing students' perceptions of overall CoI and its three-presence.

2.8 Metacognition

Metacognition is defined as "one's knowledge or beliefs about three main factors including own nature or the nature of another as a cognitive processor; a task, its demands, and how those demands can be met under varying conditions; and strategies for accomplishing the task" (Hacker, Dunlosky, Graesser, 1998, p.5). In essence, defining metacognition is like a "fuzzy concept" because of its nature (Flavell, 1981, p.37). However, it is basically a notion of thinking about one's own thought or simply "thinking about thinking, cognition of cognition" (Flavell, 1979, p.906). Thinking can of "what one know"s, "what one is currently doing", and "what one's current cognitive or affective state is" (Hacker, Dunlosky, Graesser; 1998, p.3). Flavell's work on metacognition has introduced to many researchers by Jean Piaget that used Developmental Psychology focusing on child and adolescent cognitive development. The underlying constructs in metacognition including deliberate, planful, and goal-directed thinking to one's thought to accomplish cognitive task has been included in detail in the conceptualization of formal operations of Piaget. Formal operations addresses higher order thinking skills operationalized on lower order ones. After some work, Flavell acknowledged the wide interest and promised of new area of cognitive developmental inquiry which added significant contributions to the information-processing paradigm. Then, Flavell produced his model of metacognition and cognitive monitoring which addresses one's ability to control various cognitive enterprises occur through the actions and interactions among metacognitive knowledge, metacognitive experiences, goals or tasks, and actions or strategies (Flavell, 1979; Hacker, Dunlosky, Graesser, 1998). His work on metacognition has been fed by Ryle (1949), Kluwe (1982), Brown (1978), Paris and Winograd (1990) and some other researchers.

Within an online and/or virtual learning environments, a major challenge that faced by the educators is the creation of a critical community of inquiry. Such a community

requires experience and knowledge through critical analysis, questioning, challenging and being reflective (Dewey 1993; Lipman 1991). At this point, CoI framework is an extremely valuable for higher-order learning, reflective discourse and critical thinking skills. Critical thinking is defined by Ennis (1985) as a reflective and reasonable thinking focused on deciding what to believe or do and includes creativity, problem solving, intuition and insight (Garrison, Anderson, Archer, 2001). Moreover, as the authors maintained that it encompasses both a process- the acquisition of deep and meaningful understanding, content-specific critical inquiry abilities, skills, and dispositions- and outcome- educational activities including complex and (only indirectly) accessible cognitive process. Therefore, enhancing critical thinking skills of students leads to difficulties for the educators, especially in online learning settings. CoI framework and then practical inquiry model initiate at this point since CoI grounded in critical-thinking and then functionalized on this parsimonious model (Garrison, Anderson & Archer, 2000). Consequently, they are promising more at enhancing critical thinking skills.

Critical thinking and inquiry is attributed on the awareness and ability for learners to take responsibility and control to construct meaning and confirm knowledge. This awareness and ability has labeled as metacognition by the developers of CoI framework (Akyol & Garrrison, 2011a). It's time to disseminate its educational potential, especially for the online learning settings.

Metacognition is found at the intersection of the cognitive and teaching presence elements as the authors claimed (Garrison, Akyol, 2013). Although there are some claims like that metacognition or self-regulation are not included in the model itself, they proposed metacognition can be found by moving beyond self-regulation and co-regulation that are already inherent in the structure of model (Garrison, Akyol, 2013). They enhanced the categories of metacognition and developed a survey to examine the metacognition better in e-learning community. Before this, they elaborate the metacognition construct in the CoI framework dividing into three-categories with benefitting transcripts codes generated in online discussion postings (Table 2.6).

Table 2.6 Metacognition Construct in the Community of Inquiry (Akyol & Garrison, 2011a, p.185)

Metacognition in a Community of Inquiry		
Knowledge of Cognition (KC) (Entering Knowledge /Motivation)	**Monitoring of Cognition (MC)** (Assessment /Task Knowledge)	**Regulation of Cognition (RC)** (Planning /Strategies)
Pre-Task Reflection - Knowledge of the inquiry process - Knowledge of critical thinking and problem solving - Knowledge of factors that influence inquiry and thinking - Knowledge of self as a learner - Entering motivational state - Knowledge of discipline - Knowledge of previous experiences - Expectancy of success	*Reflection on Action* - Declarative; judging - Commenting on task, problem or discussion thread - Asking questions for confirmation of understanding - Commenting about self's and others' understanding - Making judgments about validity of content - Commenting on or making judgments about the strategy applied - Asking questions about progression or stalling - Expressing emotions during learning - Assessing motivational state and effort required	*Reflection in Action* - Procedural; planning - Setting goals - Applying strategies ▪ Providing/asking for support ▪ Challenging self or others ▪ Asking questions to deepen thinking ▪ Asking for clarification ▪ Request information ▪ Self-questioning - Questioning progression, success - Taking control of motivation and effort - Facilitating/directing inquiry

Three dimensions of metacognition, as seen in Table 2.6, knowledge of cognition, monitoring of cognition, and regulation of cognition. Akyol and Garrison (2013) defined three dimensions of metacognition as follows:

> "1) knowledge of cognition (KC) as an entering metacognitive state that reflects knowledge and motivation associated with the inquiry process;
>
> 2) monitoring of cognition (MC) as reflection on action and associated with assessing the learning process (this includes assessing progression and effort with regard to goals and expectations); and
>
> 3) regulation of cognition (RC) as the enactment and control of the learning process (reflection in action) which requires employment of strategies to achieve meaningful learning outcomes" (pp.85-86).

Knowledge of cognition (KC) simply refers to awareness of self as a learner in a broad sense including entering knowledge and motivation associated with the inquiry process, academic discipline, and expectancies (Akyol & Garrrison, 2011a). Monitoring of cognition (MC) addresses the awareness and willingness to reflect upon the learning process. Assessment of task, understanding progression and effort are required facilitated by knowledge of practical inquiry. Finally, the third dimension regulation of cognition (RC) is on the action of the learning experience addressing to the enactment and control of the learning process through the employment of strategies to achieve meaningful learning outcomes.

The research on metacognition in the sense of community of inquiry has been started more recently. Akyol and Garrrison (2011a) in their study declared that critical thinking and inquiry is attributed on the awareness and ability for the learners to take responsibility and control in order to construct meaning and confirm knowledge which is called metacognition existing at the intersection of the cognitive and teaching presence elements. However, there are some opponents of this idea and they argue with the absence of metacognition or self-regulation in the model itself. However, Garrison as a pioneer of the model, and together with Akyol (2013) advocated to CoI model in that metacognition can be found by moving beyond self-regulation and co-regulation that are already inherent in the structure of model. They elaborated the categories of metacognition and developed a questionnaire to examine the metacognition better in e-learning community after concentrating on the intersection

of CP ant TP. Except the questionnaire, Snyder and Dringus (2014) focused on exploration of metacognition in asynchronous student-led discussions based on the categories Akyol and Garrison (2009) defined. They concluded with the result that metacognition survey was useful to explore and examine deep instances of metacognition. However, they did not use metacognition questionnaire and conducted purely a qualitative research. They also suggested more elaboration on metacognition similar with Akyol and Garrison (2011a) suggesting to focus more on the intersection of three presences to comprehend the dynamics of metacognition in CoI model. This study, within a huge sample, uses metacognition questionnaire after translating into Turkish as the first time and providing reliability and validity throughout this study. In this way, both the literature is fed with translation of metacognition questionnaire and the results of the study related with metacognition in the nature of community of inquiry framework.

2.9 Motivation

The historical perspectives of motivation based on drive theory which is the earliest theoretical approach, followed by conditioning theory, cognitive consistency theory, and humanistic theory.

Drive theory originated from psychological needs. Drives, as defined by Woodworth (1918) is the internal forces that sought to maintain homeostatic body balance by responsing to the obtained elements. It was started first with the laboratory experiements on the naimals (Richter, 1927; Woodworth, Schlosberg, 1954). After this work, Hull (1943) broadened the dirve concept by postulating that psychological deficits were pimary needs that intigated drives to reduce the needs. Drive is the inculison of motivationeal force that energized and prompted peple and animals into the actions. Hull (1943) defines motivation as the initaiton of learned, or habitual, patterns of movement or behavior (p.226). He further stated that learning occurs when ones adapt themselved to the environment to survive.

The second perspective is the conditioning theory which explains motivation in terms of responses elicited by stimuli (classical conditioning of Pavlov's legacy to learning theory) or emitted in the presence of stimuli (operant conditioning of Skinner's work). Since condititoning theory offer an incomplete account of human motivation, the work on motivation has been continued.

The third perspective is the cognitive consistency theory which assumes that motivation is caused by the interactions of cognitions and behaviors. It includes two perspectives inside it, namely balance theory of Heider (1964) and dissonance theory of Festinger (1957) for more elaboration and meet with the deficiencies in earlier perspectives.

The last perspective is the humanistic theory which emphasizes cognitive and affective processes based on largely consructivist orientation. The pinooer of humanistic theory is Abraham Maslow put the emphasis on developing one's full potential and Carl Rogers emphasizing learning and instruction focusing on personal groth, autonomy, and freedom from control by external forces.

In addition to aforementioned perspectives on motivation, social-cognitive theorist also made valuable contribution to the motivation. They directed attention to the relation between motivation and learning (Bandura, 1986; Pajares, Miller, 1994; Pjares, Schunk, 2001, 2002; Pintrich, 2000a, 2000b, 2003; Schunk, 1995; Schunk & Zimmerman, 2006). In social-cognitive theory, goals and expectations are important lerning mechanisms and motivation is a goal-directed bahvior instigated and sustained by people's expectations concerning the anticipated outcomes of their actions and self-efficacy to perform those actions (Bandura, 1986).

Motivation is further defined by Bandura (1991) as a general construct including the entire directive and activating functions that move one to an action. Generally, it is viewed as a process through which individuals instigate and sustain goal-directed activity and their needs and desires are set in motion (Pintrich, Marx, Boyle, 1993; Rakes, Dunn, 2010).

Probably the mostremarkable model of motivation belongs to the Keller. Keller's model of motivation ARCS in which A stands for attention, R stands for Relevance, S for satisfaction and C for confidence has been developed in response to a desire to find more effective ways of understanding the major influences on the motivation to learn (Keller, 1987). It is designed also for systematic ways to identify and solve problems about motivation in learning process. In addition to four conceptual categories that characterize hıman motivation, it also provides a set of guidelines and strategies to improve the motivational appeal of instruction. Moreover, it includes a systematic design process called as motivation design (Keller, 1987; Keller, Suzuki, 1988).

Keller's ARCS Model is the most promising theoritecal approach in earlier studies in the nature on online learning settings (Bae, Lim, & Lee, 2005; Jones, Issroff, Scanlon, Clough, & McAndrew, 2006; Shih & Mills, 2007).

With the increment in online enrollments, scholarly interest in motivation has also increased (Dabbagh & Kitsantas, 2004; Green & Azevedo, 2007). It has been investigated in depth in the nature of online learning environments. However its effect on CoI framework or on three constructs has not been studied to date except two studies. The first study conducted by Polat (2013) with 165 students concluded that there is no significant relation among motivation and perceived scores of online students on three presences. However, this surprising result can be caused by course design, context, research design, etc. the second study was conducted by Kim in 2015. He did not investigate the effect of motivation on the CoI overall. He examined the effect of motivation only on three-presence of the CoI separately and concluded with positive significant correlation of the motivation with each three-presence. therefore, there is no consensus among two studies and it is clear that only these two studies is not enough to have a better understanding of motivation's effect on the CoI framework and its three-presence. From this point, it is important to study to the effect of motivation on the CoI framework and its three presences separately. Hence, further research should be required. At this point, this study is worth of notice because of investigating the effect of motivation both on the community of inquiry framework and its three-presence on a huge sample together with some other constructs.

2.10 Recommended Versions of Community of Inquiry Framework

The research about the Community of Inquiry (CoI) framework has been tramendously increased and in turns some controversies has been emerged at the same time. One of the most remarkable point more recently is the absence of learner presence addressing learners' self-regulated behaviors and skills during learning process. Related with this issue, Shea and Bidjerano (2010) in their study proposed a new version of CoI framework with adding learner presence after examining the association between learner self-efficacy and their ratings of the quality of their learning in virtual learning environments with a huge sample including 3165 students in online and blended learning environments. They concluded with a strong positive correlation among three-presence of the CoI framework and self-efficacy and further suggested that self-

efficacy is just one component of self-regulation which they called as learning presence. Their proposed version of CoI framework is given in Figure 2.7.

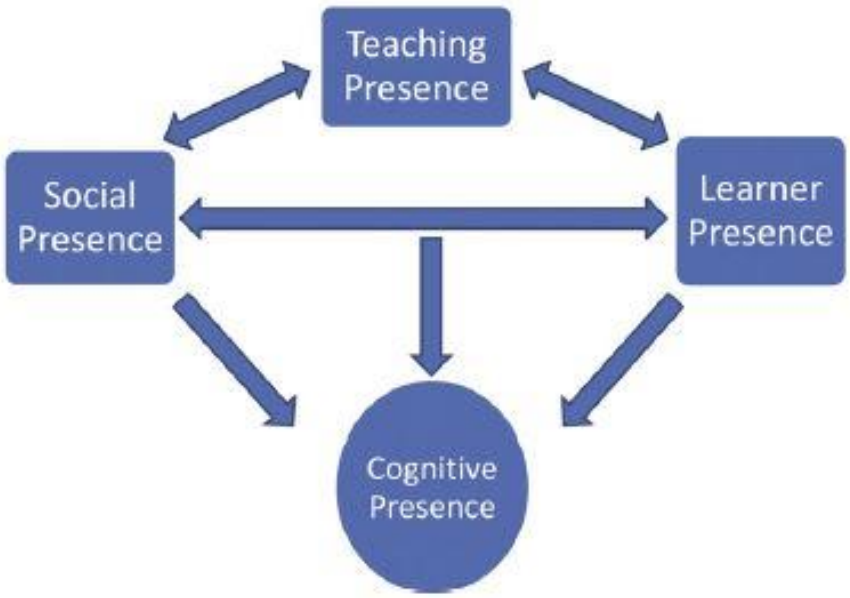

Figure 2.7 Revised Community of Inquiry Model Including Learner Presence

Their revised model includes four-presence as seen in Figure 2.7. Their explanation for the original elements in the model *SP, CP,* and *TP* remains the same and the new construct named as learner presence as the inclusion of self-efficacy as well as other cognitive, behavioral, and motivational constructs supportive of online learner self-regulation. In the earlier studies, some opponents of this idea claimed that the learner dimension is lack in the model and should be added to the original model. However, the whole of CoI framework explains an educational experience of online learners and three-presence already reflects a measure of their learning addressing their social abilities, cognitive abilities and behaviors and their perceptions about the course management, design and organization and the course by the course instructor. So, the learner dimension in the model is not absent, rather it is inherent and covered as a whole (Garrison, Akyol; 2013). The model is completely about the learners' skills and behaviors indicating their social and cognitive abilities during learning process. The missing part, as the authors of new proposed version of CoI framework claimed is the learners' self-regulation which plays an important role especially in online learning environments. The authors highly recommended to add learner presence which reflects the self-regulation of online learners. Considering the nature of online learning environments which is characterized by the absence of real instructor in the learning

environment, self-regulation could be essential for the learners in terms of quality of learning process, learning environment and outcomes. Their argument could have a strong rationale since self-regulation is highly valued by the educators and crucial factor for all learners without depending on any type of elarning environment. All recommended versions of CoI framework are discussed in the discussion and conclusion chapter in accordance with the findings of this study.

They have continued to study based on their initial argument and focused on their proposed version in a later study (2014). They reconceptualized their proposed version of CoI framework addressing the gap of the self- and co-regulatory processes again and concluded with a tentative representation of the CoI framework by reflecting the unique contributions of students and instructors embedding the social dimension as part of each presence as in Figure 2.8.

*Figure 2.*8 Tentative Reconceptualization of the CoI Framework

They conceptualized the CoI framework in three elements including Social-Learning Presence (SLP), Social-Teaching Presence (STP) and Socio-Cognitive Presence (SCP). They explained SLP as the inclusion of the attitudes, abilities, and behaviors of students in order to self- and co-regulate their learning while STP as the roles specific to online instructors, each with a shared emphasis on the social dimension of teaching and learning. They defined SCP as the knowledge construction but not implies simply cognitive but also a socio-cognitive process.

The second proposed model, on the other hand may not be valid for all the times since the learning or knowledge construction is not compulsorily be a social process or action at all the time. All of the proposed versions of CoI framework are discussed in the discussion and conclusion chapter in accordance with the findings of this study.

The third recommended version of the CoI framework belongs to Cleveland-Innes and Campbell (2012). They focused on the emotions in the online learning environment beyond the influence found in social presence. They concluded with the addition of a new construct named emotional experience both in the combination with social presence and also clusters together as a unique presence. They removed the personal-affective category in social presence and produced a new presence extending it (Figure 2.9).

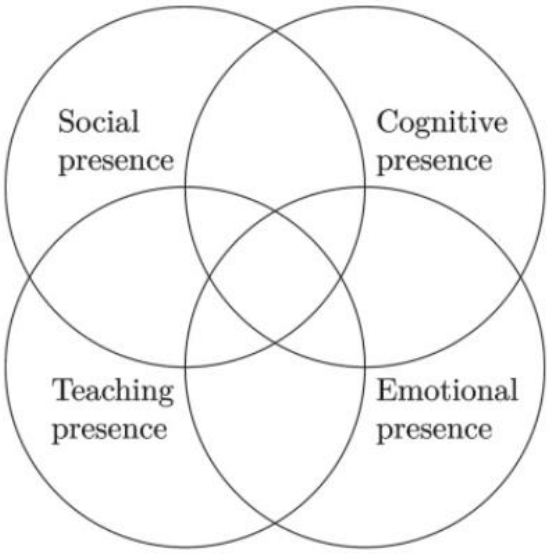

Figure 2.9 Relationship of Inquiry Framework

They defined emotional presence as the "outward expression of emotion, affect, and feeling by individuals and among individuals in a community of inquiry, as they relate to and interact with the learning technology, course content, students, and the instructor" (Cleveland-Innes, Campbell, 2012, p.283). However, the emotions are covered in the social presence in the original framework. It is discussed in detail in the discussion and conclusion chapter in accordance with the findings of this study.

The fourth proposed version of the CoI framework belongs to Lam (2015). The author focused in his study to understand the components of the CoI framework in a more complete way and concluded that learners experienced learning on some occasions

with their intrinsic drive rather than any teaching presence. Learners directed their own learning and shared the ideas in the discourse without teaching instruction or facilitation and he linked it with learning autonomy. Then, he proposed a suggestion to add autonomy presence to the original model as seen in Figure 2.10.

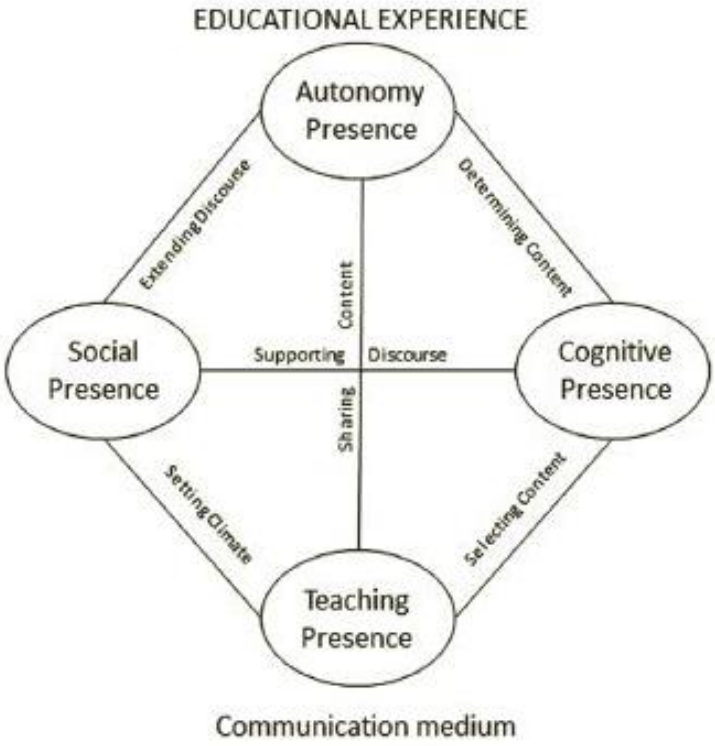

Figure 2.10 Extended Community of Inquiry (ECoI)

Lam (2015) defined autonomy presence as the drive to inquiry leading to sharing and discussion initiated by learners. He proposed three-category for the autonomy presence; intrinsic motivation, interpretation with the formulation of the ideas and inspiring discourse by sharing the ideas. Based on his arguments, intrinsic motivation was not covered in the original model although the motivation is indirectly included in the phase of triggering event in cognitive presence to some extent. The second category of autonomy presence *interpretation* is addressed in cognitive presence in the original model. The inspiring discourse is included in teaching presence, however he also reflects the discourse initiated and maintained by the students rather than teachers. Considering the main point in his argument, it is similar to the main argument of Shea and Bidjerano (2010). His argument behind the autonomy presence is similar with learner presence recommended by Shea and Bidjerano (2010, yet it is narrower. The

baseline underlying of two main study is parallel to each other and discussed in detail in the discussion chapter based on the findings retrieved in this study.

The other study conducted by Armelinni and De Stafini in 2015 focused on the role of three-presence in blended learning environment and concluded with social presence as more prominent than teaching and cognitive presence. Their proposed model of the CoI framework is given in Figure 2.11.

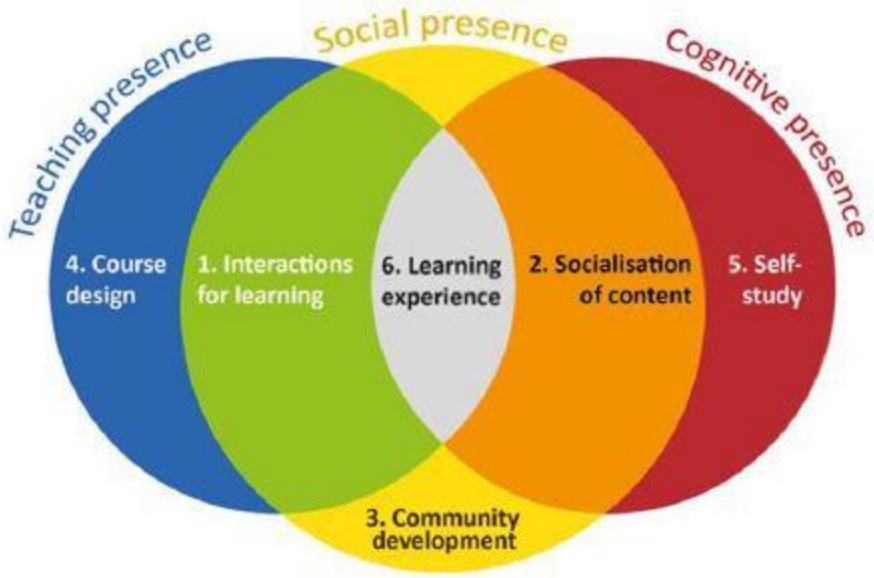

Figure 2.11 New Version of the Community of Inquiry Framework

They believed three core elements remains the same yet their nature changed based on the teaching and learning in the 21st century, for instance integrating social networking sites (SNS) in teaching-learning process. They also claim that teaching and cognitive presence should also become social.

The final attempt was done by Dunlap, Verma and Johnson in 2016. They combines CoI framework with Kolb's experiential learning cycle in order to guide online course designers and educators. They found that the integration of the prescriptive stages of Kolb's experiential learning cycle with the CoI framework helped to create productive, meaningful, and flexible learning experiences for prospective STEM teachers and concluded with their study with a new proposed version *Presence + Experience (P+E) framework* given in Figure 2.12.

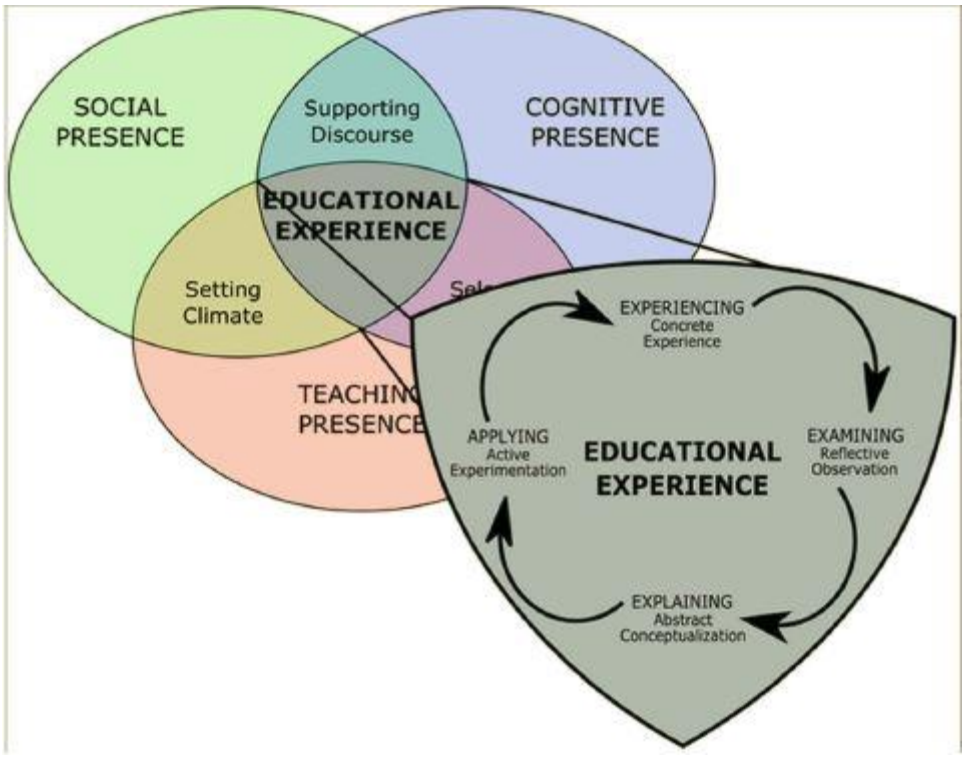

Figure 2.12 Presence + Experience (P+E) Framework

They claimed that course-design structure proposed by the original framework may not be suitable at all the time. For this reason, they tried to find a generic guideline in designing courses in any type and defined the factors that should be taken into consideration as context, content, learning objectives and audience. They also stated that Kolb's experiential learning cycle can be used to inform TP (and ultimately SP and CP) by prescribing a systematic approach keeping in sight for the design and organization of learning experiences, the design and facilitation of interactions and the design and delivery of content-specific instruction. That means, inferred from their arguments, Kolb's experiential learning cycle helps to approach the goals of the CoI model in an intentional, experience-centered way.

Overall, most of aforementioned studies put the emphasis on the absence of self-regulation and add a new construct calling either learning presence or autonomy presence. This study discusses all these recommended versions of CoI framework in the discussion and conclusion chapter in accordance with the findings retrieved from the whole study.

2.11 Summary of the Chapter

In this chapter, the underlying theoretical basis of this study, community of inquiry (CoI) framwork and its three core elements, namely social presence, teaching presence and cognitive presence were provided with their foundations. Within the scope of this research, self-regulation, metacognition, and motivation were also reviewed in online learning environments specifically in the sense of CoI framework. All these constructs examined in this study were presented with earlier related studies as a summary. The recommended versions of CoI framework from the earlier studies were also reviewed in detail.

CHAPTER 3

METHOD

This chapter introduces the research methodology of this study. It starts with the introduction, research design, sampling procedure, data collection instruments the validity and reliability of these instruments as well as data collection procedure. Then, data analysis and trustworthiness of data analysis are explained. The limitations of the study are also provided at the end of chapter.

3.1 Introduction

The aim of this study is to investigate the perceptions of students toward community of inquiry and its three elements *social presence, cognitive presence, teaching presence* in the online course context by examining the effect of their self-regulation, metacognition and motivation with discovering their associations with and contributions into the social presence, cognitive presence, teaching presence of students as well as other potential factors having both positive and negative influence and to take students' suggestions in order to uncover the ways to facilitate these three elements. Within this purpose, the research questions that guide this study are the following.

With respect to the purpose of the study, the research questions that are investigated throughout this study are as follow.

1. What are the students' perceived levels of CoI, social presence, cognitive presence, teaching presence, self-regulation, metacognition and motivation in the online course context?
2. How do students' perceived levels of self-regulation, metacognition, and motivation levels in the online course context predict their perception in regard of
    a. CoI?
    b. Social presence?
    c. Cognitive presence?
    d. Teaching presence?

3. What are the posting patterns of students' teaching presence, social presence and cognitive presence in the online course context?
4. What are the other potential factors that affect students' social presence, teaching presence and cognitive presence both positively and negatively in the online course context?
5. What are the suggestions of students in terms of facilitating their social presence, teaching presence and cognitive presence in the online course context?

3.2 Design of the Study

The complex nature of online learning environments necessitates using multiple methods and multiple sources of data to understand both group and individual learning (Gunawerdena, Carabajal, Lowe, 2001). In order to have a better and deep understanding of research problems, this study collected both quantitative and qualitative data and applied the principles of mixed-method research design. A mixed-method research design is defined by Creswell & Plano Clark (2011) as a procedure for collecting, analyzing, and mixing both quantitative and qualitative methods in a single study or a series of studies to provide a better understanding of research problem. Although the procedures of a mixed-method research are time-consuming and require extensive resources, data collection and analysis, this type of research provides more complete understanding of research problem(s) by merging, integrating, linking, or embedding both qualitative and quantitative data. This type of design also provides the higher validity and reliability by eliminating the limitations of each single method (Tashakkori & Teddle, 2003) and thus, it is a more viable method (Creswell, 2012; Fraenkel, Wallen, Hyun; 2012).

Of six types of mixed-methods designs, embedded design was applied in this research. In an embedded designed study, both quantitative and qualitative data are collected simultaneously or sequentially, but to have one form of data play a supportive role to the other form of data (Creswell, 2012). So, the second form of data is collected to argument or support the primary form of data not provided by the primary form of data. The second form of data can be either qualitative or quantitative, but most examples in the literature support adding qualitative data into a quantitative design as in this study. Moreover, the second form of data can be collected either before or after the primary data. The strength of embedded design is the combination of both type of data. The analyses of both data are kept separate since two datasets often reflect

different questions. Then, results of two datasets interpreted together. With regard to this study, the majority of research questions (first five) sought to be investigated via primary form of data specifically quantitative data. From the eight research questions, the remaining three (last three questions) were investigated using with the second form of data specifically qualitative data. Qualitative data was also used for elaboration and provide additional information to the primary from of data. The figure of the design methodology applied in this study is in Figure 3.1.

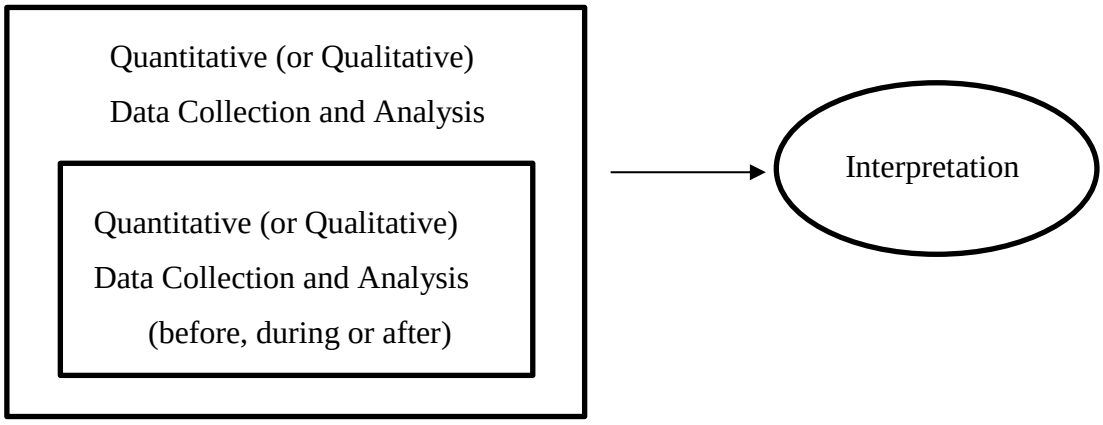

Figure 3.1 Embedded Design of Mixed Method Study (Adapted from Creswell, 2012, p.541)

The details about the design of the whole study including research questions, data sources and data analysis are presented in Table 3.1.

Table 3.1 Summary of Research Questions, Data Sources and Analysis

Research Questions	Data Source Type	Data Source	Data Analysis
1. What are the students' perceived levels of CoI, social presence, cognitive presence, teaching presence, self-regulation, metacognition and motivation in the online course context?	• Quantitative	• Community of Inquiry Survey • Self-regulation Questionnaire • Metacognition Questionnaire • Motivation Scale	• Descriptive statistics
2. How do students' perceived levels of self-regulation, metacognition, and motivation levels in the online course context predict their perception in regard of a. CoI? b. Social presence? c. Cognitive presence?	• Quantitative	• Community of Inquiry Survey • Self-regulation Questionnaire • Metacognition Questionnaire • Motivation Scale	• Inferential statistics: Multiple Linear Regression Analysis

Research Questions	Data Source Type	Data Source	Data Analysis
d. Teaching presence?			
3. What are the posting patterns of students' teaching presence, social presence and cognitive presence in the online course context?	• Qualitative	• Online Discussion Postings	• Transcript analysis
3. What are the other potential factors that affect students' social presence, teaching presence and cognitive presence both positively and negatively in the online course context?	• Qualitative	• Interview Protocol • Online Discussion Postings	• Content Analysis • Transcript analysis
5. What are the suggestions of students in terms of facilitating their social presence, teaching presence	• Qualitative	• Interview Protocol • Online Discussion Postings	• Content Analysis • Transcript analysis

Research Questions	Data Source Type	Data Source	Data Analysis
and cognitive presence in the online course context?			

3.3 Participants of the Study

A population is a "group of individuals who have the same characteristics" (Creswell, 2002, p.142). In regard of this study, population includes all the students that are enrolled in at least one online course within undergraduate programs in the universities of Turkey. The accessible population includes the students (6000) in the online course context in a well-known public university in Ankara, Turkey. As parallel with the aim of this study, the population and accessible population were determined based on the previous and current experience in online learning. Those students included in the population take some courses offered in fully online, although they are educated in formal education programs. The courses offered fully online that the population enrolled are Turkish Language 1, Turkish Language 2, Development of Reading and Writing Skills English 1, Development of Reading and Writing Skills English 2, Atatürk's Principles and The History of His Reforms 1, Atatürk's Principles and The History of His Reforms 2, Information and Communication Technology (ICT) 1, and ICT 2. These courses constitute about 20% of the whole requirements of students in their entire programs. They are common and must courses for all the students without depending on either their faculty or department. Therefore, due to the large number of students, all these courses are offered in the type of online learning by the Department of Informatics. The students take the first group of those courses in the fall semester and the second group of courses in the spring semester. So, the participants of this study included the students enrolled in ICT-I course in the fall term of 2015-16 academic year.

A sample is a subgroup of the population that the researcher plans to study in order to make generalizations about the population. In an ideal situation, sample must be selected as the representative of the entire population (Creswell, 2002). In this study, sample included 3708 students enrolled in the online course *ICT-I* in Ankara University.

There are two sampling approaches in general: probability and nonprobability sampling. In probability sampling approach, individuals are selected based on being representative of a population. Three types of probability sampling are simple random sampling, stratified sampling and multistage cluster sampling. In this study, *nonprobability sampling* approach in which participants are chosen since they are

available, convenient and representative for the purpose of research was applied (Creswell, 2002). There are two types of nonprobability sampling approach: convenience sampling and snowball sampling. This study included three-cycle in data collection and the sampling method applied in selecting representative sample is illustrated in Figure 3.2.

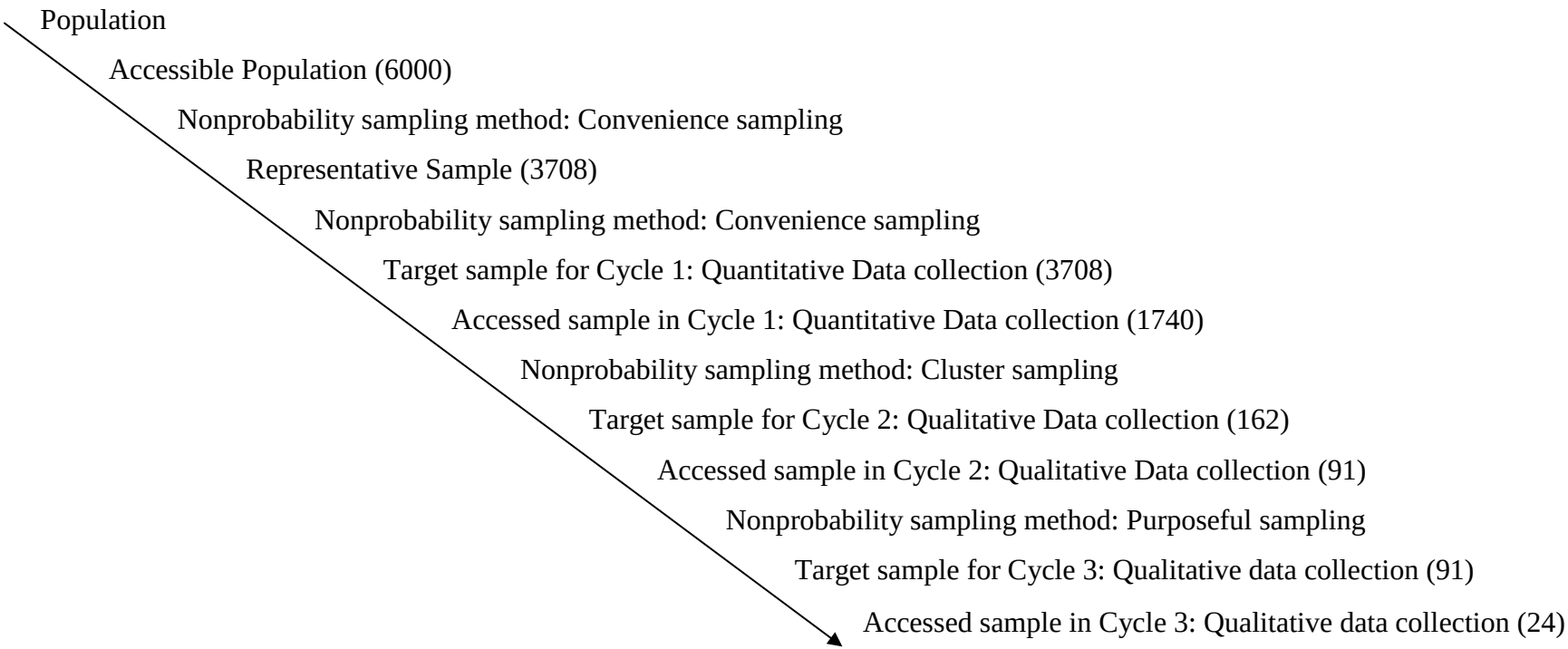

Figure 3.2 Population and Sampling Procedure for Three-Cycle of Data Collection

3.3.1 First Cycle

Target group was determined based on *convenience sampling* method in the first cycle of data collection which includes the quantitative data. The participants were selected from the representative sample considering their availability and willingness to participate into the study. In this stage, 3708 students were available and 1740 of those students were accessed in collecting data in this first cycle. However, 1535 subjects were included after eliminating the missing cases (72) and extreme outliers (133). The distribution of the participants in the first cycle based on their gender and year of study is presented in Table 3.2. Their age range is presented in Table 3.3 and their faculty information is in Table 3.4.

Table 3.2 Distribution of the Participants by Gender and Year of Study

		Frequency	**Percentage**
Gender			
	Female	1078	70.2
	Male	457	29.8
Year of Study			
	Freshman	726	47.3
	Sophomore	478	31.1
	Junior	308	20.1
	Senior	18	1.2
	Other	5	.3
Total		1535	100

About the gender distribution of the participants as seen in Table 3.2, 1078 of the students were female while 457 of 1535 were male. Moreover, Table 3.2 shows the year of study of the participants. The majority of the participants are freshmen,

followed by sophomores. Other group includes the students educated in Faculty of Medicine which is a six-year program. Table 3.3 presents the age distribution of the participants.

Table 3.3 Distribution of the Participants by Age Range

Age Range	**Frequency**	**Percentage**
17-21	1258	82.0
22-26	187	12.2
27-31	38	2.5
32-36	26	1.7
37-41	11	0.7
42-46	7	0.5
47-51	4	.3
52-56	4	.3
Total	1535	100.0

Table 3.3 presents the age range of the participants with the frequency and percentage values.Their age changed in the range of 17 and 56. The majority of the students were at the ages of 17 to 21, followed by 22 to 26. The majority of the students (1258 or 82%) were in the age range of 17-21. Of those students, 187 of them (12.2%) were in the age range of 22-26. These two age ranges included the two top highest groups (94.4%) of the whole participants. The faculty information of the students is illustrated in Table 3.4.

Table 3.4 Distribution of the Participants by Their Faculty

Faculty	Frequency	Percentage
State Conservatory	4	.3
Languages, History and Geography	561	36.5
Faculty of Pharmacy	188	12.2
Faculty of Divinity	23	1.5
Faculty of Communication	51	3.3
Faculty of Engineering	51	33
Faculty of Health Sciences	257	16.7
Health Services Vocational School	101	6.6
Faculty of Medicine	86	5.6
Faculty of Veterinary Medicine	51	3.3
Faculty of Agriculture	153	10.0
Other	9	.6
Total	1535	100.0

The participants were from 13-faculty and one vocational school as seen in Table 3.4. The majority of the students (561, 36.5%) were from the Faculty of Language, History and Geography. The other highest participation were from the Faculty of Health Sciences (257, 16.7%), Faculty of Pharmacy (188, 12.2%) and Faculty of Agriculture (153, 10%).

The department information of the participants were illustrated in Appendix A. The participants were from in total of 51 departments. The majority of them were from the Departments of Pharmacy (188, 12.2%), Psychology (110, 7.2%) and Medical Documentary and Secretary (100, 6.5%). The participants were not accumulated only in some departments. They were from 51 different departments from 12 faculties and this distribution provides an advantage on the generalizability of the results.

3.3.2 Second Cycle

From the students in the first cycle, a group of students was selected based on *cluster sampling* method for the second cycle of data collection which includes the first part of qualitative data. The sample was clustered based on their departments. From those clusters, the one which includes 162-student in the Department of Medical Documentary and Secretary (MDS) in a vocational school was selected since it is a

full-online associate degree program and thus fits with the context of the research much better. The accessed sample in the second cycle of data collection includes 91 students. Table 3.5 presents the frequencies about the participants in the second cycle of data collection.

Table 3.5 Participant Demographics in Online Discussion

Discussion Activity (DA)	**N**
DA 1	73
DA 2	70
DA 3	62
DA 4	64
DA 5	60
DA 6	62
Participating atudents	91
No participation	71
Whole class	162

DA: Discussion activity

The number of students differed in each activity as presented in Table 3.5. Of 162 students, there were 91 different students participated into the online asynchronous discussion activities (DA). The average number of students was 64, while the minimum number was 60 and the maximum was 73 in the six-activity of discussion.

3.3.3 Third Cycle

For the third cycle of data collection, students were selected based on *purposeful sampling* method in which researchers purposefully or intentionally select individuals and sites to learn or understand the central phenomenon rather than generalize to a population from sample (Creswell, 2002). Participants were chosen among the ones who are studied in the second cycle. Specifically, *confirming/disconfirming sampling* was used to test or explore further specific findings in qualitative inquiry. Of those students, 91 of them were classified based on their participation rate in the second cycle of data collection specifically discussion forums, as highest, medium and lowest level. Students who participated in online discussion forums at highest level (5-6 weeks) were classified as Group 1 including 31 students, those at medium level participation (3-4 weeks) were in Group 2 including 32 students and lastly those at

lowest rate (1-2 weeks) were classified in Group 3 including 28 students. Although the gender was planned in creating these three groups, it was not a good criteria in that situation, since the majority of entire class were the female students. For this reason, they were grouped based on their participation ratio. At this cycle, the sample included 26 students; 2 of them were studied in pilot study and the remaining 24 in the main study. For pilot study, one student that was not classified in any of three groups and one student from Group 1 and for the main study, 10 students from Group 1, 10 from Group 2 and 4 from Group 3 were accessed. Table 3.6 presents the participants based on their groups and gender distribution in the third cycle of data collection.

Table 3.6 Participant Demographics in the Third Cycle

Groups	**Interviewees**	**Total**	**Gender**	
			Female	**Male**
Group 1 – High Participation		31	27	4
	Interviewees in Group 1	**10**	**9**	**1**
Group 2 - Medium Participation		32	24	8
	Interviewees in Group 2	**10**	**5**	**5**
Group 3 - Low Participation		28	19	9
	Interviewees in Group 3	**4**	**1**	**3**
Total		91	70	21
	Interviewees in total	**24**	**15**	**9**

From 24 interviewees, 15 of them were female, and 9 of them were male. They were also asked about their marital status and/or having children, prior knowledge, and working conditions. Only 5 of them are married and have children. In terms of prior knowledge, 8 of them stated their deficiency. And 7 of them stated they have a job besides being a student and they are actively working. These demographics of the

interviewees were retrieved in case of reasoning and understanding of the situation better.

Overall, any of demographic information of the participants was not the focus of this study in regard to the research questions and the purpose of this study. The demographic information was presented solely for increasing the external validity of the findings and in case of the researchers studying on a similar context.

3.4 Context of the Study

The study was conducted in ICT-I course in 2015-2016 fall semester at one of the well-known university in Ankara, Turkey. It is offered by four instructors based on the same course syllabus presented in Appendix C. In this study, the students taught by two-instructor were included.

ICT-I course is a 2-credit must course and common for all the students in the university without depending on their faculty and department. There is an excessive number of students taking this course and for this reason, it is offered in the type of online learning. In the fall semester of 2015-2016 academic year, there were 6000 students enrolled in the course. They were classified based on their departments into different sections. For this study, 3708 students were available. From those students, the cluster including students educated in Medical Documentary and Secretary (MDS) Department, an online associate degree program including 162 students were chosen for the second cycle. Online asynchronous discussion activities and interviews were conducted with MDS students.

In regard of ICT-I course, it is offered by the Department of Informatics. The course syllabus is on Appendix C. The course is taught by the instructor during 100-minute without any break using the medium of Adobe Connect syncrnohously and a larning management system, specifically Moodle. The instructor teaches the lesson with applying the principles of direct instruction, demonstration and drill and practice. Students can ask their questions at any time during the course sessions when they have any question with the feature of raise hand on Adobe Connect or via course website or Facebook page outside the class hours. The instructor shares their screen with the students when they practicing. All class-hours' videos are shared on the course system *Moodle* for non-participants. All of the course materials are also shared on the system.

The course goal is to teach the main concepts of computer technology, how it works, the hardware and working principles, operating system and working principles, the Internet and benefits, e-mail, the softwares of Microsoft Office and Libre Office. Moreover, it aims to gain students computer literacy both in daily life and teaching-learning processes by teaching Word, Excel and PowerPoint both in Microsoft Office and Libre Office as well as database and its managegement. The objective of the course is to gain students the fundamentals of computer literacy and basic hardware and software. The course curriculum is prepared according to the curriculum of European Computer Driving License (ECDL). The course includes in total of 16-week class in a semester and the last week is always reserved for the final exam. Each week, two class hour are hold during 100-minute. The course offered synchronously with the software *Adobe Connect* and the medium of instruction is Turkish. The course is conducted over Modular Object Oriented Dynamic Learning Environment (*Moodle)* which is an open source software free web platform developed on PHP programming language and a type of learrning management system (İşman, 2011). Sample screenshot is given in Figure 3.3.

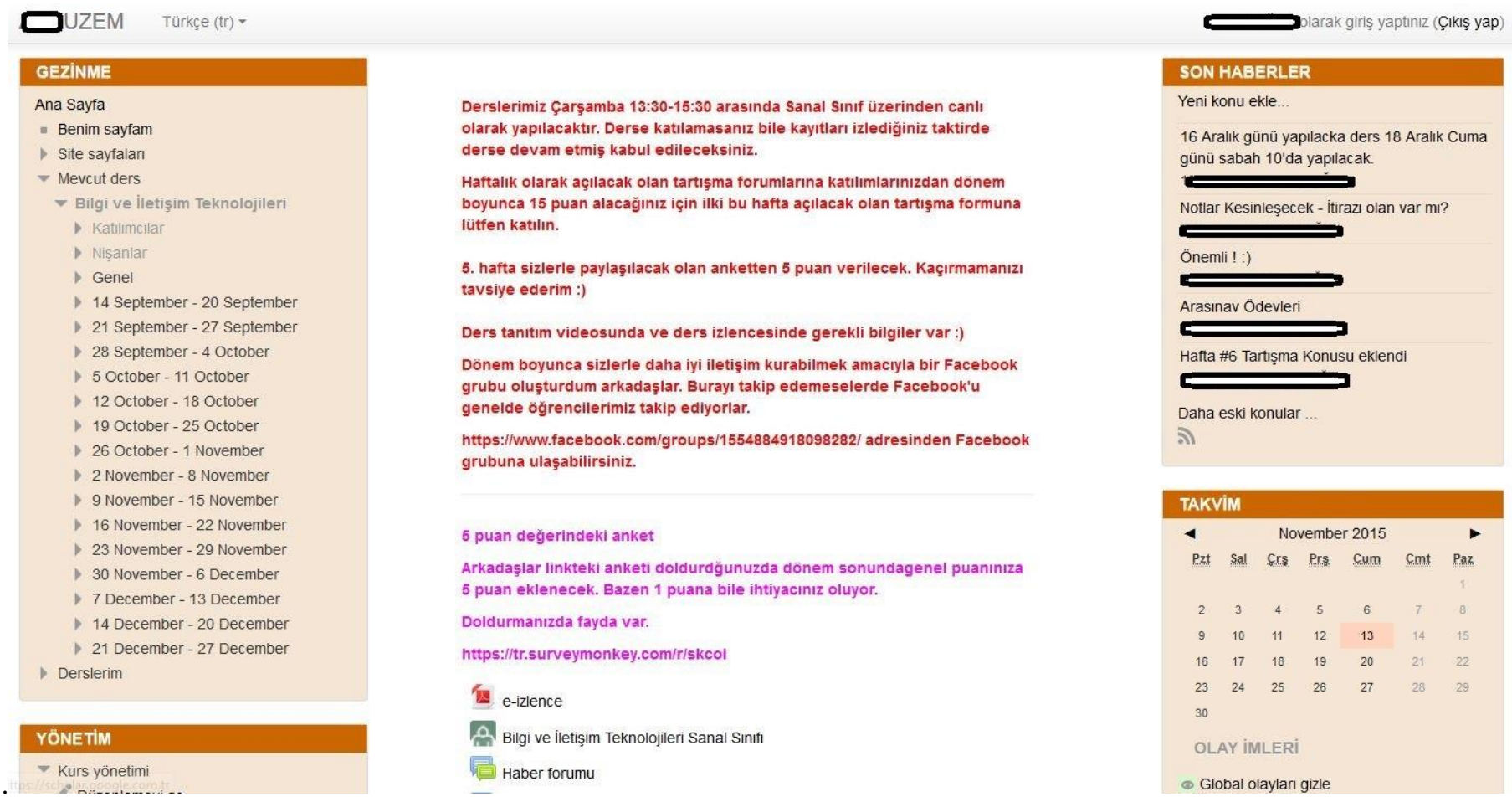

Figure 3.3 Sample Screenshot of Course System

Learning management systems (LMS) are defined by Szabo & Flesher (2002) as "computer-based database and presentations systems which manage the entire instructional program and learning progress of employees with respect to the competencies specified by the goals and objectives of an organization" (p.1). It provides various instructional features which allows instructors and educators to truly customize and personalize learning accordingly for the leaners' needs and to facilitate flexibility of choice and control of the learners as they work toward mastery of required attainments and deep knowledge (Reigeluth, Watson, Watson, Dutta, Chen, Powell, 2008). The types of LMSs *includes* NWEA, Skyward, PeBL, Odyssey, Moodle, etc. Moodle is the most preferred and used one in different kinds of LMSs (İşman, 2011). Moodle, on the contrary of other learning management systems, offers some fatures that can be arranged according to the needs of instructors. It allows to access different kinds of activities, themes, and some extensions and in this way, it provides to the instructors and educators create a rich e-learning content (İşman, 2011). The most remarkable feature of Moodle is the easy use of anyone including instructors and learners. It can work both on Windows and Linux operating systems. It offers many features via course management tools, content tools, and communication tools and in this way allows sharing content easily, conducting quiz/test, discussion forums, chat, etc. (Yildirim, Reigeluth, Kwon, Kageto, Shao, 2014).

The course system was also supported with a Facebook page for the students who prefer and use social networking services more and in order to increase communication and make interaction and collaboration easier. The sample screenshots from the course Facebook page are provided in Figure 3.4 and Figure 3.5. The page was used for easier communication, brainstorming, and announcements. The researcher was also added to the page as an admin like the instructor.

Figure 3.4 Sample Screenshot from the Course Facebook Page

Figure 3.5 Sample Screenshot from the Course Facebook Page

The evaluation of students' performance was based on mixed method including both formative and summative evaluation methods. The grading policy consists of 20% for the assignment, 60% for the final exam, 15% for discussion activities, and 5% for the response to the instruments.

3.5 Data Collection Instruments and Procedure

The instruments for each cycle of data collection and procedure are explained separately in the following part.

3.5.1 Data Collection Instruments

The instruments used in data collection are explained in two-group as quantitative data collection instruments and qualitative data collection instruments in the following part.

3.5.1.1 Quantitative Data Collection Instruments

Quantitative data were collected online via Survey Monkey in the first cycle using four instruments including Community of Inquiry survey, self-regulation questionnaire, metacognition questionnaire, and motivation scale. Altough they seem different kind of instruments including survey, questionnaire and scale; their names are just different and they are completely in the same structure and response format. They are just called throughout the study using their original names. These four quantitative data instrument, each in different section were prepared online in Survey Monkey. The link was announced to the student in Moodle and Facebook after 70% of the course sessions was completed. The data collection took four-week. Of 3708 students, 1740 responded to the quantitative data instruments; however the missing cases (72) and extreme outliers (133) were eliminated from the data in the analysis. The data were analyzed

using SPSS version 23.0 with the technique of multiple linear regression analysis. The following part presents each instrument used in this part.

A. Community of Inquiry Survey

Community of Inquiry survey was developed to structurally valid and psychometrically sound instrument to measure students' perceptions of community of inquiry, its three presences and their inter-relationships by Arbaugh, Cleveland-Innes, Diaz, Garrison, Ice, Richardson, & Swan in 2008 with 287 graduate students. It includes 34-item in the form of 5-point Likert type scale indicating - 1: strongly disagree; 2: disagree; 3: neutral; 4: agree; and 5: strongly agree. It was yielded in three factors namely teaching presence (TP), social presence (SP) and cognitive presence (CP). The validity of the instrument was checked with Principal Component Analysis (PCA) and yielded in three factors. Teaching Presence is reflected with 13 items, Social Presence with 12 items and Cognitive Presence with 9 items. These three factors accounted for 61.3% of the total variance in scores. The reliability of the instrument was analyzed with Cronbach's Alpha values which yielded internal consistencies equal to 0.94 for TP, 0.91 for SP, and 0.95 for CP.

The Community of Inquiry survey translated into Turkish and validated by Öztürk in 2012. For the validation process, she first translated the CoI survey into Turkish and then one language expert and two field experts were checked the translation. Then, she tested the translated survey with applying to 140 students enrolled in online and blended courses to provide its validity and reliability. Construct validity for confirmatory factor analysis indicated that adapted version of the instrument has also three factors similar in the original instrument. Chi-square goodness-of-fit statistics was found significant and indicated the model fit the data and also, three factors and its items have a significant relationship. Its reliability was provided via internal consistency via Cronbach alpha. Cronbach alpha value was found .92 for teaching presence, .88 for social presence and .75 for cognitive presence and lastly .97 for the whole instrument (Öztürk, 2012). Therefore, adapted version of CoI instrument is found reliable and valid, thus it was used in this study after taking permission via email from the owner of translated version of CoI survey. The data gathered from this instrument used in the analysis of students' perceptions of CoI and its three-presence and also to predict the contribution of each presence both to the CoI and its three-presence

B. Self-Regulation Questionnaire

The self-regulation of students in the online course context was measured via the short form of Online Self-Regulated Learning Questionnaire (OSLQ) developed by originally Lan, Bremer, Stevens and Mullen (2004) with 5-point Likert type response format. It includes 86-item yielding in six sub-scale constructs: environment structuring; goal setting (GS); time management (TM); help seeking (HS); task strategies (TS); and self-evaluation (SE). The higher scores on this instrument indicate better self-regulation in online learning by students. It was shortened later including 24-item by Barnard, Paton and Lan (2008) with 204 students enrolled in online learning. The short from of the self-regulation instrument has also been validated and found reliable (Barnard, Lan, To, Paton, & Lai, 2009). The validity was checked with confirmatory factor analysis and fit indices found. The results indicate evidence toward construct validity of the instrument for the students both in blended and online learning. The reliability was provided with checking internal consistency values. Cronbach's Alpha value which yielded internal consistency value of the scores was found 0.93 of the instrument. Cronbach alpha values by subscale ranged from .67 to .90 in blended learning and .87 to .96 in online learning. ın summary, the short form of self-regulation questionnaire provided the validity and reliability and for this reason, it was used in this study after translated.

The short form of the scale was first translated into Turkish and checked its validity and reliability by the researcher in the scope of this study. As mentioned previously, it includes 24-item yielding in six sub-scales and in the form of 5-point Likert type response format. The subscales namely factors and the number of items reflecting these subscales are ES with 5-item, GS with 4-item, TM with 4, HS with 3, TS with 4 and SE with 4-item.

The questionnaire has been already translated into Turkish in earlier studies by Uzun, Ünal and Yamaç (2013) and Yetik (2011). However, Uzun, Ünal and Yamaç (2013) in their study did not check the reliability and validity. They just translated the survey and then directly used without any confirmation and validation. Yetik (2011) translated the survey in her thesis study, but she conducted the validity process with the students in face-to-face education having prior online learning experience. However, checking the survey items based on past experiences of the students can affect the results.

Students, during responding to the survey items can have different opinions or behaviors based on prior experience since they were in fact educated in face-to-face education and their experience was just based on the past. For this reason, the survey was translated into Turkish by the researcher in the scope of this study with the exact target sample; students are enrolled in full online learning program in order to have a valid and reliable version after taking permission via email from the owners.

The procedure to translate and validate the accuracy of the instrument was started with the translation of the questionnaire items into Turkish by the researcher. At the same time, five more researchers (two having PhD, three are PhD students) in the same discipline were also translated the survey. All six forms of translation were checked and compared to each other. After making the required revisions, the sixth and more experienced researcher who is expert at both the topic and the techniques of measurement and evaluations reviewed the translation and then with her suggestions, some changes were applied. After then, one English language expert checked the original survey and translated version in terms of equality in language and meaning while the other English language expert did back-translation of the survey. Based on their feedback and back-translation, the translation of the whole instrument was found appropriate with a suggestion of change in few words. The survey finalized after revision one more time with the agreement of the researcher of this study and the six peers and experts included in this process.

The procedure continued with the validation process. With this aim, the survey was applied at one of the well-known university in Adana, Turkey to administer its reliability and validity issues. The data were collected from 321 students in a vocational school. The students were from fully online associate degree programs including Electronic Communication Technology, Computer Programming, Pediatric Development and Accounting and Tax Practicing. The questionnaire was applied in the format of paper-based in one-hour before the final exam. Although they are educated in the type of online program, only their final exam is conducted face-to-face. The questionnaire was distributed to the 444 students in total, the missing cases (123) were excluded from the data and in the analysis, and 321 students' responses were included. The entering data to SPSS program took ten days and controlled two times. The data were imported to IBM SPSS AMOS version 21.0 for confirmatory

factor analysis (CFA) which rests on a solid theoretical or empirical base and how many factors are there and whether they are correlated or not are already known based on empirical base (Stevens, 2009). The aim of CFA is to confirm a hypothesized factor structure with the data by forcing items to load only on a specific factor.

The required assumptions of CFA were checked before conducting the analysis. Considering adequate sample size, the minimum sample size should be more than 200 according to Guilford (1954), 5 subjects per item, namely 120 for Hair (2010) and 10 subjects per item, namely 240 for MacCallaum and Widaman (1999) since the instrument includes 24-items. According to the statements of the authors, sample size (n=321) was adequate for the analysis. The outliers were checked via descriptive statistics and boxplots in SPSS and eliminated from the data. The missing data were checked in SPSS and all of them were deleted from the data since the sample size is already more than the required minimum number of adequate sample size. Univariate and multivariate normality were checked in AMOS using skewness and kurtosis values, and the data were provided normality assumptions.

In the analysis of CFA about the estimated model of translated instrument, goodness of fit statistics including $\chi 2$/df (Chi-Square/Degree of Freedom), Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) used. RMSEA is a "population based index that relies on the non-central $\chi 2$ distribution, which is the distribution of the fitting function when the fit of the model is not perfect. RMSEA is an error of approximation index because it assesses the extent to which a model fits reasonably well in the population and relatively insensitive to sample size. RMSEA values of 0 indicate perfect fit and values very close to suggest good model fit" (Brown, 2015, pp.71-72). As the author states, RMR reflect the average discrepancy between observed covariance and predicted covariance. However, since RMR value is affected by the metric of the input variables; it is difficult to interpret and for this reason SRMR is generally preferred as Brown (2015) contended. SRMR indicates the average discrepancy between the correlations observed in the input matrix and the correlations predicted by the model. Its values can vary between 0 and 1, with 0 indicates a perfect fit. GFI index is "roughly analogous to the multiple R^2 value in

multiple regression in that it represents the overall amount of the covariation among the observed variables that can be accounted for by the hypothesized model" (Stevens, 2009). Therefore, the larger GFI value represents better model fit (Ong & Van Dulmen, 2007). AGFI adjusts the GFI for the number of degrees of freedom. The values close to 1 indicates better model. CFI that is also referred to as incremental fit indices evaluates the fit of a user-specified solution in relation to a more restricted, nested baseline model (Brown, 2015). TLI known as the non-normed fit index has features that compensate for the effect of model complexity like RMSEA as Brown (2015) defined. It includes "a penalty function for adding freely estimated parameters that do not markedly improve the fit of the model" (p.72). NFI "represents the increment in fit obtained by using the hypothesized model relative to the fit of the null model. Values range from zero to one, with higher values indicative of a greater improvement in fit" (p.72). The goodness of fit statistics of the translated survey were presented in Table 3.7.

Table 3.7 CFA Indices of Translated Self-regulation Questionnaire

	Original Version	**Translated Version**
χ^2/df	2.77	2.45
RMSEA	.06	.06
RMR	--	.08
SRMR	--	.06
TLI	.94	.89
CFI	.93	.90
GFI	--	.86
AGFI	--	.84
NFI	--	.80

According to the findings, with a χ^2/df ratio value of 2.45, the translated survey was acceptable. The worth of fit values was found to be χ2/df = 2.45, RMSEA = .06, RMR =.08, SRMR = .06, TLI = .89, CFI = .90, GFI = .86, AGFI = .84 and NFI = .80. According to these values, it can be said that GFI, AGFI, CFI, TLI and NFI observable fit values were slightly lower than acceptable value, but very close to good fit values while RMSEA, SRMR, and RMR fit values indicated an acceptable and good fit (Table 3.1). In other words, the obtained model indicated that the factors were confirmed by

the data (Çokluk et al., 2010; Sümer, 2000; Tabachnick & Fidell, 2001). In addition, the item-factor structure of translated version of self-regulation instrument is indicated in Figure 3.6. According to the item-factor structure, all indicators of the observed variables *GS, ES, TS, TM, HS, and SE* appear to be almost about equal weights based on their standard regression weights (factor loadings) that can be interpreted as the correlation between the observed variable and the corresponding common factor. The path diagram also shows the squared multiple correlation coefficients (R^2) that describes the amount of variance the common factor accounts for in the observed variables. For instance, the highest amount of variance explained is by ES that explains about the 66% of the variance in ES3. The lowest amount of variance explained is by TS that explains 30% of the variance in TS2. Moreover, the correlations between the common factors are also displayed in the path diagram. The highest correlation is between HS and SE with the value of .99 and the lowest correlation is with the value of .50 between ES and TM.

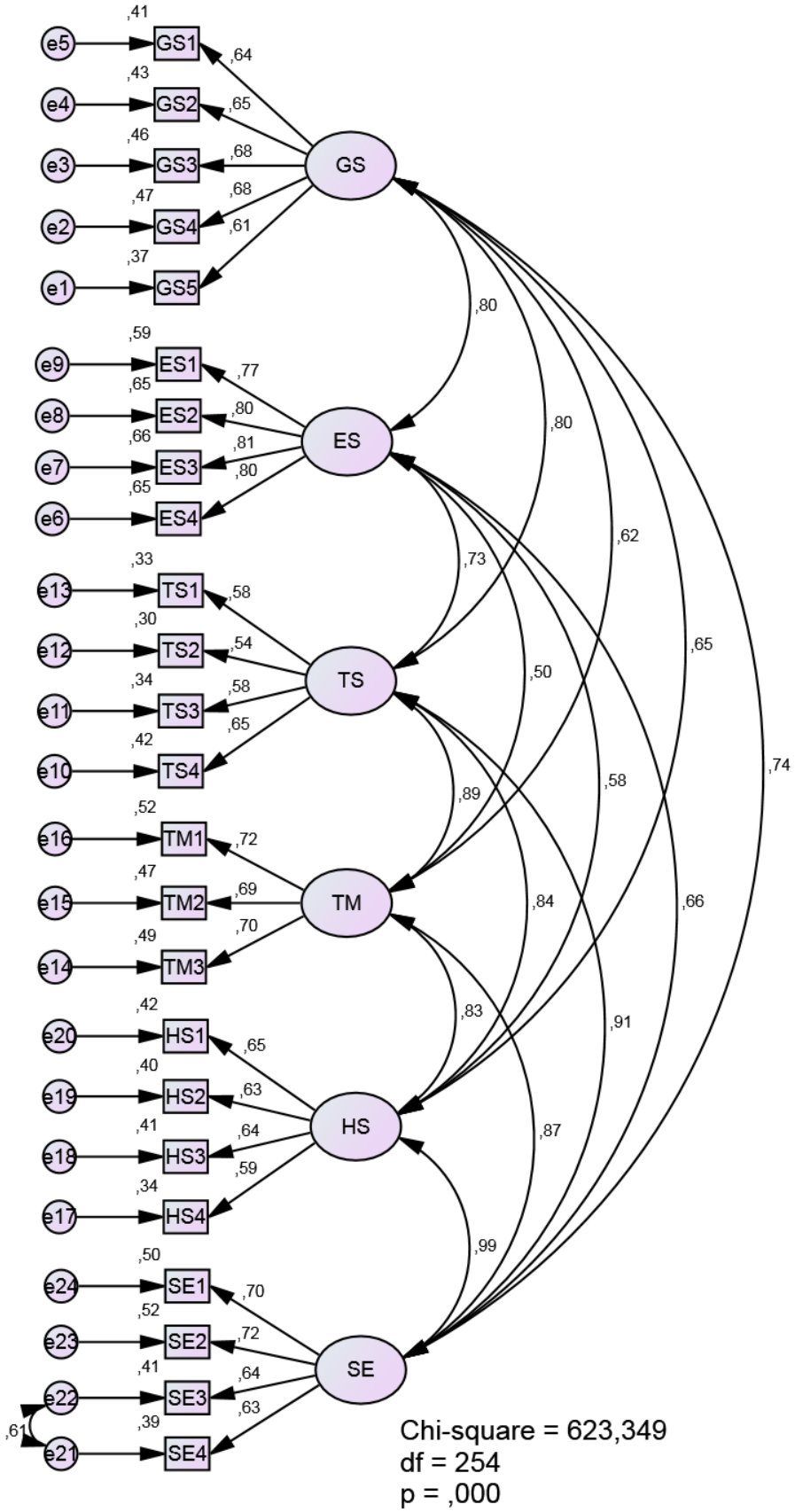

Figure 3.6 Item-Factor Structure of Translated Self-regulation Questionnaire

Considering the reliability, internal consistency was assessed via Cronbach alpha values. The results is illustrated in Table 3.8.

Table 3.8 Reliability Statistics of Six Factors of Translated Self-regulation Questionnaire

Factor	Cronbach's Alpha
Self-regulation	.95
GS	.79
ES	.87
TS	.67
TM	.75
HS	.71
SE	.81

The coefficient alpha values of the factors of the survey were found in the range of .71 and .87 and .95 for the whole. All the factors have alpha values higher than .70 except one, but its values is very close to .70. Therefore, all the factors showed acceptable internal consistency values (Hair, Black, Tatham, Anderson; 2010) and found acceptable.

Based on the results of confirmatory factor analysis and reliability test in the pilot, the translated version of self-regulation questionnaire (Appendix F) was found acceptable, valid and reliable and so fits the original version. Therefore, it was used in the main study as it is without any change to discover students' self-regulation and its contribution to the CoI and its three-presence.

C. Metacognition Questionnaire

The metacognition of students in the online course context was measured via the metacognition questionnaire developed by Garrison and Akyol in 2013. It was emerged first qualitatively with deriving on the literature based on metacognition and self-regulation (Akyol & Garrison, 2011). Then the authors developed a quantitative questionnaire to measure the metacognition which is difficult to assess with online transcription analysis of discussion posts. Its pilot testing was conducted in the study by Akyol, Garrison and Vaughan in 2012. The instrument validation was conducted in the study by (Garrison & Akyol, 2013). It includes 26-item in 5-point Likert type

response format indicating 1: strongly disagree; 2: disagree; 3: neutral; 4: agree; and 5: strongly agree. It yielded in three subscales: knowledge of cognition (KC), monitoring of cognition (MC) and regulation of cognition (RC). KC is reflected with 8-item, MC is again with 8-item and RC with 10-item. The validity of original instrument was administered with 76 students in a large university in Canada. Factor analysis was administered and oblique rotation for factor loadings was conducted. It includes three factors (Garrison & Akyol, 2013).

The questionnaire was used in this study to discover the students' metacognition and its contribution to the CoI and its three-presence in the online course context. With this aim, since the instrument was developed more recently and no Turkish version exist up to date, first it was translated into Turkish by the researcher in the scope of this study. The procedure to translate and validate the accuracy of the instrument was started with the translation of the 26-item into Turkish by the researcher meanwhile six more researchers (two having PhD, four are PhD students) in the same discipline were also translated the survey. The seven forms of translation were checked and compared to each other. After making the required revisions, the eighth and more experienced researcher who is expert at both the topic and the techniques of measurement and evaluations reviewed the translation and then with her suggestions, some changes were applied. After then, one English language expert checked the original survey and translated version in terms of equality in language and meaning while the other English language expert did back-translation of the survey. Based on their feedback and back-translation, the translation of the whole instrument was found appropriate with minor suggestions specifically changes in few words. The survey finalized after revision one more time with the agreement of the researcher of this study and seven peers and experts included in this process.

The validity and reliability of translated questionnaire was investigated at one of the well-known university in Adana, Turkey. The data were collected from 304 students enrolled in full online associate degree programs in vocational schools of the university. The departments of the students were fully online associate degree programs including Electronic Communication Technology, Computer Programming, Pediatric Development and Accounting and Tax Practicing. The survey was applied in the format of paper-based at one-hour before the final exam. Although they are

educated in the type of online program, only their final exam is conducted face-to-face. In total, 444 online students took the survey, the missing cases (140) were excluded from the data and in the analysis, and 304 students' responses were included. The entering data to SPSS program took ten days and controlled two times. The data were imported to IBM SPSS AMOS version 21.0 for confirmatory factor analysis (CFA) which rests on a solid theoretical or empirical base and how many factors are there and whether they are correlated or not are already known based on empirical base (Stevens, 2009). The aim of CFA is to confirm a hypothesized factor structure with the data by forcing items to load only on a specific factor.

Before conducting the analysis, the required assumptions of CFA were checked. In regard of minimum sample size, it should be more than 200 based on Guilford (1954), 130 for Hair (2010), 260 for MacCallaum and Widaman (1999), and 260-390 for Field (2013). According to the authors' statements about adequate sample size, with 304 subjects' responses, the sample size is more than enough. Univariate and multivariate normality were checked in AMOS using skewness and kurtosis values, and the data were provided normality assumptions. Then, CFA was conducted via IBM SPSS AMOS version 21.0 to investigate the construct validity. For the estimated model of adapted instrument, goodness of fit statistics used in this analysis are $\chi 2/df$ (Chi-Square/Degree of Freedom), Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI). The findings is presented in Table 3.9.

Table 3.9 CFA Indices of Translated Metacognition Questionnaire

	Original Version	**Translated Version**
χ^2/df	--	2.25
RMSEA	--	.06
RMR	--	.05
SRMR	--	.04
TLI	--	.94
CFI	--	.94
GFI	--	.85
AGFI	--	.83
NFI	--	.89

According to the findings, with a χ^2/df ratio value of 2.25, the adapted survey is acceptable. Moreover, the worth of fit values was found to be χ2/df = 2.25, RMSEA = .06, RMR =.05, SRMR = .04, TLI = .94, CFI = .94, GFI = .85, AGFI = .83, and NFI = .89. According to these values, it can be said that GFI, AGFI, NFI observable fit values were slightly lower than acceptable value, however they are close to a good fit values while RMSEA, SRMR, and RMR fit values indicate an acceptable and good fit (Table 3.8). In other words, this obtained model indicated that the factors were confirmed by the data (Çokluk et al., 2010; Sümer, 2000; Tabachnick & Fidell, 2001).

The item-factor structure of translated metacognition instrument was illustrated in Figure 3.7. According to the figure, all indicators of the observed variables *KC, MC, and RC* appear to be almost about the equal weights based on their standard regression weights (factor loadings) that can be interpreted as the correlation between the observed variable and the corresponding common factor. The path diagram also shows the squared multiple correlation coefficients (R^2) that describes the amount of variance the common factor accounts for in the observed variables. For instance, the highest amount of variance explained is by MC that explains about the 72% of the variance in MC3. The lowest amount of variance explained is by RC that explains 41% of the variance in RC4. Moreover, the correlations between the common factors are displayed in the path diagram. The correlation is with the value of .89 between KC and MC, and .90 between MC and RC and .86 between KC and RC.

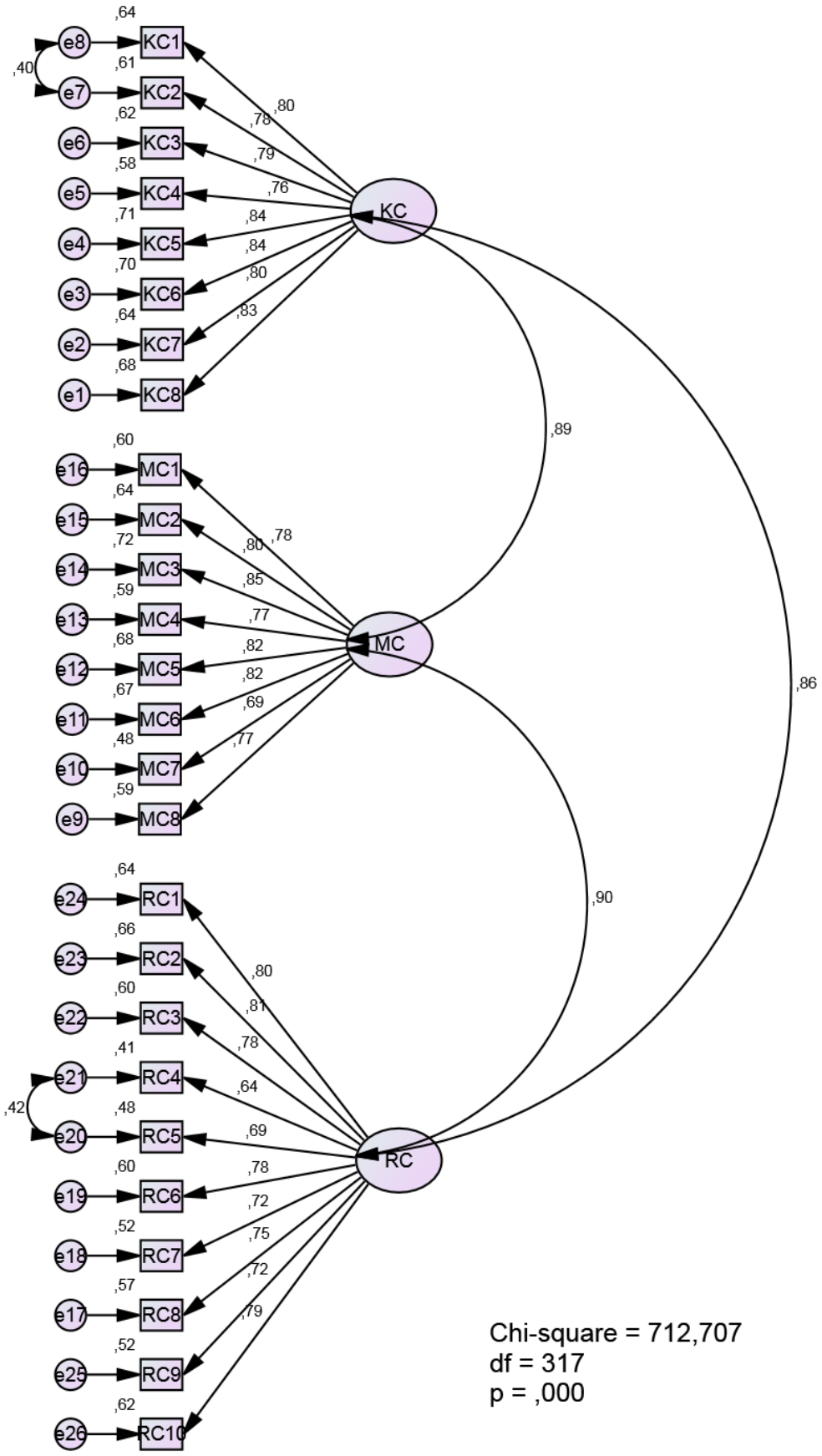

Figure 3.7 Item-Factor Structure of Translated Metacognition Questionnaire

For reliability test, internal consistency was examined via Cronbach alpha values of each factor. The results is given in Table 3.10.

Table 3.10 Reliability Statistics for Three Factors of Translated Metacognition Questionnaire

Factor	Cronbach's Alpha
Metacognition	.94
KC	.97
MC	.93
RC	.93

The coefficient alpha values for the factors of this survey were found in the range of .97 and .93 and .94 for the whole. All the factors have alpha values higher than .70 (Hair, et al, 2010) and they are very close to 1.00. Therefore, all the factors showed almost perfect internal consistency values.

Overall, the results of pilot testing indicated that the translated version of metacognition questionnaire (Appendix G) was valid, reliable and acceptable. Therefore, it was used in the main study as it is to measure students' metacognition and its contribution to the CoI and its three-presence in the online course context.

D. Motivation Scale

Students' level of motivation in the online course context was determined quantitatively using Motivating Strategies for Learning Questionnaire (MSLQ) which was developed originally by Pintrich, Smith, Garcia, McKeachie (1991). The instrument combines two scales; the first is Motivation Scale (MS) and the second is Learning Strategies Scale (LSS). The authors declared that the instrument can be used as it is or any sections separately accordingly with the purpose. It is in 7-point Likert type response format from 1: not at all true for me to 7: very true for me. It includes 31-item yielded in 6-factor for the motivation and 50-item yielded in 9-factor for learning strategies. Since any part of MLSQ can be used together or separate as the owners of the scale stated, only MS was used in this study to assess students' motivation levels.

Motivation scale yielded with six factors, namely intrinsic goal orientations reflected with 4-item, extrinsic goal orientations with 4-item, task value with 6-item, control beliefs about learning with 4-item, self-efficacy for learning and performance reflected with 8-item and text anxiety with 5-item. It has been already translated into Turkish by Büyüköztürk, Akgün, Özkahveci, and Demirel (2004). After they translated the scale into Turkish, it was checked by 13 specialists for content approval. After they finalized the translation of the scale, they collected data from 852 students to test its validity and reliability. The validity and reliability of translated version were checked via exploratory factor analysis, confirmatory factor analysis, Cronbach Alpha correlation coefficient, corrected item-total correlations and t-tests between items' means of upper and lower points. The results confirmed the original instrument yielding MS with six factors. The correlation coefficient was found .85 between English version and Turkish version. Chi-Square value (x^2=1866.55, N = 852, SD = 417, p =.0005) calculated after adapted into Turkish was found to be significant (Büyüköztürk, Akgün, Özkahveci, Demirel; 2004). For this reason, the instrument used as it is after taking permission via email from the owners. The survey was used to measure the students' motivation and its contribution into the CoI and its three-presence.

3.5.1.2 Qualitative Data Collection Instruments

Qualitative data were collected in two steps including the first and third cycles of data collection. The first cycle included online discussion posts for the six-activity and the second cycle was the interview. The discussion activities were conducted in the forum section on Moodle with the students in the Department of MDS. 91 students were participated into the discussions. The second cycle specifically the interviews was conducted via either Facebook chat or audio and video calling with 26 students in total. 2 of those interviews were conducted to test the interview questions in the pilot. Half of the interviews were conducted via chat while half of them via audio or video calling. For audio and video calls, all interviews were recorded via audio recorder. The duration of interviews was 12 minutes as average for the interviews conducted via Facebook Audio-Video call. The instruments used in qualitative data collection are explained respectively.

A. Online Discussion Posts

The asynchronous discussion postings of students were used to unveil their perceived levels of teaching presence, social presence and cognitive presence in the online course context. The discussion questions were self-developed. They were prepared based on course content focusing particularly on taking students' own ideas and reflective thinking. They were also checked by the course instructor and an expert in order to provide its content validity besides understandability and appropriateness.

The questions were open-ended and in Turkish. The questions are presented in Appendix D. Each week, students responded two questions and reflected their own ideas, knowledge and feelings in the scope of the questions. There were 6 discussion activities in total and each discussion was open during two weeks. The underlying themes behind the questions of six activities were about cognitive presence and social presence whilst only the two activities including the fifth and sixth were related with teaching presence. Since the focus of this study is particularly on the cognitive presence, the majority of discussion activities addressed the cognitive presence.

In terms of the details about the themes behind the questions, first activity includes about students' past experience about being introduced with the computer as a first time, the difficulties and/or problems they faced and how they overcame those difficulties and/or problems as well as how they make computers beneficial in daily life. The first activity also focused on discover the students' strategies and skills in dealing with information pollution on the Internet and how they handle with information pollution, their suggestions to overcome this problem and justification of their solutions.

The second activity focused on their usage of social networking services, differences from face-to-face communication, addiction of social media usage and their suggestions and solutions to handle with this addiction. The second activity focused also on plagiarism and unethical usage of any information on the Internet, their own experience, suggestions and solutions to handle with this problem.

The third activity was about the students' own experience and learning strategies when learning something new in the computer, problems they faced and how they solved those problems. It asked also about how they benefitted from their friends and from the Internet for this task. Moreover, other theme relying on the third activity was

about group working performances, difficulties and strategies to deal with those difficulties, advantages and disadvantages of group working.

The fourth activity was about safety of digital information and potential ways either individual or massive (ministries, universities, legislative regulations) for the safety usage and protection. It was also discovered students' experience in word processors and problems they faced and their solutions beside their feelings about inadequacy of information in word processing software.

The fifth activity looked for the search strategies on the Internet and step-by-step solution for an assigned problem using Internet. Moreover, this activity included students' critics about the course instructor and the course. It covered their evaluation of the course in general, design and organization, discourse and instruction, and also course instructor in general, her efforts and behaviors, teaching style, etc. They made also suggestions to meet the deficits and make the course better.

Finally, the sixth activity set sight on the sense of community, their communication and interaction with the course instructor and classmates, integrating knowledge learned throughout the course into the real life, critics about Moodle and Facebook and their general evaluations and suggestions about the course, course instructor and so on.

Each discussion was open during two weeks and held on the Moodle asynchronously. It started at the second week of the semester and completed at the last class. It took-week in total. The instructor and the researcher was at the outside of this phase. The discussions were hold online via Moodle and the researcher had provided with a username and password with instructor authorization in this cycle for the access and management of this cycle.

The collected data were used to reveal the posting patterns of students in regard of social presence, cognitive presence and teaching presence after analyzing based on transcript analysis using coding matrix as well as enhancing quantitative data results.

B. Interview Protocol

In order to explore other potential factors that have an effect on students' perceived levels of teaching presence, social presence and particularly cognitive presence, and also to have a detailed understanding, an interview protocol was self-developed for the students. It includes three demographic question and eleven open-ended questions.

The demographic questions are about students' working condition, prior knowledge, and marital status and/or having a child. The interview protocol was designed as semi-structured and presented in Appendix I. The underlying themes behind the interview questions included demographic information, issues about social presence, teaching presence, cognitive presence and their suggestions. The information about the students' working condition, marital status and prior knowledge about the course topics were retrieved. In terms of social presence, two main questions were asked to the students about their sense of belonging to the learning community and communication with their classmates and the course instructor. The questions about cognitive presence focused on their motivation, cooperation, combining new information and integration of knowledge into daily life. In regard of teaching presence, the questions were about the course activities including discussion, assignment, group working performances and exam and their concerns about the course at the beginning and throughout the semester, instructor's effort to encourage them in and out of the class and her feedback beside evaluation of their performances and grading policy. Finally their comments and suggestions were asked regarding all these issues and/or any other thing they want to mention.

The content and construct validity were checked and provided with four expert opinions. Two of them checked the questions in terms of clearness, simplicity, meaning and understandability. Then, the third expert checked the questions in terms of measurement and evaluation principles; specifically equality, balance, and the meaning. After, the fourth expert checked the questions regarding with the topic, research questions, meaning, balance, clearness and equality. When the questions were finalized, pilot testing of the interview was done with two students via Facebook Video Calling. According to the results of pilot study, some questions were revised by rewording some phrases, excluding some details and adding more explanations or examples in some parts. The course instructor were used in place of faculty member in the third and sixth questions. Evaluation of students' performance were enhanced with adding grading of any of students' performances such as assignment, discussion posts, final exam. Course activities were added with some examples like discussion activities, practice. In place of online collaborative learning community, the class was solely used. The third question about the course instructor were detailed with about their thoughts about the instructor's attitude toward them when they need help or do

not understand the topic. Finally, a new question was added to the interview protocol. The question is the following.

> *If this course was supported as face-to-face classes and/or offered in the format of blended learning, then how do your learning, motivation, and interaction change? Please explain it with their reasons and providing examples. [Bu ders aynı zamanda yüz yüze derslerle desteklenseydi, öğrenme, derse karşı ilginiz ve etkileşim açısından ne gibi farklılıklar olurdu? Sebepleri ile birlikte örnek vererek açıklayınız.]*

Two interviewees frequently mentioned about the drawbacks of online learning and therefore, a new question above was added to the interview protocol. After revising interview protocol, there are two sections including three demographic information and 12 open-ended questions in the final version (Appendix I).

Interviews were hold individual and online using Facebook Video Call or Audio Call (12) and synchronized chat via Facebook (12). After taking permissions from the interviewees, they were recorded via audio recorder. The collected data were used to explore other potential factors that affect students' social presence, cognitive presence and teaching presence both positively and negatively as well as taking their suggestions to facilitate those variables. It was used also to enhance and elaborate the quantitative data results.

3.5.2 Procedure of the Study

The data collection was completed in 2015-2016 fall semester with the students in ICT-IC 1 course at one of the well-known university in Ankara, Turkey. There are in total of 6000 students taking ICT-IC 1 course in different sections based on their departments and 3708 students were available for this research. The procedure for three-cycle of data collection was picturized in Figure 3.8 based on academic calendar of the university.

Figure 3.8 Timeline of Three-Cycle of Data Collection

Data collection procedure was completed in three-cycle. The first cycle included the first part of qualitative data. This cycle included the online discussion posts for the six-activity. It was completed in 12-week. 91 students from MDS Department were participated. The second cycle included the quantitative data collected via four quantitative data collection instruments. Of 6000 students taking ICT-IC 1 course, 3708 were available for this research. Of those students, 1740 were responded to quantitative data collection during 4-week. The third cycle included the second part of qualitative data, specifically interview. It was completed in 3-week. 24 students selected based on purposeful sampling from the participants of the first cycle were participated. The whole procedure for the data collection and analysis is visualized in Figure 3.9.

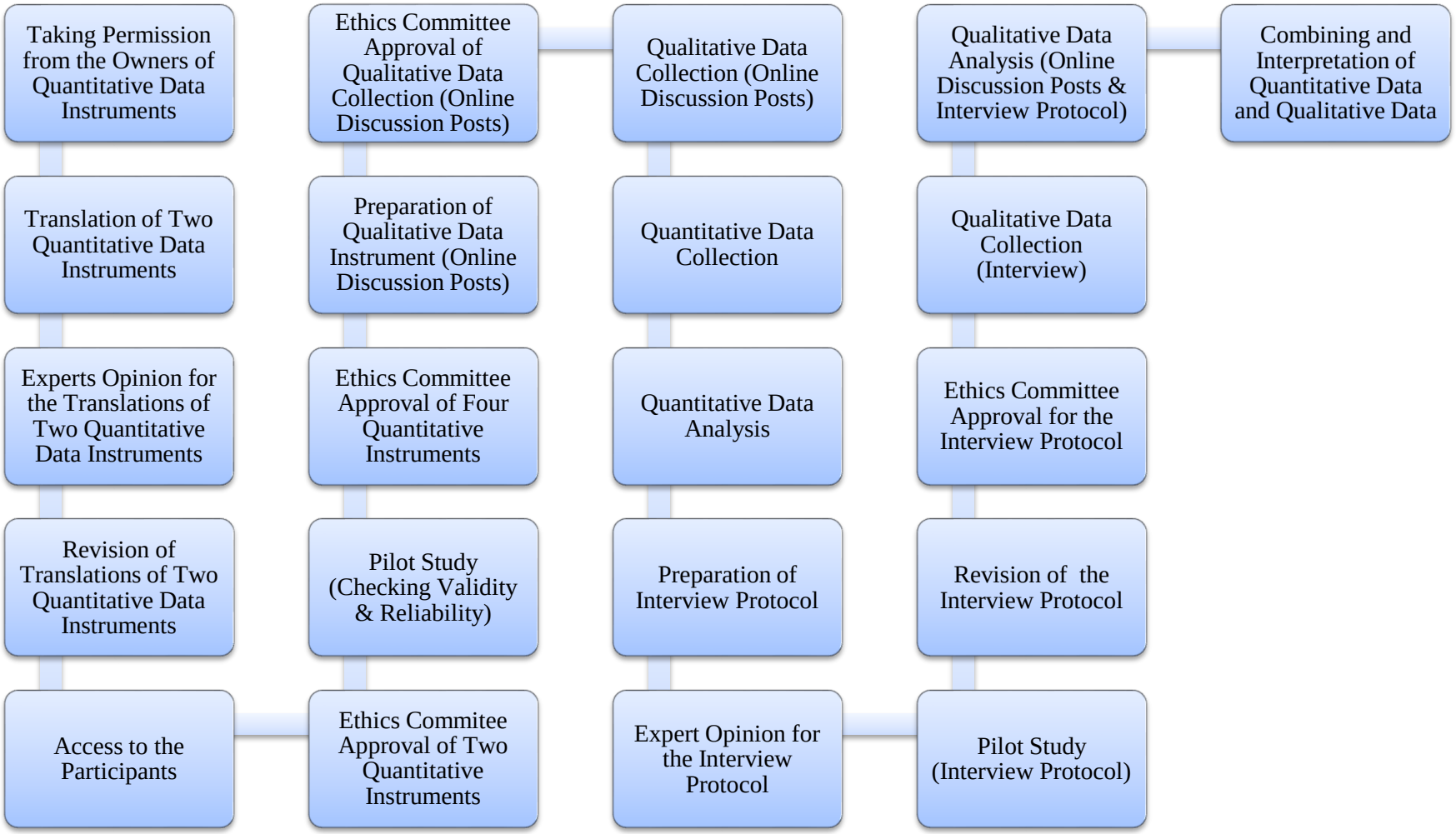

Figure 3.9 Flowchart of Data Collection and Analysis Procedures

3.6 Data Analysis

Data analysis included three-cycle as parallel with the data collection. In the first cycle, quantitative analysis using both descriptive and inferential statistics, in the second cycle both quantitative analysis based on descriptive statistics and qualitative analysis based on deductive content anaylsis for the online discussion posts and in the third cycle qualitative analysis of interview based on inductive content anaylsis were conducted.

In the first cycle, quantitative data analysis were conducted on the data collected via quantitative data collection instruments using the descriptive and inferential statistical analysis. Students' perceived levels of CoI and its three-presence, self-regulation, metacognition and motivation in the online course were investigated after importing data taken from Survey Monkey to the IBM SPSS version 23.0. The multiple linear regression analysis in which the relationship between one dependent variable and several independent variables are investigated (Hair, Black, Tatham & Anderson, 2010). The multiple linear regression analysis revealed the contribution of each predictor into the CoI and its three-presence. With this purpose, four analysis of standard (simultaneous) multiple linear regression were conducted in accordance with the research questions. There are three different methods of multiple linear regression analysis: simultaneous regression, step-wise regression and hierarchical regression. In simultaneous regression, the independent variables are simply entered into the regression equation and their contribution to the prediction of the criterion is evaluated. Thus, for this question, simultaneous regression analysis was conducted. In step-wise regression, the independent variables are entered in an order determined by the degree of statistical significance; researcher cannot determine the order of the independent variables. It was not sued in this study. In hierarchical regression analysis, predictors are entered in an order that specified by the researcher as each independent variable is assessed based on what it adds to the equation at its own point of entry (Tabachnick & Fidell, 2007). It was again not sued in this research and therefore, simultaneous multiple regression analysis was conducted. It also explained the relationship among all these variables. The assumptions that are required to be checked and provided before conducting the regression analysis are normality, homoscedasticity, independent observation, multicollinearity and influential observations, adequate sample size, outliers and missing data. All required assumptions were checked and

provided in a required fashion before conducting the analysis. They are explained in the next chapter.

In the second cycle, discussion posts of the students were analyzed both qualitatively and quantitatively. With this purpose, descriptive analysis and transcript analysis were conducted. Descriptive analysis was conducted to retrieve the percentages of students' posts for three-presence and its categories. For this purpose, the number of students participating in each discussion activity investigated whether containing any indicator of the categories of three-presence or not seperately. Based on the result, percentages were retrieved via the total number of students that participated in each discussion activity divided by the number of posts containing any indicator of the categories of three-presence seperately. This analysis was benefitted from the results of transcript analysis since the percentages were retrieved after transcript analysis. Transcript analysis of discussion postings was conducted deductively based on transcript analysis using the coding matrix. Social presence was coded in three categories: affective expression, open communication and group cohesion (Rourke, Anderson, Garrison, & Archer, 2001). Cognitive presence was coded using the indicators of the four phases of the Practical Inquiry Model: triggering event, exploration, integration and resolution (Garrison & Anderson, 2003). Teaching presence was coded in three categories: design and organization, facilitating discourse, and direct instruction (Anderson, Rourke, Garrison &Archer, 2001). Students' posts can be included in one or more categories of any three-presence at the same time depending on the nature of their posts.

In the third cycle, qualitative data analysis was conducted on the interview transcribed data via inductive content analysis to discover other potential factors that have affect students' perceived levels of social presence, cognitive presence and teaching presence both positively and negatively as well as to take students' suggestions about the ways to enhance three-presence of the CoI in the online course context. The data transcribed and then emerging themes and codes were generated inductively. In order to provide the validity of the findings, triangulation technique was used. Triangulation is defined by Creswell (2002) as the process of corroborating evidence from different individuals (e.g., a principal and a student), types of data (e.g., interviews), or methods of data collection (e.g., interviews) in descriptions and themes in qualitative research. With

this purpose, interrater agreement method was applied and one external interrater was requested to code the interview data to provide the accuracy of the findings and agreement.

3.7 Trustworthiness

Considering the trustworthiness of the study, firstly the fundamental rules of ethics were followed throughout the study. All the participants in any part of data collection treated with respect and kept their identity confidential. They were selected based on their willingness to participate and informed about the whole study. The study did not include any harm (physical or psychological), illegal or misbehaviors for the participants. They were not deceived in any way throughout the study.

All of the instruments were reviewed by subject matter experts and researchers in the field to ensure the content validity. In order to enhance internal validity, reliable and valid instruments used in the study. Two of the four instruments (CoI instrument and motivation instrument) in the quantitative data collection were provided its validity and reliability in previous empirical findings. The remaining two instruments (self-regulation instrument and metacognition instrument) were provided its validity and reliability in the scope of this study and explained in detail under each instrument. The reliability of the variables measured via four quantitative data instruments are explained in Table 3.11 with their Cronbach's Alpha values.

Table 3.11 Cronbach's Alpha Values of Original Study and Current Study

	Original Study	**Current Study**
CoI	.97	.97
Social Presence	.88	.92
Cognitive Presence	.75	.94
Teaching Presence	.92	.93
Self-regulation	.93	.95
Metacognition	-	.94
Motivation	.68	.92

The credibility of the findings were validated with triangulation technique which is the process of corroborating evidence from different individuals, types of data or methods of data collection (Cresswell, 2012) . The data were collected with different methods,

both quantitatively via four-instrument and qualitatively via discussion activities and interview in order to provide and increase the accuracy (validation) of the findings. The subject characteristics including age, gender, yea of school, department, and faculty were presented in detail in any case of implementing in a similar context by other researchers to provide and enhance external validity.

Considering qualitative part of the study, in the analysis which includes two parts, transcription analysis of discussion postings and coding interview data were provided the credibility of their findings with interrater agreement method. The following explains each of them in detail.

3.7.1 Trustworthiness of Coding Discussion Postings

In the first cycle of qualitative data analysis, the asynchronous discussion postings of students in the online course context were analyzed by the researcher and by an interrater separately in order to provide the accuracy refers to the validation of the findings. The interrater was selected based on the experience in coding process. She took "Qualitative Research Methods in Education" course, conducted lots of coding as an interrater. She coded discussion posts of 40 students in the first discussion activity based on social presence and cognitive presence, and 40 students' discussion postings in fifth discussion activity since only the fifth and sixth discussion activities were related with teaching presence because of the focus of this study is particularly on the cognitive presence. The coding of the researcher and the interrater were then compared and the results were interpreted with the agreement method based on three-presence of the CoI framework.

3.7.1.1 Social Presence

According to the results of interrater agreement process, 40 students' posts in DA1 was coded based on three categories of social presence *Affective/Personal (AP), Open Communication (OP) and Group Cohesion (GC)*. AP was coded as 1.00, OC as 2.00, and GC as 3.00. The coding of the researcher and the interrater was compiled in a Microsoft Office Excel sheet and then exported into IBM SPSS version 23.0. The percentage of interrater agreement and all the details about agreed and disagreed coding based on social presence are tabulated in Table 3.12.

Table 3.12 Percentage of Interrater Agreement on Social Presence

rate_difference					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	-3.00	1	1.1	1.1	1.1
	-2.00	5	5.4	5.4	6.5
	.00	74	80.4	80.4	87.0
	1.00	3	3.3	3.3	90.2
	2.00	1	1.1	1.1	91.3
	3.00	8	8.7	8.7	100.0
	Total	92	100.0	100.0	

(1.00: AP, 2.00: OC, 3.00: GC)

Overall, the percent agreement was found 80.4% based on social presence. Table 3.13 presents the cross tabulation of interrater agreement process with indicating the details about agreed and disagreed coding in the agreement process for three-category of social presence. According to the cross tabulation table, the diagonal indicates the agreed coding by the both rater for each category.

Table 3.13 Cross tabulation of Rater 1 * Rater 2 on Social Presence

Rater 1 * Rater 2 Cross tabulation						
Count						
		Rater 2				Total
		.00	AP	OC	GC	
Rater 1	.00	**0**	0	5	1	6
	AP	2	**38**	0	0	40
	OC	1	0	**26**	0	27
	GC	8	0	1	**10**	19
Total		11	38	32	11	92

(n = 40)

Considering the details about the coding of the researcher and the interrater in regard of three-category of social presence, the number of posts coded in AP category by the researcher was 40 whereas it was 38 by the interrater. However, all 38 posts coded in

AP category belong to the same subject. Therefore, the percentage of interrater agreement was really high for the first category of social presence. Moreover, the number of posts coded in OC category was 27 by the researcher while it was 32 by the interrater. However, 26 posts coded in this category were the same which means the percentage of interrater agreement was almost perfect. Furthermore, the number of posts coded in GC category was 19 by the researcher whilst it was 11 by the interrater. Although the numbers of posts coded in this category were not so close to each other, all 10 posts coded in this category were the same. It can be inferred that the percentage of interrater agreement was at acceptable level.

Although the percentage of interrater agreement (80.4%) on social presence shows a perfect agreement, there is a problem with percentage agreement due to the capitalization on chance. Therefore, the better approach is to calculate a measure of agreement which takes into account random agreement opportunities (Altman, 1999; Landis & Koch, 1977). For this reason, in order to have a better approach to detect and interpret agreement of raters, Kappa value was also calculated. Since the data are qualitative and coding based on categorical, nominal codes, Cohen's kappa (κ) was used to detect the level of agreement. Table 3.14 indicates the measure of agreement revealed with Cohen's Kappa value.

Table 3.14 Measure of Agreement on Social Presence

Symmetric Measures					
		Value	Asymptotic Standardized Error[a]	Approximate T[b]	Approximate Significance
Measure of Agreement	Kappa	.715	.054	10.913	.000
N of Valid Cases		92			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

p< .05

According to the result, there was a substantial (good) agreement between the two raters' judgements, κ = .715, *p* < .05. Both methods indicate that coding of discussion postings based on social presence was agreed by the interrater at good level.

3.7.1.2 Cognitive Presence

According to the results of interrater agreement process, 40 students' posts in DA1 was coded based on four categories of cognitive presence *Triggering Event (TE), Exploration (EX), Integration (INT) and Resolution (RES).* In the analysis, TE was coded as 1.00, EX 2.00, INT as 3.00 and RES 4.00. Table 3.15 indicates the descriptive statistics about percentage of interrater agreement on cognitive presence.

Table 3.15 Percentage of Interrater Agreement on Cognitive Presence

rate_difference					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	-4.00	1	.7	.7	.7
	-2.00	2	1.5	1.5	2.2
	.00	123	91.8	91.8	94.0
	1.00	2	1.5	1.5	95.5
	2.00	1	.7	.7	96.3
	3.00	3	2.2	2.2	98.5
	4.00	2	1.5	1.5	100.0
	Total	134	100.0	100.0	

(1.00: TE, 2.00: EX, 3.00: INT, 4.00: RES)

The percent agreement was found 91.8% based on cognitive presence. That means the coding of discussion postings based on cognitive presence was conducted with an almost perfect level of agreement and eliminating subjectivity of the researcher. Table 3.16 presents the details about agreed and disagreed coding in the agreement process for the four-category of cognitive presence. According to the cross tabulation table, the diagonal indicates the agreed coding by the both rater for each category.

Table 3.16 Cross Tabulation of Rater 1 * Rater 2 on Cognitive Presence

Rater 1 * Rater 2 Cross tabulation							
Count							
		Rater 2					Total
		.00	TE	EX	INT	RES	
Rater 1	.00	**0**	0	0	0	1	1
	TE	2	**35**	0	2	0	39
	EX	1	0	**37**	0	0	38
	INT	3	0	0	**23**	0	26
	RES	2	0	0	0	**28**	30
Total		8	35	37	25	29	134

(n = 39)

Considering the details about the coding of the researcher and the interrater in regard of four-category of cognitive presence, the number of posts coded in TE category by the researcher was 39 whereas it was 34 by the interrater. All 34 posts coded in this category were the same. Therefore, the percentage of interrater agreement was almost perfect for the TE category. The number of posts coded in EX category was 38 by the researcher while it was 37 by the interrater. All 37 posts coded in the EX category belong to the same subjects and therefore the percentage of interrater agreement was almost perfect. As for the third category *INT* of cognitive presence, the number of posts coded in INT category by the researcher was 26 whereas it was 25 by the interrater. All the posts coded in INT category by the researcher and the interrater are about the same except one and thus, the percentage of interrater agreement was almost perfect. Finally, the number of posts coded in RES category by the researcher was 30 whereas it was 29 by the interrater. Similar to the case for INT category, all the posts which are coded in RES category by the researcher and the interrater were about the same except one. Hence, the percentage of interrater agreement was almost perfect.

The percent agreement (91.8%) shows a perfect agreement on cognitive presence; another measure is still required because of the capitalization on chance. Hence, the more accurate and better approach about measure of agreement considering random agreement opportunities (Altman, 1999; Landis & Koch, 1977) was conducted via calculating Kappa value. According to the authors' statement, if the coding data

includes levels of nominals, categories, then Cohen's Kappa should be used. Cohen's kappa (κ) value was calculated in IBM SPSS version 23.0. Table 3.17 shows the measure of agreement revealed with Cohen's Kappa value on cognitive presence.

Table 3.17 Measure of Agreement on Cognitive Presence

Symmetric Measures					
		Value	Asymptotic Standardized Error[a]	Approximate T[b]	Approximate Significance
Measure of Agreement	Kappa	.892	.030	18.733	.000
N of Valid Cases		134			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

$p < .05$

According to the result, there was a substantial (good) agreement between the two raters' judgements, $\kappa = .892$, $p < .05$. The first method also indicates evidence for a perfect level of agreement. Therefore, the coding of discussion postings in regard with cognitive presence was conducted with eliminating almost all the researcher's subjectivity.

3.7.1.3 Teaching Presence

According to the results of interrater agreement process, 40 students' posts in DA5 was coded based on three categories of teaching presence *Design and Organization (DO), Facilitating Discourse (FD) and Direct Instruction (DI).* DO was coded as 1.00, FD as 2.00, and DI as 3.00. The posting of one student was not applicable and thus, 39 students' discussion postings were included in the analysis. The coding of the researcher and the interrater were analyzed and summarized in a Microsoft Office Excel sheet and then imported to IBM SPSS. Table 3.18 indicates the descriptive statistics about percentage of interrater agreement on teaching presence.

Table 3.18 Percentage of Interrater Agreement on Teaching Presence

rate_difference					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	-3.00	1	1.4	1.4	1.4
	-2.00	1	1.4	1.4	2.8
	-1.00	2	2.8	2.8	5.6
	.00	59	83.1	83.1	88.7
	1.00	1	1.4	1.4	90.1
	2.00	4	5.6	5.6	95.8
	3.00	3	4.2	4.2	100.0
	Total	71	100.0	100.0	

(1.00: DO, 2.00: FD, 3.00: DI)

Overall, the percent agreement was found 83.1% based on teaching presence. The more details about agreed and disagreed coding in the agreement process for the three-category of teaching presence is tabulated in Table 3.19. According to the cross tabulation table, the diagonal indicates the agreed coding by the both rater for each category.

Table 3.19 Cross Tabulation of Rater 1 * Rater 2 on Teaching Presence

Rater 1 * Rater 2 Cross tabulation						
Count						
		Rater 2				Total
		.00	DO	FD	DI	
Rater 1	.00	**1**	0	1	1	3
	DO	1	**37**	0	0	38
	FD	4	0	**12**	2	18
	DI	3	0	0	**9**	12
Total		9	37	13	12	71

(n = 39)

Considering the details about the coding of the researcher and the interrater in regard of three-category of teaching presence, the number of posts coded in DO category by

the researcher was 38 whereas it was 37 by the interrater. All 37 posts coded in this category were the same. Therefore, the matching of agreed and disagreed coding was really high and the percentage of interrater agreement was almost perfect for the DO category. The number of posts coded in FD category was 18 by the researcher while it was 13 by the interrater. All 12 posts coded in this category were the same and so the percentage of interrater agreement was almost perfect. Finally, the number of posts coded in DI category was 12 both by the researcher and the interrater. However, the number of posts which is common and belongs to the same subjects was 9. Still, the agreement was almost perfect.

Although the percent agreement (83.1%) on teaching presence shows a perfect agreement, the capitalization on chance can mislead. For this reason, the better approach is to calculate a measure of agreement that takes the gauge of random agreement opportunities (Altman, 1999; Landis & Koch, 1977). Kappa value was also calculated to have more accurate information about measure of raters' agreement. Cohen's kappa (κ) was used because the coding was based on categorical, nominal codes. Table 3.20 shows the measure of agreement revealed with Cohen's Kappa value on teaching presence.

Table 3.20 Measure of Agreement on Teaching Presence

Symmetric Measures

		Value	Asymptotic Standardized Error[a]	Approximate T[b]	Approximate Significance
Measure of Agreement	Kappa	.736	.062	9.849	.000
N of Valid Cases		71			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

$p < .05$

According to the result, there was a substantial (good) agreement between the two raters' judgements, $\kappa = .736$, $p < .05$. The first method *percentage of interrater agreement* indicates also evidence for a substantial level of agreement. Hence, the

coding of discussion postings in regard with teaching presence was conducted with reducing the researcher's subjectivity and bias and also enhancing objectivity.

3.7.2 Trustworthiness of Coding Interview Data

In the second cycle of the qualitative data analysis, specifically interviews, a different interrater coded six interview (3 female, 3 male) data. The external coder was selected based on the experience in coding qualitative data. She is really experienced in qualitative. She also conducted her doctoral dissertation based particularly on qualitative data. She also conducted some qualitative researches and administered qualitative coding and became external coder in some studies.

The validity of generated themes and codes were administered with measure of agreement. In coding process, the researcher and the external coder made coding of six interviewees' (3 female, 3 male) transcribed data separately. The codes and sub-codes were compared with each other to reveal the match and then together with the interrater, themes were generated based on the CoI model and the related literature. In terms of codes and sub-codes, there was no disagreement between the researcher and interrater and therefore, the agreement was perfect. The coding schema of the interview is presented in Table 3.21.

Table 3.21 Coding Schema

Themes	**Codes**	**Sub-codes**
Demographics	Working condition	
	Marital status	
	Prior knowledge	
Teaching presence	Course Activities	Discussion
		Assignment
		Group working
		Exam
	Concerns about the course	
	Encouraging students	
	Instructor's feedback	

Themes	Codes	Sub-codes
	Evaluation of students' performances	
Social presence	Communication	Communication with other students Communication with the instructor
	Belongingness to the community	
Cognitive Presence	Motivation	
	Cooperation	
	Combining new information	
	Integration knowledge into daily life	
Suggestions	Scope of course content	
	Type of education (blended learning)	
	More practice	

According to the results, five themes; namely demographics, teaching presence, social presence, cognitive presence and suggestions were generated. Under these themes, there were 17 codes and 6 sub-codes in total. They were explained in the next chapter in accordance with the research questions.

3.8 Limitations

In this study, the first phase of data collection, namely online discussion forums were hold asynchronously. Since students are educated in online program and many of them are working, there would be time lags in synchronous format. For this reason, discussions were hold asynchronously. However, in a synchronous format, the results could differ especially in terms of social presence and therefore, it is one of the limitations of this study. Moreover, the instructor was at the outside of the discussion activities, she was only the observer of the process. If the instructor were included in the discussion, the results could be differ. However, it might be better for the students to feel more comfortable on the contrary. Hence, it might be a limitation but also may

not. In addition, teaching presence was covered only in two discussion activity. The reason behind this was the focus of the study which is examining cognitive presence in depth and learning how to foster it since it was the least known element up-to-date. Also, it is caused by the nature of teaching presence which is addressed as the most known element of CoI framework. However, the examples and indicators of teaching presence encountered only in two discussion activities. Although it was appropriate in accordance with the aim of the study, still it could be a limitation.

Moreover, the third phase of data collection, namely interviews were conducted with the students from the students participated in the first cycle of data collection. The students in the first cycle were classified in three different groups based on their participation ratio in the first cycle and for the interviews, equal number of students from each three groups were tried to be accessed. However, in group 3 which includes students participated at low ratio were not accessed as much as in other two groups including students participated at moderate or high level. This is another limitation of this study.

Furthermore, while conducting interviews, some students stated they were not comfortable in audio or video calling, and suggested to conduct interviews as written statements. Some students stated they were excited and some told they could participate only if it would be done via chat, mail or messages. Thus, interviews conducted with those students via synchronized chat in Facebook in order not to lose those participants in the study. Although the interviews, rather than mail or messages; conducted via synchronized chat to make clear the questions for them and deepen the data at that time, they might not be responded too much or not express their thoughts and feelings in a better way as in talking. Therefore, this is another limitation of this study.

Finally, the size of participants in the whole study specifically the second cycle of data collection and participants studied in the second and third cycles of data collection were excessively different from each other. If their number were closer, making a comparision between two types of students which are educated in formal education but have online learning experience and at the current time enrolled in some online courses (N=1435), and students are educated in totally online learning setting (N=100) could be better. However, the numbers are so different that conducting an inferential

analysis specifically multiple linear regression is not appropriate and do not meet with the required assumptions for the analysis. For the comparision, only their descriptive statistics were used.

CHAPTER 4

RESULTS

This chapter includes the research findings of the study. The findings are organized and presented in parallel with the research questions respectively. At the end of chapter, a summary about the whole chapter is provided.

4.1 Perceptions of Students about CoI, SP, CP, TP, Self-regulation, Metacognition and Motivation (RQ1)

In consideration of first research question, the perceived levels of CoI, social presence, cognitive presence, teaching presence, self-regulation, metacognition and motivation of the students in the online course context were discovered via their responses to the quantitative data instruments. The research question that is examined in this part is the following.

> RQ1. What are the students' perceived levels of CoI, social presence, cognitive presence, teaching presence, self-regulation, metacognition and motivation in the online course context?

The results of demographics statistics about students' community of inquiry, social presence, cognitive presence, teaching presence, self-regulation, metacognition, and motivation are presented in Table 4.1.

Table 4.1 Descriptive Statistics of Students' CoI, SP, CP, TP, Self-regulation, Metacognition and Motivation

	Mean	**SD**	**Minimum**	**Maximum**
CoI	3.45	.70	1.00	5.00
Social Presence	3.26	.85	1.00	5.00
Cognitive Presence	3.44	.77	1.00	5.00
Teaching Presence	3.64	.68	1.00	5.00
Self-regulation	3.39	.72	1.00	5.00
Metacognition	3.85	.59	1.00	5.00
Motivation	4.50	.86	1.00	7.00

N=1535

According to the results, students' perceived levels of the CoI in the online course context has a mean score of 3.45 over 5.00 and standard deviation of .70. The minimum score is 1.00 while the maximum score is 5.00. Their perceived levels of social presence has a mean score of 3.26 and a standard deviation of .85. Cognitive presence has a mean score of 3.44 and a standard deviation of .77, while the mean score of teaching presence is 3.64 and standard deviation is .68. Their perceived levels of self-regulation has a mean score of 3.39 and standard deviation of .72 while the metacognition (M= 3.85, SD= .59). The highest mean score belongs to the motivation (M= 4.50, SD= .86). The minimum score of the motivation is 1.0 while the maximum score score is 7.00.

Since Likert type instruments used in this study regarded as interval scale, the gap between the point 1 and 2 on the scale are the same with the gap between the point 3 and 4 in contrary to anticipated as a nominal or ordinal scale. In the same way, for 7-Likert type instrument, the gap between the point 5 and 6 could be appreaciated as same between the gap between the point 1 and 2 on the scale (Hart, 1996; Teghtsoonian, Teghtsoonian, 1978). Therefore, based on descriptive statistics, in order

to compare the measured constructs, three groups, namely lowest group, middle group and highest group were created (Figure 4.1 and 4.2).

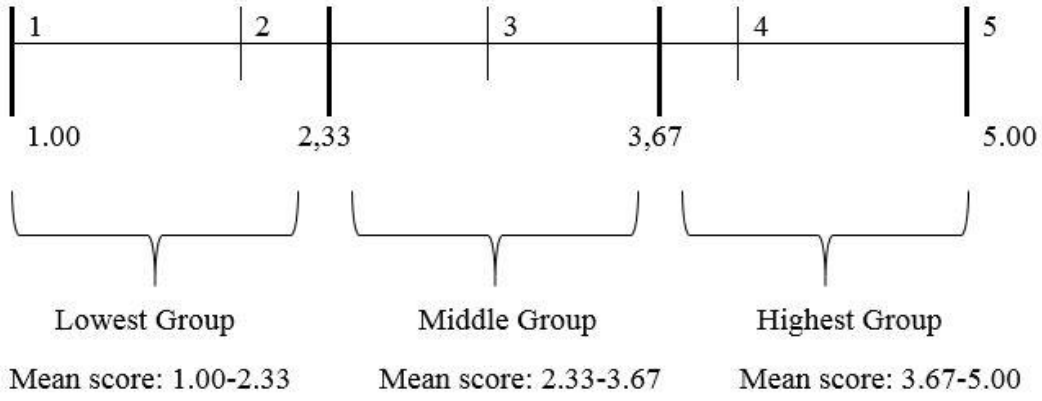

Figure 4.1 Mean Scores Range for the CoI, Its Three-Presence, Self-regulation and Metacognition and Their Three Representative Groups

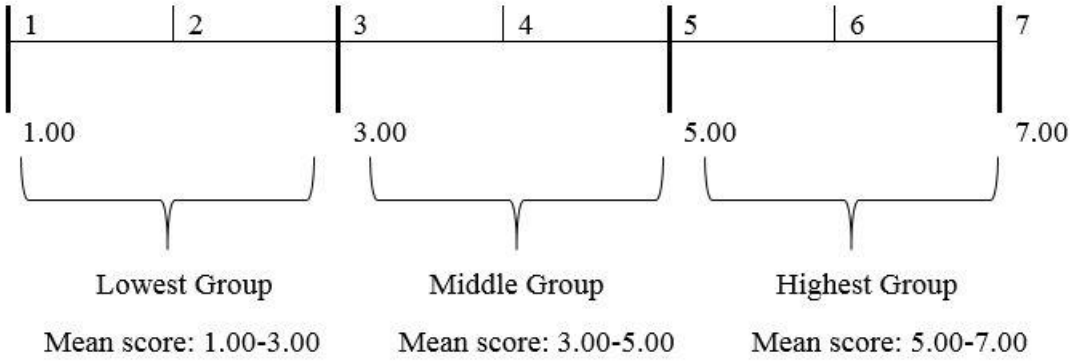

Figure 4.2 Mean Scores Range for Motivation and Its Three Representative Groups

When considering three groups formed based on mean scores, range and intervals, students' perceptions of the CoI, social presence, teaching presence, cognitive presence, self-regulation, and motivation lay in the middle group. Although included in the same group, students' perceptions of teaching presence which is very close to the boundary of the highest group, is the highest among the others laying in the middle group. It is followed by the CoI and cognitive presence, and then self-regulation and lastly ocial presence which is the lowest score among all of them. Only students' perceptions of metacognition lays in the highest group. Overall, their perceptions of all these variables found well enough laying in either medium or highest group.

With regard to students in MDS Department participated in the second and third cycles of data collection process via online discussion posts and interview protocol, their descriptive statictics are presented in Table 4.2.

Table 4.2 Descriptive Statistics about CoI, SP, CP, TP, Self-regulation, Metacognition and Motivation of Students in MDS Department

	Mean	**SD**	**Minimum**	**Maximum**
CoI	4.1	.54	2.65	5.00
Social Presence	3.97	.63	2.11	5.00
Cognitive Presence	4.16	.57	2.67	5.00
Teaching Presence	4.19	.57	2.69	5.00
Self-regulation	3.94	.57	2.58	5.00
Metacognition	4.23	.47	3.08	5.00
Motivation	5.17	.82	1.90	7.00

N=100

The descriptive statistics given in Table 4.2 belongs to the students at MDS Department including 100 student. Their perceived levels of the CoI in the online course context has a mean score of 4.1 over 5.00 and standard deviation of .54. The minimum score is 2.65 while the maximum score is 5.00. Their perceived levels of social presence has a mean score of 3.97 and a standard deviation of .63. The minimum score of social presence is 2.11. Cognitive presence has a mean score of 4.16 and a standard deviation of .57, while the mean score of teaching presence is 4.19 and standard deviation is .57. The maximum score was the same with the whole sample while the minimum scores were different. The minimum score of cognitive presence was 2.67, and it was 2.69 of teaching presence. Their perceived levels of self-regulation has a mean score of 3.94 and standard deviation of .57 while the metacognition (*M*= 4.23, *SD*= .47). The minimum score of the self-regulation is 2.58 while the maximum score score is 5.00. Also, the minimum score of the metacognition is 3.08 while the maximum score score is 5.00. The mean score of the motivation is

5.17 and standard deviation of .82 (*M*= 5.17, *SD*= .82). The minimum score of the motivation is 1.90 while the maximum score score is 7.00. Overall, students at MDS Deaprtment got higher levels considering the minimum scores and mean scores as compared with the whole sample. Also, the mean scores of MDS students for all constructs lay in the highest group according to mean scores range. Therefore, it can be inferred that online discussion activities were beneficial for them to attain higher levels in these constructs.

The descriptive statistics about the students except in MDS Department are provided in Table 4.3.

Table 4.3 Descriptive Statistics about CoI, SP, CP, TP, Self-regulation, Metacognition and Motivation of Students not in MDS Department

	Mean	**SD**	**Minimum**	**Maximum**
CoI	3.27	.78	1.00	5.00
Social Presence	3.21	.85	1.00	5.00
Cognitive Presence	3.39	.76	1.00	5.00
Teaching Presence	3.60	.67	1.00	5.00
Self-regulation	3.36	.71	1.00	5.00
Metacognition	3.83	.58	1.00	5.00
Motivation	4.45	.84	1.00	7.00

N=1435

The descriptive statistics provided in Table 4.3 belongs to the students except educated in MDS Department including 1435-student. Their perceived levels of the CoI in the online course context has a mean score of 3.27 over 5.00 and standard deviation of .578 (*M*= 3.27, *SD*= .82). The descriptive statistics about social presence are (*M*= 3.21, *SD*= .85), cognitive presence (*M*= 3.39, *SD*= .76), and teaching presence (*M*= 3.60, *SD*= .67). The mean score of the self-regualtion is 3.36 and standard deviation of .71 (*M*= 3.36, *SD*= .71), while that of metacognition are (*M*= 3.83, *SD*= .58). Finally, mean score of the motivation is 4.45 and standard deviation of .84 (*M*= 4.45, *SD*= .84). The

minimum score is 1.00 and the maximum score is 5.00 for all constructs except motivation of that was 7.00. Their minimum and maximum score are the same with the whole sample. As compared with MDS students, the minimum score of MDS students are higher than the remaining part of the sample.

Considering students' responses for each item in aforementioned constructs, firstly CoI survey is in the 5-point Likert type response format indicating - 1: strongly disagree; 2: disagree; 3: neutral; 4: agree; and 5: strongly agree and therefore students' scores change between 1 and 5. The details about the students' perceptions of the CoI in the online course was provided with the descriptive statistics about their responses for each item in the CoI instrument that are illustrated in Table 4.4 based on its three factors *teaching presence, social presence and cognitive presence.*

Table 4.4 Descriptive Statistics of CoI Survey Grouped by its Three-Presence

	ITEMS	Mean	SD
Community of Inquiry		**3.45**	**.70**
Social Presence		**3.26**	**.85**
Item-14	Getting to know other course participants gave me a sense of belonging in the course.	3.52	1.04
Item-15	I was able to form distinct impressions of some course participants.	3.08	1.15
Item-16	Online or web-based communication is an excellent medium for social interaction.	3.13	1.19
Item-17	I felt comfortable conversing through the online medium.	3.25	1.16
Item-18	I felt comfortable participating in the course discussions.	3.23	1.09
Item-19	I felt comfortable interacting with other course participants.	3.28	1.07
Item-20	I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.	3.29	1.05

	ITEMS	Mean	SD
Item-21	I felt that my point of view was acknowledged by other course participants.	3.27	1.02
Item-22	Online discussions help me to develop a sense of collaboration.	3.31	1.06
Cognitive Presence		**3.44**	**.77**
Item-23	Problems posed increased my interest in course issues	3.39	1.02
Item-24	Course activities piqued my curiosity.	3.38	1.05
Item-25	I felt motivated to explore content related questions.	3.36	1.04
Item-26	I utilized a variety of information sources to explore problems posed in this course.	3.37	1.07
Item-27	Brainstorming and finding relevant information helped me resolve content related questions.	3.45	.99
Item-28	Online discussions were valuable in helping me appreciate different perspectives.	3.39	1.05
Item-29	Combining new information helped me answer questions raised in course activities.	3.46	.99
Item-30	Learning activities helped me construct explanations/solutions.	3.49	.97
Item-31	Reflection on course content and discussions helped me understand fundamental concepts in this class.	3.45	.95
Item-32	I can describe ways to test and apply the knowledge created in this course.	3.43	.97
Item-33	I have developed solutions to course problems that can be applied in practice.	3.38	1.02
Item-34	I can apply the knowledge created in this course to my work or other non-class related activities.	3.70	.98

	ITEMS	Mean	SD
Teaching Presence		**3.68**	**.68**
Item-1	The instructor clearly communicated important course topics.	3.77	.88
Item-2	The instructor clearly communicated important course goals.	3.79	.86
Item-3	The instructor provided clear instructions on how to participate in course learning activities.	3.86	.86
Item-4	The instructor clearly communicated important due dates/time frames for learning activities.	3.95	.92
Item-5	The instructor was helpful in identifying areas of agreement and disagreement on course topics that helped me to learn.	3.63	.91
Item-6	The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.	3.64	.92
Item-7	The instructor helped to keep course participants engaged and participating in productive dialogue.	3.62	.91
Item-8	The instructor helped keep the course participants on task in a way that helped me to learn.	3.60	.91
Item-9	The instructor encouraged course participants to explore new concepts in this course.	3.52	.95
Item-10	Instructor actions reinforced the development of a sense of community among course participants.	3.50	.98
Item-11	The instructor helped to focus discussion on relevant issues in a way that helped me to learn.	3.52	.97
Item-12	The instructor provided feedback that helped me understand my strengths and weaknesses relative to the course's goals and objectives.	3.39	1.00
Item-13	The instructor provided feedback in a timely fashion.	3.53	.98

N=1535

The mean scores of each item in the CoI survey showed that all the items in each presence had mean score around overall mean scores of each presence and the CoI. There was no any item having notable different mean score as compared to overall mean scores of each presence and the CoI. Considering three-presence of the CoI, teaching presence had the highest mean score whilst the social presence was the lowest. In terms of teaching presence, the highest means score belonged to the items 3 and 4 while the lowest mean score was item 12. With regard to social presence, the highest means score belonged to the item 14 whilst the lowest mean score was items 15 and 16. Finally, as for cognitive presence, the highest means score belonged to the item 34 whereas the lowest mean score was items 24, 26 and 33. Frequency of CoI survey based on its three-presence and its indicators is presented in Table 4.5.

Table 4.5 Frequency of CoI Survey Grouped by its Three-Presence and its Sub-Categories

	Strongly disagree (1)	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly agree (5)**
Social Presence					
Affective/ Personal					
Item-14	69	170	448	591	257
	4.5%	11.1%	29.2%	38.5%	16.7%
Item-15	177	265	504	436	153
	11.5%	17.3%	32.8%	28.4%	10.0%
Item-16	186	244	485	423	197
	12.1%	15.9%	31.6%	27.6%	12.8%
Open Communication					
Item-17	142	239	469	461	224
	9.3%	15.6%	30.6%	30.0%	14.6%
Item-18	116	239	542	455	183
	7.6%	15.6%	35.3%	29.6%	11.9%
Item-19	110	208	543	487	187
	7.2%	13.6%	35.4%	31.7%	12.2%

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
Group Cohesion					
Item-20	94	215	569	471	186
	6.1%	14.0%	37.1%	30.7%	12.1%
Item-21	85	205	639	425	181
	5.5%	13.4%	41.6%	27.7%	11.8%
Item-22	93	225	524	500	193
	6.1%	14.7%	34.1%	32.6%	12.6%
Cognitive Presence					
Triggering Event					
Item-23	77	194	514	553	197
	5.0%	12.6%	33.5%	36.0%	12.8%
Item-24	90	201	480	563	201
	5.9%	13.1%	31.3%	36.7%	13.1%
Item-25	84	201	523	530	197
	5.5%	13.1%	34.1%	34.5%	12.8%
Exploration					
Item-26	86	235	450	552	212
	5.6%	15.3%	29.3%	36.0%	13.8%
Item-27	67	168	507	593	200
	4.4%	10.9%	33.0%	38.6%	13.0%
Item-28	80	214	466	573	202
	5.2%	13.9%	30.4%	37.3%	13.2%
Integration					
Item-29	54	190	489	597	205
	3.5%	12.4%	31.9%	38.9%	13.4%
Item-30	52	162	504	612	205
	3.4%	10.6%	32.8%	39.9%	13.4%
Item-31	51	170	529	604	181
	3.3%	11.1%	34.5%	39.3%	11.8%

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
Resolution					
Item-32	57	175	547	564	192
	3.7%	11.4%	35.6%	36.7%	12.5%
Item-33	69	206	536	524	200
	4.5%	13.4%	34.9%	34.1%	13.0%
Item-34	42	120	432	606	335
	2.7%	7.8%	28.1%	39.5%	21.8%
Teaching Presence					
Design and Oranization					
Item-1	32	68	421	718	296
	2.1%	4.4%	27.4%	46.8%	19.3%
Item-2	23	81	372	773	281
	1.5%	5.3%	24.2%	50.4%	8.6%
Item-3	22	75	342	758	338
	1.4%	4.9%	22.3%	49.4	22.0%
Item-4	26	85	287	684	453
	1.7%	5.5%	18.7%	44.6%	29.5%
Facilitating Discourse					
Item-5	27	117	510	621	260
	1.8%	7.6%	33.2%	40.5%	16.9%
Item-6	28	126	486	630	265
	1.8%	8.2%	31.7%	41.0%	17.3%
Item-7	32	102	540	606	255
	2.1%	6.6%	35.2%	39.5%	16.6%
Item-8	33	120	517	628	237
	2.1%	7.8%	33.7%	40.9%	15.4%
Item-9	42	145	548	567	233
	2.7%	9.4%	35.7%	36.9%	15.2%
Item-10	44	157	564	521	249
	2.9%	10.2%	36.7%	33.9%	16.2%

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
Direct Instruction					
Item-11	40	170	529	551	245
	2.6%	11.1%	34.5%	35.9%	16.0%
Item-12	61	200	542	536	196
	4.0%	13.0%	35.3%	34.9%	12.8%
Item-13	59	142	488	622	224
	3.8%	9.3%	31.8%	40.5%	14.6%

N=1535

As can be seen in Table 4.5, in regard of social presence, for affective/personal belies most of the students (55.2%, N=848) said that they felt sense of belong in the course getting to know other course participants. Some students (38.4%, N=589) said that they were able to form distinct impressions of some course participants. They (40.4%; N=620) also favor online or web-based communication for social interaction. In terms of open communication, some (44.6%, N=685) stated they felt comfortable conversing through the online medium. Similarly, some other students (41.5%, N=638) stated they felt comfortable participanting in the course discussions. Also, some (43.9%, N=674) felt comfortable interacting with other course participants. In regard with group cohesion, some students (42.8%, N=657) stated they felt comfortable disagreeing with other course participants while still maintaining a sense of trust while some (37.1%, N=569) were abstainer. Some of them (39.5%, n=606) felt that their points of view were acknowledged by other course participants; however more (41.6%, N=639) were not sure. Some students (41.6%, N=693) thought that online discussions help me to develop a sense of collaboration.

Considering sub-constructs of cognitive presence, in regard of triggering event, some students (42.8%, N=750) said that problems posed increased their interest in course issues while some others (35.6%, N=514) wase undecided. About half of them (49.8%, N=764) thought that course activities piqued their curiosity. Similarly, some students (47.3%, N=727) felt motivated to explore content related questions. In terms of exploration, about half of them (49.8%, N=764) utilized a variety of information sources to explore problems posed in the course. More than half (51.6%, N=793) also

said that brainstorming and finding relevant information helped them resolve content related questions. In adiditon, half of them (50.5%, N=775) stated online discussions were valuable in helping them appreciate different perspectives. Thirdly, in regard with integration, more than half (52.3%, N=802) told that combining new information helped them answer questions raised in course activities. Similarly, again more than half (53.3%, N=817) thought learning activities helped them construct explanations and solutions. In addition, more than half of the students (51.1%, N=785) stated reflection on course content and discussions helped to understand fundamental concepts in this class. Finally, in terms of resolution, about half of the students (49.2%, N=756) stated that they can describe ways to test and apply the knowledge created in this course. They (47.1%, N=724) said that they have developed solutions to course problems that can be applied in practice. And majority of them (60.3%; N=941) also said that they can apply the knowledge created in this course to their work or other non-class related activities.

Finally, considering teaching presence, firstly, about design and organization, majority the students (66.1%, N=1014) told that the instructor clearly communicated important course topics. Also, most of them (59.0%, N=1054) thougth that the instructor clearly communicated important course goals. Many students (71.4%, N=1096) declared that the instructor provided clear instructions on how to participate in course learning activities. Again most students (74.1%, N=1137) said that the instructor clearly communicated important due dates/time frames for learning activities.

Secondly, about the facilaiting discourse, more than half of the students (57.4%, N=881) declared that the instructor was helpful in identifying areas of agreement and disagreement on course topics that helped me to learn. They (58.3%, N=895) also said that the instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking. 56.1% (N=861) of the participants thougth that the instructor helped to keep course participants engaged and participating in productive dialogue. At about the same percentage (N=865), they also told that the instructor helped keep the course participants on task in a way that helped me to learn. More than half (52.1%, N=800) said that the instructor encouraged them to explore new concepts in this course. And half of them (N=770) said that the course instructor actions reinforced the development of a sense of community. Lastly, for direct

instruction, more than half (51.9%, N=796) stated that the instructor helped to focus discussion on relevant issues in a way that helped them to learn while 34.5% (N=529) was undecided. About feedback, 47.7% (N=732) of them stated that the instructor provided feedback that helped them understand their own strengths and weaknesses relative to the course's goals and objectives, however 35.3% (N=542) of them was neutral. And lastly, 55.1% (N=846) of the students stated that the instructor provided feedback in a timely fashion.

Students' self-regulation was measured via selfregulation questionnaire which is the 5-point Likert type response format indicating - 1: strongly disagree; 2: disagree; 3: neutral; 4: agree; and 5: strongly agree and therefore students' scores change between 1 and 5. The descriptive statistics about the students' responses for 24-item in self-regulation instrument were presented in Table 4.6.

Table 4.6 Descriptive Statistics of 24-Item of Self-Regulation Questionnaire

	ITEMS	Mean	SD
Self-regulation		**3.39**	**.72**
Item-1	I set standards for my assignments in online courses.	3.26	1.03
Item-2	I set short-term (daily or weekly) goals as well as long-term goals (monthly or for the semester).	3.54	.98
Item-3	I keep a high standard for my learning in my online courses.	3.40	.97
Item-4	I set goals to help me manage studying time for my online courses.	3.42	.98
Item-5	I don't compromise the quality of my work because it is online.	3.30	1.06
Item-6	I choose the location where I study to avoid too much distraction.	3.72	.96
Item-7	I find a comfortable place to study. structuring	3.93	.90
Item-8	I know where I can study most efficiently for online courses.	3.68	1.01
Item-9	I choose a time with few distractions for studying for my online courses.	3.71	.99

	ITEMS	Mean	SD
Item-10	I try to take more thorough notes for my online courses because notes are even more important for learning online than in a regular classroom.	3.38	1.11
Item-11	I read aloud instructional materials posted online to fight against distractions.	3.26	1.11
Item-12	I prepare my questions before joining in the chat room and discussion.	3.02	1.16
Item-13	I work extra problems in my online courses in addition to the assigned ones to master the course content.	3.16	1.10
Item-14	I allocate extra studying time for my online courses because I know it is time-demanding.	3.22	1.12
Item-15	I try to schedule the same time every day or every week to study for my online courses, and I observe the schedule.	3.11	1.14
Item-16	Although we don't have to attend daily classes, I still try to distribute my studying time evenly across days.	3.21	1.12
Item-17	I find someone who is knowledgeable in course content so that I can consult with him or her when I need help.	3.54	1.02
Item-18	I share my problems with my classmates online so we know what we are struggling with and how to solve our problems.	3.34	1.09
Item-19	If needed, I try to meet my classmates face-to-face.	3.47	1.07
Item-20	I am persistent in getting help from the instructor through e-mail.	3.25	1.10
Item-21	I summarize my learning in online courses to examine my understanding of what I have learned.	3.46	1.06
Item-22	I ask myself a lot of questions about the course material when studying for an online course.	3.36	1.04

	ITEMS	Mean	SD
Item-23	I communicate with my classmates to find out how I am doing in my online classes.	3.28	1.11
Item-24	I communicate with my classmates to find out what I am learning that is different from what they are learning.	3.43	1.10

N=1535

The mean scores of each item in the self-regulation questionnaire showed that all the items had mean score around overall self-regulation mean score. There was no any item having notable different mean score as compared to overall mean score. The highest means scores belonged to the items 6, 7, and 9. These items are yielded in the factor named environment structuring. The lowest means scores belonged to the items 12, 13, and 15. Items 12 and 13 yielded in the factor *task strategies* and item 15 in the factor *time management*. Frequency of self-regulation questionnaire based on its sub-factors is presented in Table 4.7.

Table 4.7 Frequency of Self-Regulation Questionnaire Grouped by its Sub-Categories

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
Goal Setting					
Item-1	91	231	558	495	160
	5.9%	15.0%	36.4%	32.2%	10.4%
Item-2	43	189	426	652	225
	2.8%	12.3%	27.8%	42.5%	14.7%
Item-3	63	185	530	587	170
	4.1%	12.1%	34.5%	38.2%	11.1%
Item-4	55	199	503	599	179
	3.6%	13.0%	32.8%	39.0%	11.7%
Item-5	88	229	549	467	202
	5.7%	14.9%	35.8%	30.4%	13.2%

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
Environment Structuring					
Item-6	38	122	379	686	310
	2.5%	7.9%	24.7%	44.7%	20.2%
Item-7	24	76	308	697	430
	1.6%	5.0%	20.1%	45.4%	28.0%
Item-8	53	129	404	621	328
	3.5%	8.4%	26.3%	40.5%	21.4%
Item-9	44	132	372	665	322
	2.9%	8.6%	24.2%	43.3%	21.0%
Task Strategies					
Item-10	95	226	464	495	255
	6.2%	14.7%	30.2%	32.2%	16.6%
Item-11	107	278	451	506	193
	7.0%	18.1%	29.4%	33.0%	12.6%
Item-12	170	355	448	402	160
	11.1%	23.1%	29.2%	26.2%	10.4%
Item-13	115	316	474	461	169
	7.5%	20.6%	30.9%	30.0%	11.0%
Time Management					
Item-14	112	305	437	488	193
	7.3%	19.9%	28.5%	31.8%	12.6%
Item-15	145	316	461	448	165
	9.4%	20.6%	30.0%	29.2%	10.7%
Item-16	128	272	469	485	181
	8.3%	17.7%	30.6%	31.6%	11.8%
Help Seeking					
Item-17	62	175	416	637	245
	4.0%	11.4%	27.1%	41.5%	16.0%
Item-18	10	230	461	541	203

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
	6.5%	15.0%	30.0%	35.2%	13.2%
Item-19	86	178	447	587	243
	5.6%	11.6%	29.1%	37.9%	15.8%
Item-20	112	249	514	465	195
	7.3%	16.2%	33.5%	30.3%	12.7%
Self-evaluation					
Item-21	84	187	433	604	227
	5.5%	12.2%	28.2%	39.3%	14.8%
Item-22	85	218	482	565	185
	5.5%	14.2%	31.4%	36.8%	12.1%
Item-23	124	228	460	534	189
	8.1%	14.9%	30.0%	34.8%	12.3%
Item-24	95	211	424	556	249
	6.2%	13.7%	27.6%	36.2%	16.2%

N=1535

As can be seen in Table 4.7, in regard with goal setting, some students (42.6%; N=655) stated that they set standards for their assignments in online courses, however some others (36.4%, N=558) were undecided. More than half of the students (57.2%, N=877) told that they set short-term (daily or weekly) goals as well as long-term goals (monthly or for the semester). About half (49.3%, N=757) stated that they keep a high standard for their learning in the online courses, while some others (34.5%, N=530) were not sure. About half of the students (49.7%, N=778) declared that they set goals to help them manage studying time for their online courses while some others (32.8%, N=503) were undecided. And lastly, some students (43.6%, N=669) stated that they don't compromise the quality of their work because it is online whereas some others (35.8%, N=549) were not sure. Secondly, for environment structuring, many students (64.9%, N=996) stated that they choose the location where they study to avoid too much distraction. Most of them (73.4%, N=1127) told that they find a comfortable place to study. In addition, many students (61.9%, N=949) know where they can study most efficiently for online courses. And lastly, most of them (64.3%, N=987) stated that they choose a time with few distractions for studying for their online courses. In

terms of task strategies, about half (48.8%, N=750) of the students said that they try to take more thorough notes for their online courses because notes are even more important for learning online than in a regular classroom while some others (30.2%, N=464) were not sure. The frequencies about students' response rate were 45.6% (N=699) for reaingd aloud instructional materials posted online to fight against distractions, 36.6% (N=562) for preparing their questions before joining in the chat room and discussion, and 41.0% (N=630) for working extra problems in their online courses in addition to the assigned ones to master the course content. Their responses to the task strategies were fairly moderate andit can be inferred that they could need improvement in their skills and behaviors of task strategies.

In terms of time management, some students (44.4%, N=681) stated that they allocate extra studying time for their online courses because they know it is time-demanding, whereas some others (28.5%, N=437) were undecided. Some of them (39.9%, N=613) told that they try to schedule the same time every day or every week to study for their online courses, and they observe the schedule, whilst some others (30.0%, N=461) were not sure. And about time management, some students (43.4%, N=666) also stated although they don't have to attend daily classes, they still try to distribute their studying time evenly across days while some others (30.6%, N=469) were undecided. Furthermore, about help seeking, more than half of the students (57.5%, N=882) stated that they find someone who is knowledgeable in course content so that they can consult with him or her when they need help while some others (27.1%, N=416) were not sure. Some students (48.4%, N=744) stated that they share their problems with the classmates online so they know what they are struggling with and how to solve their problems whereas some others (30.0%, N=461) were not sure. More than half of them (53.7%, N=830) said that if needed, they try to meet the classmates face-to-face. And finally, some students 42.0%i N=660) told that they are persistent in getting help from the instructor through e-mail while some others (33.5%, N=514) were not sure. Moreover, considering the last factor of self-regulation, namely self-evalaution, more than half of the students stated that (54.1%, N=831) they summarize their learning in online courses to examine their understanding of what they have learned. About half of the students (48.9%, N=750) said that they ask themselves a lot of questions about the course material when studying for an online course. Also, about half of them (47.1%, N=723) told that they communicate with the classmates to find out how they

are doing in the online classes whereas some others (30.0%, N=460) were not sure. Lastly, more than half of them (52.4%, N=805) said that they communicate with the classmates to find out what themselves as an individual are learning that is different from what they are learning. It is clear that students' selfevaluation skills were at failry moderate level. It can be inferred that they could need improvement in the skills and bahviors of self-evalaution.

Students' metacognition was measured via metacognition questionnaire which is the 5-point Likert type response format indicating - 1: strongly disagree; 2: disagree; 3: neutral; 4: agree; and 5: strongly agree and therefore students' scores change between 1 and 5. The descriptive statistics about the students' responses for 26-item in metacognition instrument were presented in Table 4.8.

Table 4.8 Descriptive Statistics of 26-Item of Metacognition Questionnaire

	ITEMS	Mean	SD
Metacognition		**3.85**	**.59**
Item-1	I know my strengths as a learner.	4.05	.90
Item-2	I know my weaknesses as a learner.	4.05	.86
Item-3	I have good critical thinking skills.	3.86	.88
Item-4	I have good problem solving skills.	3.79	.87
Item-5	I know what factors may enhance my thinking and learning.	3.95	.83
Item-6	I know my motivational state at the beginning of the learning process.	4.00	.82
Item-7	I am clear of my opportunities for success.	3.94	.86
Item-8	I know my existing knowledge and experiences related to the learning task.	3.89	.85
Item-9	I make judgments about the difficulty of the task.	3.92	.85

	ITEMS	Mean	SD
Item-10	I am aware of my effort during the learning process.	3.97	.85
Item-11	I am aware of my level of thinking during the learning process.	4.01	.81
Item-12	I constantly monitor my feelings during the learning process.	3.76	.96
Item-13	I consciously assess my understanding during the learning process.	3.90	.85
Item-14	I realize I need confirmation of my understanding.	3.95	.84
Item-15	I pay attention to other course participants' ideas/ understandings/comments.	3.83	.93
Item-16	I think about how we are approaching the task.	3.77	.89
Item-17	I set goals to achieve a high level of learning.	3.85	.89
Item-18	I modify my approach to enhance my effort.	3.82	.87
Item-19	I ask questions or request information to deepen my thinking.	3.78	.92
Item-20	I challenge myself and other course participants.	3.54	1.00
Item-21	I make suggestions to other course participants to help their learning.	3.56	1.00
Item-22	I apply specific strategies to enhance my understanding.	3.78	.91
Item-23	I ask for help when I encounter difficulty.	3.86	.88
Item-24	I modify my goals or strategies when I encounter difficulty in understanding.	3.79	.90

	ITEMS	Mean	SD
Item-25	I change my strategy depending on the task.	3.63	.97
Item-26	I try to control my anxiety to enhance my understanding.	3.90	.89

N=1535

The mean scores of each item in the metacognition questionnaire showed that all the items had mean score around overall metacognition mean score. There was no any item having remarkable different mean score as compared to overall mean score. The hishest mean scores belonged to the items 1, 2, 6, and 11. The first three items yielded in the factor named knowledge of cognition which reflects knowledge and motivationassociated with inquiry process. Item 11 yielded in the factor named monitoring of cognition which addresses reflection on action and associated with assessing the learning process including assessing progression and effort in terms of goals and expectations. The lowest mean scores belonged to the items 20, 21, and 25 yielded in the factor named regulation of cognition as the enactment and control of the learning process requiring employment of strategies to attain meaningful learning outcomes. Knowledge of cognition is the entering metacognitive state while regulation of cognition is the last. For this reason, students' mean scores with regard to these items included in these two factor are expected. Frequency of metacognition questionnaire based on its three sub-factors is presented in Table 4.9.

Table 4.9 Frequency of Metacognition Questionnaire Grouped by its Sub-Categories

	Strongly disagree (1)	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly agree (5)**
Knowledge of Cognition					
Item-1	28	67	213	721	506
	1.8%	4.4%	13.9%	47.0%	33.0%
Item-2	21	63	212	758	481
	1.4%	4.1%	13.8%	49.4%	31.3%
Item-3	19	78	366	704	368
	1.2%	5.1%	23.8%	45.9%	24.0%

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
Item-4	20	86	402	715	312
	1.3%	5.6%	26.2%	46.6%	20.3
Item-5	13	69	283	784	386
	.8%	4.5%	18.4%	51.1%	25.1%
Item-6	8	69	266	769	423
	.5%	4.5%	17.3%	50.1%	27.6%
Item-7	16	62	327	717	413
	1.0%	4.0%	21.3%	46.7%	26.9%
Item-8	14	74	338	748	361
	.9%	4.8%	22.0%	48.7%	23.5%
Monitoring of Cognition					
Item-9	18	74	286	790	367
	1.2%	4.8%	18.6%	51.5%	23.9%
Item-10	12	68	309	718	428
	.8%	4.4%	20.1%	46.8%	27.9%
Item-11	9	61	258	789	418
	.6%	4.0%	16.8%	51.4%	27.2%
Item-12	29	127	382	646	351
	1.9%	8.3%	24.9%	42.1%	22.9%
Item-13	17	71	327	758	362
	1.1%	4.6%	21.3%	49.4%	23.6%
Item-14	16	63	304	756	396
	1.0%	4.1%	19.8%	49.3%	25.8%
Item-15	29	107	327	705	367
	1.9%	7.0%	21.3%	45.9%	23.9%
Item-16	23	102	380	729	301
	1.5%	6.6%	24.8%	47.5%	19.6%
Regulation of Cognition					
Item-17	22	86	352	721	354
	1.4%	5.6%	22.9%	47.0%	23.1%

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
Item-18	18	82	363	739	323
	1.2%	6.0%	23.6%	48.1%	21.0%
Item-19	23	105	409	648	350
	1.5%	6.8%	26.6%	42.2%	22.8%
Item-20	47	176	471	576	265
	3.1%	11.5%	30.7%	37.5%	17.3%
Item-21	51	177	424	629	254
	3.3%	11.5%	27.6%	41.0%	16.5%
Item-22	27	98	380	707	323
	1.8%	6.4%	24.8%	46.1%	21.0%
Item-23	22	87	328	742	356
	1.4%	5.7%	21.4%	48.3%	23.2%
Item-24	28	90	371	728	318
	1.8%	5.9%	24.2%	47.4%	20.7%
Item-25	42	135	447	633	278
	2.7%	8.8%	29.1%	41.2%	18.1%
Item-26	29	70	307	747	382
	1.9%	4.6%	20.0%	48.7%	24.9%

N=1535

As can be seen in Table 4.9, students' responses were at higher percentage level for all three sub-constructs of metacognition. In terms of knowledge of cognition, the majority of the students (80.0%, N=1227) stated they know their strengths as a learner. They (80.7%, N=1239) also stated that they know their weaknesses as a learner. Their response rate for having good critical thinking skills at 69.9%, good problem solving skills at 66.9% (N=1072), know what factors may enhance their thinking and learning at 76.2% (N=1170), know their motivational state at the beginning of the learning process at 77.8% (N=1192), being clear of their opportunities for success at 73.6% (N=1130), and know their existing knowledge and experiences related to the learning task at 72.2% (N=1109). It can be inferred that the response rate and relative percentage values of knowledge of cognition were substantially high.

In terms of monitoring of cognition, most of them (75.4%, N=1157) stated that they make judgments about the difficulty of the task. Their response rate for being aware of heir own effort during the learning process at 74.7% (N=1146), being aware of their own level of thinking during the learning process at 78.6% (N=1207), constantly monitor their feelings during the learning process at 65% (N=997), consciously assess their understanding during the learning process 73.2% (N=1120), realization of the need for confirmation of their understanding at 75.1% (N=1152), paying attention to other course participants' ideas/ understandings/comments at 69.8% (N=1072), and think about how they are approaching the task at 67.1% (N=1030). It can be inferred that the response rate and relative percentage values of monitoring of cognition were fairly high.

Finally, in terms of regulation of cognition, majority of the students (70.1%, N=1075) stated that they set goals to achieve a high level of learning. Most of them (69.1%, N=1062) told that they modify their own approach to enhance their effort. Many students (65%, N=998) declared that thry ask questions or request information to deepen their thinking. More than half (54.8%, N=841) stated they challenge themselves and other course participants, but 30.7% of them (n=471) was undecided. Moreover, the response rate for the remaining items were 57.5% (N=883) for making suggestions to other course participants to help their learning, 67.1% (N=1030) for applying specific strategies to enhance their understanding, 71.5% (N=1098) to ask for help when encounter difficulty, 68.1% (N=1046) for modifying their goals or strategies when encounter difficulty in understanding, 59.3% (N=911) for changing their strategy depending on the task, and 73.6% (N=1129) for trying to control their anxiety to enhance their understanding. It can be inferred that the response rate and relative percentage values of monitoring of cognition were substantially high.

Students' motivation was measured via motivation scale which is the 7-point Likert type response format indicating 1: not at all true for me to 7: very true for me and therefore students' scores change between 1 and 7. The descriptive statistics about the students' responses for 31-item in motivation instrument were presented in Table 4.10.

Table 4.10 Descriptive Statistics about 31-Item of Motivation Scale

	ITEMS	Mean	SD
Motivation		**4.50**	**.86**
Item-1	In a class like this, I prefer course material that really challenges me so I can learn new things.	4.51	1.60
Item-2	If I study in appropriate ways, then I will be able to learn the material in this course.	5.19	1.44
Item-3	When I take a test I think about how poorly I am doing compared with other students.	3.38	1.74
Item-4	I think I will be able to use what I learn in this course in other courses.	4.57	1.53
Item-5	I believe I will receive an excellent grade in this class.	4.52	1.43
Item-6	I'm certain I can understand the most difficult material presented in the readings for this course.	4.10	1.55
Item-7	Getting a good grade in this class is the most satisfying thing for me right now.	4.73	1.63
Item-8	When I take a test I think about items on other parts of the test I can't answer.	3.77	1.75
Item-9	It is my own fault if I don't learn the material in this course.	4.10	1.58
Item-10	It is important for me to learn the course material in this class.	4.91	1.42
Item-11	The most important thing for me right now is improving my overall grade point average, so my main concern in this class is getting a good grade.	4.80	1.61
Item-12	I'm confident I can learn the basic concepts taught in this course.	4.99	1.42
Item-13	If I can, I want to get better grades in this class than most of the other students.	4.98	1.72

	ITEMS	Mean	SD
Item-14	When I take tests I think of the consequences of failing.	4.01	1.78
Item-15	I'm confident I can understand the most complex material presented by the instructor in this course.	4.37	1.52
Item-16	In a class like this, I prefer course material that arouses my curiosity, even if it is difficult to learn.	4.78	1.49
Item-17	I am very interested in the content area of this course.	4.08	1.54
Item-18	If I try hard enough, then I will understand the course material.	5.28	1.40
Item-19	I have an uneasy, upset feeling when I take an exam.	3.55	1.73
Item-20	I'm confident I can do an excellent job on the assignments and tests in this course.	4.34	1.47
Item-21	I expect to do well in this class.	5.01	1.40
Item-22	The most satisfying thing for me in this course is trying to understand the content as thoroughly as possible.	5.04	1.46
Item-23	I think the course material in this classis useful for me to learn.	4.72	1.52
Item-24	When I have the opportunity in this class, I choose course assignments that I can learn from even if they don’t guarantee a good grade.	4.61	1.59
Item-25	If I don't understand the course material, it is because I didn't try hard enough.	4.49	1.54
Item-26	I like the subject matter of this course.	4.16	1.57
Item-27	Understanding the subject matter of this course is very important to me.	4.37	1.58
Item-28	I feel my heart beating fast when I take an exam.	3.93	1.87

	ITEMS	Mean	SD
Item-29	I'm certain I can master the skills being taught in this class.	4.39	1.47
Item-30	I want to do well in this class because itis important to show my ability to my family, friends, employer, or others.	4.75	1.69
Item-31	Considering the difficulty of this course, the teacher, and my skills, I think I will do well in this class.	5.01	1.45

N=1535

The 31-item included in motivation scale having means score around the overall motivation mean score (M = 4.50) of the students in the online course. The highest mean scores belonged to the items 2, 18, 21, 22, and 31. When these items are considered, it is inferred that students' control of learning beliefs including items 2 and 18 indicate their efforts to learn will result in positive outcomes (Pintrich, Smith, Garcia, McKeachie, 1991). The item 22 is included in the factor *intrinsic goal orientation* which concerns the degree to which students perceive themselves to be participating in a task for reasons such as challenge, curiosity, mastery, etc. That means having instrinsic goal orientation means that students' participation in the task is an end all to itself; rather than participation being a means to an end. The items 21 and 31 are yielded in the factor named self-efficacy for learning and performance and indicate self-appraisal of one's ability to master a task and confidence in one's ability to perform the task. The lowest mean scores belonged to the items 3, 8, 14, 19 and 28. These items constitutes the factor named Text Anxiety and the developers of motivation questionnaire states that the items in the text anxiety factor is negatively related with their motivation and therefore, expected to be low if their motivation is high or vice versa. As seen from Table 4.7, the lowest scores belonged to the items 3, 8, 14, 19 and 28 yileding the factor *text anxiety*. However, as the developers of motivation questionnaire declared that the low mean scores of these items were expected result because of high motivation score. Frequency of motivation scale based on its sub-factors is presented in Table 4.11.

Table 4.11 Frequency of Motivation Scale Grouped by its Sub-Categories

	1	**2**	**3**	**4**	**5**	**6**	**7**
Intrinsic Goal Orientation							
Item-1	78	101	150	476	299	222	209
	5.1%	6.6%	9.8%	31.0%	19.5%	14.5%	13.6%
Item-16	29	90	164	358	383	290	221
	1.9%	5.9%	10.7%	23.3%	25.0%	18.9%	14.4%
Item-22	22	57	139	331	355	333	298
	1.4%	3.7%	9.1%	21.6%	23.1%	21.7%	19.4%
Item-24	53	105	211	345	340	266	215
	3.5%	6.8%	13.7%	22.5%	22.1%	17.3%	14.0%
Extrinsic Goal Orientation							
Item-7	58	94	177	350	311	279	266
	3.8%	6.1%	11.5%	22.8%	20.3%	18.2%	17.3%
Item-11	46	97	165	348	311	284	284
	3.0%	6.3%	10.7%	22.7%	20.3%	18.5%	18.5%
Item-13	58	99	135	297	282	266	398
	3.8%	6.4%	8.8%	19.3%	18.4%	17.3%	25.9%
Item-30	73	99	159	329	320	262	293
	4.8%	6.4%	10.4%	21.4%	20.8%	17.1%	19.1%
Task Value							
Item-4	57	104	147	453	326	263	185
	3.7%	6.8%	9.6%	29.5%	21.2%	17.1%	12.1%
Item-10	20	69	125	394	384	294	249
	1.3%	4.5%	8.1%	25.7%	25.0%	19.2%	16.2%
Item-17	91	154	268	435	309	169	109
	5.9%	10.0%	17.5%	28.3%	20.1%	11.0%	7.1%
Item-23	43	94	157	368	371	297	205
	2.8%	6.1%	10.2%	24.0%	24.2%	19.3%	13.4%
Item-26	86	146	266	413	313	183	128
	5.6%	9.5%	17.3%	26.9%	20.4%	11.9%	8.3%

	1	2	3	4	5	6	7
Item-27	57	136	246	395	314	214	173
	3.7%	8.9%	16.0%	25.7%	20.5%	13.9%	11.3%
Control Beliefs about Learning							
Item-2	20	65	92	267	403	353	335
	1.3%	4.2%	6.0%	17.4%	26.3%	23.0%	21.8%
Item-9	96	151	252	467	275	159	135
	6.3%	9.8%	16.4%	30.4%	17.9%	10.4%	8.8%
Item-18	18	40	94	288	362	368	365
	1.2%	2.6%	6.1%	18.8%	23.6%	24.0%	23.8%
Item-25	52	101	244	375	346	242	175
	3.4%	6.6%	15.9%	24.4%	22.5%	15.8%	11.4%
Self-efficacy for Learning and Performance							
Item-5	40	99	173	461	374	252	136
	2.6%	6.4%	11.3%	30.0%	24.4%	16.4%	8.9%
Item-6	80	167	268	448	267	191	114
	5.2%	10.9%	17.5%	29.2%	17.4%	12.4%	7.4%
Item-12	17	59	137	353	384	318	267
	1.1%	3.8%	8.9%	23.0%	25.0%	20.7%	17.4%
Item-15	56	119	234	425	334	221	146
	3.6%	7.8%	15.2%	27.7%	21.8%	14.4%	9.5%
Item-20	46	121	250	441	328	225	124
	3.0%	7.9%	16.3%	28.7%	21.4%	14.7%	8.1%
Item-21	19	52	135	345	382	347	255
	1.2%	3.4%	8.8%	2.25%	24.9%	22.6%	16.6%
Item-29	46	107	244	435	345	223	135
	3.0%	7.0%	15.9%	28.3%	22.5%	14.5%	8.8%
Item-31	25	52	127	373	351	319	288
	1.6%	3.4%	8.3%	24.3%	22.9%	20.8%	18.8%

	1	2	3	4	5	6	7
Test Anxiety							
Item-3	284	257	253	368	174	109	90
	18.5%	16.7%	16.5%	24.0%	11.3%	7.1%	5.9%
Item-8	190	221	257	341	245	165	116
	12.4%	14.4%	16.7%	22.2%	16.0%	10.7%	7.6%
Item-14	161	197	228	330	272	195	152
	10.5%	12.8%	14.9%	21.5%	17.7%	12.7%	9.9%
Item-19	225	248	283	332	222	134	91
	14.7%	16.2%	18.4%	21.6%	14.5%	8.7%	5.9%
Item-28	188	230	206	325	229	180	177
	12.2%	15.0%	13.4%	21.2%	14.9%	11.7%	11.5%

1: not at all true of me → 7: very true of me, N=1535

Regarding the sub-constructs of motivation (Table 4.13), first of all about intrinsic goal orientation, some students (47.6%, N=730) stated that in an online class, they prefer course material that really challenges them so they can learn new things; while some others (31.0%, N=476) were undecided. More than half of the students (58.4%, N=894) told that in the online class, they prefer course material that arouses their curiosity, even if it is difficult to learn. Also, more than half (64.2%, N=986) declared that the most satisfying thing for them in the course is trying to understand the content as thoroughly as possible. Some students (53.4%, N=821) also maintained that when they have the opportunity in the online course, they choose course assignments that they can learn from even if they don't guarantee a good grade.

In regard with extrinsic goal orientation, more than half of the students (55.8%, N=856) thought that getting a good grade in this class is the most satisfying thing for them. Also, many students (57.3%, N=879) said that the most important thing for them is improving their overall grade point average, so their main concern in this class is getting a good grade. The majority of the students (61.6%, N=946) said that if they can, they want to get better grades in the class than most of the other students. Finally, many of them (57.5; N=875) said that they want to do well in the class because it is important to show their ability to their family, friends, employer, or others.

In terms of task value, half of the students (50.4%, N=774) though that they are able to use what they learn in this course in other courses. More than half of them (60.4%, N=927) said that learning course material in the class hours is important for them. Some students (38.1%, N=587) declared their interest in the content area of the course, whereas other some (28.3%; N=435) was not. More than half of them (56.9%, N=873) thought the course material in the class is useful for them to learn. Some students (40.6%, N=624) favor the subject matter of the course, while there were some others (26.9%, N=413) who did not like. Finally, some students (45.7%, N=701) declared that understanding the subject matter of the course is very important to them.

In regard with control beliefs about learning, majority of the students (71.1%, N=1091) said that If they study in appropriate ways, then they will be able to learn the material in this course. A few students (37.1%, N=569) thought that if they don't learn the material in the course, it is their own fault. Some others (32.5%, N=499) do not seem themselves as responsible if they don't learn, and the remaining (30.4%, N=467) are undecided. Most of them (71.4%, N=1095) declared that if they try hard enough, then they will understand the course material. Finally, about half of them (49.7%, N=763) declared that if they don't understand the course material, it is because they didn't try hard enough. About half of the remaining students (25.9%, N=397) thought vice versa, while the second half (24.2%, N=375) was undecided.

In terms of considering self-efficacy for learning and performance, about half of the students (49.7%, N=762) believed receiving an excellent grade in the course whilst some of them (30.0%, N=461) was not sure. Few students (37.2%, N=572) were sure about understanding the most difficult material presented in the readings in the course, while some others were undecided (29.2%, N=448) and the remaining (33.6%, N=515) was not. Many of them (63.1%, N=969) were confident that they can learn the basic concepts taught in the course. However, some of them (45.7%, N=701) were confident that they can understand the most complex material presented by the instructor in the course. Also, some (44.2%, N=677) stated they were confident in doing an excellent job on the assignments and tests in the course whereas some others (28.7%, N=441) were not sure. Most of them (64.1%, N=984) expected to do well in the class. Some of them (45.8%, N=703) were sure of being able to master the skills being taught in the class. And finally, most of them (62.5%, N=958) said that considering the difficulty

of this course, the teacher, and their own skills, they think they will do well in this class.

About the last construct, namely text anxiety, few students had an anxiety. Their response rates were at 24.3% (N=373) for during take a test they think about how poorly they are doing compared with other students, 34.3% (N=526) think about test items on other parts of the test they can't answer, 40.3% (N=619) think of the consequences of failing in a test, 29.1% (N=447) feeling upset when take a test, and 38.1% (N=586) for feeling their heart beating fast when they take a test.

4.2 The Relationship and the Contributions (RQ2)

In consideration of second research question and four sub-questions, using IBM SPSS vesion 23.0, four multiple linear regression analysis were conducted respectively. The research question that is examined in this part is the following.

> RQ2. How do students' perceived levels of self-regulation, metacognition, and motivation levels in the online course context predict their perception in regard of the followings?
>
> a. CoI?
> b. Social presence?
> c. Cognitive presence?
> d. Teaching presence?

In consideration of second research question, the prediction of students' perceptions of CoI, social presence, cognitive presence, and teaching presence by ther self-regulation, metacognition, and motivation were investigated with their responses to the four quantitative data instruments.

The assumptions for multiple linear regression analysis were explained first, and then each analysis result based on each sub-questions of second research question were explained seperately.

4.2.1 Assumptions

Before conducting simultaneous multiple regression analysis, the required assumptions which are adequate sample size, missing data, normality of residuals, homoscedasticity, independence of error terms, multicollinearity, and influential observations (outliers) were checked. Each of them was explained below in detail.

4.2.1.1 Adequate Sample Size

The first assumption is the adequate sample size. The minimum sample size for multiple regression analysis is formulated as 50 + 8k (k: number of predictor variables) (Green, 1991). According to author statement, the sample is more than the adequate since it includes 1740 students.

4.2.1.2 Missing Data

The second assumption is checking the missing data. The missing cases were checked by descriptive and removed from the whole data at the beginning of analysis. At the beginning, there were 1740 subjects; however, 72 subjects' data are missing and therefore removed from the data and then, 1668 subjects remained.

4.2.1.3 Linearity

Linearity address to the linear relationship between the outcome (dependent) variable and the predictor (independent) variables (Field, 2009). Linearity assumption can be checked with scatterplots which are given in Figure 4.2, 4.3, 4.4, 4.5, 4.6, and 4.7 in Appendix M respectively. Since the same shape of the line above emerges, linearity assumption was met.

4.2.1.4 Homoscedasticity

The third assumption is homoscedasticity which means the variance of the error term is constant across each value of the predictor (Tabachnick & Fidell, 2013). It can be checked via scatterplots. The produced scatterplots are presented in Figure 4.8, 4.9, 4.10, 4.11, 4.12, and 4.13 in Appendix N. According to the scatterplots, there is no apparent pattern and therefore, the homoscedasticity assumption was also met.

4.2.1.5 Normality of Residuals

The fourth assumption is the normality of residuals which gives hint whether the error terms are normally distributed or not. In order to check normality of residuals, Skewness and Kurtosis values, histogram and p-p plot can be used (Tabachnick & Fidell, 2013). Table 4.12 indicates Skewness and Kurtosis values. According to the test results, all values of Skewness and Kurtosis test lay in 3 and -3 (Hair et al., 2010).

Table 4.12 Skewness and Kurtosis Test Results of All Variables

	Skewness		Kurtosis	
	Statistic	**Std. Error**	**Statistic**	**Std. Error**
CoI	-.10	.06	.21	.13
Social Presence	-.24	.06	-.05	.13
Cognitive Presence	-.32	.06	.24	.13
Teaching Presence	-.18	.06	.55	.13
Self-regulation	-.16	.06	.26	.13
Metacognition	-.39	.06	.95	.13
Motivation	.02	.06	.72	.13

For each dependent variable in four analysis, based on histograms of regression standardized residuals (Figure 4.14, 4.15, 4.16, 4.17 in Appendix O), there is a normal distribution since the frequency of residuals is close to normal distribution line. The all histograms are symmetrical and approximately bell-shaped.

Moreover, based on p-p plot, there is no dispersal of residuals and they follow the 45-degree line (Figure 4.18, 4.19, 4.20, 4.21 in Appendix O). The dots lie almost exactly along the diagonal. Therefore, all the results indicated that normality assumption was met and errors are distributed normally.

4.2.1.6 Independence of Error Terms

The fifth assumption to be checked is independence of errors. The error term should be independent of the predictors in the model and of the values of the error term for other cases to meet the independence of errors assumption. It is checked via Durbin-Watson coefficient test values. In Durbin Watson coefficient test, the value of ranges should be from 0 to 4 (Field, 2013). As a rule of thumb Durbin-Watson (1951) value should be between 1 and 3 to indicate independence of observations. In this study, Durbin-Watson value is 1.94 and lay in the range of 1.5 and 2.5. Thus, independence of error terms assumptions was also met.

4.2.1.7 Multicollinearity

The sixth assumption that is required to be checked is multicollinearity. Multicollinearity means unacceptably high level of intercorrelation among predictors.

It can be checked via Tolerance and VIF (Variance Inflation Factor) values (Field, 2013). The collinearity statistics of the variables is illustrated in Table 4.13.

Table 4.13 Tolerance and VIF Values for Variables

Model		**Collinearity Statistics**	
		Tolerance	**VIF**
1	(Constant)		
	Social presence	.43	2.31
	Cognitive Presence	.29	3.39
	Teaching presence	.48	2.08
	Self-regulation	.42	2.40
	Metacognition	.56	1.78
	Motivation	.60	1.67

When tolerance is close to 0, there is a high multicollinearity of the variables. As a rule of thumb, if tolerance is less than .2, a problem with multicollinearity is indicated as stated by Menard (1995). As can be seen from Table 4.13 there is no any variable having tolerance value less than .20. The other statistic used in checking for multicollinearity assumption is VIF which is defined as the inverse of tolerance. If VIF value is high, there is high multicollinearity and instability of the regression coefficients. VIF=4 is an arbitrary, but there are some researchers use the more lenient cutoff of 5.0. Also, the largest VIF value should be less than 10 (Bowerman & O'Connell, 1990; Myers, 1990). According to the authors statements, there is no any predictor having VIF value greater than 4 (Table 4.13). Therefore, the multicollinearity assumption is met.

4.2.1.8 Influential Observations (Outliers)

The seventh assumption for multiple linear regression analysis is influential observations, namely outliers. Field (2013) defines outlier as a score very different from the rest of the data. Outliers can be identified by numerous ways; including box-plots, Leverage value test, Cook's Distance test, DFBeta and Mahalanobis distance (Tabachnick & Fidell, 2013). All test values to check the outliers were done and examined. Since the only one of them is not enough to detect a case as an outlier Field (2013).

According to the results, all DFBeta values lay in 1 and -1. Therefore, there is no outlier based on DFBEta test values. However, in order to be sure, the other tests were conducted and compared with each other. According to Leverage Value test, based on the formula, the test statistic 3(k+1)/n equal to .011, in which k represents the number of predictor variable while n is the total subject. For Cook's Distance test, the formula M+2SD equals to .009 and lastly Mahalanobis Distance test, the test statistics equals to 12.59. Based on all these three tests, findings indicated there are some outliers in the data although DFBeta values. For this reason, in order to be sure, finally box-plots, the easiest way to detect outliers are produced. In boxplot, mild outliers identified with a circle greater than 1.5 times the Interquartile Range (IQR) while extreme outliers identified with an asterisk greater than 3 times the IQR. Based on the box-plots of Manalanobis Distance, Cook's Distance, Centered Leverage Value, and all DFBeta values that are presented below, all of extreme and mild outliers were removed from the data. At the beginning, the number of subjects was 1668 and from them, 133 ones were removed and 1535 subjects remained. The removed cases from the data are the ones that are shown in boxplots at the outside 1.5 times the IQR including mild outliers identified with circle or extreme outliers with asterisk. When missing cases and outliers were removed from the data, the sample size is still more than the adequate sample size for multiple regression analysis. Related with the influential observationsi the box plots are presented in Figure 4.22 to Figure 4.31 in Appendix P.

4.2.2 The Community of Inquiry and Contributing Factors (RQ2.a)

4.2.2.1 The Relationship

After checking all required assumptions for multiple regression analysis, the analysis was conducted via standart multiple regression analysis method to answer the following sub-research question.

> RQ2.a How do students' perceived levels of self-regulation, metacognition, and motivation levels in the online course context predict their perception in regard to community of inquiry?

The analysis results are presented in Table 4.14.

Table 4.14 Pearson Correlation Result of the CoI

	CoI	**Self-regulation**	**Metacognition**	**Motivation**
CoI	-			
Self-regulation	.75*	-		
Metacognition	.57*	.58*	-	
Motivation	.60*	.53*	.52*	-

*p<.01, N=1535

Field (2013) states correlation between predictors should be less than .90. There is no correlation greater than .90 between predictors as seen in Table 4.14. The results indicates that there is a strong positive correlation between the CoI and self-regulation, which was statistically significant (r=.75, n=1535, p<.01). The coefficient of determination was calculated (r^2=.56) and it means 56% of the total variability on the community of inquiry is shared by the self-regulation.

There is also a strong positive correlation between the CoI and metacognition, which was statistically significant (r=.57, n=1535, p<.01). The coefficient of determination was calculated (r^2=.32) and it means 32% of the total variance in the CoI is shared by the metacognition.

In addition, there is a strong positive correlation between the CoI and motivation, which was statistically significant (r=.60, n=1535, p<.01). The coefficient of determination r^2 is the square of the Pearson correlation coefficient r and was calculated (r^2=.36) and it means 36% of the total variance in the CoI is shared by the motivation.

Overall, all three variables have positively correlated with the CoI and the degree of their relations are strong. The strong correlation with the CoI belongs to the self-regulation. The metacognition and motivation have correlated with the CoI about the same degree.

4.2.2.2 The Contributions of Predictors

The regression results explains more about each variable with showing their unique contributions to the CoI. Table 4.15 shows the summary of simultaneous multiple linear regression analysis for these variables in the prediction of the CoI.

Table 4.15 Multiple Linear Regression Analysis for Variables Predicting the CoI

Variable		**b**	**SE**	**β**	**t**	**sr^2**	**R^2**	**ΔF**
Model							.62	825.56
1	(Constant)	.21	.08		2.65			
	Self-regulation	.53	.02	.55	26.39*	.174		
	Metacognition	.15	.02	.12	5.97*	.009		
	Motivation	.20	.02	.24	12.34*	.038		

*p<.01, N=1535

The regression equation in raw score form:

CoI = .21 +.53* self-regulation + .15 * metacognition + .20 * motivation

The regression equation in standard score form:

$Z_{\text{cognitive presence}} = .55^* z_{\text{self-regulation}} + .24 * z_{\text{motivation}} + .12 * z_{\text{metacognition}}$

The model explains the 62% of total variance and significant F (3, 1531) = 825.56; p < .01.

The first predictor *self-regulation* (t = 26.39, p<.01) was significantly contributes to the CoI. It has also a strong positive significant correlation (r=.75, p<.01) with the CoI. It predicts uniquely 17.4% of students' perceptions of the community of inquiry in the online course context. If there is a one unit increase or decrease in self-regulation, then the CoI changes .53 accordingly controlling for the other variables in the equation. Gravetter & Wallnau (2013) contended that in the standardized form of the regression equation, the relative size of the beta values is an indication of the relative contribution of the variables. With .55 value of β, self-regulation is the best variable contributing to the CoI.

The second predictor *metacognition* (t = 5.97, p<.01) significantly contributes to the model with having a medium positive significant correlation (r=.57, p<.01). It explains uniquely .9% of students' perceived levels of the community of inquiry in the online course context. If there is a one unit increase or decrease in metacognition, then the

CoI changes .15 accordingly given that the other variables are held constant. With .12 value of β, metacognition is the weakest predictor contributing to the CoI.

The third predictor *motivation* (t = 12.34, $p<.01$) significantly contributes to the model with having a medium positive significant correlation (r=.60, $p<.01$). If there is a one unit increase or decrease in motivation, then community of inquiry changes .20 accordingly controlling for the other variables in the equation. Also, 3.8% of the variance in the community of inquiry is explained uniquely by motivation. With .24 value of β, motivation is the second best contributor of the CoI.

Overall, all of three predictors significantly contribute to the perceived levesl of students' community of inquiry in the online course context. The best predictor is self-regulation while the weakest one is metacognition among three predictors that accounted 62% of total variability of the community of inquiry.

4.2.3 Social Presence and Contributing Factors (RQ2.b)

The relationship among students' perceptions of self-regulation, metacognition, and motivation with their social presence in the online course context and the contributions of these factors into their social presence were investigated via simultaneous multiple linear regression analysis to answer the following sub-research question.

> RQ2.b How do students' perceived levels of self-regulation, metacognition, and motivation levels in the online course context predict their perception in regard of social presence?

The results are explained in detail in the following part.

4.2.3.1 The Relationship

The correlations of the variables with the dependent variable *social presence* are presented in Table 4.16.

Table 4.16 Pearson Correlation Result of Social Presence, Self-regulation, Metacognition, and Motivation

	Social Presence	**Self-regulation**	**Metacognition**	**Motivation**
Social Presence	-			
Self-regulation	.69*	-		
Metacognition	.45	.58*	-	
Motivation	.51*	.53*	.52*	-

*p<.01, N=1535

Field (2013) states correlation between predictors should be less than .90. According to the results, there is no correlation greater than .90 between the predictors of social presence (Table 4.11). Considering the associations of each predictor with social presence, the first predictor self-regulation is significantly associated with social presence. There was a strong positive correlation between social presence and self-regulation (r=.69, n=1535, p<.01). The highest correlation is found between between self-regulation and social presence. The coefficient of determination r^2 which is the square of the Pearson correlation coefficient r was calculated (r^2=.48) and means 48% of the variance in social presence is shared by the self-regulation.

The second predictor *metacognition* failed surprisingly to have a significant association with social presence. Finally, the third predictor *motivation* has a low positive correlation with social presence, which was statistically significant (r=.45, n=1535, p<.01). The coefficient of determination was calculated (r^2=.20) and it means 20% of the variability on social presence is shared by the metacognition.

Overall, self-regulation has the strongest significant correlation whilst the motivation has the weakest correlation with social presence. Metacognition is not significantly correlated with social presence.

4.2.3.2 The Contributions of Predictors

To what degree the predictor variables contribute to the social presence was investigated with the simultaneous multiple regression analysis. The results can be found in Table 4.17 indicating the total and individual contribution of each variable.

Table 4.17 Multiple Linear Regression Analysis for Variables Predicting Social Presence of Students

Variable		**b**	**SE**	**β**	**t**	**sr^2**	**R^2**	**ΔF**
Model							.50	518.37
1	(Constant)	-.02	.11		-.21			
	Self-regulation	.69	.03	.58	24.60*	.20		
	Metacognition	.02	.03	.01	.53	.0001		
	Motivation	.20	.03	.20	.025*			

*p<.01, N=1535

The regression equation in raw score form is written as follows.
Social presence = -.02 + .69 * self-regulation + .20 * motivation

The regression equation in standard score form can be written in the following.
$Z_{\text{social presence}} = .58^{*}\ z_{\text{self-regulation}} + .03 * z_{\text{motivation}}$

The model explains the 50% of total variance and significant F (3, 1531) = 518.37; p<.01.

The first predictor *self-regulation* (t=24.60, p<.01) had a significant correlation with social presence. It has a strong positive correlation (r=.69, p<.01) with social presence. It explains uniquely 20% of students' perceived levels of social presence in the online course context. If there is a one unit increase or decrease in cognitive presence, then social presence changes with the ratio of .69 accordingly controlling for the other variable in the equation. Gravetter & Wallnau (2013) contended that in the standardized form of the regression equation, the relative size of the beta values is an

indication of the relative contribution of the two variables. According to the author, with .58 value of β, self-regulation is the best predictor of social presence.

The second predictor *metacognition* (t=.53, *p*>.01) failed to have a significant correlation with social presence. Metacognition did not make a significant contribution to the prediction of social presence and therefore, it is not included in any form of regression equation.

The third predictor *motivation* (t=.20, *p*<.01) had a significant correlation with outcome variable (r=.51, *p*<.01). It has a moderate positive correlation with social presence. It explains uniquely 2.5% of students' perceived levels of social presence in the online course context. If there is a one unit increase or decrease in motivation, then social presence changes .20 accordingly controlling for the other variable in the equation. With .03 value of β, motivation is the weakest variable of social presence.

Overall, among there predictors, metacognition has failed to make a significant contribution to the prediction of social presence. Self-regulation is the strongest predictor of social presence and the motivation is the weakest predictor. In other words, the highest contribution belongs to the self-regulation while the lowest contribution belongs to the motivation in the prediction of social presence. The total variability of social presence accounted at 50% by three predictors, namely self-regulation, metacognition and motivation.

4.2.4 Cognitive Presence and Contributing Factors (RQ2.c)

The relationship among students' perceptions of self-regulation, metacognition, and motivation with their cognitive presence in an online course context and the contributions of these factors into their cognitive presence were investigated via simultaneous multiple regression to answer the following sub-research question.

> RQ2.c How do students' perceived levels of self-regulation, metacognition, and motivation levels in the online course context predict their perception in regard to cognitive presence?

The results are explained in detail in the following part.

4.2.4.1 The Relationship

The correlations of the variables with the dependent variable *social presence* are presented in Table 4.18.

Table 4.18 Pearson Correlation Result of Cognitive Presence, Self-regulation, Metacognition, and Motivation

	Cognitive Presence	**Self-regulation**	**Metacognition**	**Motivation**
Cognitive Presence	-			
Self-regulation	.74*	-		
Metacognition	.55*	.58*	-	
Motivation	.58*	.53*	.52*	-

*p<.01, N=1535

The associations of the variables with the dependent variable *cognitive presence* are presented in Table 4.16. The correlation coefficient between the variables should be less than .90 (Field, 2013). According to the results provided in Table 4.16, there is no correlation greater than .90 between the predictors of cognitive presence.

According to the results of simultaneous multiple linear regression analysis which also gives correlation among the variables, the first predictor self-regulation is significantly associated with social presence. There was a strong positive correlation between social presence and self-regulation (r=.74, n=1535, p<.01). The highest correlation is found between between self-regulation and social presence. The coefficient of determination r^2 which is the square of the Pearson correlation coefficient r was calculated (r^2=.55) and means 55% of the variance in cognitive presence is shared by the self-regulation.

The second predictor *metacognition* is significantly associated with cognitive presence. There is a moderate positive correlation between metacognition and cognitive presence (r=.55, n=1535, p<.01). The coefficient of determination was

calculated (r^2=.30) and it means 30% of the variability on cognitive presence is shared by the metacognition.

Finally, the third predictor *motivation* has a moderate positive correlation with cognitive presence, which was statistically significant (r=.58, n=1535, p<.01). The coefficient of determination was calculated (r^2=.34) and it means 34% of the variability on cognitive presence is shared by the metacognition.

Overall, self-regulation has the strongest significant correlation with social presence whereas metacognition has the weakest correlation. The degree of assocations of metacognition and motivation with cognitive presence, however, are very close to each other.

4.2.4.2 The Contributions of Predictors

The result of simultaneous multiple regression analysis that is presented in Table 4.19 indicates the contribution of each variable that sought in this study into the cognitive presence.

Table 4.19 Multiple Linear Regression Analysis for Variables Predicting Cognitive Presence of Students

Variable		**b**	**SE**	**β**	**t**	**sr²**	**R²**	**ΔF**
Model							.60	774.39
1	(Constant)	-.05	.09		-.62			
	Self-regulation	.60	.02	.56	26.60*	.18		
	Metacognition	.14	.03	.10	5.02*	.0066		
	Motivation	.20	.02	.23	11.32*	.003		

*p<.01, N=1535

The regression equation in raw score form:

Cognitive presence = -.05 +.60 * self-regulation + .14 * metacognition + .20 * motivation

The regression equation in standard score form:

$Z_{\text{cognitive presence}} = .56^{*} z_{\text{self-regulation}} + .10 * z_{\text{metacognition}} + .23 * z_{\text{motivation}}$

The model explains the 60% of total variance and significant F (3, 1531) = 774.739; $p<.01$.

The first predictor *self-regulation* (t=26.60, $p<.01$) had a significant correlation with cognitive presence. It has a strong positive correlation (r=.74, $p<.01$) with cognitive presence. It explains uniquely 18% of students' perceived levels of cognitive presence in the online course context. If there is a one unit increase or decrease in self-regulation, then cognitive presence changes with the ratio of .60 accordingly controlling for the other variable in the equation. Gravetter & Wallnau (2013) contended that in the standardized form of the regression equation, the relative size of the beta values is an indication of the relative contribution of the two variables. According to the author, with .56 value of β, self-regulation is the best predictor of cognitive presence.

The second predictor *metacognition* (t=.20, $p<.01$) had a significant correlation with outcome variable *cognitive presence* (r=.55, $p<.01$). It has a moderate positive correlation with cognitive presence. It explains uniquely .3% of students' perceived levels of cognitive presence in the online course context. If there is a one unit increase or decrease in metacognition, then cognitive presence changes .14 accordingly controlling for the other variables in the equation. With .10 value of β, metacognition is the weakest variable of cognitive presence.

The third predictor *motivation* (t=.20, $p<.01$) had a significant correlation with outcome variable (r=.51, $p<.01$). It has a moderate positive correlation with cognitive presence. It explains uniquely .3% of students' perceived levels of cognitive presence in the online course context. If there is a one unit increase or decrease in motivation, then cognitive presence changes .20 accordingly controlling for the other variables in the equation. With .23 value of β, motivation is the second best predictor of cognitive presence.

Overall, all three predictors significantly contributed to the prediction of cognitive presence. The strongest predictor is self-regulation and the weakest one is

metacognition among all three predictors that accounted 60% of total variability of cognitive presence.

4.2.5 Teaching Presence and Contributing Factors (RQ2.d)

The relationship among students' perceptions of social presence, cognitive presence, self-regulation, metacognition, and motivation with their teaching presence in the online course context and the contributions of these factors into their teaching presence were investigated via simultaneous multiple linear regression to answer the following sub-research question.

> RQ2.d How do students' perceived levels of self-regulation, metacognition, and motivation levels in the online course context predict their perception in regard to teaching presence?

The results are explained in detail in the following part.

4.2.5.1 The Relationship

The relationship of each variable with the dependent variable teaching are presented in Table 4.20.

Table 4.20 Pearson Correlation Result of Social Presence, Self-regulation, Metacognition, and Motivation

	Teaching Presence	**Self-regulation**	**Metacognition**	**Motivation**
Teaching Presence	-			
Self-regulation	.59*	-		
Metacognition	.55*	.58*	-	
Motivation	.54*	.53*	.52*	-

*p<.01, N=1535

According to the correlation coefficients presented in Table 4.18, there is no correlation among the predictors of teaching presence (Field, 2003). In terms of the degree of correlations, the first predictor *self-regulation* is significantly associated with

teaching presence. There is a moderate positive correlation between teaching presence and self-regulation (r=.59, n=1535, p<.01). The highest correlation exists between between self-regulation and teaching presence. The coefficient of determination r^2 which is the square of the Pearson correlation coefficient r was calculated (r^2=.35) and means 35% of the variance in teaching presence is shared by the self-regulation.

In addition, the second predictor *metacognition* has a moderate positive correlation with teaching presence, which was statistically significant (r=.55, n=1535, p<.01). The coefficient of determination was calculated (r^2=.30) which means 30% of the variability on teaching presence is shared by the metacognition.

Finally, the third precitor *motivation* has a moderate positive correlation with teaching presence, which was statistically significant (r=.54, n=1535, p<.01). The coefficient of determination was calculated (r^2=.29) and it means 29% of the variability on teaching presence is shared by the metacognition.

Overall, all three predictors have significantly associated with teaching presence. Among three predictors, self-regulation has the strongest significant correlation whilst the motivation has the weakest correlation with teaching presence. However, the assocations of metacognition and motivation with teaching presence are very close to each other.

4.2.5.2 The Contributions of Predictors

To what degree the variables predict the teaching presence was investigated with the simultaneous multiple regression analysis. The results can be found in Table 4.21 indicating the total and individual contribution of each variable.

Table 4.21 Multiple Linear Regression Analysis for Variables Predicting Teaching Presence of Students

Variable		**b**	**SE**	**β**	**t**	**sr^2**	**R^2**	**ΔF**
Model							.45	413.72
1	(Constant)	.69	.09		7.67			
	Self-regulation	.30	.02	.32	12.73*	.059		
	Metacognition	.28	.03	.24	9.86*	.035		
	Motivation	.19	.02	.24	10.28*	.038		

*p<.01, N=1535

The regression equation in raw score form:
Teaching presence = .69 + .30 * self-regulation + .28 * metacognition + .19 * motivation

The regression equation in standard score form:
$Z_{\text{teaching presence}} = .32^* z_{\text{self-regulation}} + 24^* z_{\text{metacognition}} + .24 * z_{\text{motivation}}$

The model explains the 45% of total variance and significant F (3, 1531) = 413.72; p<.01.

The first predictor *self-regulation* (t=12.73, p<.01) had a significant correlation with teaching presence. It has a strong positive correlation (r=.59, p<.01) with teaching presence. It explains uniquely 5.9% of students' perceived levels of cognitive presence in the online course context. If there is a one unit increase or decrease in self-regulation, then teaching presence changes with the ratio of .30 accordingly controlling for the other variable in the equation. Gravetter & Wallnau (2013) contended that in the standardized form of the regression equation, the relative size of the beta values is an indication of the relative contribution of the two variables. According to the author, with .32 value of β, self-regulation is the best predictor of teaching presence.

The second predictor *metacognition* (t=.20, p<.01) had a significant correlation with outcome variable *teaching presence* (r=.55, p<.01). It has a moderate positive

correlation with teaching presence. It explains uniquely 3.5% of students' perceived levels of teaching presence in the online course context. If there is a one unit increase or decrease in metacognition, then teaching presence changes .28 accordingly controlling for the other variables in the equation. With .24 value of β, metacognition is the second best predictor of teaching presence, same as motivation.

The third predictor *motivation* (t=.20, $p<.01$) had a significant correlation with outcome variable (r=.51, $p<.01$). It has a moderate positive correlation with teaching presence. It explains uniquely 3.8% of students' perceived levels of teaching presence in the online course context. If there is a one unit increase or decrease in motivation, then teaching presence changes .19 accordingly controlling for the other variables in the equation. With .24 value of β, motivation is the second best predictor of teaching presence, same as metacognition.

Overall, all three predictors significantly contributed to the prediction of teaching presence. The strongest predictor of teaching presence is self-regulation and the weaker ones metacognition and motivation made equal contribution to the orediction of teaching presence. They all together accounted 45% of total variability of teaching presence.

The results about four standard multiple regression analysis which were conducted to reveal the contributions of self-regulation, metacognition and motivation in the prediction of the CoI overall, social presence, cognitive presence, and teaching presence is summarized in Figure 4.32 to see the overall picture of the findings and make the interpretation easier.

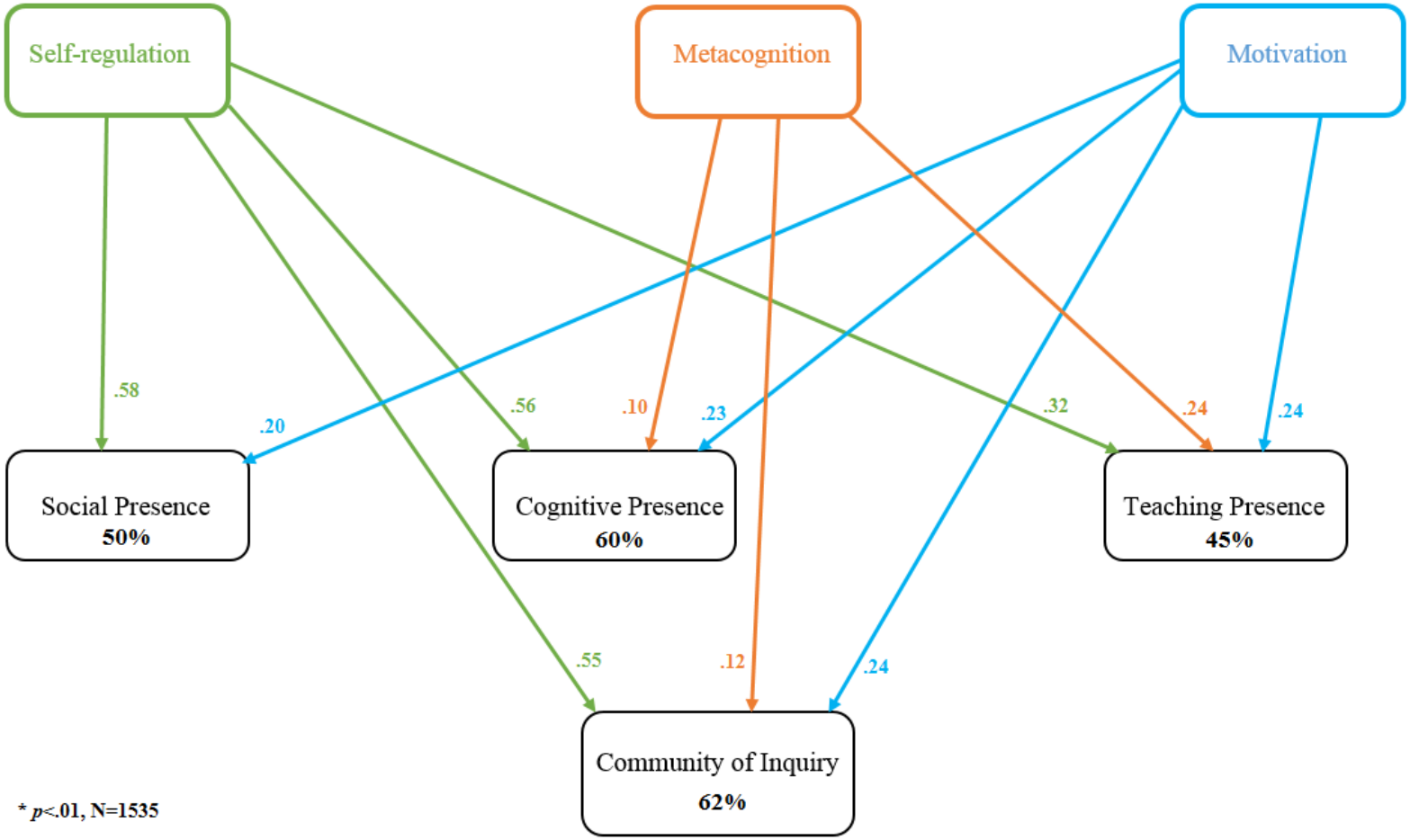

Figure 4.32 Summary of Predictions of the CoI and its Three-presence by Three Predictors

Figure 4.32 indicates the explained variance in each variable with its percentage values. The lines show the significant contribution of each predictor in to the CoI overall, social presence, cognitive presence, and teaching presence with their Beta values. It is clear from Beta values, self-regulation was the strongest variable that makes valuable and highest contribution to all of the constructs. Only metacognition failed to have a significant contirubiton in the prediction of social presence.

4.3 Posting Patterns of Students (RQ3)

In consideration of third research question, both descriptive statistical analysis and transcript analysis were conducted to reveal students' posting behaviors of social presence, cognitive presence, and teaching presence in the online course context. The research question that was invesitagated in this part is the following.

> RQ3. What are the posting patterns of students' teaching presence, social presence and cognitive presence in the online course context?

Students' posting patterns regarding with social presence, cognitive presence, and teaching presence in the online course context were analyzed deductively based on coding matrix (Appendix J). In order to have a better understanding of online discussion posts, the questions in each discussion activity is provided in Table 4.22.

Table 4.22 Questions in the Six-Activity of Online Discussion

Discussion Activity Number	Main Question 1	Main Question 2
Discussion Activity 1	1- Remember the first time you was introduced with the computer. For what reasons, you used computer? What kind of problems you encountered during using computer and how you overcame those problems? How you made an effort to use computer and make it beneficial in your daily life?	2- How you check the accuracy of information that you retrieved from the Internet? How to be sure about the accuracy of information that you retrieved from the Internet? What you do to overcome with information pollution?
Discussion Activity 2	1- What kind of platforms you use in your daily life to communicate virtually? How do you feel in communicating virtually different from face-to-face communication? What do you think about the effect of virtual communication tools in human being' life? Do these tools cause an addiction? If yes, what should do to prevent this addiction or overcome it?	2- What do you do if you recognize on the Internet, any person that uses any of your documents or assignment you prepared without your permission? What do you think about whether we can use any document found on the Internet as we wish? In general, what kind of precauitons can be taken to prevent plagiarism or information theft? What are your

Discussion Activity Number	Main Question 1	Main Question 2
		strategies and/or methods to prevent plagiarism or information theft in your daily life?
Discussion Activity 3	1- How do you feel yourself in using a new software program in the computer? What knd of strategies or method you use to learn something new? And how do you benefit from your friends or the Internet in this sense?	2- What kind of strategy do you follow to prepare a group assignment with your classmates? What are the potential problems that you encounter in group work? What do you do to overcome these problems? What do you think about the advantages and disadvantages of group work in general?
Discussion Activity 4	1- What do you think about the protection of digital information? Does the digital information require any protection; if yes, why? What do you think about precautions that can be taken both individually or collectively (e.g.ministries, universities, legislative regulations)?	2- Do you think that you are well enough or not in word processing softwares? In which areas, you are not well enough? What do you do to learn about that you don't know? How do you feel if you recognize that you don't have enough information about anything in any software program in the computer and what do you do to overcome it?

Discussion Activity Number	Main Question 1	Main Question 2
Discussion Activity 5	1- What is your first step in making a detailed search on the Internet to solve any problem? What are the procedure that you follow to make a search? What kind of strategies or method that you use to solve any problem and why?	2- What do you think about your course instructor in terms of her teaching style, managmenet of the course and course content? Do you think that the instructor well-planned the course? If there is any deficiencies, how can they be filled?
Discussion Activity 6	1- What is your general opinion about ICT-1 course? What do you think that which topics are added or excluded from this course and which topics are emphasized more? What do you think about group activities in this course? What do you think about the contribution of the knowledge that you learned in this course in your real lfie?	2- To what degree you feel yourself belonged to this course community and why? What is your communication with your instructor and the classmates? How can the communication in this community be developed? What are the good and bad sides of the course management system (Moodle) and course page on Facebook and how can their deficiencies be filled?

Table 4.22 presents the questions in six discussion activities. For each discussion activity provided in Table 4.22, a summary of the descriptive information about students' posts for these discussion activities (DA) is presented in Table 4.23.

Table 4.23 Summary of Discussion Postings in Online Discussion Posts

	DA 1	DA 2	DA 3	DA 4	DA 5	DA 6	Average
Number of Students	73	70	62	64	60	62	65
Number of Sentences	555	640	448	461	346	501	492
Average Number of Sentences	8	9	7	7	6	8	8
Number of Words	7183	8302	6079	5299	4402	6271	6256
Average Number of Words	98	119	98	83	73	101	95

DA: Discussion Activity

The number of students participating in discussions differed in each activity. From 162 students, 91 students (56%) responded to six-activity of the discussion. From those students, the average number of students per discussion activity was 65, which means 71% of the participating students and 40% of the whole class. Also, the minimum number of participating students was 60 and the maximum number was 73.

The total sentence number was also different in each discussion activity. The maximum number of total sentences that students wrote was 640 while the minimum number was 346. The average number of total sentences was 492. They wrote sentences from 9 to 6 as average per each week and average number of sentences per six discussion activities was about 8. Students wrote at most in the second activity while at least in the fifth activity. Total sentence number in the second activity was about the double the amount of the fifth activity. In each activity, all of the participating students wrote at least 6 sentences.

As for the total number of words, it changed from 8302 to 4402 and the average number was 6256. Students wrote at most in the second activity and least in the fifth activity. They wrote about the twice as the fifth activity, similar with total sentence number. The average number of words changed 119 to 73 and was 95 as average in all the activities.

When the total and average number of students participated in six discussion activities, considering the total and average sentences and words, their response rate in the second activity was about the twice of the fifth activity. When the discussion topics in the second and fifth activities are thought, the topic of second activity was virtual communication and social media and ethics while the topic of fifth activity was making search in Internet to solve a problem and overall evaluation of the instructor offering ICT-IC course. The reason may be arise from because of the topic of activities. Students might be hesitated explaining general thoughts about their instructor due to the probability of instructor see and read all responses with students' identities although an explanation was made to all the students about being relax and wrote any good or bad thoughts. The second reason may be the attractiveness of the topic of the second activity. Many of the students use social media in their daily lives.

In continuing part, the postings patterns of students based on three-presence of the CoI framework are explained.

4.3.1 Social Presence

The discussion posting of students in terms of social presence was examined based on three categories; namely, affective-personal, open communication, and group cohesion. The number of students participating in each discussion activity investigated whether containing any indicator of the categories of social presence or not. Students' posts can be included in one or more categories of social presence at the same time depending on the nature of their posts. Based on the result, percentages were retrieved via the total number of students that participated in each discussion activity divided by the number of posts containing any indicator of the categories of social presence. The coding result of students' discussion posts in terms of social presence is presented in Table 4.24. There were two students, the first was in DA2 and the other in DA6 that were not perceived social presence at all corresponding to its three categories.

Table 4.24 Coding Result of Social Presence in Online Discussion Posts

	Affective / Personal	**Open Communication**	**Group Cohesion**
DA 1	95%	47%	29%
DA2	80%	87%	53%
DA 3	76%	89%	66%
DA 4	98%	41%	38%
DA 5	82%	88%	35%
DA 6	95%	90%	60%
Total	**87%**	**73%**	**47%**

According to the table, basedon six discussion activities, students overall posted mostly (87%) in affective - personal category of social presence. Their posting behavior of open communication was 73% and 47% of group communication through the six discussion activities. It can be inferred that they perceived affective – personal category of social presence as twice of group communication. Among three categories

of social presence, the sharpest increase occurred in open communication in the fifth activity. In the same category, such a similar improvement was also encountered in the six activity. Moreover, the most remarkable increase occurred in open communication in the second discussion activity. A similar improvement was also seen in affective/personal category in the fourth activity. On the contrary, the most notable decrease occurred in open commuincation category in the fourth activity. Also, another sharping decrease was seen in group cohesion in the fourth activity.

Students' posting behaviors based on social presence in six-activity of discussion is pisturized in Figure 4.33. As the figure below points out, they overall perceived affective – personal category of social presence at most while group communication at least. It can be inferred that they generally responded individually more than collaboratively. In addition, in three-activity, they perceived affective/personal category at the highest level whilst in remaining three-activity, they perceived open communication category at the highest level. However, their perception based on group communication in total was at enough level. Group cohesion behaviors enhanced up to the mid and then sharpingly decreased. Overall, if the grouped activities are thought accordingly categories of social presence, affective – personal behaviors of students' posts were at high level during the whole activities. Open communication and group cohesion behaviors indicated similar improvement based on looking solely at the beginning and end of six-activity. Group communication behaviors increased at the mid and slightly decreased at the end. Overall, students perceived affective - personal category of social presence at most while group communication at least similar with the situation in total.

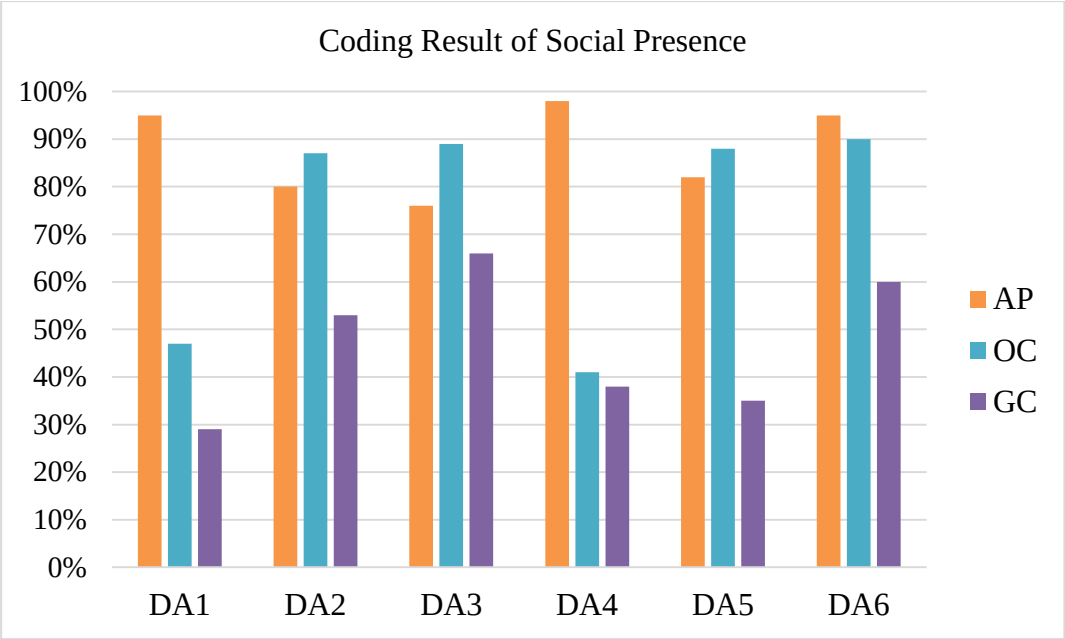

Figure 4.33 Coding Result of Social Presence

After the descriptive statistics, some examples of students' posts coded in three categories of social presence *affective - personal, open communication and group cohesion* were provided together with their indicators.

The first category namely affective-personal responses are a tacit recognition of a reciprocal relationship with the community, facilitation of conditions for engagement in meaningful dialogue and an educational experience. Its sample indicators are expressing emotions and camarederie, use of humor, self-expression/self-disclosure, use of unconventional expressions to express emotion and sense of belong to a course community (Garrison & Anderson, 2003). These indicators and sample students' posts correspondingly are presented respectively.

The first sample indicator is expressing emotions and camaradeire including expression of feeling, emotions, and mood including repetitious punctuation, concspicous capitalization and emoticons. It is also attributed to immediacy including closeness, warmth, affiliation, attraction, openness, etc. Sample students posts for this first indicator are presented below.

> *It is not possible to be bored in this class because the instructor teaches the course very well and makes us active, although ICT-1 course is an online course. She is interested with our problems and repeats and explains insistently*

what we dd not understand. The course is designed so well that I ccannot see any deficiency (smiling) (DA 5, S 13) (Q1)

I feel to belong this learning community very much because my instructor is excellent. Althoguh I know my instructor from distance, our communication is excellent since she responded all our questions individually; thanks to our instructor, I like her very much. (DA 6, S 2) (Q2)

I attend this course with a favor. (DA 6, S 42) (Q3)

The second sample indicator is use of humor which is the pervasive characteristic of causal conversation in opposite of its infrequent occurrence in formal, pragmatic interactions (Eggins & Slade, 1997). It includes conversational strategies like humorous banter, teasing, irony, understatements, sarcasm and joking. One example from students' posts is presented below.

We recognized that the faculty member exerts herself to the utmost and tries to give more points to us with weekly discussions (smiling). (DA 5, S 37) (Q4)

The third indicator is self-expression and/or self-disclosure. It is the psychological explanation of social attraction and bonding among community members. When community members discloses more personal information, other members reciprocate them more and the more member knows about each other, the more likely they are to establish trust, seek support, and in turns become more satisfied (Cutler, 1995). It is simply presenting the details of life outside the class or expressing vulnerability. Sample students' posts for this indicator are presented below.

I think that I am not good at word processing softwares, sometimes I forget page numbering, adding graph, editing grammatical errors, adding table, converting word document into pdf file, etc. and it is caused by not using the software frequently. In these circumtances, I ask to my friends or watch video from YouTube to remember or re-learn and it is annoying for me. I cannot do the things that I already know, but because of lack of practice and I waste of time and work on them again. The waste of time including possibility of making a mistake or not being able to do any task timely makes me worried and in turns, being negative. (DA 4, S 23) (Q5)

I don't feel domineer very much since I think I do not have enough knowledge. I cannot communicate with anybody at enough level because I think I cannot express myself correctly because of distance. (DA 6, S 46) (Q6)

To be honest, I couldn't comment too much since I couldn't participate into the course sessions at anough level; however I like learning something new about computer and it helps to me in real life. (DA 6, S 61) (Q7)

The other indicator is the use of unconventional expressions to express emotions to facilitate expressiveness in the medium. It is simply includes the use of nonverbal cues in written form using emoticons (Kuehn, 1993). Sample students' posts for this indicator are presented below.

Teacher, it is absolutely correct if you say (smiling) (DA 5, S 20) (Q8)

I couldn't participate into the courses sessions at enough level because of huge working conditions, but İ watching course videos and understand easily; it is clear that instruction during the course is planned before the course; all is perfect! Thanks to (instructor's name and surname) (DA 5, S 57) (Q9)

The last sample indicator for affective-personal categories is the sense of belong to a course community. It addresses a sense of affiliation with community members and a sense of solidarity within the community. Sample students' posts for this indicator are presented below.

I feel myself like in a real class rather than a virtual class. (DA 6, S 24) (Q10)

I feel myself belong greatly to this learning community and I am comfortable like at my home. Our communication with the classamtes and coure instructor are very well, I can benefitted from them in any issue. (DA 6, S 35) (Q11)

I recognized my mistakes and deficits after the course. I felt myself more belong to this community. (DA 6, S 62) (Q12)

The second category of social presence is open communication that reflects a climate of trust and acceptance and therefore has an affective quality. As Short, Wlliams and Christie (1976) declared, it is "evidence that the other is attending" as a critical feature

in the promotion of socially meaningful interaction. It addresses the indices of threaded interchanges combined with messages of a socially appreciative nature. It is also called by by some researchers as interactive responses (Rourke, Anderson, Garrison, & Archer, 2007). Its sample indicators include comfortable conversing online, comfortable interacting with other community members, asking questions, complimenting/expressing appreciation and expressing agreement/disagreement (Garrison & Anderson, 2003). These indicators and sample students' posts correspondingly are presented below.

The first sample indicator is comfortable conversing online and sample students' posts are presented below.

> *Everybody accept what they know themselves as correct. We should proof what we defend. If we defend, it becomes true and everybody should be aware of their responsibility. It is required not having such an idea that after alleging an excuse, my friends do it and then I can share their effort like myself. If everybody does their responsibilities, then anything is succeeded with a warm and comfortable learning environment and good communication. (DA 3, S 33) (Q13)*

The second indicator is comfortable interacting with community members, namely other course participants. Sample students' posts are presented below.

> *...If everyone fulfills his/her responsbility, then no problem arises... (DA 3, S 23) (Q14)*

> *I believe we can overcome with the issue with an exchange of sympathy. (DA 3, S 25) (Q15)*

Another indicator of open communication is asking questions both to the other community members or the moderator, namely instructor. Sample students' posts are provided below.

> *I did not understand the problem itself. (DA 5, S 14) (Q16)*

> *How it can be in an online learning? I do not know. (DA 6, S 41) (Q17)*

The other indicator is complimenting/expressing appreaciton. Sample students' posts are presented below.

> *I like this course since I overcame my deficiencies with enhancing my knowledge with the help of this course. Our instructor planned and designed the course very well and even excellent, thanks to our instructor and her effort. (DA 5, S 16) (Q18)*

> *The only thing about the course is perfect. The teaching style of our instructor, responding to our questions one by one and with a simple- easy language and her timely feedback are very well. (DA 5, S 18) (Q19)*

> *This course was very beneficial for me.There are many thing that I don't know, but I learned most of them in this course and I can integrate those practical information in my daily life; thanks to this course and my instructor…This course made me interested in computer technologies more. (DA 6, S 50) (Q20)*

The last sample indicator of open communication is expressing agreement/disagreement with other community members' ideas or posts. Sample students' posts are presented below.

> *No, we cannot say the precautions are at anough level, today even grand instutitons like ministries are exposed to hackers. (DA 2, S 11) (Q21)*

The third category of social presence is group cohesion which is also called as cohesive responses. It is exemplified by activities that build and sustain a group commitment. Its sample indicators include vocatives, addresses or refers to the group using inclusive pronouns (e.g. we, you, and us) and phatics/salutations (Garrison & Anderson, 2003). These indicators and sample students' posts correspondingly are presented below.

The first sample indicator is vocatives which is using redundant pronouns addressing community members by name to establish a closer relationship (Eggins & Slade, 1997; Rourke, Anderson, Garrison, Archer, 2007). For example, the student used a vocative in her post calling her instructor name.

Everything is excellent. Thank you (teacher's name and surname) (DA 5, S 57) (Q22)

The second indicator is addresses or refers to the group using inclusive pronouns such as we, our, us which connotes feeling of closeness (Mehrabian, 1969; Garrison & Anderson; 2003). Sample students' post are provided below.

Anyway, we can handle it with our effort. (DA 2, S 12) (Q23)

We can direct them to the instutions offering such a support… (DA 2, S 18) (Q24)

The third sample indicator is phaticss/saluations which are defined as communication "used to share feelings or to establish a mood of sociability rather than to communicate information or ideas" (Swan, 2012). It includes communicative acts such as formal inquiries about one's health, greeting, remarks about the weather, formulistic talks, meaningless sounds, closures, and comments about trivial matters merely to establish social contact (Bussman, 1998). Sample students' post about phatics/saluations are presented below.

First, Hello Teacher; … (DA 2, S 8) (Q25)

Hello teacher… (DA 5, S 14) (Q26)

Thank you very much, teacher. Thanks for your effort! (DA 6, S 20) (Q27)

4.3.2 Cognitive Presence

The discussion posting of students in terms of cognitive presence was examined based on four categories; namely, triggering event, exploration, integration and resolution. The number of students participating in each discussion activity investigated whether containing any indicator of the categories of cognitive presence or not. Students' posts can be included in one or more categories of cognitive presence at the same time depending on the nature of their posts. Based on the result, percentages were retrieved via the total number of students that participated in each discussion activity divided by the number of posts containing any indicator of the categories of cognitive presence. The coding result of students' discussion posts in terms of cognitive presence is

presented in Table 4.25. There were two posts, one was in DA 2 and the other was in DA 6 that were suitable with none of the categories of cognitive presence.

Table 4.25 Coding Result of Cognitive Presence in Online Discussion Posts

	Triggering Event	**Exploration**	**Integration**	**Resolution**
DA 1	67%	90%	52%	51%
DA 2	39%	34%	14%	27%
DA 3	77%	95%	16%	55%
DA 4	77%	92%	42%	45%
DA 5	20%	98%	67%	27%
DA 6	48%	23%	16%	89%
Total	**55%**	**72%**	**35%**	**49%**

According to the table, students posted mostly (72%) in exploration category of cognitive presence. Their posting behaviors from more to less was 55% in triggering event, 49% in resolution and 35% in integration respectively through the six discussion activities. It can be inferred that they overall perceived exploration of cognitive presence as twice of integration category. Among the four categories of cognitive presence, both of the most remarkable increase and decrease occurred in exploration category, in the third and six activity respectively. There was a sharply decrease again in exploration category in the second discussion activity. Considering striking enhancement in four category of cognitive presence, they were also seen in the categories of triggering event, integration and resolution. In the third activity, a remarkable improvement in triggering event category. Such an improvement occurred in the fourth discussion activity in terms of integration category and in the third and sixth activities with regard to resolution category. On the other hand, there was an outstanding decrease in all four categories of cognitive presence. In the second activity, there was a salient decrease in all four-category. An outstanding decline ws also seen in the ifth activity with regard to triggering event and resolution. Furthermore, in the sixth activity such a salient decrease occurred in exploration and integration categories.

Students' posting behaviors based on cognitive presence in six-activity of discussion is visualized in Figure 4.34. As can been from Figure 4.34, the students perceptions were at the highest level in terms of exploration, at the lowest level in terms of

integration. It indicated that students mostly tried to explore the content, appreciate the diverse perspectives, collaborative exploration of content, etc. Also, the results gave hints the lack of sustained critical reflection, connecting ideas and synthesis, etc. Triggering event declined after the first activity, but increased sharply at the mid. Integration was generally low, except two activity. At the end, resolution was strikingly enhanced. Overall, they perceived exploration at the highest level, integration at the lowest level.

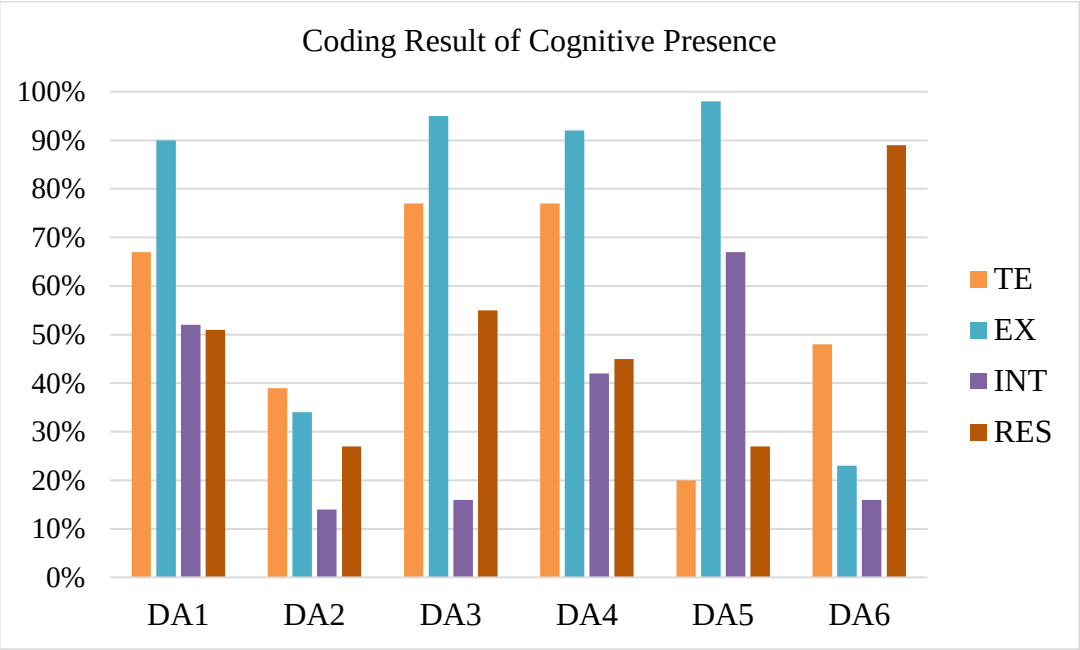

Figure 4.34 Coding Result of Cognitive Presence

After the descriptive statistics, some examples of students' posts coded in four categories of cognitive presence *triggering event, exploration, integration and resolution* were the following.

The first category namely triggering event is the initial phase of critical inquiry in which an issue or problem emerging from an experience is identified or recognized through a well-though out activitiy to ensure full engagement. In this phase, community members are full engaged with an issue or problem, assess their knowledge, and generate unintended but constructive ideas to identify the problem itself (Garrison, Anderson, Archer, 2001).

Since cognitive presence is operationalized in Practical Inquiry Model, the categories are usually completely identified rather than describing sample indicators. Still, in

order to guide the researcher, they define some sample indicators. Based on their declaration, the sample indicators of triggering event are recognize the problem, sense of puzzlement, environment facilitates problem-based approach, environment facilitates curiosity and motivation. Sample students' posts for the first category *triggering event* are provided in the following.

> *…I am first introduced with the computer in 2006. However, it did not take my attention because of not having Intenret connection. After connected to the Internet, I was lost inside the computer. I was a bit late to use computer… (DA 1, S 14) (Q28)*
>
> *I recognized that I used more comfortably over time and then wanted to learn new features. (DA 1, S 16) (Q29)*
>
> *Using computer was a privilege for me. While using computer, we were afraid of breaking its working. We keystroked carefully. (DA 1, S 23) (Q30)*
>
> *I wondered about it and in essence, fiddle about with computer provided me to learn and satisfy my curiosity. (DA 1, S 27) (Q31)*

The second category of cognitive presence is exploration in which community' members shift between their private, reflective world and the social exploration of ideas. It basically means that the grasp the nature of problem or issue, search for relevant information and possible explanations that take place in the community by iteratively moving between critical reflection and discourse. It includes the process of brainstorming, questioning, and exchange of information (Garrison, Anderson, Archer, 2001). Relevant samples from students' posts are provided below.

> *Some of them are trying to use social media to communicate consciously while some were not, they only waste of time. Even though they are in life, they forgot about having a heart-to-heart talk and even saying Hello in a real life. This is a bitter experience… Social media platforms used for communication are pulling people with each passing day inside themselves that use those platforms unconsciously. This addiction can cause some psychological illnesses beyond addiction. Caution is in fact inside oneself. If they know the usage reasons of those platforms and use consciously, then all cautions would be taken.*

However, for those that cannot prevent this addiction we can direct into some psychological therapy center like in USA; we can organize some conferences about disadvantages of virtual communication and social media or some activities can be done for those to direct them into the real communications beyond virtual ones. (DA 2, S 18) (Q32)

First, I analyze the differences from similar softwares and its advantages. Then, I asked to my friends for help and watch videos to use it. The best learning style is trial and error form me; practicing the new software or tool in test page is better than theoretical information. (DA 3, S 1) (Q33)

The third category of cognitive presence is integration in which participants move to a more focused and structured phase of construct meaning from the dieas generated in exploratory phase. Integration requires active teaching presence to didagnose participants' misconceptions, probe questions, etc. Participants made decisions about the problem or issue connecting ideas and making synthesis (Garrison, Anderson, Archer, 2001). The followings are sample students' posts of integration category.

The information retrieved from the Internet is not always correct, for this reason I always check its correctness from at least three websites and if it does not persuade me, then I look for official web pages; and if it is not enough, then I look for the main source of the information that I found in the Internet searching for the books and encyclopedia. The Internet provides an easy access to something but its correctness is always questionable. (DA 1, S 29) (Q34)

I had very difficulty in the peast. However, I was benefitted from my friends and instructors to overcome these difficulties. I felt myself sometimes insufficient when I had lack of knowledge. I cope with it by persuading myself in a way that if somebody knows, then I can also learn, studying more and practicing. As you see, making an effort is required. Self-confidence comes first to succeed! (DA 4, S 7) (Q35)

The last category of cognitive presence is resolution of the problem or issue by means of direct or vicarious actions including implementation or testing of proposed solutions. Participants defend their solutions, apply their newly knowledge in their real

life, etc. (Garrison, Anderson, Archer, 2001). The following are sample students' posts of resolution category.

> *Protection of knowledge is absolutely essential and it should be restricted with no access for unrelated people using with e-signature, etc. (DA 4, S 7) (Q36)*

> *…Nobody can access any information of someone. It means interference in private life… Using a strong and unique password is for this reason essential…Ministries can enact a law about this issue. Firewalls should be stronger. (DA 4, S 53) (Q37)*

> *I like this course since I overcomed the deficiencies improving myself with the help of this course. (DA 5, S 16) (Q38)*

> *As I learned in Math course, to solve a problem, first you should know the formula and do the required steps in an order; like first multiplication and division, and then addition and substraction in a math problem. For this reason, first I determine the required steps, and the order of the steps is important for me; then I do each step in order to solve a problem… And, the solution accepted by myself comes to the end. (DA 5, S 59) (Q39)*

4.3.3 Teaching Presence

The discussion posting of students in terms of teaching presence was examined based on three categories; namely, design and organization, facilitating discourse and direct instruction. The number of students participating in each discussion activity investigated whether containing any indicator of the categories of teaching presence or not. Students' posts can be included in one or more categories of teaching presence at the same time depending on the nature of their posts. Based on the result, percentages were retrieved via the total number of students that participated in each discussion activity divided by the number of posts containing any indicator of the categories of teaching presence. The coding result of students' discussion posts in terms of teaching presence is presented in Table 4.26.

Table 4.26 Coding Result of Teaching Presence in Online Discussion Posts

	Design and Organization	**Facilitating Discourse**	**Direct Instruction**
DA 5	77%	32%	73%
DA 6	92%	68%	56%
Total	**84%**	**50%**	**65%**

Since the focus of the study is on particularly cognitive presence, teaching presence was not covered as much. This is beacause teaching presence is the most known and explained element of CoI framework up to this date in earlier studies. The percentages for each category of teaching presence are presented in Table 4.21. According to the results, students' posts were accumulated from more to less in the DO category (84%), then DI (65%) and FD (50%). The focus of their discussion postings were on the design and organization of the course, flow of the course and appropriateness of course methods and activities. Their perceptions about both of the categories of DO and FD increased in the DA 6 in contrary to DI category. The perceptions of FD category was the lowest, however improved in the six activity.

Students' posting behaviors based on teaching presence in two-activity of discussion is visualized in Figure 4.35. As can been from Figure 4.35, students' perceptions were at the highest level in terms of design and organization, at the lowest level in regard to facilitating discourse. It indicated that students discussed more about the design and organization of the course including curriculum, course activities and content, methods, time paramters, use of medium, etc. Although they discussed less at the fifth activity about the facilitation of the discourse including encouragement by the instructor in making contribution, learning climate, assessment of learning process, draw in them promting discussions, etc; their perceptions were enhanced at the sixth activity. Finally, students' postings about direct instruction including their instructor's presenting content, making summary, diagnosing their misconceptions, injecting knowledge from diverse sources, etc. declined at the sixth activity. Overall, they perceived design and organization at the highest level, facilitating discourse at the lowest level.

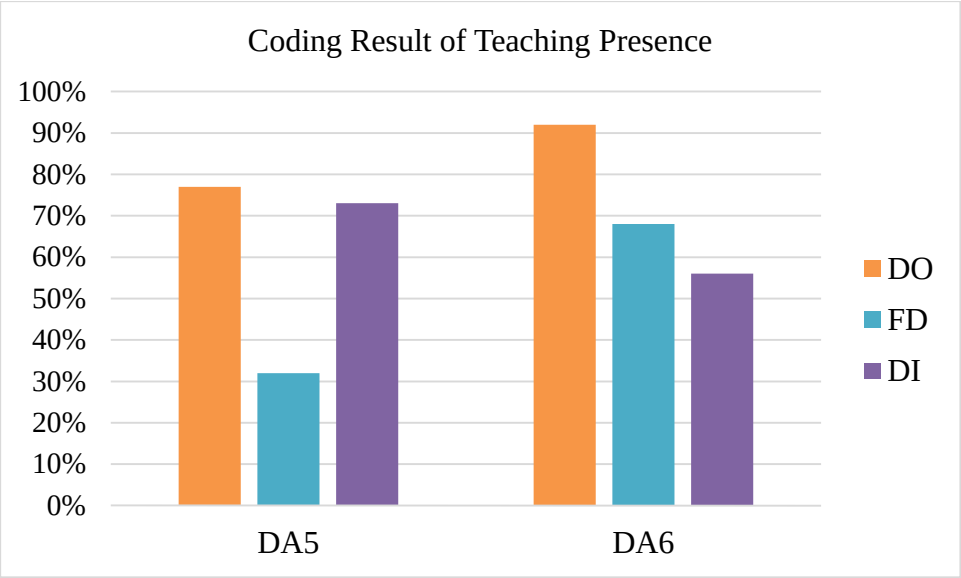

Figure 4.35 Coding Result of Teaching Presence

After the descriptive statistics, some samples of students' posts coded in three categories of teaching presence *design and organization, facilitating discourse and direct instruction* were provided respectively in the following.

The first category of teaching presence is the design and organization which includes building curriculum materials, design and admisintering appropriate mix of group and individual activities taking palce during the course, negotiating time parameters, providing organizational service to the participants via guidelines and tips and modelling appropriate etiquette and effective use of those medium (Anderson, Rourke, Garrison, Archer; 2001). Sample students' posts of design and organization category are provided below.

> *I like the design and organization of the course since my instructor teaches the course with emphasizing the practice. I recognized my deficiencies related with computer and softwares. I learn something new in each course. Then, I practice it immediately to repeat and not to forget it. The course is so well-designed that I think there is no deficiency. (DA 5, S 2) (Q40)*

> *The instruction in the course, organization and management, and course ontent are very well and I am doing well. I think the course instructor planned and designed the course very well and teaches the course based on that plan. (DA 5, S 56) (Q41)*

The teaching style of course instructor and her mastery level is at enough level considering an online course. When course videos, presentations, sample practice and activities are considered, an organized process can be seen. (DA 5, S 59) (Q42)

The second category of teaching presence is facilitating discourse including assessment of efficacy of the learning process, encouragement, acknowledgement or reinforcement of students' contributions to construct both personal meaning and mutual understanding, identifying the areas of (dis)agreement and seeking to reach consensus, setting learning climate appropriately and taking actions to reinforce the development of community (Anderson, Rourke, Garrison, Archer; 2001). Sample students' posts of facilitating discourse are provided below.

I attended into the course two times, but I think the teaching style of our instructor is very well and a simple and easy language is used. Moreover, she is open to share and help to us. Altough I cannot attend into the course sessions, I am trying to participate in discussions. Since I like the course. Especially, the discussions contributes to us and the course by making us interested and connected to the course.I can be inofmred about anything and feel the need of checking any new discussion post. Thank you for your interst. You dominate the class altough it is online I am following from Facebook group and even it provides us to be informed up-to-date. (DA 5, S 5) (Q43)

I like your teaching style, you use a simple language. When you teach any subject, it takes my attention and listen you with enjoy. With discussion activities, we can share our ideas and opinions. You make us brainstorming in this way. I feel myself like in formal education. (DA 5, S 6) (Q44)

ICT-I course is completely online, but our instructor teaches so well and lively, boring in the course is impossible. (DA 5, S 13) (Q45)

I look forward the course. The course is so nice and fluent that there is no enough time for some question rather boring. I like this course because I overcame my deficiencies and enhanced my knowledge. The design and

organization of the course is very well and even perfect, thanks to my instructor for her efforts. (DA 5, S 16) (Q46)

The last category of teaching presence is direct instruction which address to the providing intellectual and scholarly leadership and sharing subject matter knowledge. It includes the presentation of content, directing questions to the community, focus to the discussion by directing attention particularly, confirm undersntading through assessment and explanatory feedback, diagnosing misconceptions, injecting knowledge from diverse sources and directing students for further individual and group study, and responsing to the technical questions about the system the course offered (Anderson, Rourke, Garrison, Archer; 2001). Sample students' posts of direct instruction are provided below.

Our instructor teaches the course with the details of topics and in a way that I can understand. This increases my motivation. Also, I am not shy in asking question, my instructor gives confidence for it. She explains and repeats what we didn't understand again and again. (DA 5, S 10) (Q47)

I think our instructor is master at subject. I think if anybody like me having lack of knowledge can do what is taought, it means our instructor is successful. (DA 5, S 32) (Q48)

It is an applied course and since our instructor is the master at the subject, it is effective. (DA 5, S 42) (Q49)

4.4 Other Potential Factors (RQ4)

In consideration of fourth research question, inductive qualitative content analysis was conducted to reveal other potential factors that have a positive and negative influence on students' social presence, cognitive presence, and teaching presence in the online course context. The research question that was invesitagated in this part is the following.

RQ4. What are the other potential factors that affect students' social presence, teaching presence and cognitive presence both positively and negatively in the online course context?

Other potential factors that affect students' social presence, cognitive presence and teaching presence both positively and negatively in the online course context were explored via the interview protocol besides discussion activities which are used to feed the findings of interview data. The summary of the findings about these potential factors and corresponding number of students are presented in Table 4.27. The numbers are based on the interview findings, but sample students statements were provided both from interview and discussions.

Table 4.27 Summary of Other Potential Factors Effecting Three-Presence of the Coi (N=24)

Factors Affecting Positively	Factors Affecting Negatively
Social Presence	
Kindness behaviors of the instructor (n=19)	The nature of online learning (n=18)
Discussion activity (n=18)	Working conditions (n=5)
Aids of Facebook (Whatsapp) group (n=17)	Technical and usability problems of course management system (n=4)
Kindness bevaviors of the classmates (n=17)	Difficulty with individual assignment (n=4)
	Marital status and family life (n=3)
Cognitive Presence	
Discussion activity (n=18)	Difficulty with individual assignment (n=4)
Cooperation (n=17)	Lack of prior knowledge (n=1)
Addressing course topics in daily life (n=16)	Lack of practice (n=2)
Sustain motivation (n=13)	Simplicity of course topics (n=1)
Teaching Presence	
Kindness behaviors of the instructor (n=19)	The nature of online learning (n=18)
Instructor's effort (n=15)	Concerns about the course (n=17)
Immediate feedback (n=14)	Attitude of instructor toward questioning about grades (7)
Use of a simple and easy-to-understand language (n=4)	Working conditions (n=5)
	Marital status and family life (n=3)
	Lack of practice (n=2)

According to the Table 4.24, other potential factors that were retrieved via interview and fed with discussion posts were examined based on thre-presence of community of inqury framework. For each three presence, factor having both positive and negative effect are provided seperately. The explanations and sample sudents' statements were provided in continuing section respectively.

4.4.1 Social Presence

The findings indicated that other potential factors having a positive influence on students' social presence were kindness behaviors of course instructor, discussion activities, aids of Facebook and Whatsapp group and kindness behaviors of the classmates. According to the findings retrieved from the interview with 24 students, 19 of them stated kindness and warm behaviors of course instructor contributed to their social presence since it increased their participation into the course sessions, made them encouraged, more interested and willingness. For example, one sample statement from the discussion posts is presented below.

> *We are taught a lesson without boring thanks to the kindly and warm behaviors of our instructor. (DA 6 S 51) (Q50)*

The second factor having positive influence on students' social presence is discussion activities. 18 of 24 students highly cited the benefits of discussion activities for them. They stated discussion activites provided them to know classmates, build more interaction, brainstorming and building both personal meaning and mutual understanding. The followings are sample statements from the interviewees.

> *They (discussion activities) are exactly beneficial for us in a way that we make brainstorming for the issues that we don't know and we also both express our ideas and learn our classmates' ideas about the issues, and we know each other more and express ourselves better after reading their comments and ideas; so I think they are well and I favored those activities. (Interview, S 12) (Q51)*

Another student told that:

> *Yes, I favored discussion activities; since it is not hold in other courses; it is new in this course. For instance, we talked wth our classmates in ICT-I course and then mmediately visit course website and reply to discussion questions, it*

is good for us. In other courses, the situation I different from ICT-I course, we merely participated in course sessions and then immediately exit. However, in ICT-I course, discussion forums are open periodically, we visited course website for a time, write our responses; so it is better and appropriate from my point of view. (Interview, S 14) (Q52)

The other sample statement from the interviewes is:

However, the assignment and discussion activities in the scope of ICT-I course are very well for me; even more clearly, it is the only course that I can be a part of inside the course and be active. (Interview, S 14) (Q53)

The other factor that students called as a contributor of their social presence is the aids of Facebook (Whatsapp) group. 17 students favored and benefitted very much. For example, one interviewee stated:

During the course, we can ask any question to both our classmates and instructor. Moreover, we can easily communicate via Facebook group or Whatsapp group, the announcemens are done easily and we learn immediately. (Interview, S 9) (Q54)

Another student told that:

For example, our communication is generally via Facebook. Also, the discussion posts of our friends and their comments and posts on Facebook inform us, so it is good and there is no communication gap in this way. When some questions are asked, we write on Facebook immediately or Whatsapp sometimes, and always there is a response for them. Thanks to our friends, they generally reply. Our instructor also helps us. (Interview, S 13) (Q55)

Similarly, the other student stated:

Our communication is very well thanks to Facebook and Whatsapp. When there is question in one's mind, s/he writes it on Facebook and the others reply immediately. So, from the beginning of the semester, there is no any question

that I asked but no response and also no communication gap. (Interview, S 22) (Q56)

Finally, students mentioned about the kindness behaviors of the classmates. 17 of 24 students favored their classmates' warm behaviors and added the kindness and warm behaviors of the classmates made them more motivated throughout the course, know each other more, dissolve their shy during and outside the course sessions and in turns, contributed to the development of their social presence. In this issue, for example, one students stated:

For example, I didn't know about the topics related with the assignment, for this reason I asked to my classmates and they helped me and taught about the topics and in this way I can did my assignment, thanks to our classmates, they behave to me very nice and warm, I never felt outside the class, I am older than my classmates and some of them called me big sister (smiling) (Interview, S 12) (Q57)

Another student said that:

There are different groups of students in the class, the first group have knowledge about course content, the second have some and the last group does not know about course topics at all. However, the first group of students behave warm and helped to the third group of students, always replied their questions and solved our questions within the class easily thanks to the kindness behaviors of the classmates… (Interview, S 14) (Q58)

On the other hand, findings indicated that other potential factors having a negative influence on students' social presence were the nature of online learning, working conditions, technical and usability problems of course management system *Moodle*, difficiulty with individiual assignment, and being married and/or having a child.

According to the findings retrieved from the interview with 24 students, majority of students (18) stated that the nature of online learning because of characterized by the absence or lack of real instructors and interaction effected their social presence negatively. The nature of online learning was also mentioned with having a negative influence on teaching presence. Since they do not know each other, they shy while

asking questions both during and/or outside the course sessions ether to their instructor or to their classmates. They thought that some course topics had difficulty for them during learning due to being an online class.they believe that if this course was offered in blended learning format, it would be better for their learning, their sense of belong to the community, their interaction, communication and motivation. Related with this statement, sample students' statements are provided below.

> *For example, if face-to-face class sessions are held biweekly, it would be better for us. They can be hold in a month, still it would be better for us. That means, it would be better for us in order not to feel outside of the class, participate into the course sessions more and being more interested. (Interview, S 23) (Q59)*

Another students stated that:

> *I favor face-to-face course sessions more, I can learn easier in face-to-face class and ask my all questions; but it means more costs for us. (Interview, S 12) (Q60)*

Another factor that students discussed in the interview was their working conditions which cause them not to be able to devote more time to the course requirements, not to be able to participate into course sessions, etc. Working conditions were also mentioned as a negative factor of teaching presence. Related with this issue, one interviewee stated:

> *I can not attent to the course very much since I am working and also dealing with hospital's work and no enough time for the course. (Interview, S 20) (Q61)*

Another student talked about ther working condition like as follows.

> *Like me, many of online learners are also working at a job and therefore no enough time. For example, I work from 8 AM to 7 PM. At the time of assignment and its due date, I was in a hotel for a conference related with my work and I tried to do my assignment there. So, we have no enough time since we are working at the same time being a student. (Interview, S 18) (Q62)*

4 students stated they had difficulty in individual assignment. It was also mentioned as having with negative influence on their cognitive presence. Finaly, the factor that students discussed in the interview was their marital status and family life. 3 students reasoned their low level of social presence as being married and having a child. They talked about their family life and stated they have no enough time since they have child (ren). For this reason, they were not able to participate into course sessions, build communication, etc. It is also cited as a negative factor effecting teaching presence. Related with this issue, one student in the discussion acitivity, posted that:

> *I cannot communicate with my classmates and you -the course instructor- frequently since I am married and have two children; my son is a 7th grade student and my daughter is a 3rd grade student; and I think the reason behind it is the homework of my children, my courses and the daily routines. (DA 6 S 46) (Q63)*

Again about martial status and family life, one interviewee stated that:

> *I am married and have three children, so under this condition, courses, assignments, studying for them, etc. time is not enough for all these. In essense, if we have enough time and study ourselved, then it would be OK. (Interview, S 12) (Q64)*

All the factors having positive and negative influence on students' social presence are explained in this section. Next section presents the factors having positive and negative influence on students' cognitive presence with sample quotations from the interviewees.

4.4.2 Cognitive Presence

The findings indicated that other potential factors having a positive influence on students' cognitive presence were aids of discussion activities, cooperation, addressing course topics in real life, and also sustaining of their motivation. According to the findings retrieved from the interview with 24 students, 18 of them stated discussion acitivities provided them to make brainstorming more, self-expressing their opnions and ideas and also learn about their classmates' opnions and ideas, and therefore building personal meaning and gaining of mutual understanding of the problems or

issues, make more search about the problems of issues and learn new knowledge as well as exploring the content both by individually and collaboratively. For example, one sample statement from the discussion posts is presented below.

> *They (discussion activities) are exactly beneficial for us in a way that we make brainstorming for the issues that we don't know and we also both express our ideas and learn our classmates' ideas about the issues, and we know each other more and express ourselves better after reading their comments and ideas; so I think they are well and I favored those activities. (Interview, S 12) (Q65)*

Another student told that:

> *I think discussion activites are benficial. At least, they provide us to participate into course more, we make more search, etc. (Interview, S 23) (Q66)*

The second factor having a postivie influence on students' cognitive presence is cooperation. 17 students mentioned about tis benefits and added with cooperating, we explore the course content collaboratively and gain a mutual understanding. Sometimes we learn different perspectives of the problem or issue by cooperating with our classmates.

> *We helped to each other very much, when we have a problem or difficulty, took its photograph and sent to our classmate (smiling). Sometimes we discussed the topic or assignment with our friends and this helped us to understand the different perspectives. (Interview, S 23) (Q67)*

Another student said that:

> *We cooperated with our classmates well, and I was of helped to them and gained new knowledge or diverse perspectives of any issue. (Interview, S 24) (Q68)*

The third factor revealed as the contributor of students' cognitive presence is addressing course topics in daily life. 16 students mentioned about this issue and some examples of their statements are as follows.

I use what I learned in this course (ICT-I) in my daily life, of course I was contributed a lot. Since the content is attractive. Now, many people use computer, I think and this course content is dddressed to real life. I learned many new knowledge, dissolved my misconceptions, etc. (Interview, S10) (Q69)

Another students stated that:

It was very effective for me. For example, I have just started to use these programs. In the past, I was not as good as now I am. After this course, I learned many things about these programs and this helped me in daily life. Now I am triying to learn new softwares. (Interview, S13) (Q70)

One more example from students' statements is in the following.

Of course! Actually, I benefitted very much from what I learned in this course, it is better for us; since the topics are what we need in real life. (Interview, S15) (Q71)

Finally, students mentioned about the susain of their motivation and its benefits to them and their learning. For instance, one students stated:

The pleasure of our instructor, always trying to do something for us and motivate us… (Interview, S 6) (Q72)

Another students told that:

The course content was attractive for me, but, sometimes were not; sometimes I was bored. Actually, our instructor's interest and providing our motivation and sustain were the most important factor behind my success. (Interview, S 10) (Q73)

On the other hand, findings indicated that other potential factors having a negative influence on students' cognitive presence were difficulty with individual assignment, lack of their prior knowledge, lack of practice, and simplicity of course topics. According to the findings retrieved from the interview with 24 students, some students (4) complained about individual assignment. They stated their difficulty with

individual assignment. It was also cited as a disadvantage in terms of their social presence. For instance, one student stated that:

> *For example, in the last assignment which is individual. And I had so difficulty with that assignment that I could not do it completely. Then, I sent it my husband, but he could not also do it. Then, he asked to his work friends, and they did it. (Interview, S 12) (Q74)*

Only one student further added to the difficulty with individual assignment and stated the lack of prior knowledge effected her negatively.

> *I had so difficulty that I could not do it completely. Actually, I do not know about computer a lot. I just started to learn about computer, beacause of this course, I bought a computer. In the past, I do not know at all, and this is not good; it is difficult for me. (Interview, S 2) (Q75)*

On the contrary, one student complained about the simplicity of course content and told that:

> *Now, we are learning Microsoft Work, Excel, etc. I think if different topics were taught, then it would be better. For instance, programming. (Interview, S 10) (Q76)*

Finally, two students complained about the lack of practice in the course.

> *I think may be more practice can be held. For example, the shortcuts, some examples, etc. I am working at a hospital and needs shortcuts, for instance; but I could not find or do it. (Interview, S 19) (Q77)*

All the factors having positive and negative influence on students' cognitive presence are explained in this section. Next section presents the factors having positive and negative influence on students' teaching presence.

4.4.3 Teaching Presence

The findings indicated that other potential factors having a positive influence on students' teaching presence were kindness behaviors of course instructor, instructor's effort, immediate feedback that the course instructor gave to them and instructor's use

of a simple- easy-to-understand language thoroughout the course. According to the findings retrieved from the interview with 24 students, 19 of them stated kindness and warm behaviors of course instructor contributed to their teaching presence since it made them closer to their instructor and build easier interaction and communication with their instructor. They felt comfortable during the course and asked their questions easily both during and outside the course sessions. It was also cited as contributor of social presence and some sample studnets' statements were already provided in that section.

> *I have no problem with my instructor. Everything is fine, our instructor is so nice, apprehensive and tolerant person. (Interview, S 13) (Q78)*

Another student told that:

> *Our instructor is so tolerant. She is warm, close, and and responded to our problems and replied what we asked immediately. (Interview, S 9) (Q79)*

One more example from the interviewees is as follows.

> *As I know, she created Facebook group and very interested in the course. Whenever anything happens, about assignment or discussion forums, she informs us immediately either Facebook group or e-mail. She replies even private messages. (Interview, S 21) (Q80)*

The other factor that students benefitted was instructor's effort. 15 students appreciated their instructor's effort both during and outside the class. They told that the effort of instructor was more than enough and this made them more willingness, interested and motivated. Some examples from students' discussion posts are the following.

> *I learned something new with attending to the course sessions, listening the instructor during the course, practicing and repating what I learned. I want to suggest to my instructor continuging with discussion activities or giving assignments and grading all these activities in order to feed our exam grades. (DA 5, S 7) (Q81)*

Another student posted that:

> *Although the course is confusing, we recognize that the course instructor does her utmost and try to contribute into our perfromances and grades with discussion activities (similing) (DA 5, S 37) (Q82)*

One more example about students' posts are:

> *The course instructor support us ay any time and teaches theimportant topics both in online classes and social media platforms with her fluent and simple language. She encourages us to find solutions to our problems. I think her instructional method is appropriate. The course design and planning were well-done and the topics are taught within a logic fluently and complementarily. (DA 5, S 53) (Q83)*

4 students stated favored the immediate feedback that their instructor gave to them. They benefitted in a way that their misconceptions were immediately dissolved and all of their questions were responded at enough level instantly. Some sample statements from the interviewees and from students' discussion posts were provided below.

> *Our instructor, may God be pleased, is so nice that she explained what we asked to her immediately and repeats what we do not understand insistently. (Interview, S 12) (Q84)*

In discussion, some students posted in this issue that:

> *The course instructor is exceedingly patient. She teaches and repeats what we did not understand. (DA 5, S 36) (Q85)*

> *I favor my instructor in this course since her instructional method is well and she teaches the topics with practice, repeats what we did not understand and help us to understand and also if it is needed, she repeats the topics or teaches starting over. (DA 5, S 55) (Q86)*

> *She (course instructor) is interested with our problems and also teaches and repeats insistently what we did not understand. (DA 5, S 13) (Q87)*

Finally, the last factor having a positive influence on students' teaching presence was the instructor's use of a simple and easy-to-understand language. They stated the course was clear and east to understand for them. Also, it enhanced t their understanding and made communication with their instructor easier. Some sample statements of the students in the interview and discussion were provided below.

> *Our instructor's teaching style and communication are so nice that it is clear and easily understandable; for those who doesn't has know at al about the topic can understand easily. (Interview, S 7) (Q88)*

In discussion, some students posted in this issue that:

> *I am happy with the teaching style of our instructor. She teaches the course with a simple and easy-to-understand language. (DA 5, S 12) (Q89)*

> *The tolerance of our instructor and her teaching style are fine. (DA 6, S 27) (Q90)*

> *The teaching style of our instructor (instructor's name and surname) is very well and she teaches the course with a simple language. (DA 5, S 21) (Q91)*

On the other hand, findings indicated that other potential factors having a negative influence on students' teaching presence were the nature of online learning, concerns about the course, attitude of instructor toward questioning about grades, working conditions, marital status and famly life and lack of practice. According to the findings retrieved from the interview with 24 students, majority of students (18) complained about the nature of online leatning and insisted on blended learning format. It was also cited as parallel in social presence and sample statements were provided in that section. Secondly, students mentioned about their concenrs about the course.

> *I had some concerns, of course. Since rather than text-based, the course includes some tools that I know and for this reason, I had so concerns. I assumed I might had difficulty. (Interview, S 3) (Q92)*

Another students told that:

> *Actually, not at the beginning of the semester, but rather after the semester started, I had some concerns about the course. Since after the course sessions started, I recognized my lack of knowledge and then I was concerned about it. Due to being an online course and applied course requiring practice, I had so concern. (Interview, S 5) (Q93)*

The third factor retrieved via interview was the attitudes of course instructor toward students in questioning about grades. Of 24 students, 7 of them complaint about the instructor's attitudes toward them in this issue. For instance, one students stated that:

> *I had only problem with the assignment; I took low grade. The instructor gave 60 to most of us assuming we did the same in the assignment; but I actually did it myself and for this reason it made me so unhappy… I think the instructor had some bias in evaluating our assignments, but many students in online learning programs are already working and so has no much time; they prefer online learning programs because of these reasons including me. For example, I am at work during 8 AM and 19 PM; and I was at a conference at that time and I prepared my assignment in the hotel where conference was hold. I did my assignment myself but took low grade, though not important, it made me unhappy because of being evaluated as cheating. (Interview, S 18) (Q94)*

Another students similarly said that:

> *I expected better grade, but the situation was different. However, since I took some aprts from one of my friend, I could not object to my grade beacause of the likelihood of instructor's attitude in case of lowering my grade more. (Interview, S 17) (Q95)*

On the contrary, one student was in the opposite side and favored the instructor' attitude in this issue and stated that:

> *To be honest, grading was objective for me. The instructor was fair and objective. Since, I did my assignment myself, for instance. And I devote few days to complete my assignment. However, some students cheated or copied*

some parts of the assignment from some others and then changed it a bit and submitted to the instructor. The instructor recognized the cheating students and lowered their grades and explained the reasons. I took 100, but deservingly. (Interview, S 21) (Q96)

Working conditions is another factor having negative influence on teaching presence. According to the results, of 24 intervieweees, 5 students complained about their working conditions that they have no enough time for the course since they work most part of the day. Moreover, lack of practice is again mentioned by 2 students similarly. Both working conditions and lack of practice, since they were also mentioned similarly in social presence, sample statements from the interviewees were provided in that section.

All the factors having positive and negative influence on students' social presence, cognitive presence and teaching presence are summarized in Table 4.22. These factors are discussed in the next chapter.

4.5 Suggestions of Students (RQ5)

In consideration of fifth research question, inductive qualitative content analysis was conducted to reveal students' suggestions to facilitate their social presence, cognitive presence, and teaching presence in the online course context. The research question that was invesitagated in this part is the following.

RQ5. What are the suggestions of students in terms of facilitating their social presence, teaching presence and cognitive presence in the online course context?

The suggestions of students in terms of facilitating their social presence, teaching presence and cognitive presence in the online course context were received via interview and discussion activities. 18 students declared that they required some face-to-face classes for the course at certain times. For this reason, they preferred blended learning over online learning. They expressed their learning would increase if the course was supported with face-to-face classes. So, it can contribute teaching presence to some extent. They also claim that it would increase their communication, collaborative working and interaction which constitute social presence. For instance, one student stated that:

It would be better for me, since there are a lot of things to learn to me and I can ask face-to-face with more comfortably; since in online class there are limited time and everytime I cannot ask because there are other students; if there were face-face-to class sessions, I can ask to my instructor after class. I can send e-mail to my instructor in this way but I cannot express my problem as so much; since one more thing is expressing myself in an e-mail. (Interview, S 4) (Q97)

Another student told that:

If there were some face-to-face class sessions at least, it would be actullay different; I would have comprehensive knowledge and in this way, my motivation and willingness would also increase; since it is not so effective in the home. I open a document, try to practice; but of necessity my attention is distracted. (Interview, S 8) (Q98)

The other interviewee said that:

If face-to-face class sessions were held, then it would be fine, in fact. However, attending to the course can be difficult, everybody cannot be participate. (Interview, S 26) (Q99)

4 students claimed about the problems of course system. Some of them stated the system did not work, or they could not connect to the system during the class time. And also some students claimed that the system is complex and not useful. Sample statements are as follows.

It is a course in which I cannot connected because of the problems in course management system. The problems of course management system, complexity of forms, not retrieving the e-mails, and many trials to be connected even in accessing to the course materials. Course videos are frozen in watching. There are some problems with connection… However, the most important problem is not being updated and complexity of course management system; you can review our course schedule, some of our courses were not added into our account or some courses are not hold in the time as in schedule. (DA 5, S 2) (Q100)

Another student told that:

> *Updating the course management system, eliminating the old data and unknown parts are required. Either form or e-mail, the only channel for communication provides a better and updated network and accessing to everybody. A simpler education platform should be provided. (DA 5, S 14) (Q101)*

This problem may impair their cognitive presence since they would be demotivated to the environment. Therefore, the course system *Moodle* should be improved.

In the interview, 2 students stated their preference of group working performances over individual ones. They claimed they can work collaboratively and benefit with each other. It also helps to increase their social presence. About this issue, in addition, in the six discussion activity, about group working assignments or projects, 9 students said they prefer while 2 students insisted on individual assignments. Also, 14 students abstained since they thought that group working would be really difficult. Some different viewpoints of the students are the following.

> *Group working tasks can be better to understand the topic better with working together. (DA 6, S 43) (Q102)*

Another students stated that:

> *Group activities can be better for knowing each of us and being closer to our classmates beside future friendship. (DA 6, S 47) (Q103)*

On the contrary, one students told that:

> *Group activities is very dififcult for me since many of us cannot attent into the course at the same time or some makes more effort and more research while some doesn't do it anything and behave like a free-rider. (DA 6, S 1) (Q104)*

The other student stated that:

Group activities would be better, but since many of us are already working, it can be difficult for me. Everybody can be appropriate at different times. (DA 6, S 27) (Q105)

And finally, another one told that:

Group activities can be beneficial, but it is not an easy task. Since there may be some disconnections in the communication and participation in online paltforms. (DA 6, S 22) (Q106)

Since the class could not reach a consensus in this issue, group working performances can be tried to have a better understanding about its result.

3 students required more practice rather than many concept and verbal information in the course. This is directly related with the design and organization category of teaching presence, communication of methods. Also, 2 students stated the need for more examples. So, this may be considered to enhance students' perceptions of teaching presence.

3 students declared their preference of exam in place of assignment. They claimed they are more successful in exams more than as it was in assignment. However, no more students stated this issue. Still, it can be taken into consideration although there is no effect of this issue on any elements of CoI framework.

In summary, students' suggestions to facilitate their any of three-presence of the CoI framework were summarized with the number of students in the parenthesis mentioning those items in thw following.

- ✓ Transform the course into the blended learning from online learning(18)
- ✓ Benefitting from the aids of social networking services, like Facebook (11)
- ✓ Improving the course management system *Moodle* (4)
- ✓ Designing group working tasks more rather than individual tasks (9)
- ✓ Continue to holding individual tasks (2)
- ✓ Changing the design of the course adding more practice (3)
- ✓ Presentation of the instruction with more examples (2)
- ✓ Being assessed with the exam in place of assignment or any other task (3)

4.6 Summary of the Findings

The purpose of this study was to investigate the perceptions of students about cognitive presence with examining the effect and contribution of social presence, teaching presence, self-regulation, metacognition, and motivation in an online learning environment and finding ways to enhance cognitive presence. With this aim, both qualitative and quantitative data were collected. In a big public university, students who have experienced in online learning were selected as sample based on convenience sampling method. The students enrolled in ICT-IC course which is offered fully online were selected. In total of 6000 students, 3708 took the surveys and from those students, 1740 responded four online surveys. From those students, as parallel with the scope and aim of the research, students in MDS department that is a fully online associate degree program was selected for discussion activities. The class size is 162 and as average 65 students participated into the online six discussion activities. The discussions were hold asynchronously and the instructor was outside of the discussion. In total, 24 interviews were conducted. After finishing the interviews, the data were transcribed and checked to the accuracy of transcription. Students' posts on six discussion activities were analyzed based on coding matrix. The survey data were analyzed using simultaneous multiple linear regression analysis. At the beginning, there were 1740 students' data. After removing the missing cases (72) and extreme outliers (133) from the data, there were 1535 subjects in the analysis.

Students' perceptions of social presence, teaching presence and cognitive presence were found fine based on three data sources. The highest association of cognitive presence was found with social presence, and then teaching presence and self-regulation. Surprisingly, metacognition was found not significant and has a little effect on cognitive presence. Motivation, on the contrary, found has a moderate relationship with the cognitive presence. All these variables explained 60% of variance of cognitive presence in multiple regression analysis. Again, the most explained variance belonged to the social presence and then teaching presence. As for the other potential factor that affect students' social, cognitive and teaching presence, the type of education, the attitude of the instructor, the teaching style of the instructor, being married and having a child, working conditions were found mostly mentioned by the students in the interview. They stated mostly preference for the blended learning rather than online learning. Some suggested enhancing the course system *Moodle* making it more useful.

Some also stated change the design of the course with adding more practice rather than full of concepts and information. All these results are discussed in the next chapter.

CHAPTER 5

DISCUSSION AND CONCLUSION

This chapter includes the discussion and conclusion of the major findings of the study. This part is treated under main constructs investigated in this study to present major findings and make discussion altogether including seven parts addressing community of inquiry, social presence, cognitive presence, teaching presence, self-regulation, metacognition, and motivation. Major findings and discussion including the data retrieved from three data sources are presented and compared with earlier studies. Then, implications for the practice, practitioners, and implications in the scope of CoI framework as well as the recommendations for further research are provided.

5.1 Major Findings and Discussion

In this section, majır findings and discussion of this study are provided under the headings of each contruct that were invesitagated in the study to present an overall picture of the findings alltogether.

5.1.1 Community of Inquiry

With the development of web technologies and Internet, the demand for online/blended learning format has been increased. In the same way, there is a growing body of literature in this area to have more effective online learning environments and learning outcomes. One of the most remarkable development in this field is the appearance of Community of Inquiry framework.

Community of Inquiry (CoI) framework explains an educational experience putting the emphasis on critical thinking skills and collaborative inquiry with the intersection of three elements, namely social presence, cognitive presence, and teaching presence. CoI framework has been developed by Garrison, Anderson and Archer in 2000 which evolved computer conferencing technology and developed specifically for online-blended learning settings. The underpinning of this framework was based on John Dewey's work of progressive understanding of education, collaborative and social-constructivist orientations. From three elements of CoI framework, social presence

addresses learners' ability to project themselves socially and emotionally and functions as supporter of affective and cognitive objectives of learning (Garrison, Arbaugh, 2007; Gunawardena, Zittle, 1997; Short, Williams, Christie, 1976). It includes affective-personal beliefs, open communication and group cohesion. Cognitive presence which was derived particularly from Dewey's work on reflective thought addresses learners' ability to construct meaning through sustained communication, reflection and discourse and operationalized in Practical Inquiry Model including four categories, namely triggering event, exploration, integration and resolution (Garrison, Anderson, Archer, 2010). And the third construct teaching presence is the learners' perceptions about their instructor's ability to design and manage learning sequence, facilitation of active learning, providing subject matter expertise and direction of cognitive and social processes to realize the learning outcomes as individually meaningful and educational worthwhile (Garrison, & Arbaugh, 2007; Garrison, Anderson, & Archer; 2000). It includes design and organization, facilitating discourse and direct instruction.

There is ever-increasingly research about CoI framework. As the developers of this framework declared, it is a developmental and progressive model (Garrison, Anderson, Archer, 2010). It has not been explained completely considering earlier related research. Teaching presence is the most known construct, and cognitive presence is the least known construct. Cognitive presence was also cited as the most challenging to study. Reaching to resolution is really difficult or even rare. Some authors focusing on the CoI framework proposed new versions. From those recommended versions, the most remarkable point is the lack of self-regulated behaviors of the learners. There are also some proponents of this idea. Another one detailed feelings and emotions dividing social presence into two parts. And the other overemphasized social presence as the dominant variable in the CoI framework. All these recommended versions are discussed in detail in implications for the CoI framework section with comparing the findings of this study.

This mixed-method study examined the nature of community f inquiry framework in detail both using quantitative data and qualitative data. The findings retrieved from both quantitative data and qualitative data were accumulated altogether to make a whole discussion and more complete understanding of its nature. The findings of quantitative data include the analysis via both descriptive statistics and inferential

statistics, specifically standard multiple linear regression of the data collected from 1535 students with their responses to community of inquiry (CoI) survey. The findings of qualitative data include results of two data sources, online discussion posts analyzed via deductive content analysis relying on transcript analysis that originators of CoI framework provided and interview protocol analyzed based on inductive content analysis.

First of all, students' perceived levels of community of inquiry as a composite score which means overall CoI derived from the mean scores of social presence, cognitive presence and teaching presence. Earlier studies generally tend to measure three constructs of CoI framework rather than CoI overall. Akyol (2009) studied a small sample including only 28 graduate students, 16 students in online learning setting and 12 in blended learning setting and concluded that students' mean score value of CoI as 4.05 over 5.00. Another study conducted by Archibald (2011) with 189 students revealed the mean score of CoI as 3.58 over 5.00. Başdoğan (2015) in an online certificate program including adult learners (n=92) found that students' perceived levels of CoI as a composite score has a mean score value of 3.06 over 5.00. This study found the mean score value of 3.45 over 5.00. The retrieved mean score value of CoI in this study was higher than Başdoğan's study, lower than Akyol's and Archibald's studies. However, making comparison based merely on descriptive statistics might not so feasible. Since it could be reasoned by context of the study, participants, sample size, measurement time before-during or after the treatment, etc. Therefore, in order to have a more feasible comparison, both inferential statistics and detailed qualitative findings could be better.

In order to have a more detailed and complete understanding of students' community of inquiry, focusing on their posting behaviors and how they changes either positively and negatively during treatment process could be more reasonable. Earlier studies conducted by Akyol (2009) and Kim (2015) indicated students' perceptions for social presence was at low level. Online asynchronous discussion forums in this study indicated that students' posting behavior based on social presence and its three categories were at substantial level. They mostly perceived affective-personal beliefs followed by open communication behaviors. The lowest category was the group cohesion behaviors. Both open communication and group cohesion were improved during treatment. Moreover, interviews indicated that students perceived all three-

category of social presence so well that most of them declared that they felt belong to the community, felt comfort in communicating online with the instructor and the classmates and also expressing their own ideas. They expressed their emotions and opinions comfortably in and outside the class. They asked their questions easily in and outside the class hours and so on. They claimed all these affected their social presence, motivation and in turns learning positively. Therefore, this study provided more evidence for the existence of social presence and its three sub-category beside their development during the discussion activities as compared with Akyol's study (2009) and Kim's study (2015). Therefore, this study is highly valuable in understanding of nature of social presence together with its three-category and its developmental process. In terms of cognitive presence, students' posting behaviors in sight of exploration category was at highest, and of integration category was the lowest level. They perceived other two category at fairly moderate level. Moreover, all four-category was improved compared with the beginning throughout the six-activity. Finally, the resolution was at moderate level and developed continuously during six discussion activities as oppose to earlier studies. Since earlier studied contended that reaching to the resolution phase is really difficult (Akyol, 2009; Akyol & Garrison, 2011b), even they failed completely to reach to the resolution (Tik, 2016). The authors also claimed that synchronous online discussions constituted a time barrier to reach resolution phase. This study designed online discussions asynchronously in order to understand the actual constitutions and improvement of cognitive presence and come up with significant development in all four categories besides sustaining their high or fair levels, in contrary to aforementioned studies besides reaching to resolution phase at fair level. Finally, in regard of teaching presence which was covered only in two discussion activities due to being the most known element in the CoI framework, students favored design and organization of the course. They also favored the direct instruction. Their lowest perceived level belonged to the facilitating discourse. All these are discussed in detail; here just provided as a summary. Considering students' posting behaviors based on three-constructs on the CoI framework, students perceived community of inquiry overall at substantial level. Online discussion forums indicated that when they designed based on inquiry, brainstorming, real-life cases and self-expression and self-disclosure, students could be able to reach all phases of three-category in the collaborative community learning. Moreover, aids of discussion activity, aids of using social networking sites like Facebook, kindness behaviors of

course instructor and the classmates, instructor's effort and timely feedback were the most remarkable points which have positive influence on students. On the contrary, the nature of online learning due to being lack in real instructor and real interaction, marital status and/or having a child, working conditions were the most remarkable points having negative influence on students. All of these factors were also discussed in detail under each presence of community of inquiry.

In terms of correlation with cognitive presence and contribution to its prediction by self-regulation, metacognition and motivation, this mixed-method study designed specifically as an embedded study revealed significant positive strong association of all three variables with the CoI and indicated that 62% of total variability in the CoI was explained by these three predictors. The first predictor *self-regulation* significantly and positively associated with the CoI. In addition, self-regulation made significant contribution in the prediction of the CoI. It was found as the strongest predictor of the CoI and therefore, emphasized its importance for the students' the CoI in the online collaborative learning community. Among three predictors, self-regulation was the variable that having highest correlation with the CoI. The associations of metacognition and motivation with the CoI were nearly the same. The analysis further indicated that three variables accounted for the 62% of total variability in the CoI. Considering the relative contribution of the variables to the CoI, self-regulation was found as the best variable with .55 ratio, metacognition was the weakest with .12 ratio and motivation was the medium with .24 ratio. As for their unique contributions in the explained variance of the CoI, self-regulation was again the strongest with 7.1%, metacognition was the weakest with .9% and motivation was the medium variable having with 3.8%. Overall, three variables accounted 62% of total variability in the CoI and also considering the relative and unique contributions of three variables, self-regulation was the strongest variable while the metacognition was the weakest.

In reviewing the literature, Shea and Bidjerano (2010) declared that self-regulation represents an important mediator of the links among three presences of the CoI framework. They further stated that CoI framework cannot be considered apart from self-regulation since online learners monitor their time and cognitive strategies, regulate their study environment, and exercise control over their interactions with technology, peers, and faculty to maximize their learning (Shea et al., 2012). The

findings of this study revealing self-regulation as an important predictor and contributor of the CoI corroborates the idea of Shea and Bidjerano (2010). More recently, Başdoğan (2015) examined CoI as a predictor of self-regulated learning in the context of an online certificate program and concluded her study with advising to add SRL to the CoI framework. This study yielding strong association adds substantially to the understanding of the influence of self-regulation on the community of inquiry. The findings further support the idea of adding self-regulation to the CoI framework since it was found as the strong predictor of the CoI. In addition, since learners' self-regulation providing managing time, strategies, control of the learning and process, and more gains more importance especially in the nature on online learning characterized by the absence of real instructors, understanding self-regulation comprehensively promises better results in creating online collaborative community of inquiry learning settings. Therefore, it is highly recommended that self-regulation, due to being strong predictor of community of inquiry and providing control over learning, time and process and more, is included in the community of inquiry model.

Secondly, about metacognition, preliminary work in the sense of CoI framework has started more recently and based solely on the proof for the existence of metacognition at the intersection of teaching presence and cognitive presence (Akyol & Garrison, 2013). They further developed the metacognition instrument to make its measurement easier. In addition, Snyder and Dringus (2014) focused on exploration of metacognition in asynchronous student-led discussions based on the authors' courses of actions. In essence, these studies proved the existence of metacognition and developed an easy way for its measure. They, however, and any other research investigated the effect of metacognition neither on the CoI nor its three presence separately. This study is the first attempt to discover the effect of metacognition on the community of inquiry. For this reason, it corroborates to the literature and will be base for further research.

Finally, in regard of the motivation, very little was found in the literature about its effect on the community of inquiry up to date. The only two study investigated the effect of motivation, not CoI overall, but rather each three presence of the CoI separately. The first one was conducted by Polat in 2013 with 165 students and concluded with no significant association between motivation and any of three-presence of the CoI. The result of his study was surprising. The result can be caused

by contextual factors, sample size, or any other factor. On the contrary of Polat's study, this study discovered strong significant association between the motivation and the CoI. The second study in the literature was conducted by Kim in 2015. He did not investigate the effect of motivation on the CoI overall. He examined the effect of motivation on three presence of the CoI separately and concluded with positive significant correlation of the motivation with each three-presence of the CoI. This study contributes to the literature with significant association between motivation and the CoI. The effect of motivation on the community of inquiry was investigated in this study with a large-sample. Revealing motivation as significant predictor of the CoI and considering the lack of research, the current finding of this study adds to a growing body of literature.

Taken together, very little or no evidence on the literature about these three variables in the sense of community of inquiry and with its findings, this study serves as a base for further studies and open new directions. In order to create a better collaborative communities of inquiry in online learning settings, it could better for the online instructional designers and instructors to take these three factors into consideration in designing, teaching and managing their courses.

5.1.2 Social Presence

Social presence is the ability of learners to project themselves socially and emotionally and functions as a support for the cognitive and affective objectives of learning (Garrison, & Arbaugh, 2007; Gunawardena & Zittle, 1997; Short, Williams & Christie, 1976). It has an effect on learning with the help of social interaction (Richardson & Swan, 2003; Swan &Shih, 2005; Tu & McIsaac, 2002). This study examined the nature of social presence in detail both using quantitative and qualitative data. The findings retrieved from both quantitative data and qualitative data were accumulated altogether to make a whole discussion and more complete undersntading its nature. The findings of quantitative data include 1535 students' responses to community of inquiry (CoI) survey, specifically sub-factor of social presence analyzing via descriptive statistics and infernetail statistics, specifically simultaneous multiple linear regression. The findings of qualitative data include results of two data sources, online discussion posts analyzed deductive content analysis relying on transcript analysis that originator of CoI framework and interview protocol analyzed inductive content anaylsis.

First of all, students'perceived levels of social presence was measured in earlier studies and it differs. Akyol (2009) found students' mean score value of social presence as 3.94 over 5.00 with studying a small sample including only 28 graduate students, 16 students in online learning setting and 12 in blended learning setting. Another study conducted by Archibald (2011) with 189 students revealed the mean score of social presence as 3.46 over 5.00. A more recent study conducted by Başdoğan (2015) in an online certificate program including adult learners (n=92) found lower mean score of social presence (M=2.81). This study found mean score value of social presence of students in the online course context, including 1535 students as 3.26 over 5.00. Although the retrieved mean score value is lower than Akyol and Archiald's studies, it is higher than Başdoğan's study. In addition, making a comparision with these earlier studies including small sample size might bot be so reasonable. Moreover, the context of those studies inclıding this study, though being similar to some exten; are not the same and the result could be reasoned by different context of the studies, sample size, participants, etc. Therefore, making a comparison might not be so reasonable.

In order to have a more detailed and complete understanding of students' social presence, focusing on their posting behaviors and how their perceived levels of social presence changes during treatment process could be more reasonable. Akyol (2009) hold synchrous discussion both in online and blended learning settings during 9 weeks and revealed low perceptions of students' in terms of three categories of social presence. She revealed that students' posting behaviors were %33 in sight of affective/personal category (AP), 48% of open communication (OC) and 14% of group cohesion (GC) in online learning setting. She also found that students' posting behaviors were %12 in sigth of AP, 41% of OC and 24% of GC in blended learning setting. Considering the change in students' posting behaviors based on three-categories, AP in blended learning environment decreased continually during the treatment process. GC in online learning environment ncreased steadily during the treatment process. In both learning environment, students posted in OC category in general. Archibald focused on cognitive presence in discussion activity while Başdoğan did not hold any discussion activity in their studies.

A more recent study holding discussion activity in her study was conducted by Kim (2015). She assessed students' posts only either positive or negative, rather than sub-categories of any of three-presence. She retrieved from discussions that there were 59

relevant coded posts from 77 students including 32 on cognitive presence, 17 on social presence and the remaining 10 on teaching presence. Only three posts in social presence were assessed negative, and all the remaining posts were assessed positive. Overall, she concluded fairly high level of social presence in discussion activities.

On the other hand, this study revelaed from asynchronous discussions during 12-week in purely online learning setting that students' posted mostly (87%) in AP category, 73% in OC and 47% in GC category. Their posts were mostly in AP and OC and lower in sigth of AP category.

The quantitative data indicated in the same way majority of the students felt sense of belong to the course community (55.2%, N=848). Some of them favor the communication via online medium for social interaction (40.4%, N=620). However, these results might be effected by some participants educated in formal education, but also enrolled in some online courses. In responding to the items, they could compare their experience and preference both in online and formal education settings. In terms of open communication, some (44.6%, N=685) stated they felt comfortable conversing through the online medium. Similarly, some other students (41.5%, N=638) stated they felt comfortable participanting in the course discussions. Also, some (43.9%, N=674) felt comfortable interacting with other course participants. In regard with group cohesion, some students (42.8%, N=657) stated they felt comfortable disagreeing with other course participants while still maintaining a sense of trust while some (37.1%, N=569) were abstainer. Some of them (39.5%, n=606) felt that their points of view were acknowledged by other course participants; however more (41.6%, N=639) were not sure. Some students (41.6%, N=693) thought that online discussions help me to develop a sense of collaboration. Taken together, still this study retrieved higher levels of students' posts in three-category of social presence. Although there were some declines in percentage levels in students' posts based on three-category, in general their perceptions of OC and GC categories were developed during the treatment process. AP was already at high level at the beginning. The third data source interview protocol also indicated that students perceived all three-category of social presence very well. Most of them declared that they felt belong to the community, felt comfort in communicating online with the instructor and the classmates and also expressing their own ideas. They expressed their emotions and opniions comfortably in and outside the class. They asked their questions easily in and

outside the class hours and so on. They claimed all these affected their social presence, motivation and in turns learning positively. Therefore, this study provided more evidence for the existence of social presence and its three sub-category beside their development during the discussion activities as compared with Akyol's study (2009) and Kim's study (2015). Therefore, this study is highly vauable in understanding of nature of social presence together with its three-category and its developmental process.

This study revealing high level of social presence and developing students' social presence during treatment process, indicated that the difficulties caused by holding discussions asynchronously in such a large class size (n=162) could be overcame. Based on the results, it can be inferred that the handicap of having a large class size could be overwhelmed. The reasons behind attaining high level of social presence could be attractiveness of the topics covered in discussions, addressing topics in real life situations, students' motivation, instructor's own effort, guidance and timely feedback, sense of belonging to the learning community, etc. A more recent study conducted by Kim in 2015 concluded with the positive effect of the attractiveness of the topics covered in discussions, addressing topics in real life situations. This study verified the findings of Kim's study in different context and thus, contributed to the literature in this sense. This study could be also guide online instructors and educators showing how can be improved with addressing topics in real life, choosing attractive topics, etc.

In addition, the high levels of OC and GC could be reasoned by Facebook group and/or WhatsApp group since many students declared in some activities of discussion that both Facebook and/or WhatsApp groups contributed to their interaction and communication with the class. They were informed up-to-date for any activity, announcement, reminds and call for participation, etc. Although the situation that Facebook group was official and created by the instructor and WhatsApp group was informal and created by the students, both contributed to the facilitation of social presence. The positive influence of social networking sites specifically Facebook on social presence was found in the study more recently conducted by Lim and Richardson (2016). This study is in agreement with their findings. In adiditon, cultural differences might be reasoned by this situation. The effect of culture in using social networking sites in daily life was addressed in some earlier studies (Chau, Cole,

Massey, Montoya-Weiss, & O'Keefe, 2002; Jackson, Walk, 2003; Qui, Lin, Leung, 2012). Some differences could be also expected in teaching-learning environments. For example, a recent study examining the use of social networking sites of instructors from two different origins, namely Turkey and Germany in teaching-learning environments concluded that although Turkish instructor anticipated social networking sites (SNS) as an information sharing and socizalition platform, but some Turkish were not so optimistic as Germans which were more optimistic about the benefits of SNS in the use of education in a way that discussion and communication oriented besides sharing any material (Kilis, Rapp, Gülbahar, 2014). Another study which examined the current state of usage of SNS for education in Turkey's two leading universities both on instructors and students contended that both instructors and students were unaware of potential benefits of SNS for the education (Gülbahar, 2014). She further stated that they anticipate SNS as an informal learning platform ued solely for communication and knowledge sharing. However, there were some studies indicating positive influence of SNS in teaching-learning environments (Ajjan & Hartshorne, 2008; Genç, 2010; Lim, Richardson, 2016; Kışla, Karaoğlan, 2011; Tess, 2013). In this study, students' favor of Facebook over Moodle could also be reasoned by the culture itself since the number of people using Facebook in Turkey has been over-increasing. And as compared with Moodle which is less friendly environment than Facebook, could be expected to be favored by the students. This might improve students' social presence. The other issue is that some previous empirical findings indicated that Facebook is an effective discussion environment in online and/or blended learning (Mazer, Murphy & Simonds, 2007; English & Duncan-Howell 2008). Since it facilitates communication, interaction, and cooperation, it has favorable effects on social presence and the sense of community (Ku, Ho, & Lam, 2012; Mazer & et al., 2007; Schroeder, Minocha, Schneider, 2010). Another study indicated the enhancement of social presence using Twitter which facilitated free-flowing just-in-time interactions and social connections (Dunlap, Lowenthal, 2009). Considering from these points, with the basis on the lack of practical studies based upon effective theoretical and pedagogical orientations, Öztürk (2015) examined whether or not Facebook suits the CoI framework recently. She concluded with high level of presence of the students and revealed that Facebook is a suitable online learning environment for the CoI framework with the features fostering critical thinking, discussion, cooperation, and learning beside social relations. This study corroborates with prior

studies in the same way exploring positive effect of Facebook on students' social presence.

Furthermore, a high level of social presence could be reasoned by students' own effort, being self-regulated, a warm and comfortable learning environment, instructor's effort and guidance, or even may be due to their characteristics. Since the earlier studies generally studied with graduate students and they could be more self-regulated but may be less socialized. However, it can be inferred that both students and instructor had positive contribution in the development of students' social presence. The discussion activities and interview protocol indicated that students favored the kindness behaviors of their instructor and the classmates during the semester. The instructor migth contribute students' self-expression and self-disclosure as well as sense of belonging to the community with her kindness behaviors. S/he can facilitate students' contributions, encourage them to ask their questions and feeling comfortable during the course and outside the class hours. In the same way, kindness behaviors of the classmates might affect sense of belonging to the community, communication and collaborative work during and outside of the class and therefore might have a positive influence on social presence.

In terms of correlation with social presence and contribution to its prediction by self-regulation, metacognition and motivation, this study revealed significant association of all three variables and indicated 50% of total variability in social presence was explained by these three predictors. The first predictor *self-regulation* significantly and positively associated with social presence. In addition, self-regulation made significant contribution to the predicton of social presence. IT was found as the strong predictor of social presence and therefore, emphasized its importance for the students' social presence in online learning settings. Considering self-regulation, prior studies noted its importance for social presence besides other two-presence of the CoI (Shea, Bidjerano, 2010; Shea, Bidjerano; 2014). Shea and Bidjerano (2010) declared that self-regulation was an important mediator of the links among three-presence of the CoI framework. Başdoğan (2015) investigated the effect of self-regulation based on its six-factor and concluded with only two sub-factor *goal setting and self-evaluation* having significant association with the SP. This study revealing strong association of self-regulation with social presence and significant high contribution of self-regulation to the prediction of social presence, corroborates with the previous studies.

Considering cyclical phases of self-regulation as defined by Zimmerman (2000), forethought, performance or volitional control and self-reflection are highly essential for any collaborative community and critical inquiry. Forethought including task analysis like strategic planning and goal setting and self-motivational beliefs such as outcome expectations, intrinsic interest or value, goal orientation could facilitate especially affective/personal category of social presence and in turns open communication. Performance or volitional control inclusing self-control such as self-instruction, imagery and attention focusing and self-observation such as self-recording and self-experimentation could foster open communication and group cohesion of social presence together with self-reflection including self-judgment like self-evaluation and causal attribution and self-reflection such as self-satisfaction or affect.self-regulated behaviors and skills could support self-expression, self-disclosure, exressing (dis)agreement, activities encouraging collaboration, etc. Therefore, it can be inferred that self-regulation is essential for enhancing learners' social presence in the online collaborative learning community.

In terms of metacognition, it has been started to be the focus more recently. The sense of CoI framework was based solely on the proof for its existence at the intersection of teaching presence and cognitive presence (Akyol & Garrison, 2013). The authors focused on its existence and measurement rather than its effect. Another study conducted by Snyder and Dringus in 2014 focused on exploration of metacognition and contributed to its existence. Therefore, this is the first study that reveals the effect of metacognition both on CoI overall and its three-presence seperately. This study found that metacognition has failed to be significantly associated with and contribution to the prediction of social presence. Since this study is the first attempt to investigate the effect of metacognition, it is not possible to make any comparison. This result, in essence is some surpsrising; however it could be caused by the context of the study. Since participants in ICT-I course might not be need any metacognitive skills or behaviors. It is a basis course to gain fundamental skills and knowledge about main concepts of computer and some basic softwares rather than being a complex course. Therefore, learners might not need any metacognitive skills or behaviors. Alternatively, the reason might be the nature of measurement survey; specifically metacognition questionnaire since it was more recently developed based on qualitative data and there was no any proof in any other research. Still, learners might not need

any metacognitive skills or behaviors in the collaborative learning community in any context since it is a higher order thinking skills attributed to critical inquiry (Hacker, 1998). Self-regulation could be enough for the learners during learning process.

In terms of motivation, there is no enough research about its effect on social presence. There is only two studies and the first study conducted by Polat in 2013 concluded with no significant relationship whereas Kim (2015) revealed significant relationship between social presence and motivation. This study found significant association between motivation and social presence and also significant contribution of motivation to the prediction of social presence and therefore, contributes to the results of Kim's study. The result of Polat's study is so surprising that under normal conditions, relying on the nature of social presence and its descriptors, a significant association is expected between them. Since motivated learners could be more interested in learning process, more active and engaged in learning activities; therefore they are expected to socially present in the learning environment.

Other than aforementioned factors facilitating students' social presence, this study also revealed that some potential factors that might decrease their social presence. Some students declared that the type of education effected them in some ways including interaction and communication either with course instructor or the classmates, sense of belonging to the community, collaboration, motivation, interest and learning. Since online learning are characterized by the lack of real instructor, it might decrease students' social presence. An earlier study conducted by Borup, West and Graham (2012) focusing on removing barriers of sense of isolation caused by lack or real instructor in the nature of online learning via emerging video technologies concluded that asynchronous video promised to improve social presence. Since video-based communication in the sense of online learning, provides a feeling of instructors that seems real, familiar and present to the students and this way enhances online communication and interaction with the course instructor and among the class. Thus, online learning can be warranted with a high level of social presence benefitting from such a technology. The further investigation is warranted to investigate social presence in the online learning aided with video-based technologies similar with this study.

Moreover, technical and usability problems of course management system *Moodle* was also explored one of the other potential factors having negative influence on students'

social presence. Few students declared Moodle caused not to being participate into the course sessions sometimes due to connections problems and after some trial, they gave up to participate with being upset. Sometimes it caused to the problem of synchronization of audio and video when rewinding or forwarding the course video or load very slowly. This is in fact demotivates the students and leading to not participate into the course due to technical problems, they felt isolated and in turns decrease their social presence. An earlier study conducted by Rubin, Fernandes, and Avgerinou (2013) investigated the effects of LMS on the CoI framework and concluded that the technology and software used in online learning effected students' three-presences. They recommended support the Learning Management Systems (LMS) with affordances that facilitate collaborative learning community enhancing students' satisfaction with the LMS such as facilitating communication more and in different ways, ease of finding resources, etc. More recently, some studies indicated that even the type of technology and/or tool migth slightly change any of three-presence of the students (Gutiérrez-Santiuste, Rodríguez-Sabiote, & Gallego-Arrufat, 2015; Kovanović, Gašević, Joksimović, Hatala, & Adesope, 2015). Taken together, the used technology and software and their features could be warranted to have an influence on students' social presence and thereby should be considered carefully by online instructors and educators. Further research could grow on the effect of different technology and software to detect the best working features of them. The firms could produce better working softwares or tools for online learning compiling the better working features altogether.

The type of assessment instrument specifically individual assignment in this study was mentioned by some students to decrease collaboration and group cohesion. Actually, group performances are warranted to foster social presence of students. Therefore, online instructors should prefer group working performances more than individual ones to create and sustain an effective collaborative learning community. However, the aids of dcisusion activity favored by many students. They benefitted such a regular course activity and emphasized its importance for their progress.

And finally, another disadvantage for the students' perception of social presence in the online learning could be their marital status and/or having child. Some students declared being married and/or having child effected them negatively due to preventing their sparing time for the course requirements even their participation into the course

sessions. Beside marital status and having child or not, working conditions was addressed in the same way. Heavy working conditions might prevent learners to spare time for the course requirements and even to participate into the course. The effect of all these aforementioned factors might be expected. The research that put the emphasis on these demographics was inconclusive with their effect (Mykota, 2015; Kim, Kwon, Cho, 2011; Tu, Yen, Blocher, 2011).

Overall, students perceived social presence at high level in this study. Affective/personal behaviors were high at the beginning, but maintained at high level during treatment process. Open communication and group cohesion were developed during the semester thanks to the aids of discussion activity, Course Facebook page, and addressing course topics in real life and also focusing on self-disclosure of students rather than pure information and facts, etc. Students favored their instructor's and classmates' kindness behaviors. They initiated a group on Whatsapp to collaborate and cooperate with each other in the collaborative learning community. Large class size could be said to be overwhelmed. They also favored their instructor's effort and guidance. Howver, their marital status and/or having chilsd, working conditions, technical and usability problems of course management system *Moodle*, and individual assignment were mentioned by some students as drawback for their social presence.

5.1.3 Cognitive Presence

Cognitive presence is the ability of constructing meaning through sustained communication, reflection and discourse in a community of inquiry (Garrison, Anderson, Archer; 2001). It was derived from Dewey's work on reflective thought and grounded on critical thinking. It has not been explained completely and therefore, it requires elaboration. In this study, cognitive presence was examined in detail using both quantitative data and qualitative data.

This study examined the nature of cognitive presence in detail both using quantitative and qualitative data. The findings retrieved from both quantitative data and qualitative data were accumulated altogether to make a whole discussion and more complete understanding of its nature. The findings of quantitative data include the analysis via both descriptive statistics and inferential statistics, specifically simultaneous multiple linear regression of the data collected from 1535 students with their responses to community of inquiry (CoI) survey, specifically sub-factor of cognitive presence. The

findings of qualitative data include results of two data sources, online discussion posts analyzed deductive content analysis relying on transcript analysis that originators of CoI framework provided and interview protocol analyzed inductive content analysis.

First of all, students' perceived levels of cognitive presence was measured in earlier studies and the results are very different. Akyol (2009) found students' mean score value of cognitive presence as 4.07 over 5.00 with studying a small sample including only 28 graduate students, 16 students in online learning setting and 12 in blended learning setting. Another study conducted by Archibald (2011) with 189 students revealed the mean score of cognitive presence as 3.48 over 5.00. A more recent study conducted by Başdoğan (2015) in an online certificate program including adult learners (n=92) found lower mean score of cognitive presence (M=3.05). This study found mean score value of cognitive presence of students in the online course context, including 1535 students as 3.64 over 5.00. Although the retrieved mean score value is lower than Akyol study, it is very close to Archiald's study. It retrieved higher mean score value of cognitive presence than Başdoğan's study. Considering the contexts of previous studies and this study, comparing the mean scores of cognitive presence might not be so feasible. The context of the studies, participants, designs and treatment applied in the studies were different from each other. In order to have a more feasible comparison, both inferential statistics and detailed qualitative findings could be better.

In order to have a more detailed and complete understanding of students' cognitive presence, this study focused on cognitive presence and designed discussion questions based on its sub-dimensions. One of the most known study in the sense of CoI framework conducted by Akyol (2009) that hold synchronous discussion both in online and blended learning settings during 9 weeks, revealed that students posted 10% in triggering event (TE) category, 25% in exploration (EX), 48% in integration (INT) category and %7 in resolution (RES) category. Both TE and RES were at very low level. She also detected significant improvement only in EX category, but also slightly improvement in EX and RES categories. On the other hand, she found decrease in students' post based on TE category. She further stated that reaching to the resolution stage was very difficult (2009). Another more recent study conducted by Kim (2015) assessed students' posts only either positive or negative, rather than sub-categories. He coded 59 post from 77, specifically 32 on CP, 17 on SP, and 10 in TP. All of the posts

except one in cognitive presence were positive. He found students' perceptions of cognitive presence was at fairly substantial level.

This study held six online discussion activities during 12 weeks asynchronously and revealed that students' posts based on four-category of cognitive presence were substantial. Students' average posting in six-activity of asynchronous discussion were 55% in TE category, 72% in EX category, 35% in INT category and 49% in RES category respectively. They perceptions of EX category was at highest, and of INT category was the lowest level. They perceived other two category at fairly moderate level. Moreover, when the development of four-category of cognitive presence was examined, all four-category was developed compared with the beginning throughout the six-activity. Specifically, TE was developed at the mid of discussion activities, and then decreased at the end. EX was developed at the mid while decreased at the same level at the end. The integration was at the lowest level among all categories of cognitive presence. It was decreased at the mid but then increased at the end. During the six-activity, it was slightly developed and at low level overall on the contrary of earlier studies. Finally, the resolution was at moderate level and developed continuously during six discussion activities as oppose to earlier studies. The quantitative data also indicated similar findings. In regard of triggering event, some students (42.8%, N=750) said that problems posed increased their interest in course issues while some others (35.6%, N=514) was undecided. About half of them (49.8%, N=764) thought that course activities piqued their curiosity. Similarly, some students (47.3%, N=727) felt motivated to explore content related questions. In terms of exploration, about half of them (49.8%, N=764) utilized a variety of information sources to explore problems posed in the course. More than half (51.6%, N=793) also said that brainstorming and finding relevant information helped them resolve content related questions. In adiditon, half of them (50.5%, N=775) stated online discussions were valuable in helping them appreciate different perspectives. Thirdly, in regard with integration, more than half (52.3%, N=802) told that combining new information helped them answer questions raised in course activities. Similarly, again more than half (53.3%, N=817) thought learning activities helped them construct explanations and solutions. In addition, more than half of the students (51.1%, N=785) stated reflection on course content and discussions helped to understand fundamental concepts in this class. Finally, in terms of resolution, about half of the students (49.2%,

N=756) stated that they can describe ways to test and apply the knowledge created in this course. They (47.1%, N=724) said that they have developed solutions to course problems that can be applied in practice. And majority of them (60.3%; N=941) also said that they can apply the knowledge created in this course to their work or other non-class related activities.

Comparing with earlier studies, this study succeeded to reach to the resolution phase which is cited in the earlier as really difficult (Akyol, 2009; Akyol & Garrison, 2011b), even failed completely to reach to the resolution (Tik, 2016). The authors also claimed that synchronous online discussions constituted a time barrier to reach resolution phase. This study designed online discussions asynchronously in order to understand the actual constitutions and improvement of cognitive presence and come up with significant development in all four categories besides sustaining their high or fair levels, in contrary to aforementioned studies.

The higher percentage values of all four-category could be reasoned by the design and organization of the discussions and also attractiveness of the topics covered in those activities. The topics selected based on addressing to the real life stimulating for brainstorming and critical thinking beside students' own experiences rather than requiring pure information and facts. More importantly, the topics covered in discussion activities, besides triggering their curiosity, interest and motivation, provided to explore the tasks appreciating diverse perspectives, create a solution and apply solutions in their real life. They could share their own experiences, reflect on them with developing new or deeper knowledge. Therefore, the design and context of discussion were paramount in improving students' cognitive presence. It was more recently noted in prior studies. Redmond (2014) indicated when online discussions were structured appropriately, students can share and document their thinking and reflect on both their and other students' contributions while developing new or deepen knowledge. When they asked to reflect on their learning experience with a given scenario, they could easily applied their new knowledge and resolved the issue, means reached resolution phase.

Another more recent study conducted by Liu and Yang (2014) concluded with a similar result stating discussion types and context effect students' cognitive presence and recommended real life experiences should be covered in online discussions to

enhance cognitive presence. This study was designed discussions focusing on the dimensions of cognitive presence and succeeded with a high level of cognitive presence besides reaching resolution phase by half of the students. With the findings, this study appreciated the importance of real life experiences and also assigned case and scenarios covered in online discussions. Moreover, the structure of discussion questions were designed in the basis of problem-based approach. Overall, this study is in agreement with Redmond's (2014) and Liu and Yang's (2014) statements and enhances the understanding of cognitive presence with a more complete exploration by indicating the ways to attain, improve and sustain a high level of cognitive presence in the nature of online learning. So, online instructors and educators should be aware of that students are able to reach all four-phases of cognitive presence and set the course activities to guide them fostering their ability to challenge themselves through the process of critical thinking (Giannousi, Kioumourtzoglou, 2016; Ladyshewsky, 2013). It is highly recommended to design discussion activities accordingly with the basis on real life experiences and giving scenarios rather than pure facts and information. It could also be better to design those activities based on problem-based approach to enhance students' reflections, critical thinking and construct new knowledge or deepen their existed knowledge.

Another issue behind high level of cognitive presence mentioned by some students is the cooperation among the students. Many interviewees put excessive emphasis on the cooperation to foster their cognitive presence beside collaboration. The collaboration lays already on the basis of community of inquiry framework. Yet, cooperation was also addressed by some students in the study. Although these two terms are not the same, they are close to each other to some extent and expected to support students' experience in cognitive ability. It could improve students' cognitive presence by brainstorming, exploration and interaction. Therefore, in regard of designing any collaborative learning community, it could be better for online instructors taking cooperation into the consideration besides collaboration in and out the class and also in terms of designing course activities.

The other issue related with the high level and improvement of cognitive presence was found sustaining the motivation as mentioned by some students. It was also examined with quantitative data and explained in related part later. Holding asynchronous discussion in a large class including 162 students without forming small groups was

not an easy task. However, it was succeeded besides providing and maintaining high level of cognitive presence and its improvement during the treatment. As found in a more recent study (Kim, 2015), choosing attractive topic for the students and addressing real-life cases could led to the high level of cognitive presence. They were willingness and motivated with regular activities. The questions were also not boring for the students and they could easily express their own experiences and made brainstorming with the classmates. Generally, they liked to express their own ideas, experiences and their solutions for the proposed real-life cases. This study provided more elaboration of cognitive presence and how it could be facilitated. This study also contribute to the literature that students could reach to the resolution phase and it could be developed in opposite of earlier studies which difficultly found it at lowest level (Akyol, 2009; Akyol & Garrison, 2011b) or even failed completely to reach to the resolution (Tik, 2016).

In terms of correlation with cognitive presence and contribution to its prediction by self-regulation, metacognition and motivation, this mixed-method study revealed significant positive association of all three variables with cognitive presence and indicated that 60% of total variability in cognitive presence was explained by these three predictors. The first predictor *self-regulation* significantly and positively associated with cognitive presence. In addition, self-regulation made significant contribution to the prediction of cognitive presence. It was found as the strongest predictor of cognitive presence and therefore, emphasized its importance for the students' cognitive presence in the online collaborative learning community. Considering prior studies focusing on self-regulation in the sense of CoI framework, it was essentially addressed for the effective online collaborative community as well as facilitation of cognitive presence (Chmiliar, 2011; Means, Toyama, Murphy, Bakia, Jones, 2009; Pintrich, 1999; Shea & Bidjerano, 2012). Considering self-regulation, prior studies noted the importance of self-regulation for cognitive presence besides other two-presence of the CoI (Shea, Bidjerano, 2010; Shea, Bidjerano; 2014). They extended their work later and concluded with a new dimension named learning presence which includes learners' self-regulatory strategies (Shea, Hayes, Smith, Vickers, Bidjerano, Gozza-Cohen, Jian, Pickett, Wilde & Tseng; 2013). Another study conducted by Başdoğan (2015) contended that although two sub-constructs of self-regulation specifically environment structuring and goal setting were correlated with

the CP and explained 30% of total variability; as a composite score, it was not a significant predictor. This study investigated self-regulation overall rather than its sub-dimensions and detected high significant positive association between them. This study also revealed that it was the strongest predictor of cognitive presence with its valuable contribution. Therefore, this study elaborated self-regulation regarding the effect and contribution on cognitive presence and is in the agreement with earlier studies providing more evidence.

Considering cyclical phases of self-regulation as defined by Zimmerman (2000), forethought, performance or volitional control and self-reflection are highly essential for any collaborative community and critical inquiry. Forethought including task analysis like goal setting and strategic planning, and self-motivational beliefs such as self-efficacy, outcome expectations, intrinsic interest or value, might facilitate triggering event and exploration categories of cognitive presence. Performance or volitional control including self-control such as self-instruction, imagery and attention focusing and self-observation such as self-recording and self-experimentation together with self-reflection including self-judgment like self-evaluation and causal attribution and self-reflection such as self-satisfaction or affect could foster exploration, integration, and resolution categories of cognitive presence. Therefore, it can be inferred that self-regulation could be a crucial factor to foster learners' cognitive presence in the online collaborative learning community.

The second predictor *metacognition* has been started to be the focus more recently. In the sense of CoI framework, a more recent study was based solely on the proof for its existence at the intersection of cognitive presence and teaching presence (Akyol & Garrison, 2013). The authors focused on its existence and measurement rather than its effect. Another study conducted by Snyder and Dringus in 2014 focused on exploration of metacognition and contributed to its existence. Therefore, this is the first study that investigated the effect of metacognition both on CoI overall and its three-presence separately. This study showed significant contribution of metacognition in the prediction of cognitive presence, although it was the weakest predictor among three predictors. They were also significantly and positively associated with each other. Since there is no satisfactory work in the literature about metacognition in the sense of CoI framework, this study gains more value revealing the effect of metacognition as the first time both on the CoI overall and its three-

presence separately. With the findings indicated that metacognition was significantly contributed to the prediction of cognitive presence and positively and significantly associated, the study has fruitful directions for feeding the poor literature and opening new insights for further research.

Finally, the third predictor *motivation* made a significant valuable contribution in the prediction of cognitive presence. It was the second variable among three predictors depending on their degree of contribution. Motivation and cognitive presence were significantly and positively correlated with each other. In the literature, there is no satisfactory research about the effect of motivation on cognitive presence. There is only two studies; the first study conducted by Polat in 2013 concluded with no significant relationship whereas Kim (2015) revealed significant relationship between cognitive presence and motivation. Polat (2013) examined the relationship among each three presences of CoI and academic motivation with 165 students using the Turkish version of experimental version of Vallerand's academic motivation scale. Kim (2015) conducted his dissertation about learning flow, motivation, and community of inquiry in the online graduate degree program with 77 students and found strong positive significant relationship with each of three presences of CoI framework. This study, in contrary to Polat's study, found significant association between motivation and cognitive presence and also significant contribution of motivation in the prediction of cognitive presence and therefore, contributes to the results of Kim's study. Although there is no enough study in the literature, the importance of motivation could be appreciated for its effect on students about their perceptions toward their instructor, course, content, instruction, learning progress, etc. (Gorham, Millette, 1997; Noels, Clément, Pelletier, 1999).

Motivation could be especially important for triggering event phase. The qualitative data findings also indicated that sustaining motivation was overemphasized by some students to foster their cognitive presence in the nature of online learning. This study also contributes to the literature discovering the factors having positive and negative effect on students' motivation in terms of their cognitive presence. The potential contributing factors of the motivation to foster cognitive presence were instructor's kindly attitude toward them and efforts to make them motivated, teaching style of the instructor, attractiveness of the course topics, individual willingness, excitement due to the learning a new topic and other students' contribution whereas the misbehaviors

of some other students in the class, problems with the course system, could not able to participate into the course, a fear of failing the course, being married and/or having a child, limited time and the simplicity of course topics were potential negative factors for their motivation level.

Other than aforementioned factors facilitating students' cognitive presence, this study also revealed some other potential factors that might decrease their cognitive presence. Some students complaint about the difficulty with individual assignments and stated their preference of group performances over individual ones. They told that individual assignments could affect their sense of community negatively, decrease the quality and grades of their assignments and make them lonelier. For this reason, they preferred group performance activities more for more collaboration and exploration diverse perspectives of course topics. This could enhance the overall community of inquiry besides cognitive presence. Individual assignments, in fact do not fit in the basis of collaborative learning community very much. However, it might help to foster students' cognitive presence individually, rather than the whole community. Still, it could be taken into consideration in designing online collaborative learning communities. Designing both individual and group working activities could be more effective to have an effective collaborative learning community.

Some other student also complaint about the less of practice in the course. They emphasized the importance of practice in such a course requiring more practice rather than pure information. Practice could improve students' cognitive presence with triggering event, exploration of content and diverse perspectives of the topics and integration of information connecting with ideas and facts and making synthesis to create a solution for the proposed case or problem. It could also provide chance to deal with vicarious applications in different settings. It can be inferred that practice might be imperative to facilitate the collaborative learning communities besides cognitive presence. In essence, design of the practice could really matter. Therefore, it could be better to design the practices in a way of synthesis of problem-based approach, critical thinking and inquiry.

Not commonly, but rarely lack of students' prior knowledge and simplicity of course topics were also mentioned as other negative factors for their cognitive presence. Students could have difficulty with a lack of prior knowledge about course topics like

that they might not able to explore diverse perspectives of the topics, integration with connecting ideas and making synthesis and especially vicarious application in real life or different disciplines. They could need help in the very beginning of assigned tasks, but could fail due to the lack of prior knowledge. For this reason, it could be important to have prior knowledge especially in reaching higher levels of cognitive presence specifically resolution. For those having more knowledge and found the course topics simple might be another drawback in creating collaborative learning communities and sustain its quality. Therefore, balancing between students in different background could come into prominence for the success of collaborative learning communities even reaching high level of cognitive presence. Some earlier studies concluded with a low level of resolution and claimed that reaching to resolution phase is very difficult (Akyol, 2009; Akyol & Garrison, 2011b; Tik, 2016). However, this study, with the design and organization of the course and course activities, elicited high level of cognitive presence but specifically fairly substantial level of resolution. The gap between the course content and prior knowledge and really matters in this sense and being able to filling this gap is noteworthy. Taken together, this study makes several contributions to the current literature and provides a new understanding of cognitive presence.

Overall, students perceived cognitive presence was at fairly substantial level in this study. Although earlier studies stated that reaching to the resolution phase was very difficult or even did not occur, this study provided students to reach to the resolution phase and overemphasized the importance of addressing real-life topics and assigned cases or scenarios in discussion activities and in the agreement with the recommendations of Redmond's (2014) and Liu and Yang's (2014) in this way. All three predictors, namely self-regulation, metacognition, and motivation significantly contributed to the prediction of cognitive presence. Self-regulation was the strongest predictor followed by motivation. Metacognition was the weakest predictor of cognitive presence, however it significantly and positively correlated with cognitive presence and made a significant valuable contribution in the prediction of cognitive presence.

5.1.4 Teaching Presence

Teaching presence is defined as the designing and managing of learning sequence, facilitation of active learning, providing subject matter expertise and direction of

cognitive and social processes to realize the learning outcomes as individually meaningful and educationally worthwhile (Garrison, Anderson, & Archer; 2000; Garrison, & Arbaugh, 2007). It is about students' perceptions about their instructor to design, organize and manage the course and learning during the process. It plays a mediating and regulatory role among three elements of CoI, catalyst in starting the development of the community and must be available to provide transition from SP to CP either from the facilitator or other students (Garrison & Cleveland-Inness, 2005; Ke, 2010; Laves, 2010; Tran, 2011). Thus, it is a significant predictor of sense of community and learning outcomes (Akyol, 2009; Garrison & Arbaugh, 2007; Kozan & Richardson, 2014). This study examined the nature of teaching presence in detail both using quantitative and qualitative data. The findings retrieved from both quantitative data and qualitative data were accumulated altogether to make a whole discussion and more complete understanding its nature. The findings of quantitative data include 1535 students' responses to community of inquiry (CoI) survey, specifically sub-factor of teaching presence analyzing via descriptive statistics and inferential statistics, specifically simultaneous multiple linear regression. The findings of qualitative data include results of two data sources, online discussion posts analyzed deductive content analysis relying on transcript analysis that originator of CoI framework and interview protocol analyzed inductive content analysis.

First of all, students' perceived levels of teaching presence was measured in earlier studies and the results are very different. Akyol (2009) found students' mean score value of teaching presence as 4.15 over 5.00 with studying a small sample including only 28 graduate students, 16 students in online learning setting and 12 in blended learning setting. Another study conducted by Archibald (2011) with 189 students revealed the mean score of teaching presence as 3.80 over 5.00. A more recent study conducted by Başdoğan (2015) in an online certificate program including adult learners (n=92) found lower mean score of teaching presence (M=3.01). This study found mean score value of teaching presence of students in the online course context, including 1535 students as 3.64 over 5.00. Although the retrieved mean score value is lower than Akyol and Archiald's studies, it is higher than Başdoğan's study. In addition, making a comparison with these earlier studies conducted smaller sample size as compared with this study might not be so reasonable. Moreover, the context of those studies including this study, though being similar to some extent; are not the

same and the result could be reasoned by different context of the studies, sample size, participants, etc. Therefore, making a comparison might not be so reasonable.

In order to have a more detailed and complete understanding of students' teaching presence, focusing on their posting behaviors and how their perceived levels of teaching presence changes during treatment process could be more reasonable. Akyol (2009) hold synchronous discussion both in online and blended learning settings during 9 weeks and revealed very low perceptions of students' in terms of three categories of teaching presence. She revealed that students' posting behaviors were %1 in sight of design and organization category (DO), 25% of facilitating discourse (FD) and 30% of direct instruction (DI) in online learning setting. She also found that students' posting behaviors were %0 in sight of DO, 21% of FD and 21% of DI in blended learning setting. Considering the change in students' posting behaviors based on three-categories, Only DI was slightly improved, other two were the same during treatment process. Archibald focused on cognitive presence in discussion activity while Başdoğan did not hold any discussion activity in their studies. A more recent study holding discussion activity in her study was conducted by Kim (2015). She assessed students' posts only either positive or negative, rather than sub-categories of any of three-presence. She retrieved from discussions that there were 59 relevant coded posts from 77 students including 32 on cognitive presence, 17 on social presence and the remaining 10 on teaching presence. All coded posts in teaching presence were positive and she concluded fairly high level of teaching presence in discussion activities.

This study revealed from asynchronous discussions during merely 4-week in purely online learning setting that students' posted mostly (84%) in DO category, 50% in FD and 65% in DI category. Concerning the purpose of this study and being the most known element of CoI in earlier studies, TP was covered only two discussion activities and the results indicated that students' posts were at highest level based on DO category, followed by DI category and at the lowest level in FD category.

The quantitative data also indicated similar results. About design and organization, majority the students (66.1%, N=1014) told that the instructor clearly communicated important course topics. Also, most of them (59.0%, N=1054) thought that the instructor clearly communicated important course goals. Many students (71.4%,

N=1096) declared that the instructor provided clear instructions on how to participate in course learning activities. Again most students (74.1%, N=1137) said that the instructor clearly communicated important due dates/time frames for learning activities. Secondly, about the facilitating discourse, more than half of the students (57.4%, N=881) declared that the instructor was helpful in identifying areas of agreement and disagreement on course topics that helped me to learn. They (58.3%, N=895) also said that the instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking. 56.1% (N=861) of the participants thought that the instructor helped to keep course participants engaged and participating in productive dialogue. At about the same percentage (N=865), they also told that the instructor helped keep the course participants on task in a way that helped me to learn. More than half (52.1%, N=800) said that the instructor encouraged them to explore new concepts in this course. And half of them (N=770) said that the course instructor actions reinforced the development of a sense of community. Lastly, for direct instruction, more than half (51.9%, N=796) stated that the instructor helped to focus discussion on relevant issues in a way that helped them to learn while 34.5% (N=529) was undecided. About feedback, 47.7% (N=732) of them stated that the instructor provided feedback that helped them understand their own strengths and weaknesses relative to the course's goals and objectives, however 35.3% (N=542) of them was neutral. And lastly, 55.1% (N=846) of the students stated that the instructor provided feedback in a timely fashion.

Based on students' posting behaviors, it was at highest level based on DO category, followed by DI category and at the lowest level in FD category. It could be probably caused by the topics covered in the last activity. The improvement in FD category was important since it was developed as twice. It could be by caused by encouraging students' contributions and reinforcing them and assessing their progress and being timely responsive toward their questions. Moreover, it might be supported dissolving their misconceptions ad identifying areas of (dis)agreement and dissolving their misconceptions. Probably, setting a warm and comfortable learning environment might be important for facilitate discourse. Overall, they perceived all three-category of teaching presence substantially. Both DO and FD were improved while DI were down. The third data source interview protocol also indicated that students perceived all three-category of teaching presence very well. Considering the substantial level of

students' perceptions for three-category of teaching presence, the reason behind it might be instructor's kindness behaviors, her use of simple and easy-to-understand language and well design and organization of the course. Since students favored the design and organization of the course. They especially noted the discussion activities with their benefits for their progress. With the help of discussion activities, they were provided to make macro-level and micro-level comments about the course, course instructor and the content. Their contributions were supported and they were encouraged. Their misunderstanding were dissolved and they sought to reach consensus. Their understanding were confirmed through assessment and explanatory immediate feedback and in turns their misconceptions were diagnosed. The aids of discussion forums was cited in recent study conducted by Salloum (2011) as the most helpful factor for promoting teaching presence. Moreover, students were appreciated with the instructor's effort to facilitate them, participate into the course, being active, collaborate and asking their questions easily both in and out of the class. They benefitted from the instructor's on-time feedback and dissolving their misunderstanding. Most of them favored and benefitted from the course activities and were happy with the design and flow of the course in general.

Students considerably favored the instructor's kindly and warm behaviors to them in and out of the class. They claimed nice behaviors of their instructor made them more motivated and more willing to participate into the course sessions, feeling relaxed and comfortable in general and when asking any question and even devoting much more time and effort for the course requirements. It facilitated also the discourse and collaboration and in turns improved their perceptions of teaching presence. It has not been encountered in earlier studies, yet it is an expected finding and thus, should be cared for online instructors.

Another factor voiced by many students as one of the contributors of teaching presence was the effort of the course instructor which was more salient. It was particularly essential for enhancing discourse and collaboration among the students. It was accords with some recent studies (Hosler, Arend, 2012; Rumrill-Teece, 2015). It went beyond and further investigation together with instant and specific feedback was put on the emphasis to improve students' perceptions of teaching presence. Especially immediate feedback is noteworthy for eliciting and improving teaching presence (Akyol, 2009;

Donohoe, Mahon & O'Neill, 2008; Hosler, Arend, 2012; Rumrill-Teece, 2015; Swan, 2004; Shea, 2005). Relying on this basis, Wisneski, Ozogul, and Bichelmeyer conducted a study in 2015 about comparative investigation of instructional design practices associated with teaching presence and found that encouraging students and giving positive feedback instantly or validation of student contributions improved the teaching presence. Immediate feedback was stated as supporter of teaching presence by 14 students in the interview in this study. Therefore, the result is parallel with earlier studies (Sheran, Kelly (2010; Wisneski, Ozogul, Bichelmeyer, 2015). On the other hand, some recent studies put the emphasis on different feedback strategies but failed to find its significant effect on students' perceptions of teaching presence (Olpak 2014; Olpak, Çakmak, 2014). For example, Olpak (2014) studied with 41 students in an explanatory designed research, but surprisingly failed to investigate the significant effect of different feedback strategies on students' neither overall CoI nor any of three-presence. They explained possible reasons behind it as lack of experience of students' in online learning, technical problems of used platform and limited access to the Internet. On the contrary, this study indicated important hints about the positive effect of instructor's instant feedback on students' teaching presence. Although feedback has just started to be investigated more recently, or emphasizing its importance in the sense of CoI framework together with this study, in general, the power of feedback on students' achievement, satisfaction, learning, and their performance was overemphasized in earlier studies (Bangert-Drowns, Kulik, Kulik, Morgan, 1991; Hattie & Timperley, 2007; Kluger, & DeNisi, 1996; Mclaren, 2010; Paulus, 1999; Schunk & Swartz, 1993). Alternatively, Yang (2016) examined the conceptualization of effective feedback practice through an online community of inquiry. However, she investigated solely what processes are involved in three-presence of the CoI framework when the participants collaboratively constructed, evaluated and reconstructed written feedback. She focused on neither the effect of feedback practice in regard of community of inquiry nor its three-presence. This study with the evidence of instructor's effort and immediate feedback founding potential positive effect on the enhancement of students' teaching presence adds substantially to the understanding of teaching presence and the influence of feedback. Although feedback has just started to be investigated more recently, or emphasizing its importance in the sense of CoI framework together with this study, in general, the power of feedback on students' achievement, learning, and their performance was overemphasized in earlier studies

(Bangert-Drowns, Kulik, Kulik, Morgan, 1991; Hattie & Timperley, 2007; Kluger, & DeNisi, 1996; Paulus, 1999; Schunk & Swartz, 1993). The course instructor's use of a simple and easy-to-understand language was also favored saliently. It has not been specified in earlier studies yet. It could be anticipated to play an additional role in influencing teaching presence.

In addition, the findings retrieved from the second and third data sources indicated the advantages of using social networking services to support the course. The students thought that the instructor benefitted social networking sites effectively in the course. On the Facebook, she was very active on the course page during the semester. She replied students' questions immediately, made announcements on time, communicated friendly, etc. Students declared that they were instantly informed about any urgent announcement in the course, asked their questions easily and the instructor always responded to them immediately. The benefit of social networking sites specifically Facebook was also mentioned in a more recent study (Lim, Richardson; 2016). This study is in agreement with their findings. Students' high level of teaching presence especially facilitating discourse could be reasoned by the use of Facebook. Since it could help, like in this study to increase students' learning, interaction, communication and being socialized in the learning community. So, it can be inferred from that Facebook might foster students teaching presence and hence, online instructor could benefit from any social networking sites like Facebook which is more friendly and easy-to-use platform to support the course. Although the use of social networking sites has just started to be investigated more recently, or emphasizing its importance in the sense of CoI framework together with this study, in general, its potential benefits on students' achievement, learning, and their performance was overemphasized in earlier studies (Bosch, 2009; Mazer, Murphy, Simonds, 2007; Promnitz-Hayashi, 2011; Shih, 2011).

In terms of correlation with teaching presence and contribution to its prediction by self-regulation, metacognition and motivation, this mixed-method study revealed significant positive association of all three variables with teaching presence and indicated 45% of total variability in teaching presence was explained by these three predictors. The first predictor *self-regulation* significantly and positively associated with teaching presence. In addition, self-regulation made significant contribution to

the prediction of teaching presence. It was found as the strong predictor of teaching presence and therefore, emphasized its importance for the students' teaching presence in online learning community. Considering self-regulation, prior studies noted its importance for teaching presence besides other two-presence of the CoI (Shea, Bidjerano, 2010; Shea, Bidjerano; 2014). Shea and Bidjerano (2010) declared that self-regulation was an important mediator of the links among three-presence of the CoI framework. Another more recent study conducted by Başdoğan (2015) focusing on sub-dimensions of self-regulation, concluded that only goal setting was significantly associated with the teaching presence and explained approximately 16% of total variability in teaching presence. She further explained its reason that when learners set their own academic goals, then the guidance, feedback or encouragement provided by the instructor may be more meaningful for them. This study revealing strong association of self-regulation with teaching presence and significant high contribution of self-regulation in the prediction of teaching presence, corroborates with the previous studies (Shea, Bidjerano, 2010; Shea, Bidjerano; 2014). This study provided more support for the positive influence of self-regulation than Başdoğan (2015). Considering cyclical phases of self-regulation as defined by Zimmerman (2000), forethought, performance or volitional control and self-reflection are highly essential for any collaborative community and critical inquiry. Forethought including task analysis like goal setting and strategic planning, and self-motivational beliefs such as self-efficacy, outcome expectations, intrinsic interest or value, might facilitate facilitating discourse category of teaching presence. Performance or volitional control including self-control such as self-instruction, imagery and attention focusing and self-observation such as self-recording and self-experimentation together with self-reflection including self-judgment like self-evaluation and causal attribution and self-reflection such as self-satisfaction or affect could foster affiliating discourse and direct instruction categories of teaching presence. Self-regulated behaviors and skills could support assessing the efficacy of the process in facilitating discourse, making macro-level and micro-level comments about the course, course instructor and the content in design and organization category, etc. Therefore, it can be inferred that self-regulation could be a crucial factor to foster learners' teaching presence in the online collaborative learning community.

In terms of metacognition, it has been started to be the focus more recently. In the sense of CoI framework, a more recent study was based solely on the proof for its existence at the intersection of teaching presence and cognitive presence (Akyol & Garrison, 2013). The authors focused on its existence and measurement rather than its effect. Another study conducted by Snyder and Dringus in 2014 focused on exploration of metacognition and contributed to its existence. Therefore, this is the first study that investigated the effect of metacognition both on CoI overall and its three-presence separately. This study showed valuable contribution of metacognition in the prediction of teaching presence. They were also significantly and positively associated with each other. Since there is no satisfactory work in the literature about metacognition in the sense of CoI framework, this study gains more value revealing the effect of metacognition as the first time both on the CoI overall and its three-presence separately. With the findings indicated that metacognition was significantly contributed to the prediction of teaching presence and positively and significantly associated with teaching presence, the study has fruitful directions for feeding the poor literature and opening new insights for further research.

Finally, the third predictor *motivation*, like metacognition made a valuable contribution in the prediction of teaching presence. They were found significantly and positively correlated with each other. The contribution of metacognition and motivation were the same in the prediction of teaching presence. In the literature, there is no satisfactory research about the effect of motivation on teaching presence. There is only two studies; the first study conducted by Polat in 2013 concluded with no significant relationship whereas Kim (2015) revealed significant relationship between teaching presence and motivation. This study found significant association between motivation and teaching presence and also significant contribution of motivation in the prediction of teaching presence and therefore, contributes to the results of Kim's study. Although there is no enough study in the literature, the importance of motivation could be appreciated for its effect on students about their perceptions toward their instructor, course, content, instruction, learning progress, etc. (Gorham, Millette, 1997; Noels, Clément, Pelletier, 1999).

Other than aforementioned factors facilitating students' teaching presence, this study also revealed some other potential factors that might decrease their teaching presence. Some students declared that the type of education *online learning* did not favored very

much by some students. They claimed that they could learn better in a blended format, since they could know each other more thanks to real interactions, ask their questions more comfortably and sometimes just need face-to-face and real communications with the classmates and/or the instructor. It has been encountered in some previous empirical findings. For example, Akyol (2009) focused on students' three-presence both in the online and blended learning environments and concluded with the strengths of blended learning. On the other hand, Hosler and Arends (2012) failed to show significant difference in students' teaching presence between face-to-face and online classes. Bowers and Kumar (2015) discovered surprisingly the strength of online learning over face-to-face session. This study elicited a favor of blended learning over online learning contrarily. Although this study conducted in the online course context, the participants in the first cycle actually included in formal training programs, but they were enrolled in total of 8 online courses. Only the participants studied at the second and third cycles included students in purely online learning setting. And the findings retrieved from the second and third cycle indicated that some students suggested and insisted on blended format. On the contrary, some other students preferred and benefitted from online learning more because of their conditions like working, being married and having child, not having enough time, etc. like this study, earlier studies did not also reach a consensus about this issue. Therefore, it can be said that it could be reasoned by the context of the study, students' own preference, characteristics, their discipline, life conditions, etc. More precisely, the benefits and drawbacks of these learning environments can be subject to the learners' preference, characteristics, context of the study, learners' family life including marital status and/or having child, working conditions, subject area, etc.

The concerns of the students about the course at the beginning or mid of semester was manifested another factor that effect teaching presence negatively. Their concern could affected their progress and control own learning. It could also have a negative influence in prompting discussion, establishing netiquette and even their overall experience. It has not been studied yet in the basis of neither community of inquiry framework nor its three-presence. Therefore, it should be further investigated and potential ways to dissolve students' concerns should be revealed to improve their teaching presence accordingly.

In addition, the attitude of course instructor toward questioning about students' own grades was mentioned by some students addressing its negative impact on their teaching presence. They claimed it affected their communication with the course instructor negatively and even their behaviors to the instructor frivolously. It has not been encountered yet, but its potential slight effect on students' teaching presence might be also considered. Still, it was highly reasoned by the context of the study. However, in general online instructors should be careful in responding the needs and requests of the students in any issue. Since establishing empathy might slightly effect their perception of teaching presence, yet could have an influence on providing their trust.

Moreover, some students alleged their working conditions, marital status and/or having a child as excuses for their low level of teaching presence. Such demographics could be anticipated to have an influence, in spite of not a salient influence. The earlier studies focused only gender, age and prior online learning experience rather than marital status, working conditions and/or having a child. Therefore, it is highly recommended to observe whether and how these variables effect students' perceptions of teaching presence since they could prevent them to spare time and effort to the course requirements, collaborate and interact.

The last issue effecting students' perceptions of teaching presence negatively was addressed as the less of practice. Some students claimed that it is important to comprehend the course topic better. Also, it could lead to low their teaching presence, especially in regard of design and organization and facilitating discourse. They suggested to add more practice into the course claiming that the course requires more practice in its nature. They also stated that practice help and increase their learning in such an applied course. Thus, it could be better for the online instructors to enrich their courses with more practice in such a collaborative learning community.

Overall, students perceived levels of teaching presence was at substantial or fairly high level in this study. Design and organization category of teaching presence was at high level and still developed during treatment process. Although facilitating discourse which was at the lowest compared with other two categories, was developed especially with the aids of such regular discussion activities, immediate feedback that course instructor gave to the students. Finally, direct instruction category of teaching presence

which was at fairly high level in general, was also improved. Self-regulation, metacognition and motivation were significantly and positively correlated with teaching presence. They also significantly contributed in the prediction of teaching presence. Considering the strength of these three variables in the prediction of teaching presence, self-regulation was the first variable followed by metacognition and motivation with the same degree. Encouraging students' contributions, reinforcing them to participate and collaborate more, giving instant feedback and dissolving their misconceptions on-time as well as providing comfortable learning environment were the reasons providing and sustaining substantial level of teaching presence. The benefits of using social networking services specifically Facebook was proven in this study, similar with the study of Lim and Richardson (2016). In spite of no significant effect of different feedback strategies (Olpak, 2014; Olpak, Çakmak; 2014, this study showed valuable hints about its positive effect on students' teaching presence vice versa. In order to have a better understanding about the effect of instant feedback, further elaboration is highly recommended relying on a large theoretical and pedagogical basis. Still, it indicates the most important factors that have an influence on teaching presence. The further research could focus on the benefits of social networking services and instant feedback in order to contribute to the elaboration and improvement of teaching presence.

5.1.5 Self-regulation

Self-regulation is defined by English & English (1998) as lexical meaning is the control of one's efforts based on motives about his/her specified and subsequent goal or ideal which is also called self-control or self-discipline. In the sense of learning science, it is defined by Zimmerman (2000) as the composition of "self-generated thoughts, feelings and actions that are planned and cyclically adapted to the attainment of personal goals" (p.14). In general, educational and developmental psychologies define it as various ways to monitor, control and regulate the learning (Schunk & Zimmerman, 1994; Zimmerman, 1986; Zimmerman & Schunk, 1989). So, it exists as an on-going activity and a process (Pintrich, Wolters, Baxter; 2000). The theoretical lens of this study oriented toward self-regulated learning of Zimmerman and Schunk, as well as collaborative and social-constructivist orientations. Putting the emphasis on cognitive dimension, it is the interaction of personal, behavioral and environmental triadic processes from the viewpoint of social cognitive theory (Bandura, 1986). Self-

regulated learners "metacognitively, motivationally and behaviorally active participants in their own learning process" (Zimmerman, 1998, p.329); they can direct their own efforts, and learning to acquire knowledge and skills without depending on any member of instruction. It is a critical factor to be successful (Shea, Hayes, Smith, et al., 2013) and to accomplish the desired goals since the nature of online learning environment is characterized by autonomy and real instructors are absent (Artino & Stephens, 2009; Barnard, Lan, To, Paton, & Lai, 2009; Dabbagh & Kitsantas, 2004, Schunk & Zimmerman, 1998).

This study investigated the nature of self-regulation and its influence on community of inquiry framework and its three presences seperately. With this aim, the quantitative data were collected from 1535 students with their responses to Online Self-regulated Learning Questionnaire and analyzed via both descriptive statistics and inferential statistics, specifically standard multiple linear regression. The findings indicated that students' mean score value of self-regulation was 3.39 over 5.00. Başdoğan (2015) also found the same mean score value. However, this information might not be so reasonable in making comparison. In order to have a better understanding and making inference, inferential statistics gives more and better clue.

The inferential statistics, specifically correlation and multiple linear regression results in this study indicates that self-regulation had significantly and positively correlated with the CoI, social presence, cognitive presence, and teaching presence. The four analysis of multiple linear regression showed that self-regulation made significantly valuable contribution in their predictions and also was the strongest predictor of all four including the CoI, social presence, cognitive presence, and teaching presence. So, it is clear that the results indicates the importance of self-regulation for the CoI framework and any of its three-presence.

Considering earlier studies focusing on self-regulation in the sense of CoI framework, it was essentially addressed for the effective online collaborative community as well as facilitation of three-presence, specifically cognitive presence (Chmiliar, 2011; Means, Toyama, Murphy, Bakia, Jones, 2009; Pintrich, 1999; Shea & Bidjerano, 2012). Considering self-regulation, prior studies noted the importance of self-regulation for any of three-presence of the CoI (Shea, Bidjerano, 2010; Shea, Bidjerano; 2014). The authors extended their work later and concluded with a new

dimension named learning presence which includes learners' self-regulatory strategies (Shea, Hayes, Smith, Vickers, Bidjerano, Gozza-Cohen, Jian, Pickett, Wilde & Tseng; 2013). Another study conducted by Başdoğan (2015) examining sub-constructs of self-regulation contended that although not all construct significantly contributed to the prediction of three-presence, some sub-constructs made significant contribution. This study investigated self-regulation overall rather than its sub-dimensions and detected high significant positive association between the CoI and also its three-presence.

This study yielding significantly strong or moderate association adds substantially to the understanding of the influence of self-regulation on the community of inquiry. In addition, this study revealed that it was the strongest predictor of the CoI framework besides its three elements with its valuable contribution. Therefore, considering earlier studies, there is a growing body in the effect of self-regulation in the sense of community of inquiry and this study proven its positive effect and accepts earlier statements. This study also elaborated self-regulation regarding the effect and contribution on each three-presence and overall CoI providing more evidence. The results of this study, similar with earlier studies, takes the attention into self-regulation and accepts its addition into the CoI framework. Since, learners' self-regulated behaviors which provides managing time, strategies, control of the learning and process, could essential especially in the nature on online learning characterized by the absence of real instructors. Understanding self-regulation comprehensively could promise better results in creating online collaborative community of inquiry and learning outcomes. Therefore, it is highly recommended that self-regulation, due to being strong predictor of community of inquiry and providing control over learning, time and process and more, could be included in the community of inquiry model.

Considering cyclical phases of self-regulation as defined by Zimmerman (2000), forethought, performance or volitional control and self-reflection are highly essential for any collaborative community and critical inquiry. Forethought including task analysis like strategic planning and goal setting and self-motivational beliefs such as outcome expectations, intrinsic interest or value, goal orientation could facilitate especially affective/personal category of social presence and in turns open communication. Performance or volitional control including self-control such as self-instruction, imagery and attention focusing and self-observation such as self-recording and self-experimentation could foster open communication and group cohesion of

social presence together with self-reflection including self-judgment like self-evaluation and causal attribution and self-reflection such as self-satisfaction or affect. Self-regulated behaviors and skills could support self-expression, self-disclosure, expressing (dis)agreement, activities encouraging collaboration, etc. Therefore, it can be inferred that self-regulation might be improve learners' social presence in the online collaborative learning community.

In terms of cognitive presence, forethought including task analysis like goal setting and strategic planning, and self-motivational beliefs such as self-efficacy, outcome expectations, intrinsic interest or value, might facilitate triggering event and exploration categories. Performance or volitional control could foster exploration, integration, and resolution categories of cognitive presence since it includes self-control such as self-instruction, imagery and attention focusing and self-observation such as self-recording and self-experimentation together with self-reflection including self-judgment like self-evaluation and causal attribution and self-reflection such as self-satisfaction or affect. Therefore, it can be inferred that self-regulation could be a crucial factor to foster learners' cognitive presence in the online collaborative learning community.

In terms of teaching presence, forethought might facilitate facilitating discourse category of teaching presence. Performance or volitional control could foster affiliating discourse and direct instruction categories of teaching presence. Self-reflection, similarly could foster learners' teaching presence making contribution to overall process and learning process. In brief, self-regulated behaviors and skills could support assessing the efficacy of the process in facilitating discourse, making macro-level and micro-level comments about the course, course instructor and the content in design and organization category, etc. Therefore, it can be inferred that self-regulation could be a crucial factor to foster learners' teaching presence in the online collaborative learning community.

Taken together, for each presence of community of inquiry, self-regulation could be essential for their improvement and in turns provide more effective collaborative learning community and learning outcomes. Therefore, this study highly recommends to add self-regulation in the CoI framework. When the theoretical underpinning is considered, Zimmerman's model could be better to integrate it in the CoI framework,

matching the phases and sub-processes of self-regulation with the three-categories and their indicators. Shea and her colleagues (2013) relying on Zimmerman's model of self-regulation, proposes a coding scheme for the analysis of discussion posts and they also made its proof. This study finding similar results and recommending very similar issue to the authors, proposed the theoretical underpinning of new element relying on Zimmerman's work on self-regulation (Table 5.1).

Table 5.1 Phase Structure and Sub-processes of Self-regulation (Zimmerman, 2000, p.16)

Cyclical self-regulatory phases		
Forethought	**Performance/volitional control**	**Self-reflection**
Task analysis	Self-control	Self-judgment
✓ Goal setting	✓ Self-instruction ✓ Imagery	✓ Self-evaluation
✓ Strategic planning	✓ Attention focusing ✓ Task strategies	✓ Causal attribution
Self-motivational beliefs	Self-observation	Self-reaction
✓ Self-efficacy	✓ Self-recording	✓ Self-satisfaction/affect
✓ Outcome expectations		
✓ Intrinsic interest/value	✓ Self-experimentation	✓ Adaptive-defensive
✓ Goal orientation		

As can be seen in Table 5.1, Zimmerman's model of self-regulation includes three phases namely forethought, performance or volitional control and self-reflection. Forethought includes task analysis like goal setting and strategic planning, and self-motivational beliefs such as self-efficacy, outcome expectations, intrinsic interest or value. Performance or volitional control includes self-control such as self-instruction, imagery and attention focusing and self-observation such as self-recording and self-experimentation. Finally, self-reflection includes self-judgment like self-evaluation and causal attribution and self-reflection such as self-satisfaction or affect. The three

phases of self-regulation model of Zimmerman could be the indicators of new construct, and sub-process of these three phases could be the sample indicators. Shea and her colleagues (2013) proved their new propose in the same way, but they further stated that it is require more elaboration and proof in different settings.

Overall, based on these statement and conflict, it can be inferred that self-regulation was found essential for online collaborative learning communities. It was significantly and positively correlated with the CoI overall and its three presences separately. It also made significant valuable contribution to their prediction. In addition, it was the strongest predictor of the CoI overall and its three presences. Therefore, this study indicated that self-regulation is essential for creating effective online collaborative learning communities and similar with some earlier studies, recommends to add into the CoI framework as a new construct called as regulatory presence.

5.1.6 Metacognition

Metacognition is defined as "one's knowledge or beliefs about three main factors including own nature or the nature of another as a cognitive processor; a task, its demands, and how those demands can be met under varying conditions; and strategies for accomplishing the task" (Hacker, Dunlosky, Graesser; 1998, p.5). It is basically a notion of thinking about one's own thought or simply "thinking about thinking, cognition of cognition" (Flavell, 1979; p.906). In the scope of community of inquiry which relies on critical thinking, collaborative inquiry, reflection, challenging, etc. in essence metacognition gains more importance since it is anticipated as the awareness and ability to take responsibility and control to construct own meaning and confirm knowledge which are anticipated as critical thinking and inquiry (Akyol & Garrrison, 2011a; Dewey 1993; Lipman 1991). With an increasing research on the CoI framework, some researchers put the emphasis on self-regulation more recently. On the other hand, as one of the originators of the CoI framework, Garrison declared that metacognition is found at the intersection of the cognitive and teaching presence elements by moving going beyond self- and co-regulation which are already inherent in the structure of the model (Garrison & Akyol; 2013). However, many research are in the opposite of this claim and argue that neither self-regulation nor metacognition are not included in the model. The inclination of those research is on the self-regulation, rather than metacognition. In order to understand their existence and influences in the scope of CoI framework, both of these variables are investigated in

this study at the same time. Metacognition was measured via metacognition questionnaire developed originally by Akyol and Garrison (2011a) with the data collected from 1535 students in the online course context and analyzed via both descriptive and inferential statistics specifically standard multiple linear regression. The findings indicated that students' mean score value of metacognition was 3.85 over 5.00. According to the mean score range, only metacognition lays in highest group. In order to have a better understanding and making inference, inferential statistics gives more and better clue. Before this, examining earlier studies could provide an insight.

Metacognition has been studied inearlier studies growingly, but not in the scope of CoI framework. In online learning settings, how metacognitive abilities and skills are activities and in turns, gained benefits on the learners were indicated in the study conducted by Kurt (2007). Using metacognitive skills to enhance the effectiveness of online learning settings are detailed in anorther study (Chiazzese, Chifari, Merlo, Ottaviano, Seta; 2008). A similar more recent study provided the rationale for the importance of metacognition in both distance and online education settings (Minnaar, 2012). However, in the scope of community of inquiry framework, the research has been started more recently and therefore, the related literature is really poor. Akyol and Garrison (2013) focused solely on the proof for the existence of metacognition at the intersection of teaching presence and cognitive presence. They developed a questionnaire for its measurement to guide the researchers and make its measurement easier. Form this point, Snyder and Dringus (2014) focused on exploration of metacognition in asynchronous student-led discussions based on the authors' courses of actions and contended the proof for its existence. There is not any other study about metacognition in this sense. Therefore, this is the first study investigating metacognition influence on the CoI and its three-presence separately.

In this study, inferential statistics, specifically correlation and multiple linear regression analysis' results indicated that metacognition was significantly and positively correlated with the CoI overall, cognitive presence, and teaching presence. It failed to have a significant association with social presence, surprisingly. The multiple linear regression analysis indicated that metacognition had a significant contribution in the prediction of the CoI, cognitive presence and teaching presence. The analysis further showed that metacognition was the weakest predictor of the CoI overall and cognitive presence. Its contribution in the teaching presence was the same

with motivation, after self-regulation which was the strongest predictor. And for social presence, metacognition failed to have a significant contribution; however, it can be caused by the context of the study. Students in ICT-1 course might not need any metacognitive skills since it is a basic course which is offered to all the students without depending on discipline and aims to teach basic computer concepts, basic software including Microsoft Office, Libre Office, and basics of database systems, etc. and their usage, rather than being a complex course. So, probably it caused such a result. Alternatively, the reason might be the nature of measurement questionnaire since it was more recently developed based on qualitative data and there was no any proof in any other research. Self-regulation could be enough for the learners during learning process. Ion the other hand, although metacognition had a significant influence and contribution in the CoI, cognitive presence and teaching presence; the degree of its influence and contribution level were fairly low. Students' mean scores values laying in the higest group could be reasoned by the participants since they are normally educated in formal education except the ones participated in discussions and interview parts. They only take some courses together with ICT-1 course as fully online. Their high level of mean score value of metacognition probably caused by their background and discipline they are educated.

Furthermore, considering the community of inquiry framework, for the learners, self-regulated behaviors and skills could be adequate during the learning process; although the context were not complicated. In that case, still CoI framework could be operationalized appropriately taking the main assumptions of the CoI and underlying theoretical approaches into account. Therefore, this study has fruitful directions for feeding the poor literature and opening new insights for further research. It can be inferred that this study indicated that self-regulation could be essential for the learners in such a collaborative online learning community besides might not need for any metacognitive skills.

5.1.7 Motivation

Motivation, according to Bandura (1986) is a general construct including the entire directive and activating functions that move one to an action. It is generally anticipated as a process through which individuals instigate and sustain goal-directed activity and their needs and desires are set in motion (Rakes & Dunn, 2010; Pintrich, Marx, & Boyle, 1993). It has been growingly studied in the learning process. Also, scholarly

interest in motivation has also increased with the increment in online enrollments (Dabbagh & Kitsantas, 2004; Green & Azevedo, 2007). Earlier approaches about motivation in online learning environments based generally on Keller's ARCS Model (Bae, Lim, & Lee, 2005; Jones, Issroff, Scanlon, Clough, & McAndrew, 2006; Shih & Mills, 2007). The ARCS model identifies four essential strategic components, namely, attention, relevance, confidence and satisfaction for the instructors and educators in order to improve learners' motivation. If they were not satisfied with online their courses, their motivation decreased and they gave up to attend into online courses (Chyung, 2001; Sun, Tsai, Finger, Chen & Yeh, 2008). So, motivation is essential to learn to become successful in online learning settings (Keller, 1999). Yükseltürk and Bulut (2007) examined the predictors for students' success in the online learning environment in their study and declared that students' motivation should be maintained at high level during online course with the help of some instructional activities and also put the emphasis on students' self-regulated skills and behaviors. However, in the scope of Community of Inquiry framework, learners' motivation has not been studied as much. There are only two studies examining students' motivation in the CoI framework up to date. The first study conducted by Polat (2013) with 165 students contended that there is no significant association between motivation and any of three-presence of the CoI. It is a surprising result considering the effect of motivation in any form of learning environment. Altouh the author did not explain its possible reasons, the reasons could be caused by course design, context, research design, etc. The second study was conducted by Kim in 2015 to investigate the effect of motivation on students' social presence, cognitive presence and teaching presence separately and concluded with positive significant correlation of motivation with each three-presence. Based on poor literature in the scope of CoI framework, it is clear that there is no consensus. Also, it can be said that only those two studies are not enough to have a better understanding of motivation's effect on the CoI framework and its three-presence. From this point, it is important to study to the effect of motivation on the CoI framework and its three presences separately. From this point, this study discovered the effect of motivation on students' perceived levels of the CoI and its three-presence separately using both quantitative and qualitative data for a detailed understanding and more proof. Students' motivation was measured via Motivated Strategies for Learning Questionnaire developed by Pintrich (1991). The findings of quantitative data include the analysis results via both descriptive statistics and

inferential statistics, specifically standard multiple linear regression. The findings of qualitative data include results of interview data analyzed based on inductive content analysis.

This study revealed that students' mean score value of motivation was 4.50 over 7.00 which lays in middle group based on mean score value ranges. The multiple linear regression analysis results indicated that motivation had significantly and positively correlated with the CoI and also its three-presence separately. The analysis results further showed that motivation had significant valuable contribution in the predictions of the CoI overall, and also social presence, cognitive presence, and teaching presence. After self-regulation, motivation was the second predictor that made the valuable contribution depending on their contribution level for the CoI overall together with each three-presence. Only its contribution in the prediction of teaching presence was the same with metacognition. The qualitative data findings showed that providing and sustaining learners' motivation could be essential for the effectiveness of online learning community, especially for the students' perceptions of social presence and cognitive presence. The findings of this study indicated that the influence of motivation on the CoI framework and also social presence, cognitive presence, and teaching presence is clear and could be taken into account. For this reason, this study corroborates with Kim's study (2015) while objects to Polat's study (2013). In any learning environment, the effect of motivation could not be ignored. In any online collaborative learning community, it is already expected to have an effect, in the opposite of Polat's study. At this point, this study is worth of notice because of investigating the effect of motivation both on the community of inquiry framework and its three-presence separately on a huge sample together with some other constructs including self-regulation and metacognition using with both quantitative data and qualitative data.

Motivation is really important especially for cognitive presence, to start the initial phase, *triggering event*. Therefore, it is not ignored at all in the scope of CoI framework. This study indicated also its importance both for social presence and teaching presence. Considering the main argument of this study which is the lack of self-regulation in the model and detailed in the implication for the CoI framework part, learners' motivation is already inherent in their self-regulation (Zimmerman, 2000).

5.2 Implications of the Study for the Practice

In this study, discussion questions were prepared in a way of reflective thinking and taking students' own ideas and thoughts addressing real life experiences and cases. This inherently contributed to foster students' critical and reflective thinking skills and in turns to their cognitive presence to some extent. They expressed their own ideas and thoughts, tried to find solutions for proposed problems and examine the assigned situations, how they overcome those problems in their daily life and so on. It can be inferred that such a design directly affected and fostered their cognitive presence in parallel with the aim of this study. Therefore, learning environments and/or course activities can be designed and organized based on the objectives and accordingly the outcomes and skills for the students to be acquired and/or improved. However, those activities conducted asynchronously because of that not many students could participate into the course sessions because of the course time, or their job conditions, life conditions, etc. Another reason for this was to have a better understanding of the class overall and make them to save more effort and time for the course and activities. Those aims were acquired with the asynchronous discussion activities and supporting tool *Facebook*. Although it provided addressing the whole class, the treatment should be practiced in synchronous format and the findings should be compared in further research.

In the sense of this research, the other issue is the use of social networking service. The course instructor supported the course with a Facebook page and it was favored by many of the students. According to the students statements in the interview and discussion activities, Facebook and WhatsApp groups fostered their social presence directly and in turns their cognitive presence to some extent. They also told that Facebook group contributed to their participation and knowing to each other. The instructor easily facilitated the students on the group for the course and course activities. This can enhanced their perceived levels of teaching presence directly and in turns, cognitive presence to some extent indirectly. Since WhatsApp group was a student-led attempt and small-size, not including the whole class and the instructor, it was not covered in the context of this study. It is clear that course Facebook page was very useful and beneficial for the students and contributed to their perceived levels of SP, TP, and CP to some extent. For this reason, further research should also concentrate on the use of social networking sites in the scope of online learning.

Especially, Wikis, Blogging Services and Facebook should be warranted to contribute to the three-presence.

Considering the nature of online learning, it is highly characterized by the absence of real, present and familiar instructors and real-time interactions. In this study, students stated they had difficulty at sometimes due to the nature of online learning and they would prefer blended learning. They insisted to support the course with face-to-face classes when they need especially for some practical course topics, which means blended learning. Previous empirical findings (Akyol, 2009) indicted that blended learning environments have stronger outcomes than purely online for the students. Therefore, online learning environments can be supported with face-to-face sessions according to students' needs, or changed to blended format totally.

The second issue is applying the ways to support online learning environments and course management systems. As observed in this study, benefitting from a more user-friendly and easy-to-use social networking service like Facebook valued by the students a lot. In this study, the online course ICT-IC offered on Moodle was supported with Facebook and many students declared the benefits and easiness of this social media tool. Moodle caused some problems at certain times and this made students demotivated toward the course. ıt sometimes broken, not easy-to-use according to some students, and so on. Similar problems were addressed in the earlier as poor customizability, poor reusability, lack of pedagogical affordances, and teachers not applying pedagogical approaches in using (Yildirim, Reigeluth, Kwon, Kageto, Shao, 2014; Vrasidas, 2004). However, it has been anticipated as the most promising tool in accordance with learner-centered instruction as Yıldirim, et al. stated (2014). Yildirim and her colleagues invesitagted different kind of LMSs and also defined an ideal LMSs to meet with the standards and required functions in an information age. They declared that LMSs should provide collaborative lerning inside and outside the school, allows more customization in the instruction in accordance with learner characteristics, easy-to-use, address personalized assessment, progress tracking, reporting and responsiveness to learner needs. In this study, students in the same way complaint about the uselessness of Moodle and not being easy-to-use. In such a collaborative lerning community, it could be better that the course is offered via a better course management system in order to make the students more active and interested with the

course, allow for more collaboration, easiness in using, etc. with eliminiating the problems like being broken at sometimes.

The third issue is the providing timely feedback which was already addressed as an important factor in previous studies (Akyol, 2009; Donohoe, Mahon, O'Neill, 2008; Shea, 2005; Sheridan & Kelly, 2010) although there are some opponents (Olpak, 2014; Olpak, Çakmak, 2014). Most students in this study valued for their instructor's timely feedback and responsiveness to their requirements. It, as stated by those students, made them more motivated and interested with the course and prevented to split their attention, getting lost and also dissolved their misunderstanding. The requirement of a real-time instructor in online learning environments could be overwhelmed by the timely feedback and immediate responsiveness to the students' needs, like in this study. That is to say that an online instructor could try to give immediate feedback to their students in the online settings as possible.

The other issue is the design and organization of the course activities. Students mentioned the benefits of discussion activities in the course and suggested to hold those activities in their other online courses. Since they stated they visited and controlled the course management system on a regular basis because of those discussion activities. They also said that those activities made them more active and interested with the course and helped them to know each other and collaborate beside saving more effort and working on the course. Alternatively, as some students suggested, small quiz activities at the end of each course could be designed. This could take students' attention to the course more and make them more interested. Group performances migth also be considered, however it should be designed carefully to attain benefit. Since providing groups dynamics in online environments requires much more attention than formal education settings. It can be inferred from those statements that design and organization of the course activities play a crucial importance for its effectiveness.

The last issue is that many of the students favored the instructor of the course and valued and reasoned for her for their positive attitude toward the course and their more effort in the course. Overall, considering the nature of online learning environments, these strategies acquired from this research are positive attitude and overexertion of instructor and her overexertion, using a user-friendly social networking service

effectively to support the course, offering face-to-face course sessions when students need. These should be considered in designing any online learning environment in order to make it more beneficial, effective and appealing for the students.

5.3 Implications of the Study for the Practitioners

The implications of this study for the practitioners includes several courses of action for online instructors and educators as explained above. The recommended practical tips are listed in the following.

- ✓ Being responsiveness to the needs of students to enhance their teaching presence and motivation
- ✓ Giving timely feedback to enhance their teaching presence
- ✓ Engaging students with regular activities such as mini surveys, quizzes, discussions, etc. to contribute the development of their self-regulation
- ✓ Designing group performance activities in small groups to increase collaboration in the community
- ✓ Giving the students a voice during class hours to enahcne their social presence and increase their motivation
- ✓ Supporting the course with a friendly and easy-to-use platform like a social networking service *Facebook* preferred mostly by many students to provide easier communication and in turns facilitate their social presence
- ✓ Behaving students friendly and kindly to facilitate their teaching presence
- ✓ Creating a warm class environment to facilitate their teaching presence
- ✓ Use of a simple and easy-to-understandable language during class hours facilitate their teaching presence
- ✓ Holding face-to-face class sessions for practical part of course when students need to facilitate their social, cognitive and teaching presences.

5.4 Implications of the Study for the CoI Framework

This mixed-method study investigated community of inquiry framework and its three-presence *social presence, cognitive presence and teaching presence* discovering the effects of self-regulation, metacognition and motivation as well as other potential factors particularly focusing on cognitive presence the online course context. Within this purpose, both quantitative data and qualitative data were collected from students having prior online learning experience and currently enrolled in online courses in a

well-known public university in Ankara, Turkey. The quantitative data were collected using four quantative data instruments including Community of Inquiry survey, self-regulation questionnaire, metacognition questionnaire and motivation scale on a huge sample including 1740 students. However, the results retrieved from 1535 students' responses to those four quantitative data instruments because of eliminating extreme and mild outliers and missing cases. The qualitative data were collected using online asynchronous discussion and interview protocol from the students educated in purely online associate degree program. Both quantitative and qualitative data analysis results indicated that self-regulation, metacognition and motivation significantly contributed to the prediction of community of inquiry and its three-presence seperately. Only metacognition was failed to make a significant contribution to the prediction of social presence. It could be reasoned that highly socialized students in the community might not need self-awareness and self-ability to take resppnsibility and control to construct meaning and confirm knowledge. They might not be need for higher order thinking skills to acquire deep and meaning ful learning. Moreover, it might be caused by the nature and context of the study, specifically the online course on which students were studied in this study. ICT-1 course is a basic fundamental course which is a pure online must course for all the students without depending on their discipline to teach main concepts of computer and the Internet as well as to use of basic softwares including Microsoft Office Package programs, Libra Office programs, and basics of databases. Actually, the course is not require any self-awareness, control, or use of higher order thinking skills, inquiry and critical thinking skills in its nature. The other reason might be the metacognition questionnaire itself since it was developed more recently and still requires proof and validation in different settings. Except this, all of three constructs namely self-regulation, metacognition and motivation investigated in this study significantly contributed to the prediction of community of inquiry and its three-presence.

Firstly, self-regulation is a crucial factor for success in any type of learning environment. It is basically includes various ways to monitor, control and regulate the learning (Schunk & Zimmerman, 1994; Zimmerman, 1986; Zimmerman & Schunk, 1989). It is the interaction of personal, behavioral and environmental triadic processes from the viewpoint of social-cognitive theory (Bandura, 1986). Zimmerman (1989) defines sSelf-regulated learners are as "metacognitively, motivationally, and

behaviorally active participants in their own learning process" (p. 329). They direct their own efforts and learning to acquire knowledge and skills without depending on any member of instruction. In this context, self-regulated learning is described by Pintrich (2000) as an active, constructive process in which students set goals for their learning based on past experiences and contextual features of the current environment. Learners monitor, regulate, and control their cognition, motivation, and behavior and also are guided and constrained by their own goals (Pintrich, 2000; Rakes, Dunn; 2010). Therefore, it is highly important for any type of learning environment, especially online learning which is characterized by the absence of real instructor in the learning environment and in turns less interaction, less interest, less control, etc. Considering the benefits of self-regulated behaviors on learning and the nature of online learning environments, and based on the results of this study which found a significant contribution of self-regulation to the prediction of community of inquiry and its three-presence seperately; it is highly recommended to add and include in the CoI model. Considering the earlier studies, Shea and Bidjerano (2010) proposed a new version which adds a new construct namely learning presence addressing the inclusion of learners' self-efficacy as well as other cognitive, behavioral, and motivational constructs supportive of online learner self-regulation. This study discovering significant effect and contribution of self-regulation to the CoI framework besides its three elements, revealed the importance of self-regulation. Therefore, the absence of self-regulation in CoI framework, its importance and addiction to the model itself accepted in this study. Thus, this study is the proponent of the arguments of Shea and Bidjerano (2010) and highly recommends to add self-regulation in the CoI model. However, in their argument and proposed model, they did not include all dimensions of self-regulation, their focus was particularly self-efficacy. On the other hand, in a later study, they reconceptualized the CoI framework addressing the gap of the self- and co-regulatory processes again (Shea, Bidjerano; 2010). In this instance, they concluded with a tentative representation of the CoI framework which reflects the unique contributions of students and teachers and also embeds the social dimension as part of each presence. They defined three elements of CoI framework as Social-Learning Presence (SLP), Social-Teaching Presence (STP) and Socio-Cognitive Presence (SCP). They explained SLP as the inclusion of the attitudes, abilities, and behaviors of students in order to self- and co-regulate their learning while STP as the roles specific to online instructors, each with a shared emphasis on the social

dimension of teaching and learning. They defined SCP as the knowledge construction but not implies simply cognitive but also a socio-cognitive process. Similarly, Armelinni and De Stafini (2015) put the more emphasis on social presence addressing the requirements in the learning environment in 21st century. They overemphasized social prensece and focused particularly on social actions and social processes during learning process. However, not all the time learning could occur in a social action or progress. Therefore, their rationale as parallel with Shea and Bidjerano (2014)'s later argument and proposed model could not have a strong rationale since learning is not compulsorily a social action or social process. Learners could learn by themselves without socialization and could construct their own meaning again inside themselves. This study, accepting the first argument of Shea and Bidjerano (2010) which is adding learner presence in the CoI model addressing learners' self-efficacy, revealed the importance of self-regulation and could recommend to add learners' self-regulation including all of its' sub-dimensions rather than only self-efficacy, in the name of regulatory presence. Using the name of learner presence as suggested by Shea and Bidjerano (2010, 2014) might cause some confuse for some researchers and the practitioners. CoI framework is already about the learners' social and cognitive skills and behaviors, and also their perceptions about the design, organization and management of the course by their instructor. For this reason, calling new construct as learner presene might not be so feasible. In adiditon, in order to give a clue aout the underlying assumptions of neew construct which is self-regulation with its sub-dimensions, the name of regulatory presence could be better.

Considering their two proposed suggestions of CoI framework, the first proposed model has a strong rationale and meets the deficit of the original framework. Students' self-regulation plays a key role in their learning in the sense of online learning and thus, should be covered in this model. For this reason, this proposed version of CoI framework should be the focus of future research. However, learner presence should be more comprehensive about the learners during learning. For example, it should include the motivation of learners. Garrison and Akyol (2013) objected to this claim claiming that theoretical assumptions under this claim violates the fundamental assumptions of CoI framework. They produced metacognition survey to measure learners' self-regulation and no revision is required with this attempt in the original framework. However, this could cause some ambiguity, since the original model does

not include self-regulation of learners although they claimed it exists inherently. Therefore, this study is in the side of the recommendation of adding learner presence to the original framework, accepting only its rationale, rather than its name.

Another suggested version of the CoI framework belongs to Cleveland-Innes and Campbell (2012). They focused on the emotions in the online learning environment beyond the influence found in social presence. They concluded with the emotional experience both in the combination with social presence and also clusters together as a unique presence. They removed the personal-affective category in social presence and produced a new presence extending it. They defined emotional presence as the "outward expression of emotion, affect, and feeling by individuals and among individuals in a community of inquiry, as they relate to and interact with the learning technology, course content, students, and the instructor" (Cleveland-Innes, Campbell, 2012, p.283). However, the emotions are covered in the social presence and addressing emotions as new element in the framework has not a rationale. In the original social presence reflects both individual and group cohesion, so this proposed version of CoI framework seems superfluous. For this reason, this proposed model does not contribute to the original framework and can be ignored in the further research.

The other proposed version of the CoI framework belongs to Lam (2015). He focused on the components of the CoI framework to have a more complete understanding and concluded that learners experienced learning on some occasions with their intrinsic drive rather than any teaching presence, initiated by their instructor. Learners directed their own learning and shared the ideas in the discourse without teaching instruction or facilitation and he linked it with learning autonomy. Then, he proposed a suggestion to add autonomy presence to the original model and defined autonomy presence as the drive to inquiry leading to sharing and discussion initiated by learners (Lam, 2015). He proposed three-category for the autonomy presence; intrinsic motivation, interpretation with the formulation of the ideas and inspiring discourse by sharing the ideas. Based on his arguments, intrinsic motivation was not covered explicitly in the original model although the motivation was indirectly included in the phase of triggering event phase of cognitive presence to some extent. However, it was not reflected as it should be and seemed under shallow. Motivation can be intrinsic or extrinsic and effect learning directly; for this reason should be considered in any

learning. The second category of autonomy presence *interpretation* is found in cognitive presence in the original model. The inspiring discourse was included in teaching presence, however he also reflects the discourse initiated and maintained by the students rather than teachers. His argument was particularly caused by the absence of motivation of learners and self-regulation of own learning. Considering the main point in his argument, it is similar to the main argument of Shea and Bidjerano (2010). The autonomy presence is similar with learner presence, yet it is narrower. The baseline underlying of two main study is parallel to each other and accepted by this study. The self-regulation and motivation are missing in the original model and it could be better to cover these two dimensions absolutely. Within this point, new proposed models and their arguments could be considered in further studies. Since this study also accept their arguments and put the emphasis on their lack in the model. At the end of this part, depending on the findings of this study as compared with those recommended verisons, a new tentative reconceptualization of community of inquiry framework is introduced.

The other attempt was done by Armelinni and De Stafini in 2015. They focused on the role of three-presence in blended learning environment and concluded with social presence as more prominent than teaching and cognitive presence. They believed three core elements remains the same yet their nature changed based on the teaching and learning in the 21st century, for instance integrating social networking services in teaching-learning process. They also cliam that teaching and cognitive presence should also become social. Their argument can be logical to some extent. The unusual case in which students can learn only by themselves is also reflected in the area of self-study in cognitive presence. So, this proposed model is feasible, but not strong as the original one. However, the self-regulation which is mostly addressed as missing part in previous empirical findings and also agreed in this study is still missing.

The final attempt was done by Dunlap, Verma and Johnson in 2016. They combined CoI framework with the Kolb's experiential learning cycle in order to guide online course designers and educators. They found that the integration of the prescriptive stages of Kolb's experiential learning cycle with the CoI model has helped to create productive, meaningful, and flexible learning experiences for prospective STEM teachers and concluded with their study with a new proposed version *Presence* +

Experience (P+E) framework. However, their study is solely for the online instructors and educators to guide them in the design, organization and management process of teaching and instruction. Their claim was that course-design structure proposed by the original framework may not be suitable at all the times. They tried to find a generic guideline for course design in any type and defined the factors that should be taken into consideration are context, content, learning objectives and audience. They stated that Kolb's experiential learning cycle can be used to inform TP (and ultimately SP and CP) by prescribing a systematic approach keeping in sight for the design and organization of learning experiences, the design and facilitation of interactions and the design and delivery of content-specific instruction. That means, as their arguments, Kolb's experiential learning cycle helps to approach the goals of the CoI model in an intentional, experience-centered way. Their argument has a strong rationale and could be agreed by this study, yet it only contributes to the design and organization of online or blended learning environments keeping the original framework as the same rather than making a contribution or meet with any deficiency about learners.

Overall, this study is the proponent of the claim of Shea and Bidjerano (2010, 2013) and Lam (2015) accepting their argument. Their argument about the lack of self-efficacy in the CoI model is accepted by this study, however not only self-efficacy, all dimensions of self-regulation could be considered in creating a new tentative model and in making contribution to the original model in accordance with the findings of this study. This study indicated that self-regulation is essential for the learners in the online learning settings. It made significant valuable contribution both communiry of inquiry overall, and its three-presence seperately. It was the strongest predictor of all these constructs. Therefore, this study, accepting the arguments of Shea and Bidjerano (2010, 2013) and Lam (2015), enhances the scope of incomplete/lack part and put the emphasis on self-regulation with its all sub-dimensions including task analysis, self-motivational basis, self-control, self-observation, self-judgment, self-reaction as Zimmerman (2000) declared. Moreover, it could be better the name of the aforementioned new construct as regulatory presence addressing learners' self-regulation, not only self-efficacy. The name *learner presence* suggested by Shea and Bidjerano (2010) might be confused, or could not be feasible considering their argument behind it because social presence and cognitive presence are about learners's social and cognitive abilities and behaviors during learning process. The name of

regulatory presence might better address its underlying meaning and rationale behind this new construct. In addition, if new construct labeled as learner presence, then it might lead to underestimate other two constructs *social presence and cognitive presence* in a way that only this new construct is about the learners. Therefore, it could be better to label this new construct as regulatory presence.

The results of this study indicated that self-regulation was statistically strong predictor of overall community of inquiry as well as social presence, cognitive presence, and teaching presence. Self-regulation also plays a key role in the nature of online learning which is characterized by the absence of real instructor in the learning environment (Artino & Stephens, 2009; Barnard, Lan, To, Paton, & Lai, 2009; Chmiliar, 2011; Dabbagh & Kitsantas, 2004, Pintrich, 1999; Schunk & Zimmerman, 1998; Shea, et al., 2013). Therefore, the success and quality of online learning environments are highly promised by the learners' self-regulation. From this point, the tentative reconceptualization of CoI framework suugested by this study is visuzalied in Figure 5.1.

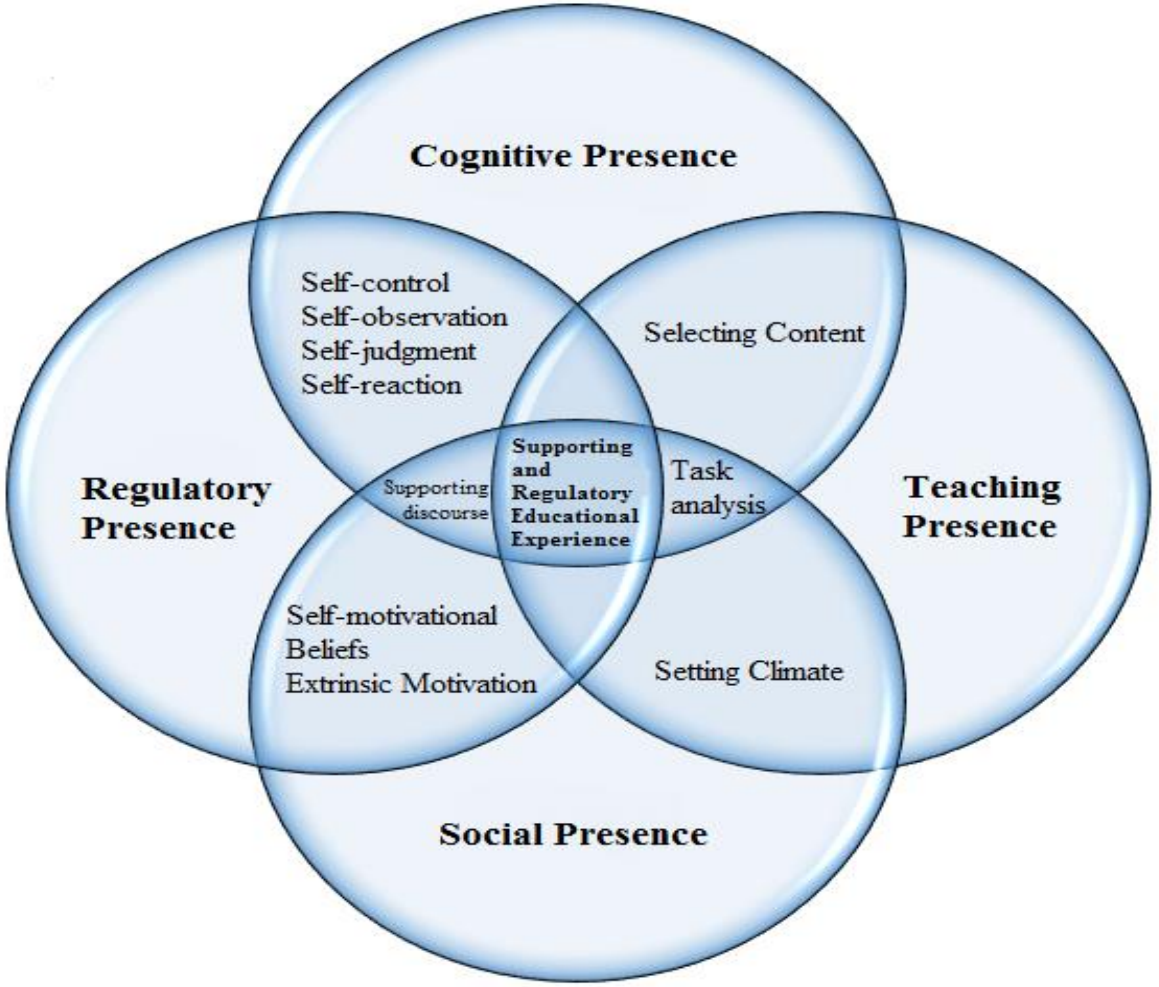

Figure 5.1 Reconceptualization of Community of Inquiry Framework

This new construct labelled regulatory presence is addressed as the composition of forethought, performance or volitional control and self-reflection relying on the Schunk and Zimmerman's statement of self-regulated learning, specificaly inclusion of cyclical phases of self-regulation (Schunk & Zimmerman, 1994, Zimmerman, 2000). These three phases could be the categories of regulatory presence. The recommended descriptors and sample indicators of regulatory presence is provided in Table 5.2.

Table 5.2 Tentative Descriptors and Sample Indicators of Regulatory Presence

Phase	**Descriptors**	**Sample Indicators**
Forethought	Task analysis	Goal setting
	Self-motivational beliefs	Intrinsic interest/value
Performance/Volitional control	Self-control	Self-instruction
		Attention focusing
	Self-observation	Self-experimentation
Self-reflection	Self-judgment	Self-evaluation
	Self-reaction	Self-satisfaction/affect

Based on Zimmerman (2000), sample indicators of forethought might be learners' task analysis and self-motivational behaviors. Sample indicators of performance or volitional control could include learners' self-control and self-observation during learning process. And finally, sample indicators of self-reflection might include learners' self-judgment and self-reaction. However, it requires validation in further research in the same way of development process of original model, specifically online discussion posts.

5.5 Recommendations for Further Research

The study was conducted in a well-known university in Ankara, Turkey with the students having online learning experience and enrolled in online courses. In the second and third phase, the participants were studied including 162-student in the Department of Medical Documentary and Secretary, fully online association degree program. The discussion activities were hold asynchronously in the course management system *Moodle*. The instructor was outside the discussion activities.

Based on the results of this study, further research should concentrate on the effect of small class size and synchronous discussion in the sense of CoI framework. Also, the case in which the instructor is also a member of discussion and its guide should be investigated in further research. Quizzes, mini surveys, group projects should also be practiced and tested for their effects in this sense. These were not practiced in this study because of large class size and the context of the study. However, those activities were mentioned by some students and so, possibly guide further researchers. The new proposed construct regulatory presence should be further investigated for more proof and elaboration. Relying on the original starting point of CoI framework, recommended descriptors and sample indicators should be studied in the same way, via discussion posts.

The metacognition was investigated in the study, however no significant association was found with the cognitive presence of students surprisingly. This can be caused by the measurement survey used in the study. It was nearly developed in another study and although it was a valid and reliable survey, there is no consensus on it. The developers of metacognition survey claim that metacognition found at the intersection of teaching presence and cognitive presence. The form of metacognition based on their description is like that, however that survey did not reveal a significant effect on students' cognitive presence in this study. Therefore, it should be examined in other context and require more proof. Alternatively, the other reason would be the form of that survey, because metacognition is basically a cognition of cognition and requires deeper measurement than a survey. Addressing metacognition in the CoI framework at the intersection of TP and CP might be inappropriate. As a researcher, the reason is probably due to the misunderstanding of TP. TP addresses the design and organization of the course, direct instruction and facilitation of discourse; which means to more relevance with the instructor. Metacognition is basically cognition of cognition and is related with learners' aware of their own cognition, capabilities and skills. At this point, metacognition can be related with cognitive presence, but not teaching presence. If CoI framework was include an element like learning presence, then metacognition would refer to cognitive presence and learning presence. In the light of this, metacognition should be concentrated on further research. In addition, self-regulation should be considered in this issue. Self-regulation predicted students' cognitive presence in a better way after than SP and TP and the controversies about the issue are

still continue. In order to have a better understanding of metacognition, self-regulation should be understood clearly in this sense. Then, regarding the CoI framework, a path way for metacognition including cognitive presence and self-regulation can be produced in further research.

The CoI framework could be applied in both blended and pure online learning settings using both synchronous and asynchronous discussions and compared the results. It is clear that this attempt could produce a stronger form of CoI framework after having a better understanding of it in any learning setting. In this way, the researchers migth reach a consensus about new proposed versions of the CoI framework and could create a better version of it working at both aforementioned learning settings and then it couldd be more grounded and valuable. That is the most urgent and important direction for further research.

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APPENDICES

Appendix A

Distribution of the Participants in Quantitative Data Collection by Their Department

Table 3.5 Distribution of the Participants by Their Department

Department	Frequency	Percentage
Agricultural Economics	18	1.2
Agricultural Machinery	3	0.2
Agricultural Structures and Irrigation	8	0.5
American Culture and Literature	11	0.7
Anthropology	24	1.6
Arabic Language and Literature	13	0.8
Archeology	5	0.3
Child Development	8	0.5
Divinity	23	1.5
English Language and Literature	49	3.2
Field Crops	10	0.7
Fisheries and Aquaculture	12	0.8
Folklore	15	1.0
Food Engineering	51	3.3
French Language and Literature	17	1.1
Geography	14	0.9
German Language and Literature	17	1.1
Health Services Management	36	2.4
History	41	2.7
History of Art	18	1.2
Hittitology	8	0.5
Horticulture	15	1.0
Indology	13	0.8
Journalism	20	1.3
Korean Language and Literature	41	2.7
Landscape Architecture	12	0.8

Department	Frequency	Percentage
Medical Documentation and Secretarial	100	6.5
Medicine	86	5.6
Midwifery	44	2.9
Modern Greek Language and Literature	17	1.1
Modern Turkish Dialects and Literatures	42	2.7
Nursing	59	3.8
Nutrition and Dietetics	44	2.9
Other	37	2.4
Pharmacy	188	12.2
Plant Protection	25	1.6
Polish Language and Culture	8	0.5
Protohistoria and Near Eastern Archeology	7	0.5
Psychology	110	7.2
Public Relations and Advertising	13	0.8
Radio, Television and Film	17	1.1
Russian Language and Literature	12	0.8
Social Work	63	4.1
Sociology	39	2.5
Soil Science and Plat Nutrition	20	1.3
Spanish Language and Literature	24	1.6
State Conservatory	4	0.3
Theatre	6	0.4
Urdu Language and Literature	8	0.5
Veterinary Medicine	51	3.3
Zootechnics	9	0.6
TOTAL	**1535**	**100.0**

Appendix B

The Course Syllabus of ICT-I

BİT 101 / ENF 101 E-DERS İZLENCESİ

Dersin Adı	Bilgi ve İletişim Teknolojileri Bilgisayara Giriş
Dersin Web Sitesi	htt[redacted]
Ders Kodu	BİT 101 – ENF 101
Ders Hakkında Bilgi	Derste bilgisayar teknolojisinin temel kavramları, çalışma sistemi, temel bilgisayar donanım parçalarının özellikleri ve çalışma prensipleri, işletim sisteminin özellikleri ve kullanılması, İnternet ve yararlanma yolları ile e-posta kullanımı ve özellikleri anlatılacaktır. Ayrıca Kelime işlemci, Hesap tablosu, Veri Tabanı programı ve Sunum programı kullanımı anlatılarak günlük hayatta ve eğitim-öğretim sürecinde gerekli temel bilgisayar kullanım becerisinin kazandırılmasını amaçlandırmaktadır.
Süre	14 Hafta
Sınav Tarihleri	*Vize ödev teslimi => 2-6 Kasım 2015* *Final sınavı => Duyurulacaktır.* *Tartışma Forumları => Haftalık olarak sistemden takip ediniz.*
Eğitmenler	[redacted]
Eğitmenler Hakkında	Öğretim elemanları hakkında detaylı bilgiye moodle ders sayfanızdan erişebilirsiniz.
Kazanımlar / Amaç, Hedef ve Davranışlar	Bilgisayar okuryazarlığı ile ilgili temel bilgi ve becerileri kazandırmayı amaçlayan bu ders, Avrupa Bilgisayar Yetkinlik Belgesi (ECDL) müfredatına uygun olarak hazırlanmıştır. Detaylı bilgi için http://www.[redacted] adresini ziyaret edebilirsiniz.
Haftalık plan ve Konular	Hafta — Modüller / İçerik / Konular
	1 — Bilgi ve İletişim Teknolojisi Kavramları
	2 — Bilgi ve İletişim Teknolojisi Kavramları
	3 — Bilgisayarı Kullanmak ve Dosyaları Yönetmek
	4 — Bilgisayarı Kullanmak ve Dosyaları Yönetmek
	5 — Kelime İşleme Yazılımları
	6 — Kelime İşleme Yazılımları
	7 — Tablo İşleme Yazılımları
	8 — Tablo İşleme Yazılımları
	9 — Sunu hazırlama Yazılımları
	10 — İnternet ve Web Kullanımı
	11 — Veritabanı Yönetimi
	12 — Veritabanı Yönetimi
	13-14 — Değerlendirme

Nasıl Çalışmalı	Derse ait notlar, örnekler, ödevler, tartışmalar ve araştırmalar tamamen dersin sitesinden erişilebilir olacaktır. Düzenli bir şekilde siteyi takip eder, konuları haftalık tekrar eder, tartışmalara katılır, verilen alıştırmaları zamanında tamamlarsanız bu süreç öğrenmeniz için yeterli olacaktır.
Yöntem ve Teknikler/Dersin İşleniş Biçimi	Dersimiz anlatım, araştırma, tartışma ve uygulama ağırlıklı olarak sürecektir.
Araç Gereçler	Bilgisayar ve İnternet ortamına erişim yeterli olacaktır.
Gerekli Donanım	Sıradan bir bilgisayar yeterlidir, özel bir gereksinim yoktur.
Katılım Beklentileri	Her hafta en az 3 kez siteyi ziyaret etmeniz, tartışmalara katılmanız ve ödevleri yapmanız beklenmektedir.
Kaynaklar	Gerekli tüm kaynaklar ders sayfası içinde yer almaktadır.
Değerlendirme	*5. hafta doldurulacak olan anket => 5 puan* *Tartışma formlarına katılım => 15 puan* *Vize ödevi => 20 puan* *Final sınavı =>60 puan*
Sohbet	Saatleri ilgili haftalarda sistem içerisinde duyurulacaktır.
Tartışma / Forum	Ders sayfasında yer alan forum alanını kullanabilirsiniz.
Telif Hakları	Lütfen kendiniz üretmediğiniz metin, görsel ya da video vb. materyalleri bu site içerisinde kullanmayınız.

Appendix C

Questions of Online Discussion Activities

Discussion Activity 1

Lütfen aşağıdaki tartışma sorularını kendinize göre cevaplayınız.

1. Bilgisayarla ilk tanıştığınız zamanları düşünün. Bilgisayarı hangi amaçlar için kullandınız? Kullanırken ne gibi sorunlarla karşılaştınız ve bu sorunları aşmak için neler yaptınız? Bilgisayarı kullanmak ve günlük hayatınızda faydalı kılmak için nasıl bir çaba gösterdiniz?

2. İnternet ortamında bir konu ile ilgili eriştiğiniz bilgilerin doğruluğunu nasıl kontrol edersiniz? Bilgilerin güvenirliği ve doğruluğundan nasıl emin olursunuz? Bilgi kirliliği ile başa çıkmak için neler yaparsınız?

Discussion Activity 2

Lütfen aşağıdaki tartışma soruları kendi düşüncelerinizi yansıtacak şekilde cevaplayınız.

1. Günlük hayatınızda hangi platformlarla sanal iletişim kuruyorsunuz? Sanal iletişim araçları aracılığıyla iletişim kurarken kendinizi yüz yüze iletişimden farklı olarak nasıl hissedersiniz? Sizce sanal iletişim araçları insan hayatında ne gibi değişikliklere sebep olur? Bu araçlar, herhangi bir bağımlılık oluşturur mu? Oluşturuyorsa bunu önlemek ya da düzeltmek için neler yapılmalıdır?

2. Bir konu hakkında sizin hazırladığınız bir ödevi ya da belgeyi İnternet ortamında herhangi birinin izinsiz bir şekilde kullandığını fark ettiğinizde ne yaparsınız? Sizce İnternette var olan her bilgiyi istediğimiz şekilde kullanabilir miyiz? Genel olarak veri hırsızlığına karşı sizce ne gibi önlemler alınabilir? Günlük hayatınızda sizin veri hırsızlığına karşı uyguladığınız yöntemler nelerdir?

Discussion Activity 3

Lütfen aşağıdaki tartışma sorularını kendinize göre cevaplayınız.

1. Bilgisayarda yeni bir programda çalışacağınız zaman kendinizi nasıl hissedersiniz? Bilmediğiniz bilgileri öğrenmek için ne gibi yöntemler kullanırsınız? Bu bağlamda arkadaşlarınızdan ya da İnternet ortamında var olan bilgilerden nasıl faydalanırsınız?

2. Sınıf arkadaşlarınızla grup olarak bir ödev hazırlamanız gerektiğinde ne gibi bir yöntem izlersiniz? Grup çalışmalarında karşılaşabileceğiniz olası problemler nelerdir? Bu sorunları çözmek için neler yaparsınız? Genel olarak grup çalışmalarının avantajları ve dezavantajları hakkında ne düşünüyorsunuz?

Discussion Activity 4

Lütfen aşağıdaki tartışma sorularını kendinize göre cevaplayınız.

1. Dijital bilginin korunması hakkında neler düşünüyorsunuz? Dijital bilgileri korumak gerekli midir, neden? Bu konuda bireysel ve kitlesel olarak (bakanlıklar, üniversiteler, yasal düzenlemeler) sizce neler yapılabilir?

2. Kelime işlemci yazılımlarda çalışırken kendinizi yeterli görüyor musunuz? Kendinizi hangi alanlarda eksik hissediyorsunuz? Bu konuda bilmediklerinizi öğrenmek için neler yaparsınız? Bilgisayarda herhangi bir programda bir konu üzerinde çalışırken yeterince bilgi sahibi olmadığınızı fark ettiğinizde kendinizi nasıl hissedersiniz ve bu durumla baş etmek için neler yaparsınız?

Discussion Activity 5

Lütfen aşağıda verilen soruları kendi düşüncelerinizi yansıtarak cevaplayınız.

1. Verilen bir problemi çözmek için İnternet ortamında detaylı arama yapmanız gerektiğinde ilk olarak ne yaparsınız? Arama yaparken hangi süreçleri izlersiniz? Problemi çözmek için ne gibi yöntemler kullanırsınız, neden?

2. Dersi veren öğretim üyesinin ders anlatımı, dersin yönetimi ve içeriği ile ilgili ne düşünüyorsunuz? Sizce dersi veren öğretim üyesi dersi iyi bir şekilde planlamış mıdır?

Varsa eksikler nasıl giderilebilir? Ders ile ilgili genel düşünceleriniz ve varsa önerileriniz nelerdir?

Discussion Activity 6

Lütfen aşağıda verilen soruları kendi düşüncelerini yansıtarak cevaplayınız.

1. Bilgi ve İletişim Teknolojileri dersi ile ilgili genel düşünceleriniz nelerdir? Sizce hangi konular ilave edilmeli ya da çıkarılmalıdır ve hangi konulara ağırlık verilmelidir? Ders kapsamında grup aktiviteleri yapılması ile ilgili ne düşünüyorsunuz? Bu ders kapsamında şimdiye kadar öğrendiğiniz bilgi ve edindiğiniz deneyimlerin gerçek hayatta size ne gibi katkı sağlayacağını düşünüyorsunuz?

2. Kendinizi Bilgi ve İletişim Teknolojileri dersi grubuna ne derece ait hissediyorsunuz ve neden? Dersi alan diğer kişilerle ve dersin öğretmeni ile iletişiminiz nasıl? Bu iletişimin geliştirilmesi için neler yapılabilir? Bu konuda dersin verildiği sistemin (Moodle web sayfası) ve Facebook grubunun iyi ve kötü yanları sizce neler ve eksik yanları nasıl giderilebilir?

Appendix D

Community of Inquiry Survey (Turkish)

	Kesinlikle katılıyorum	Katılıyorum	Kararsızım	Katılmıyorum	Kesinlikle Katılmıyorum
Öğretimsel Bulunuşluk					
1. Öğretmen, dersin önemli konularını açıkça belirtmiştir.					
2. Öğretmen, dersin önemli hedeflerini açıkça belirtmiştir.					
3. Öğretmen, ders etkinliklerine nasıl katılacağımıza ilişkin açık bir yönerge sunmuştur.					
4. Öğretmen, öğrenme etkinlikleri için önemli olan tarihleri/takvimi açık olarak belirtmiştir.					
5. Öğretmen, öğrenmeme yardım eden ders konularına ilişkin fikir birliği ve fikir ayrılığı olan noktaları belirterek öğrenmeme yardım etmiştir.					
6. Öğretmenin ders konularının anlaşılmasındaki rehberliği, görüşlerimin netleşmesinde yardımcı oldu.					
7. Öğretmen derse katılan öğrencilerin derse katılımına ve üretken bir iletişim sürecini devam ettirmelerine yardımcı oldu.					
8. Öğretmenin sınıfın dersle ilgili çalışmalara odaklanmasını sağlaması öğrenmeme yardımcı oldu.					

	Kesinlikle katılıyorum	Katılıyorum	Kararsızım	Katılmıyorum	Kesinlikle Katılmıyorum
9. Öğretmen, derse katılan öğrencileri dersle ilgili yeni kavramları/fikirleri keşfetmeleri için cesaretlendirmiştir.					
10. Öğretmen, derse katılan öğrenciler arasındaki "biz" hissinin gelişmesini güçlendirmiştir.					
11. Öğretmen, dersle ilgili konuları tartışmaya odaklanmamızda yardımcı olmuştur.					
12. Öğretmen, dersin hedeflerine ilişkin güçlü ve zayıf yanlarımı anlamamda yardımcı olarak bana geri bildirimler vermiştir.					
13. Ders öğretmeni zamanlaması iyi geribildirimler vermiştir.					
Sosyal Bulunuşluk					
14. Dersin diğer katılımcılarının olduğunu bilmek, kendimi bu derse ait hissetmemi sağlamıştır.					
15. Derse katılan bazı öğrencilerle ilgili belirgin izlenimler edindim.					
16. Çevrimiçi ya da web-temelli iletişim, sosyal etkileşim için mükemmel bir ortamdır.					
17. Çevrimiçi ortamlar yoluyla konuşurken kendimi çok rahat hissettim.					
18. Ders tartışmalarına katılırken kendimi çok rahat hissettim.					
19. Dersin diğer öğrencileri ile etkileşim kurarken kendimi rahat hissettim.					

	Kesinlikle katılıyorum	Katılıyorum	Kararsızım	Katılmıyorum	Kesinlikle Katılmıyorum
20. Dersin diğer katılımcılarının görüşlerine katılmadığımda bile kendimi rahat hissettim, üstelik bu durumda bile gruba karşı güvenim sürmekteydi.					
21. Kendi bakış açımın dersin diğer katılımcıları tarafından kabul edildiğini hissettim.					
22. Çevrimiçi tartışmalar, başkalarıyla işbirliği yaptığım hissinin gelişmesine yardımcı oldu.					
Bilişsel Bulunuşluk					
23. Ortaya atılan soru/sorunlar ders konularına olan ilgilimi arttırdı.					
24. Ders etkinlikleri beni meraklandırdı.					
25. Dersle ilgili soruların yanıtlarını bulmak için kendimi güdülenmiş hissettim.					
26. Bu dersle ilgili soru/sorunları çözmek için çeşitli bilgi kaynaklarını kullandım.					
27. Beyin fırtınası yapmak ve ilgili bilgileri bulmaya çalışmak içerikle ilgili soruları yanıtlamamda yardımcı oldu.					
28. Çevrimiçi tartışmalar, farklı görüşleri anlamama yardım ederek değerli bir katkı sağladı.					
29. Karşılaştığım yeni bilgi/fikirler ders etkinliklerindeki soruları yanıtlamamda bana yardım etti.					

	Kesinlikle katılıyorum	Katılıyorum	Kararsızım	Katılmıyorum	Kesinlikle Katılmıyorum
30. Öğrenme etkinlikleri, açıklamalar ve çözümler oluşturmamda bana yardım etti.					
31. Ders kapsamındaki tartışmalar ve ders içeriğine ilişkin düşüncelerim bu dersteki temel fikirleri anlamama yardım etti.					
32. Bu derste oluşturulan bilgileri uygulamak ve sınamak (test etmek) için çeşitli yollar tanımlayabilirim.					
33. Derste ele alınan sorunlara, gerçek yaşamda uygulayabileceğim çözümler geliştirdim.					
34. Bu derste oluşturulan bilgileri, ilerde işimde ya da dersle ilgili olmayan diğer etkinliklerde kullanabilirim.					

Appendix E

Online Self-Regulated Learning Questionnaire (Turkish)

Uzaktan Eğitim Öğrencilerinin Güdülenme, Araştırma Topluluğu, Üstbiliş ve Öz-Düzenleme Becerileri

Hoş Geldiniz

Değerli Öğrenciler,

Bu ölçek uzaktan eğitim programlarında eğitim görmekte olan öğrencilerin belirli bir derse yönelik olarak öğrenme güdülenmesi (motivasyon), araştırma topluluğu sorgusu, üst biliş becerileri ve öz-düzenleme becerilerini belirlemek amacıyla hazırlanmıştır. Anketten elde edilen veriler, Orta Doğu Teknik Üniversitesi Bilgisayar ve Öğretim Teknolojileri Eğitimi Ana Bilim Dalı doktora programı kapsamında yürütülmekte olan doktora tezinde kullanılacaktır.

Ölçekte yer alan sorulara verdiğiniz yanıtlar, kesinlikle sizi eleştirmek amacıyla kullanılmayacaktır.

Ankete katılan öğrenciler [redacted]iversitesi bünyesinde kayıtlı oldukları bir dersten ekstra 5 puan alacaktır. Bu yüzden sizden öğrenci numaranız istenmektedir.

Ankette 4 bölüm ve her bölümde farklı soru ifadeleri bulunmaktadır. Bu soruların herkes için geçerli doğru yanıtları bulunmamaktadır. Bu nedenle lütfen aşağıda verilen tüm soruları dikkatle okuyarak yanıtınızı, ifadenin karşısındaki seçeneklerden sizin için en uygun olanı işaretleyerek belirtiniz. Sorulara geçmeden önce, aşağıda verilen demografik soruları cevaplayınız.

Soru, görüş ve önerileriniz için k1selcan@gmail.com adresine e-posta atabilirsiniz.
Anketimize katıldığınız için teşekkür ederiz.

* Öğrenci numaranız nedir?

* Cinsiyetiniz nedir?

* Kaç yaşındasınız?

* Hangi üniversitede eğitim görmektesiniz?

* Hangi bölümde okuyorsunuz?

* Kaçıncı sınıftasınız?

Uzaktan Eğitim Öğrencilerinin Güdülenme, Araştırma Topluluğu, Üstbiliş ve Öz-Düzenleme Becerileri

4. Bölüm

Soruları yanıtlarken, sorularda geçen ifade sizin için kesinlikle doğru ise (5)'i, sizinle ilgili kesinlikle yanlış ise (1)'i işaretleyin. Eğer ifadenin size göre doğruluğu bunlardan farklı ise sizin için en uygun düzeyi gösteren (1)'le (5) arasındaki rakamı işaretleyiniz.

* D. Uzaktan Eğitim Öğrencilerinin Öz-Düzenleme Becerileri

	(1) Kesinlikle katılmıyorum	(2) Katılmıyorum	(3) Kararsızım	(4) Katılıyorum	(5) Kesinlikle Katılıyorum
D1. Çevrimiçi derslerdeki ödevlerim için ölçütler belirlerim.	○	○	○	○	○
D2. Kısa-vadeli hedeflerin (günlük veya haftalık) yanısıra uzun vadeli hedefler de (aylık veya dönem/sömestr boyunca) belirlerim.	○	○	○	○	○
D3. Çevrimiçi derslerdeki öğrenmem için ölçütlerimi yüksek tutarım.	○	○	○	○	○
D4. Çevrimiçi derslerde çalışma zamanımı ayarlamaya yardımcı olması için hedefler belirlerim.	○	○	○	○	○
D5. Çevrimiçi olmasından dolayı çalışmamın kalitesinden ödün vermem.	○	○	○	○	○
D6. Çalışma ortamımı fazla dikkat dağıtacak şeylerden uzak olacak şekilde seçerim.	○	○	○	○	○
D7. Ders çalışmak için rahat bir yer bulurum.	○	○	○	○	○
D8. Çevrimiçi dersler için en verimli çalışabileceğim yeri bilirim.	○	○	○	○	○
D9. Çevrimiçi derslerime çalışmak için dikkat dağıtan şeylerin az olduğu zamanı seçerim.	○	○	○	○	○
D10. Çevrimiçi dersler için daha ayrıntılı notlar tutmaya çalışırım, çünkü ders notları çevrimiçi öğrenmede normal sınıftaki öğrenmeye göre daha önemlidir.	○	○	○	○	○
D11. Dikkat dağıtan şeyleri önlemek için çevrimiçi gönderilen öğretim materyallerini yüksek sesle okurum.	○	○	○	○	○
D12. Sorularımı, çevrimiçi sohbet odasına ve tartışmaya katılmadan önce hazırlarım.	○	○	○	○	○
D13. Ders içeriğini iyice öğrenmek için çevrimiçi derslerde verilen problemlere ek olarak ilave problemlere de çalışırım.	○	○	○	○	○
D14. Zaman alıcı olduğunu bildiğim için çevrimiçi derslerime çalışırken fazladan zaman ayırırım.	○	○	○	○	○
D15. Çevrim içi derslere çalışmak için her gün veya her hafta aynı zamanı ayarlamaya çalışırım ve bu çizelgeyi uygularım.	○	○	○	○	○

	(1) Kesinlikle katılmıyorum	(2) Katılmıyorum	(3) Kararsızım	(4) Katılıyorum	(5) Kesinlikle Katılıyorum
D16. Günlük derslere katılım zorunluluğumuz olmamasına rağmen, yine de çalışma sürelerimi günlere eşit olarak bölmeye çalışırım.	○	○	○	○	○
D17. Ders içeriğine hakim bilgili birini bulurum, böylece yardıma ihtiyacım olduğunda ona danışabilirim.	○	○	○	○	○
D18. Sorunlarımı sınıf arkadaşlarımla çevrimiçi olarak paylaşırım, böylece hangi problemlerle uğraştığımızı ve onları nasıl çözeceğimizi biliriz.	○	○	○	○	○
D19. Eğer gerekirse sınıf arkadaşlarımla yüz yüze görüşmeye çalışırım.	○	○	○	○	○
D20. Dersi veren hocadan e-posta yoluyla yardım almada ısrarcıyımdır.	○	○	○	○	○
D21. Çevrimiçi derslerde ne öğrendiğimi anlamak için öğrendiklerimi özetlerim.	○	○	○	○	○
D22. Çevrimiçi bir derse çalışırken, ders içeriği ile ilgili kendime birçok soru sorarım.	○	○	○	○	○
D23. Çevrimiçi derslerde nasıl olduğumu anlamak için sınıf arkadaşlarımla konuşurum.	○	○	○	○	○
D24. Sınıf arkadaşlarımın öğrendiğinden farklı ne öğrendiğimi anlamak için onlarla konuşurum.	○	○	○	○	○

Appendix F

Metacognition Questionnaire (Turkish)

Bu anket, uzaktan eğitim programlarına kayıtlı üniversite öğrencilerinin üstbiliş becerilerini saptamaya yönelik olarak tasarlanmıştır. Bu anketten elde edilen veriler, doktora tezi kapsamında bir araştırmada kullanılacaktır. Vereceğiniz cevaplar kimse ile paylaşılmayacaktır. Lütfen tüm soruları yanıtlayınız.

Katılımınız için teşekkür ederiz.

* Doldurulması zorunlu alanlar

1. Bölüm: Demografik Bilgiler

1. Cinsiyetiniz Nedir? *

A) Kadın
B) Erkek

2. Kaç yaşındasınız? *

……

3. Hangi üniversitede eğitim görmektesiniz? *

……

4. Hangi bölümde okuyorsunuz? *

……

5. Kaçıncı sınıftasınız? *

……

2. Bölüm: Üstbiliş Becerileri

Aşağıdaki ifadelere katılma derecenizi size en uygun seçeneği işaretleyerek belirtiniz.

	Kesinlikle katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum
1. Öğrenci olarak güçlü yanlarımı biliyorum.					
2. Öğrenci olarak zayıf yanlarımı biliyorum.					
3. İyi derecede eleştirel düşünme becerisine sahibim.					
4. İyi derecede problem çözme becerisine sahibim.					
5. Hangi faktörlerin düşünme ve öğrenmemi geliştirebileceğini biliyorum.					
6. Öğrenme sürecinin başındaki motivasyon durumumu biliyorum.					
7. Başarı için sahip olduğum olanakları net bir şekilde biliyorum.					
8. Öğrenme görevleriyle ilgili var olan bilgi ve deneyimlerimi biliyorum.					
9. Görevlerin zorluğu hakkında değerlendirme yaparım.					
10. Öğrenme süreci boyunca gösterdiğim çabamın farkındayım.					
11. Öğrenme süreci boyunca düşünme seviyemin farkındayım.					
12. Öğrenme süreci boyunca duygularımı sürekli denetlerim.					
13. Öğrenme süreci boyunca ne anladığımı bilinçli bir şekilde değerlendiririm.					
14. Anladığımı doğrulamaya ihtiyacım olduğunda bunu fark ederim.					
15. Dersteki diğer katılımcıların fikirlerine/ne anladıklarına/yorumlarına dikkat ederim.					
16. Bir ödeve nasıl yaklaştığımız hakkında düşünürüm.					
17. İleri seviyede öğrenmeye ulaşmak için hedefler belirlerim.					
18. Öğrenme gayretimi artırmak için yaklaşımımda değişiklik yaparım.					
19. Düşünmemi derinleştirmek için sorular sorarım veya bilgi talep ederim.					

	Kesinlikle katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum
20. Kendimi ve dersin diğer katılımcılarını başarmak için zorlarım.					
21. Dersin diğer katılımcılarının öğrenmesine yardımcı olmak için önerilerde bulunurum.					
22. Daha iyi anlamak için özel stratejiler uygularım.					
23. Zorlukla karşılaştığım zaman yardım isterim.					
24. Anlamada zorluk çektiğim zaman hedeflerimde veya stratejilerimde değişiklik yaparım.					
25. Stratejimi ödeve bağlı olarak değiştiririm.					
26. Daha iyi anlamak için kaygılarımla baş etmeye çalışırım.					

Appendix G

Motivating Strategies for Learning Questionnaire (MSLQ) (Turkish)

Bu ölçek, uzaktan eğitim programlarına kayıtlı üniversite öğrencilerinin güdülenme sefiyelerini saptamaya yönelik olarak tasarlanmıştır. Bu ölçekten elde edilen veriler, doktora tezi kapsamında bir araştırmada kullanılacaktır. Ölçekte yer alan ifadelere ait doğru ya da yanlış cevap bulunmamaktadır. Vereceğiniz cevaplar kimse ile paylaşılmayacaktır. Lütfen tüm soruları yanıtlayınız.

Katılımınız için teşekkür ederiz.

* Doldurulması zorunlu alanlar

1. Bölüm: Demografik Bilgiler

1. Cinsiyetiniz Nedir? *

A) Kadın
B) Erkek

2. Kaç yaşındasınız? *

……

3. Hangi üniversitede eğitim görmektesiniz? *

……

4. Hangi bölümde okuyorsunuz? *

……

5. Kaçıncı sınıftasınız? *

……

2. Bölüm: Güdülenme

Aşağıdaki ifadelere katılma derecenizi size en uygun seçeneği işaretleyerek belirtiniz. Bu ifadelere ait doğru ya da yanlış cevap bulunmamaktadır.

Benim için kesinlikle yanlış : 1

Benim için çoğunlukla yanlış : 2

Benim için genellikle yanlış : 3

Benim için bazen doğru : 4

Benim için bazen doğru : 5

Benim için doğru : 6

Benim için kesinlikle doğru : 7

		1	2	3	4	5	6	7
1	Bunun gibi bir derste beni gerçekten çalışmaya zorlayacağına inandığım ders materyallerini tercih ederim, bu sayede yeni şeyler öğrenebilirim.							
2	Ancak uygun bir şekilde çalışırsam bu dersin konularını öğrenebilirim.							
3	Sınavdayken diğer öğrencilerden daha yetersiz olduğumu düşünürüm.							
4	Bu derste öğrendiklerimi diğer derslerde de kullanabilirim.							
5	Bu dersten çok iyi bir not alacağıma inanıyorum.							
6	Bu derste okumam için verilecek en zor konuları bile anlayacağımdan eminim.							
7	Benim için en tatmin edici şey sınıfta iyi bir not almaktır.							
8	Sınavda soruları çözerken, sınav kâğıdının diğer bölümlerindeki yanıtlayamayacağım soruları düşünürüm.							
9	Eğer bu dersi öğrenemiyorsam bu benim kendi hatamdır.							
10	Bu derste verilen kaynakları (kaynak materyalleri) öğrenmek benim için önemlidir.							
11	Bu derste benim için en önemli şey, genel not ortalamamı yükseltmektir, yani bu dersteki asıl amacım iyi bir not almaktır.							

		1	2	3	4	5	6	7
12	Bu derste anlatılan temel kavramları anlayabileceğim konusunda kendime güveniyorum.							
13	Eğer yapabilirsem, bu sınıftaki diğer öğrencilerin hepsinden daha yüksek not almak isterim.							
14	Sınavdayken başarısızlığı ve bunun doğuracağı sonuçları düşünürüm.							
15	Bu derste öğretmenin anlatacağı en zor konuyu bile anlayacağıma güveniyorum.							
16	Bunun gibi bir derste, zor olsalar bile, bende merak uyandıran ders materyallerini tercih ederim.							
17	Bu dersle ilgili konulara oldukça ilgi duyuyorum.							
18	Yeterince çalışırsam dersi anlayabilirim.							
19	Sınavdayken kendimi rahatsız ve morali bozuk hissederim.							
20	Bu dersteki ödevleri ve sınavları mükemmel yapabileceğim konusunda kendime güveniyorum.							
21	Bu derste başarılı olmayı bekliyorum.							
22	Bu derste benim için en tatmin edici şey içeriği mümkün olduğunca çok anlayabilmektir.							
23	Bence bu derste kullanılan materyaller dersi öğrenmem için faydalıdır.							
24	Eğer olanak tanınırsa, iyi not almamı sağlamayacak olsa bile en iyi şekilde öğrenmemi sağlayacak ödevleri seçerim.							
25	Dersi yeterince anlayamıyorsam, bu yeterince çalışmadığım içindir.							
26	Bu dersin konularını seviyorum.							
27	Bu dersin konularını öğrenmek benim için çok önemlidir.							
28	Sınavdayken kalbimin hızla çarptığını hissederim.							
29	Eminim ki bu derste öğretilen tüm becerileri ustalıkla yapabilirim.							

		1	2	3	4	5	6	7
30	Sınıfta başarılı olmak isterim; çünkü yeteneğimi aileme, arkadaşlarıma, üstlerime ve diğerlerine göstermek benim için önemlidir.							
31	Dersin zorluğunu, öğretmeni ve becerilerimi dikkate aldığımda, bence bu derste başarılı olurum.							

Appendix H

Interview Protocol (Turkish)

Görüşme Soruları

Herhangi bir işte çalışıyor musunuz?
Bu dersi almadan önce bilgisayar kullanma bilgi ve beceriniz ne düzeydeydi?
Evli misiniz? (Çocuğunuz var mı?)

1. Dönem başında BİT dersi ile ilgili endişeleriniz nelerdi? Dersler ilerlemeye başladıktan sonra bu endişeleriniz nasıl değişiklik gösterdi? Sebepleri ile açıklar mısınız?

2. Sizce BİT dersi etkinlikleri ve değerlendirme şekli nasıldı? Dersin amaçlarına uygun mu yoksa değil mi?
    a. Bu konu hakkında varsa önerileriniz nelerdir?

3. Dersi veren öğretim üyesinin verdiği ödevler, hazırladığı ders içeriği ve ders etkinlikleri ile ilgili sorularınıza yaklaşımı hakkındaki düşünceleriniz nelerdir?
    a. Zamanında ve yeterli geri bildirim verdi mi yoksa sizin için yeterli değil miydi?
    b. Bu konular hakkında varsa önerileriniz nelerdir?

4. Çevrimiçi ortamda sunulan haftalık tartışma etkinlikleri öğrenmenizi nasıl etkiledi? Bir örnek vererek açıklar mısınız?
    a. Size faydalı oldu mu yoksa geliştirilmesi gerekir mi? (Nasıl geliştirilebilir?)

5. Bu dersi daha iyi öğrenmeniz için sizce neler yapılabilir?
    a. Sınavlar yerine grup projesi olsaydı,
    b. Sınavla birlikte grup projesi olsaydı
    c. Sınav hiç olmasaydı ve yerine ödevler olsaydı

sizce faydalı olur muydu? Sebepleri ile birlikte açıklar mısınız? (Ya da sizin önereceğiniz başka bir yöntem var mı?)

6. Sizce grup (topluluk/sınıf) içinde iletişim nasıldı? Bu iletişimi artırmak için neler yapılabilir? Dersi veren öğretim üyesi ile iletişiminizin artması ve diğer öğrencilerle herhangi bir konuda yardımlaşmanız için öğretim üyesi neler yaptı? Sizce yaptıkları yeterli miydi? Neden? (Nasıl artırılabilir?)

7. Kendinizi sınıfa ne derecede ait hissettiniz, yoksa kendinizi bu grubun dışında hissettiğiniz zamanlar oldu mu? Sebepleri ile birlikte örnek vererek açıklar mısınız? (Grubun dışında kalmamanız için (hiçbir öğrencinin kendini grubun dışında gibi hissetmemesi için) neler yapılabilir?)

8. Ders sürecince yardımlaşma sizce nasıldı? Sebepleri ile birlikte örnek vererek açıklar mısınız? (Bunu artırmak için neler yapılabilir?)

9. Dönem boyunca derse olan motivasyon ve isteğinizde iniş-çıkışlar oldu mu? Peki, buna sebep olan faktörler neydi? (İsteğinizi artırmak için neler yapılabilir?)

10. Bu ders aynı zamanda yüz yüze derslerle desteklenseydi, öğrenme, derse karşı ilginiz ve etkileşim açısından ne gibi farklılıklar olurdu? Sebepleri ile birlikte örnek vererek açıklayınız.

11. Bu derste öğrendiğiniz bilgileri günlük hayatınızda ya da çalışma hayatınızda nasıl kullanabilirsiniz? Rahatlıkla kullanabilir misiniz yoksa kullanamaz mısınız? Neden? (Günlük hayatta bu bilgileri kullanmak için neler yapılabilir?)

12. Bunların dışında genel olarak dersin işleyişi, içeriği, etkinlikler, değerlendirme şekli ya da herhangi bir konuda önerileriniz ya da eklemek istediğiniz bir şey var mı?

Appendix I

Coding Matrix: The Categories and Their Indicators of the Components of Community of Inquiry Framework

The Categories and Their Indicators of Teaching Presence (TP)

Category 1: Design and Organization DO

- ✓ Setting curriculum (including methods and assessment) DO1
- ✓ Communication of course goals, methods and topics DO2
- ✓ Establishing time parameters DO3
- ✓ Utilizing medium effectively DO4
- ✓ Establishing netiquette DO5
- ✓ Making macro-level comments about course content DO6

Category 2: Facilitating Discourse FD

- ✓ Identifying areas of agreement/disagreement FD1
- ✓ Seeking to reach consensus/understanding FD2
- ✓ Encouraging, acknowledging, or reinforcing student contributions FD3
- ✓ Setting climate for learning FD4
- ✓ Drawing in participants, prompting discussions FD5
- ✓ Assessing the efficacy of the process FD6
- ✓ Actions reinforcing development of community FD7

Category 3: Direct Instruction DI

- ✓ Present content/questions DI1
- ✓ Facilitation of focus the discussion on specific issues and task DI2
- ✓ Summarize the discussions DI3
- ✓ Confirm understanding through assessment and explanatory feedback DI4
- ✓ Diagnose misconceptions DI5
- ✓ Inject knowledge from diverse sources, e.g., textbook, articles, internet, personal experiences DI6
- ✓ Responding to technical concerns DI7
- ✓ Timely feedback DI8

The Categories and Their Indicators of Social Presence (SP)

Category 1: Affective/Personal AP

- ✓ Expressing emotions and camaraderie AP1
- ✓ Use of humor AP2
- ✓ Self-expression/self-disclosure AP3
- ✓ Use of unconventional expressions to express emotion AP4
- ✓ Sense of belong to a course community AP5

Category 2: Open Communication OC

- ✓ Comfortable conversing online OC1
- ✓ Comfortable interacting with other course participants OC2
- ✓ Asking questions OC3
- ✓ Complimenting/expressing appreciation OC4
- ✓ Expressing agreement/disagreement OC5

Category 3: Group Cohesion GC

- ✓ Vocatives GC1
- ✓ Addresses or refers to the group using inclusive pronouns (e.g. we, you, us) GC2
- ✓ Phatics/salutations GC3
- ✓ Discussions and activities encouraging collaboration GC4
- ✓ Comfort with expressing one's opinion and listening to others GC5
- ✓ Sense of trust and effective intergroup communication GC6

The Categories and Their Indicators of Cognitive Presence (CP)

Category 1: Triggering Event TE

- ✓ Recognize the problem TE1
- ✓ Sense of puzzlement TE2
- ✓ Environment facilitates problem-based approach TE3
- ✓ Environment facilitates curiosity, motivation TE4

Category 2: Exploration EX

- ✓ Using a variety of resources to explore problems posed EX1
- ✓ Exploration of relevant information EX2
- ✓ Collaborative exploration of content EX3
- ✓ Appreciation of diverse perspectives EX4
- ✓ Suggestions for consideration EX5
- ✓ Leaps to conclusions EX6

Category 3: Integration INT

- ✓ Using information, connecting ideas, synthesis to answer questions INT1
- ✓ Learning activities that assist in constructing answers/solutions and/or creating solutions INT2
- ✓ Sustained critical reflection within a discourse community INT3

Category 4: Resolution RES

- ✓ Testing and applying knowledge RES1
- ✓ Application of solutions to practice RES2
- ✓ Defending solutions RES3
- ✓ Application of knowledge creation to other contexts RES4

Appendix J

Ethics Committee Approval for Pilot Study, Online Discussion and Quantitative Data Instruments

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
APPLIED ETHICS RESEARCH CENTER

ORTA DOĞU TEKNİK ÜNİVERSİTESİ
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6 Haziran 2015

Gönderilen : Prof.Dr.Zahide Yıldırım
Bilgisayar ve Öğretim Teknolojileri Eğitimi Bölümü

Gönderen : Prof. Dr. Canan Sümer
IAK Başkan Vekili

İlgi : Etik Onayı

Danışmanlığını yapmış olduğunuz Bilgisayar ve Öğretim Teknolojileri Eğitimi bölümü doktora öğrencisi Selcan Kilis'in "**Çevrimiçi Ders Ortamında Öğrencilerin Öğretimsel Buradalık, Sosyal Buradalık, Öz-Düzenleme, Üstbiliş, Motivasyon Ve Başarı Seviyelerinin Bilişsel Buradalıklarına Olan Etkisinin İncelenmesi**" isimli araştırması "İnsan Araştırmaları Komitesi" tarafından uygun görülerek gerekli onay verilmiştir.

Bilgilerinize saygılarımla sunarım.

Etik Komite Onayı

Uygundur

02/06/2015

Prof.Dr. Canan Sümer
Uygulamalı Etik Araştırma Merkezi
(UEAM) Başkan Vekili
ODTÜ 06800 ANKARA

Appendix K

Ethics Committee Approval for the Interview Protocol

UYGULAMALI ETİK ARAŞTIRMA MERKEZİ
APPLIED ETHICS RESEARCH CENTER

ORTA DOĞU TEKNİK ÜNİVERSİTESİ
MIDDLE EAST TECHNICAL UNIVERSITY

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21 ARALIK 2015

Gönderilen: Prof.Dr. Zahide YILDIRIM
Bilgisayar ve Öğretim Teknolojileri Eğitimi

Gönderen: Prof. Dr. Canan SÜMER
İnsan Araştırmaları Komisyonu Başkanı

İlgi: Etik Onayı

Sayın Prof.Dr. Zahide YILDIRIM danışmanlığını yaptığınız doktora öğrencisi Selcan KİLİS'in "Çevrimiçi Ders Ortamında Öğrencilerin Öğretimsel Buradalık, Sosyal Buradalık, Öz-Düzenleme, Üstbiliş, Motivasyon ve Başarı Seviyelerinin Bilişsel Buradalıklarına Olan Etkisinin İncelenmesi" başlıklı araştırması İnsan Araştırmaları Komisyonu tarafından uygun görülerek gerekli onay 10.01.2016-15.06.2016 tarihleri arasında geçerli olmak üzere verilmiştir.

Bilgilerinize saygılarımla sunarım.

Prof. Dr. Canan SÜMER
Uygulamalı Etik Araştırma Merkezi
İnsan Araştırmaları Komisyonu Başkanı

Prof. Dr. Meliha ALTUNIŞIK
Etik Komitesi Üyesi

Prof. Dr. Aydan BALAMİR
Etik Komitesi Üyesi

Prof. Dr. Mehmet UTKU
Etik Komitesi Üyesi

Prof. Dr. Ayhan SOL
Etik Komitesi Üyesi

BU BÖLÜM, İLGİLİ BÖLÜMLERİ TEMSİL EDEN İNSAN ARAŞTIRMALARI ETİK ALT KURULU TARAFINDAN DOLDURULACAKTIR.

Protokol No: 2015-FEN-070

İAEK DEĞERLENDİRME SONUCU

Sayın Hakem,

Aşağıda yer alan üç seçenekten birini işaretleyerek değerlendirmenizi tamamlayınız. Lütfen "Revizyon Gereklidir" ve "Ret" değerlendirmeleri için gerekli açıklamaları yapınız.

Değerlendirme Tarihi: 21.12.2015

Ad Soyad:

☒ **Herhangi bir değişikliğe gerek yoktur. Veri toplama/uygulama başlatılabilir.**

☐ **Revizyon gereklidir**

☐ Gönüllü Katılım Formu yoktur.

☐ Gönüllü Katılım Formu eksiktir.

Gerekçenizi ayrıntılı olarak açıklayınız:

☐ Katılım Sonrası Bilgilendirme Formu yoktur.

☐ Katılım Sonrası Bilgilendirme Formu eksiktir.

Gerekçenizi ayrıntılı olarak açıklayınız:

☐ Rahatsızlık kaynağı olabilecek sorular/maddeler ya da prosedürler içerilmektedir.

Gerekçenizi ayrıntılı olarak açıklayınız:

☐ Diğer.

Gerekçenizi ayrıntılı olarak açıklayınız:

☐ **Ret**

Appendix L

Linearity Assumptions (Scatterplots)

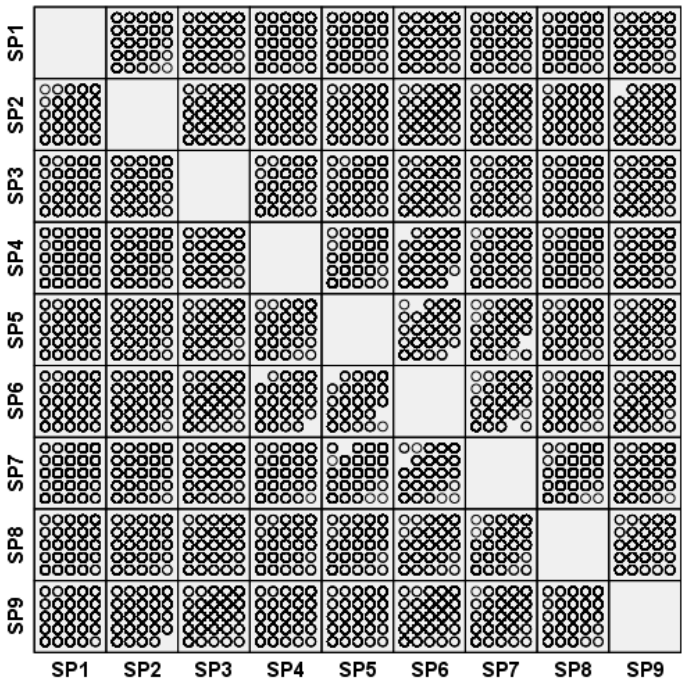

Figure 4.2 Scatterplot of Social Presence

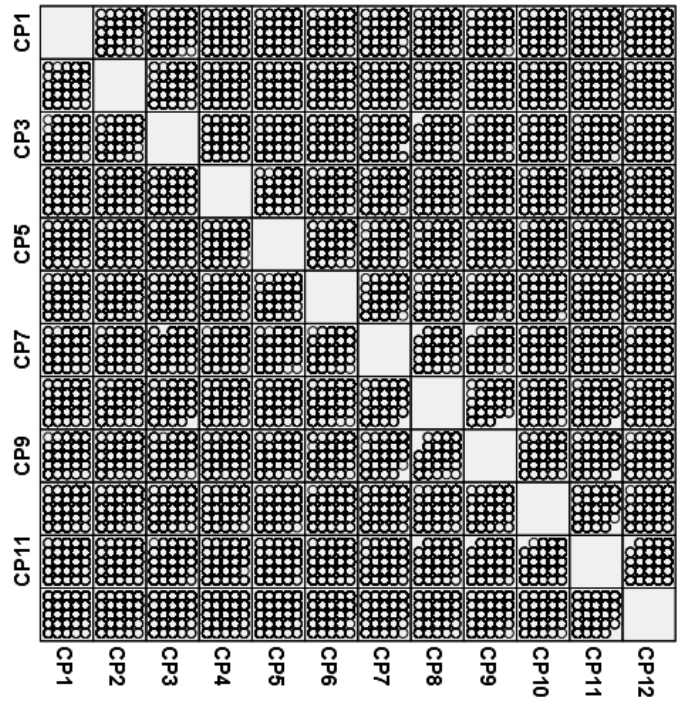

Figure 4.3 Scatterplot of Cognitive Presence

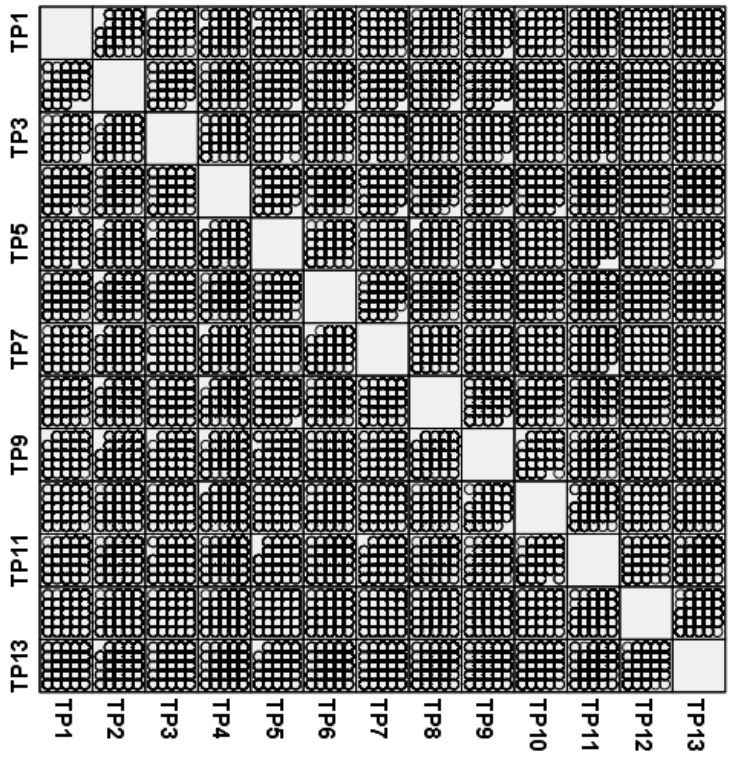

Figure 4.4 Scatterplot of Teaching Presence

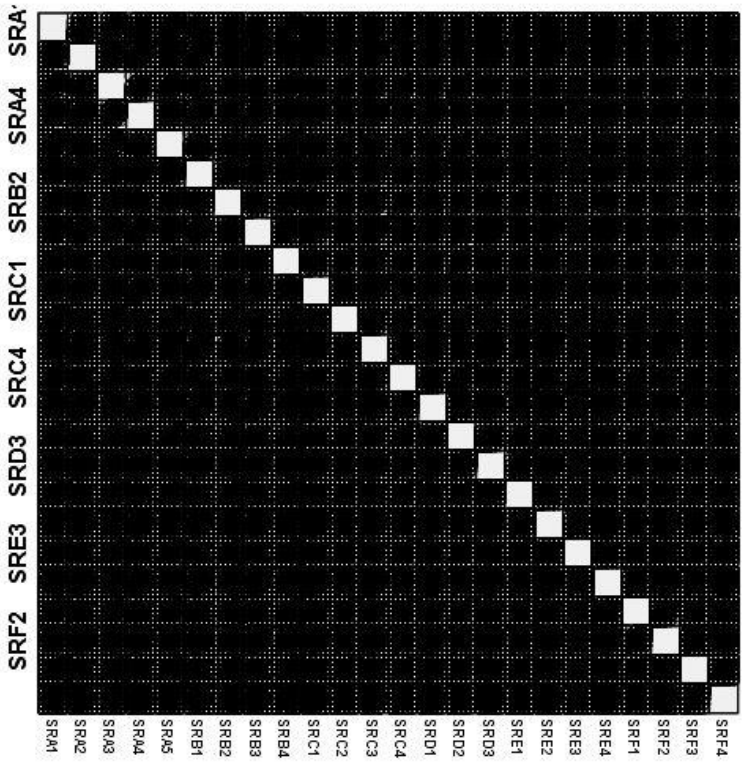

Figure 4.5 Scatterplot of Self-Regulation

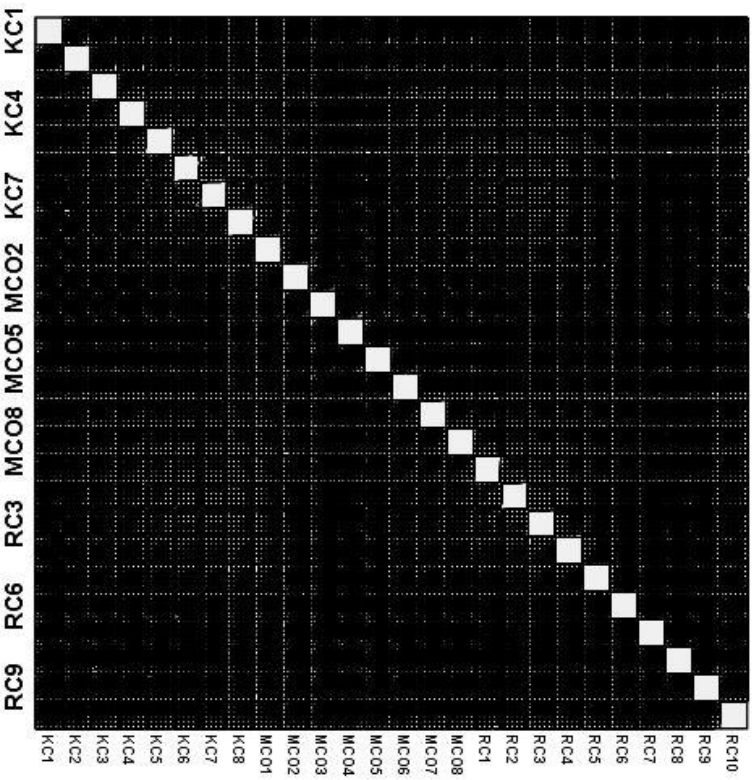

Figure 4.6 Scatterplot of Metacognition

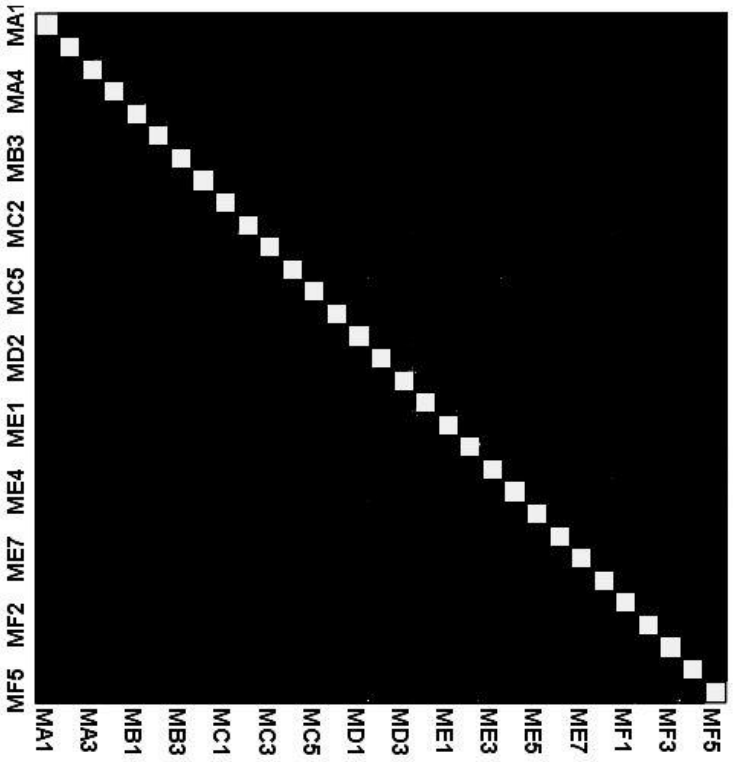

Figure 4.7 Scatterplot of Motivation

Appendix M

Homoscedasticity Assumptions (Scatterplots)

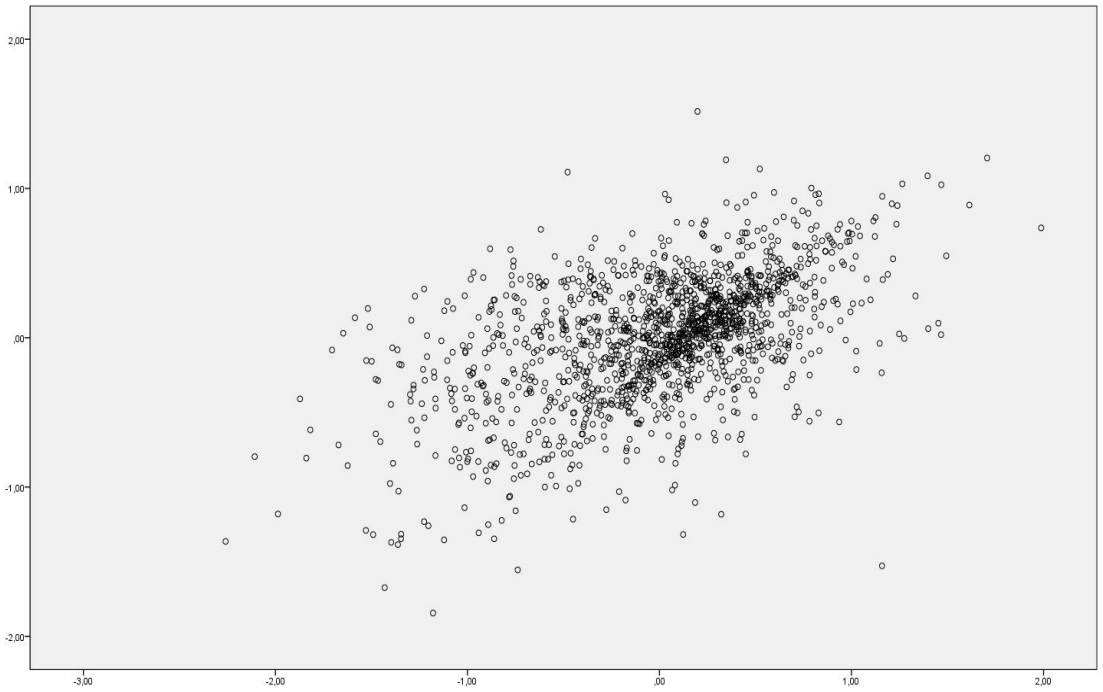

Figure 4.8 Scatterplot of Social Presence

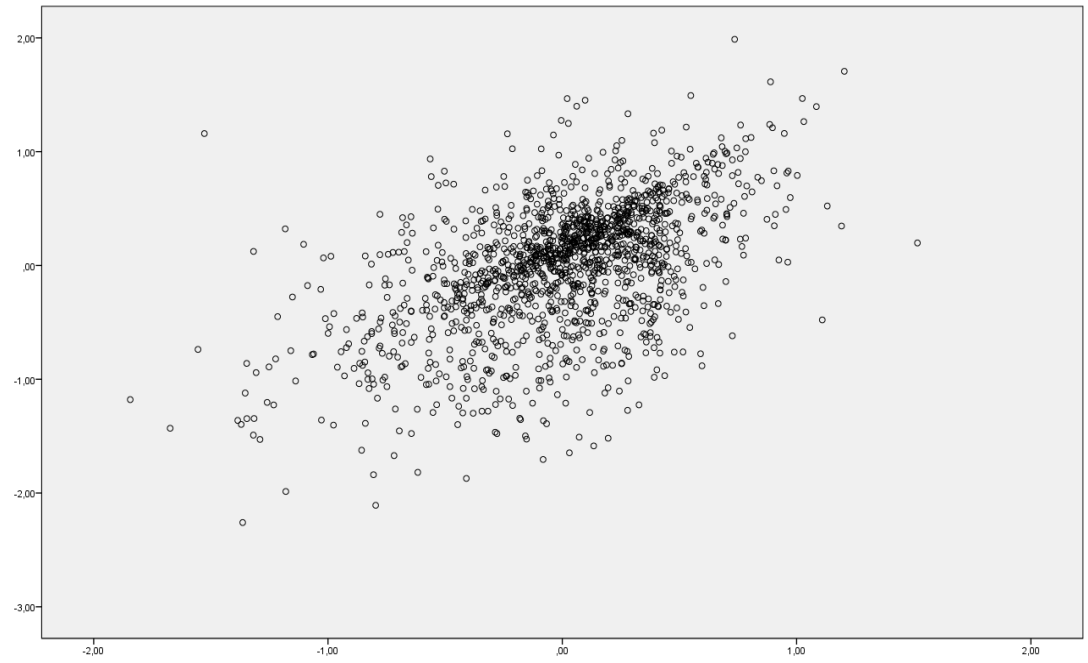

Figure 4.9 Scatterplot of Cognitive Presence

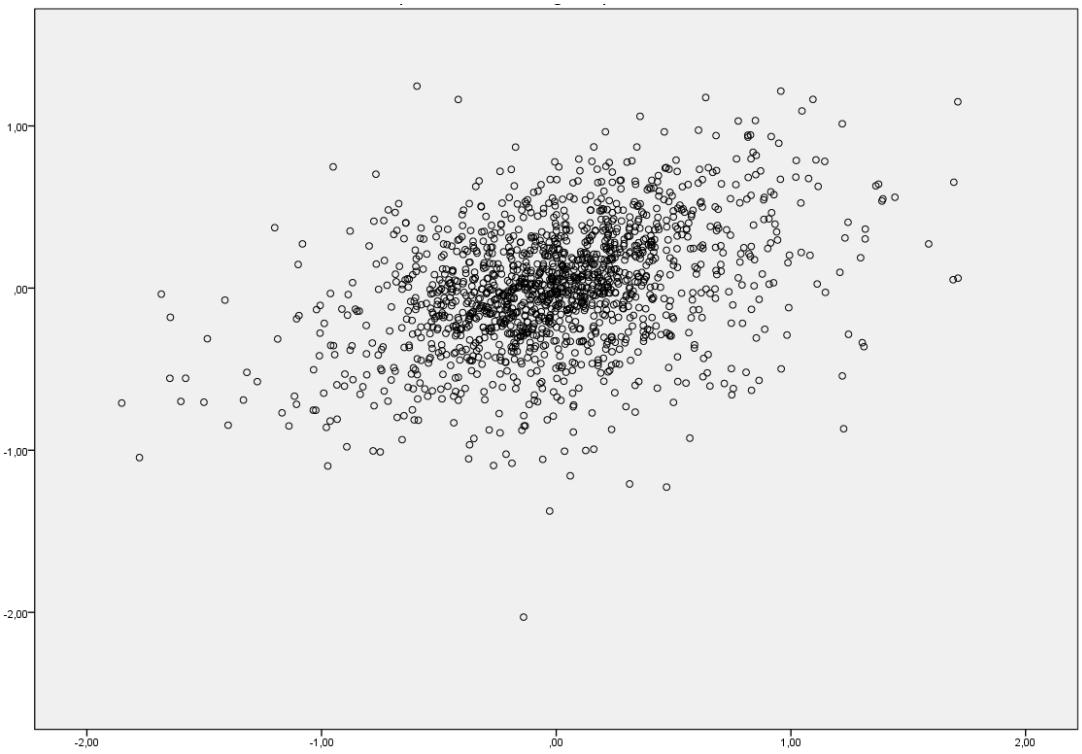

Figure 4.10 Scatterplot of Teaching Presence

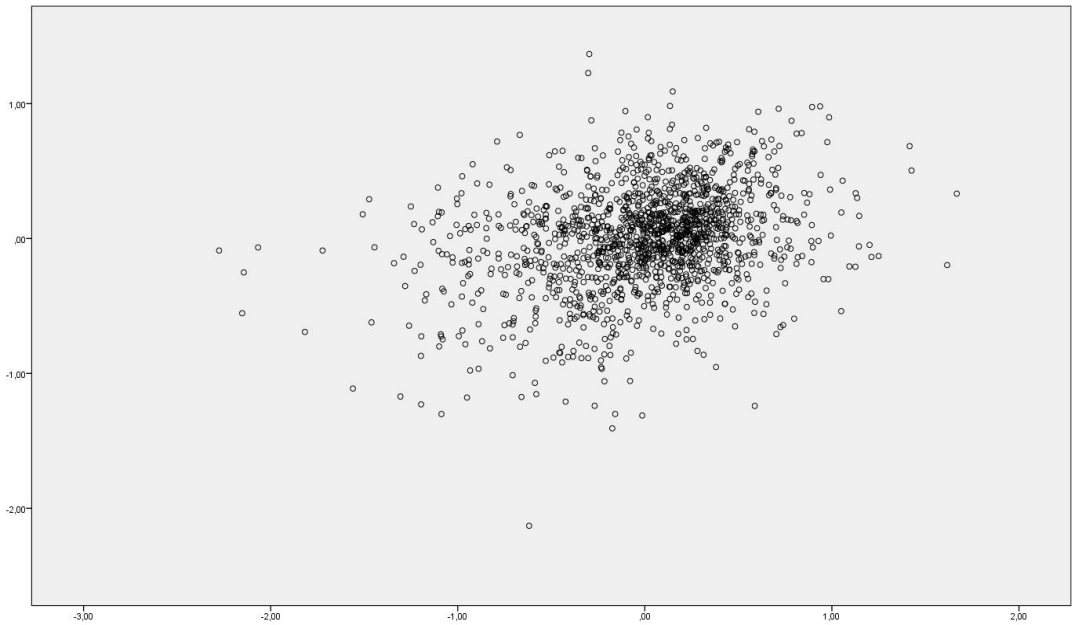

Figure 4.11 Scatterplot of Self-regulation

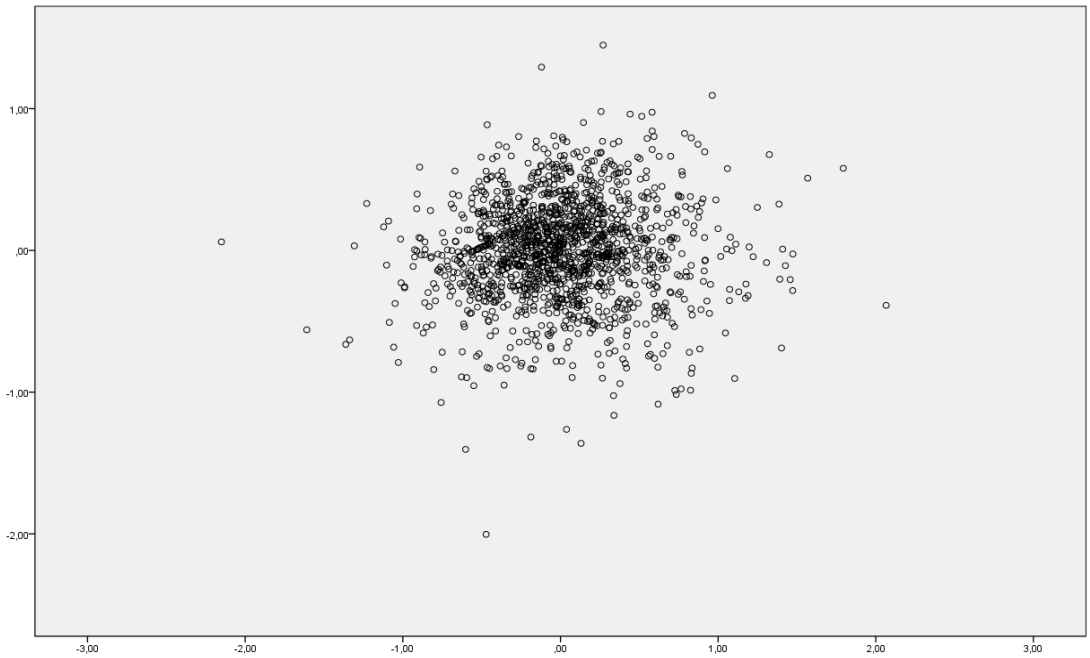

Figure 4.12 Scatterplot of Metacognition

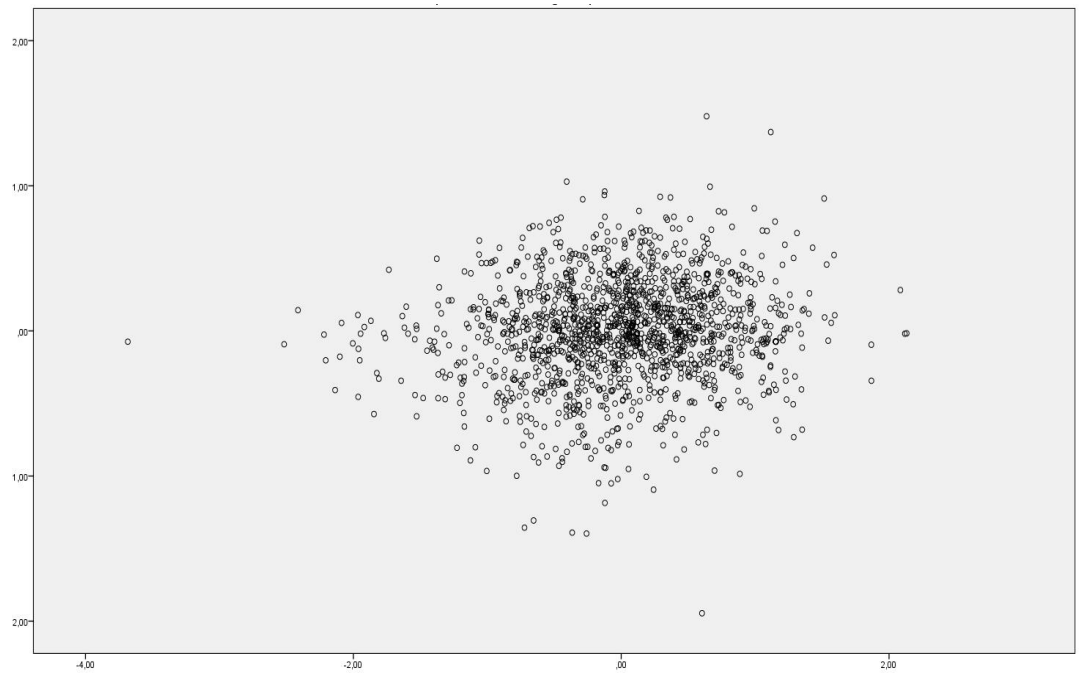

Figure 4.13 Scatterplot of Motivation

Appendix N

Normality of Residuals Assumptions (Histograms)

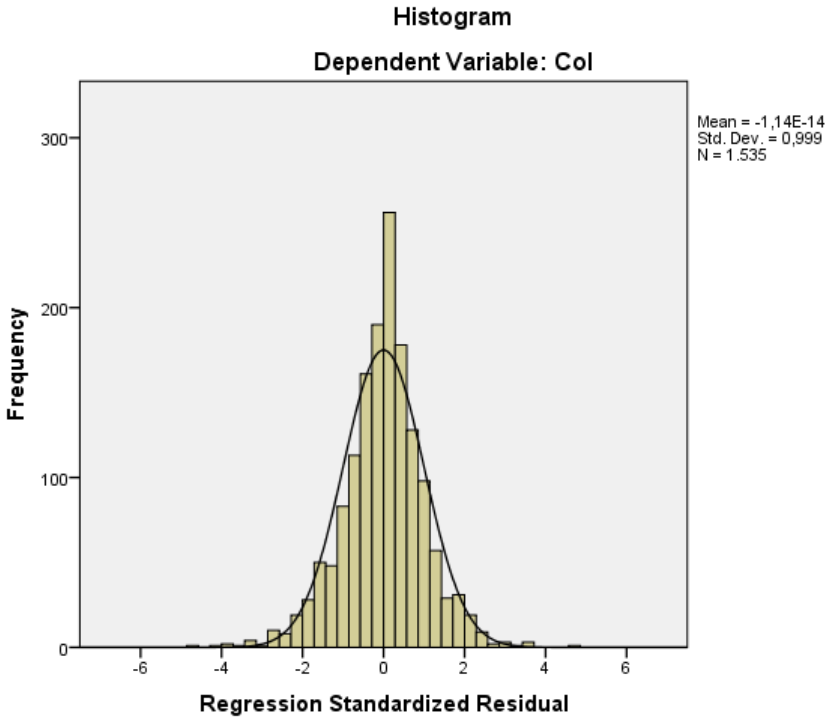

Figure 4.14 Histogram of Regression Standardized Residual of the CoI

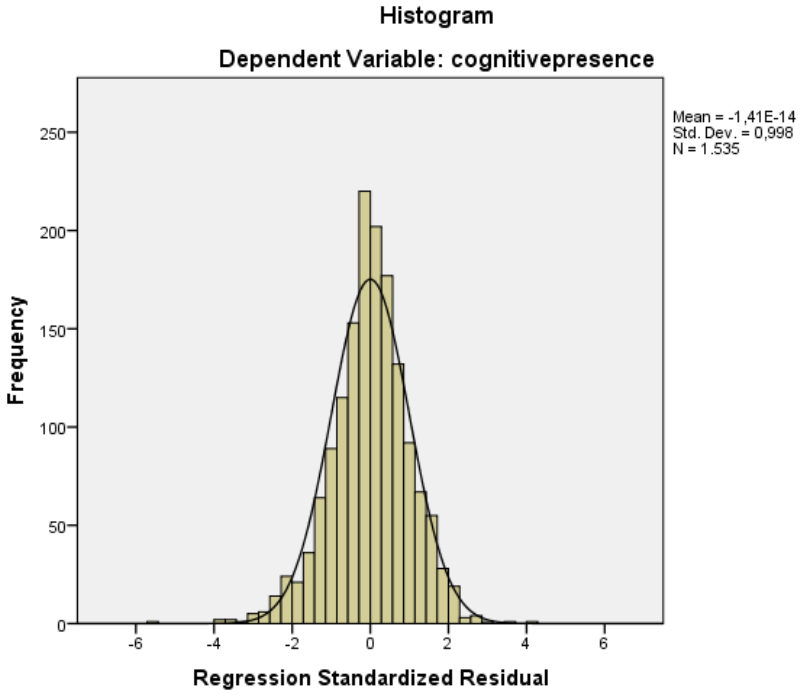

Figure 4.15 Histogram of Regression Standardized Residual of Cognitive Presence

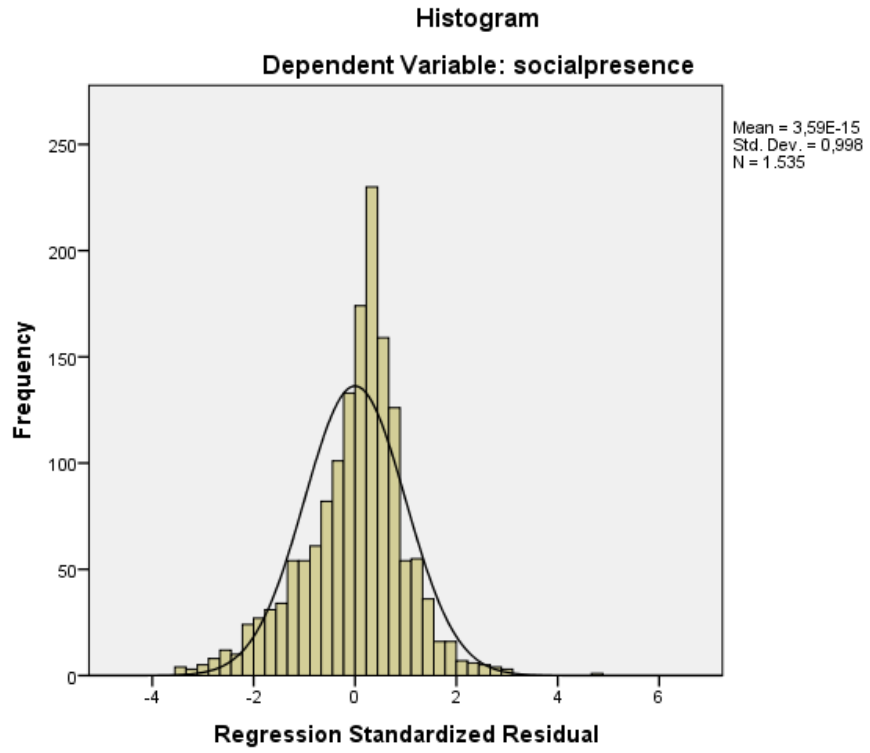

Figure 4.16 Histogram of Regression Standardized Residual of Social Presence

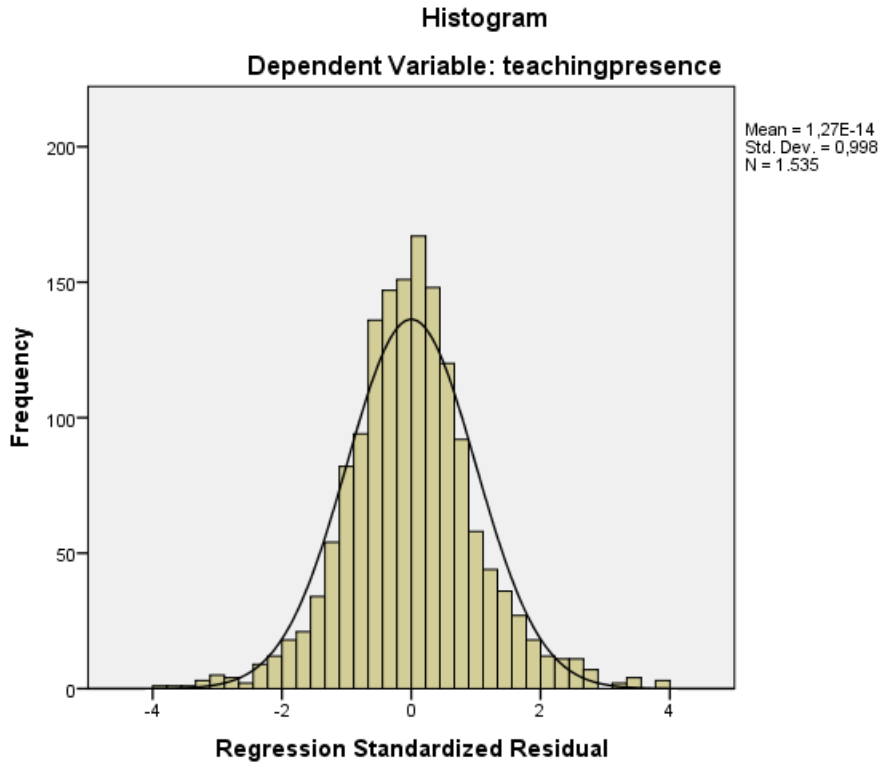

Figure 4.17 Histogram of Regression Standardized Residual of Teaching Presence

Appendix O

Normality of Residuals Assumptions (P-P Plots)

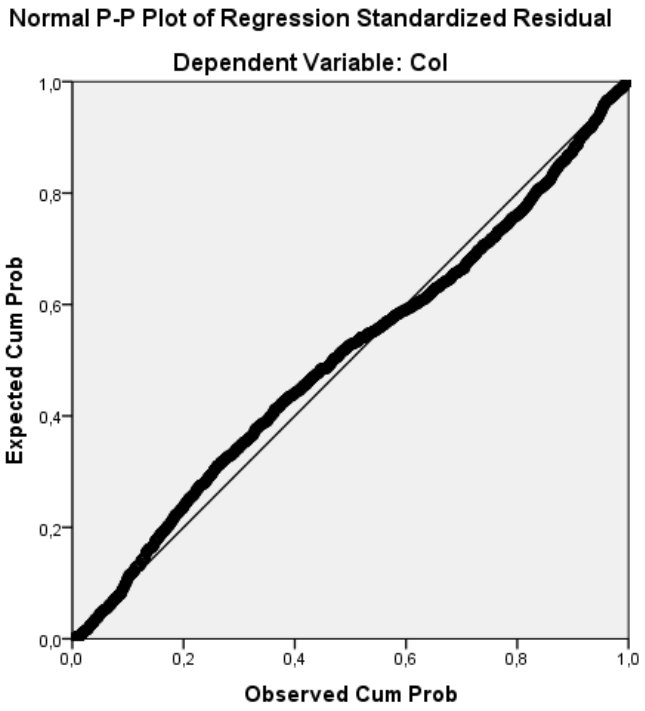

Figure 4.18 Normal P-P Plot of Regression Standardized Residual of the CoI

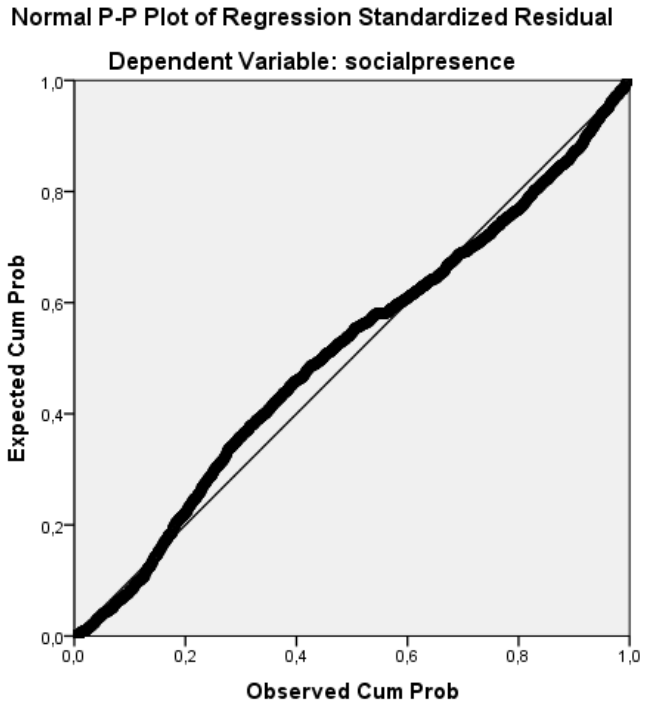

Figure 4.19 Normal P-P Plot of Regression Standardized Residual of the Social Presence

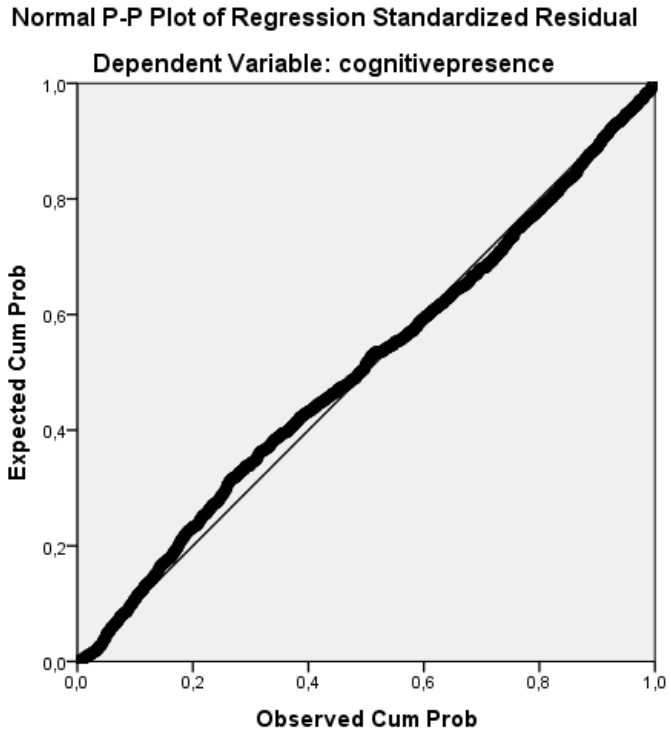

Figure 4.20 Normal P-P Plot of Regression Standardized Residual of the Cognitive Presence

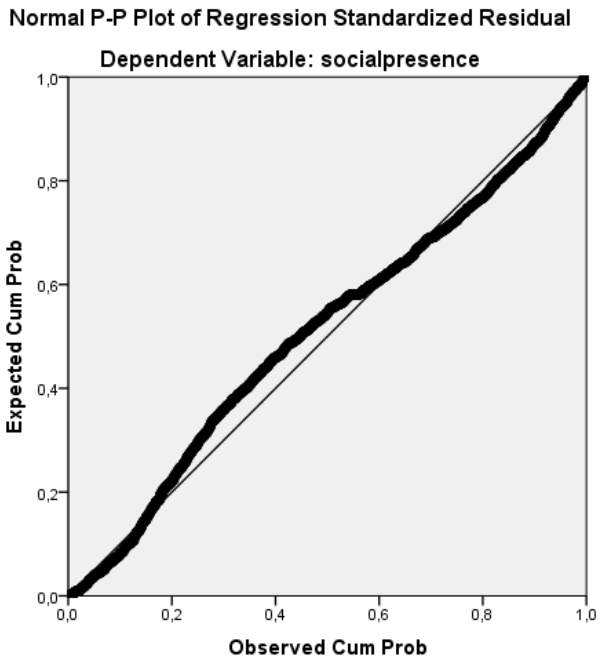

Figure 4.21 Normal P-P Plot of Regression Standardized Residual of the Teaching Presence

Appendix P

Influential Observations Assumptions (Boxplots)

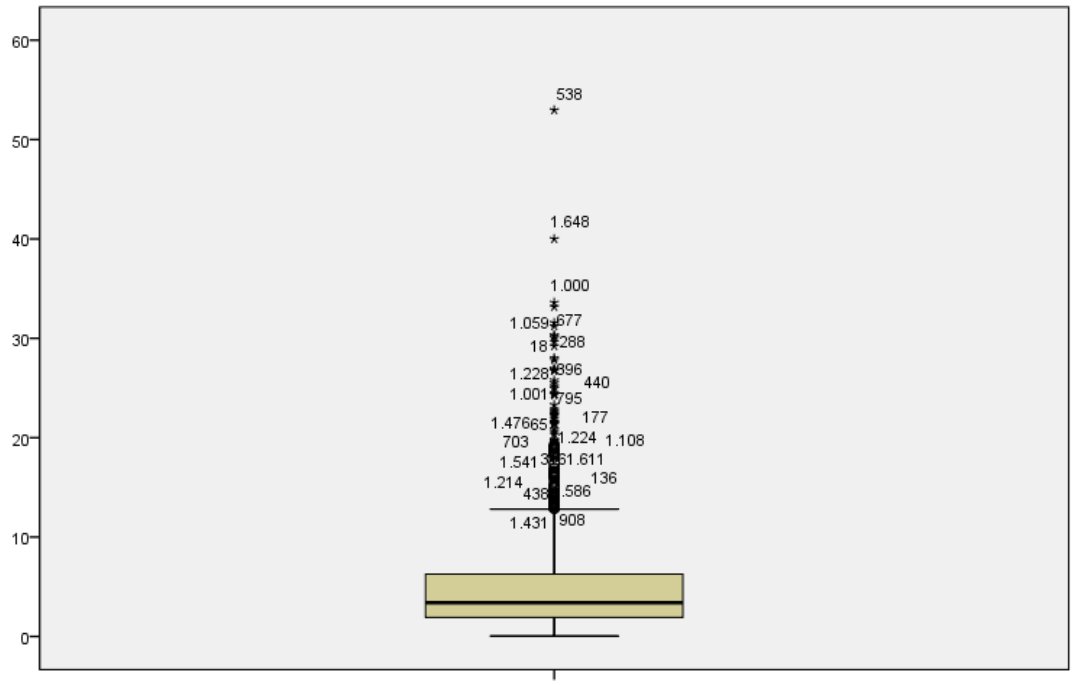

Figure 4.22 Boxplot of Mahalanobis Distance

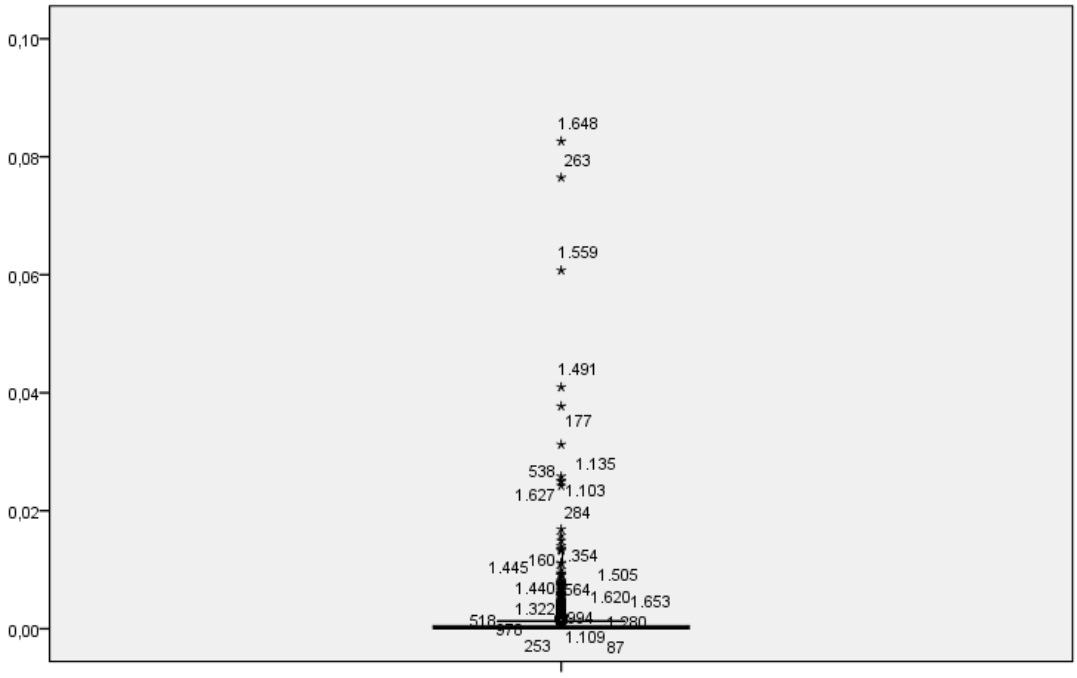

Figure 4.23 Boxplot of Cook's Distance

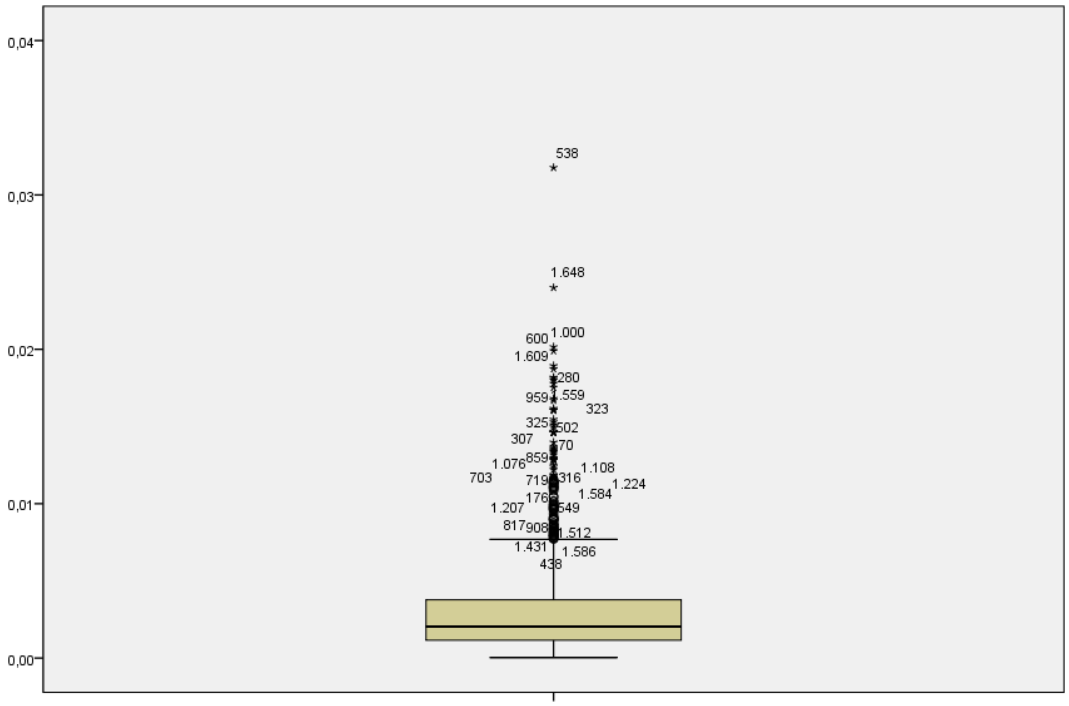

Figure 4.24 Boxplot of Centered Leverage Value

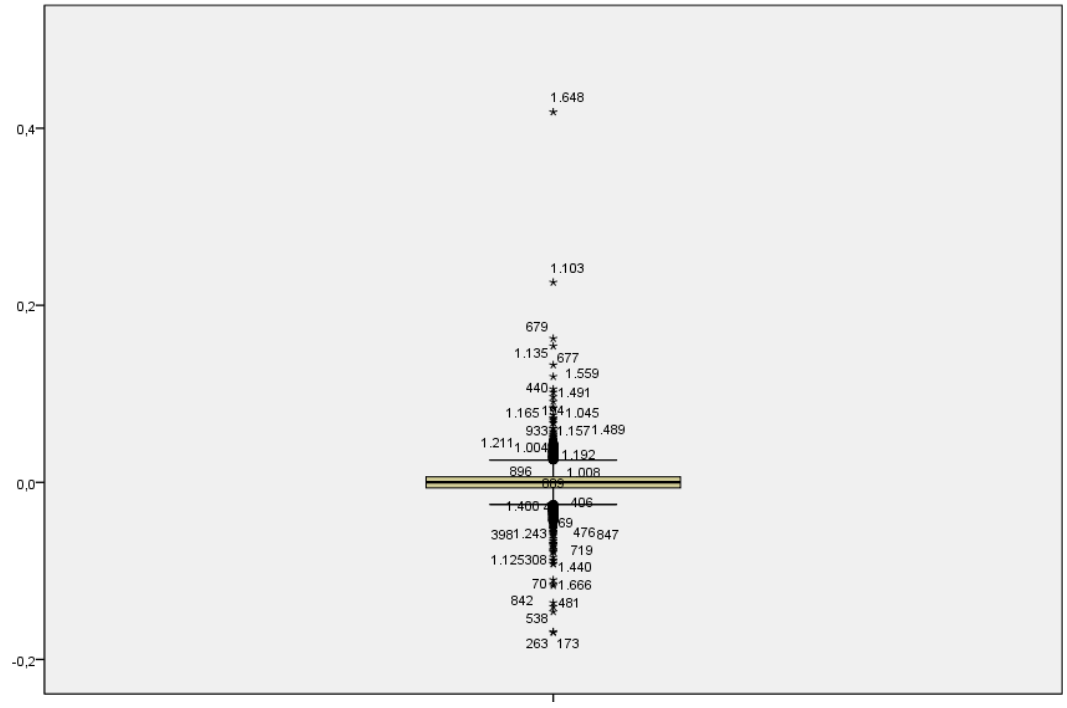

Figure 4.25 Boxplot of Standardized DFBETA Intercept

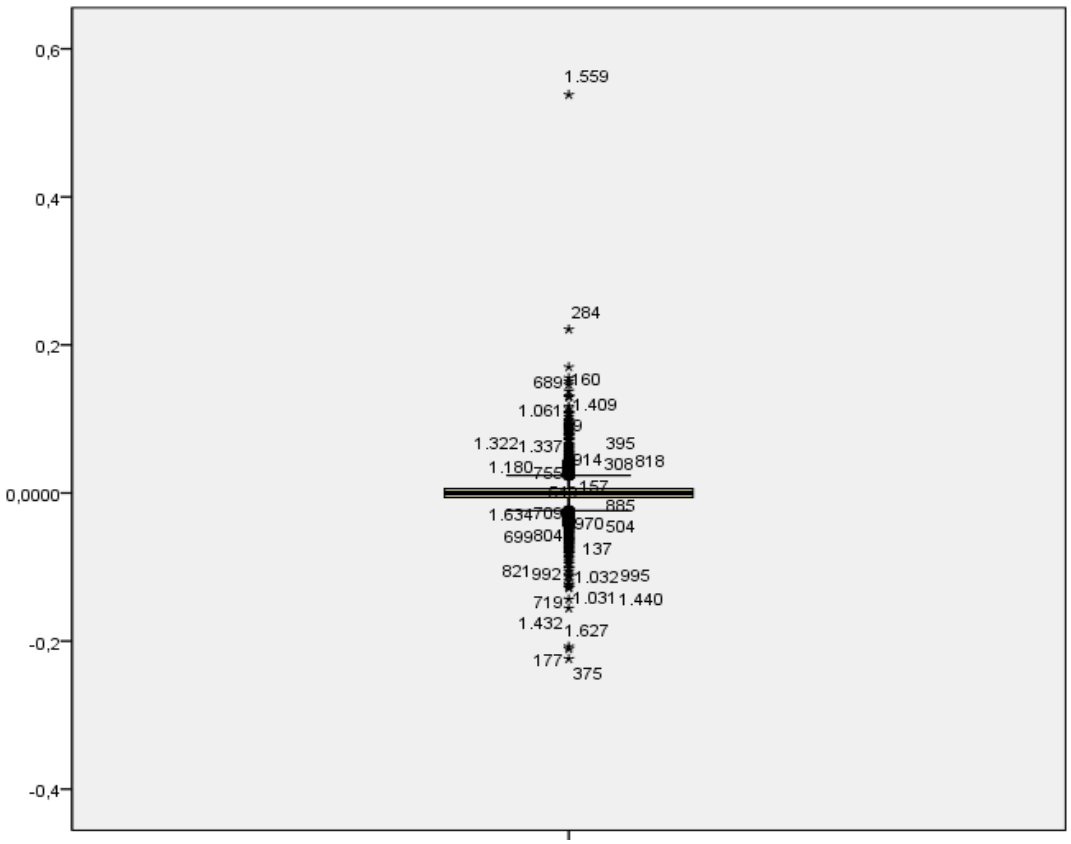

Figure 4.26 Boxplot of Standardized DFBETA Social Presence

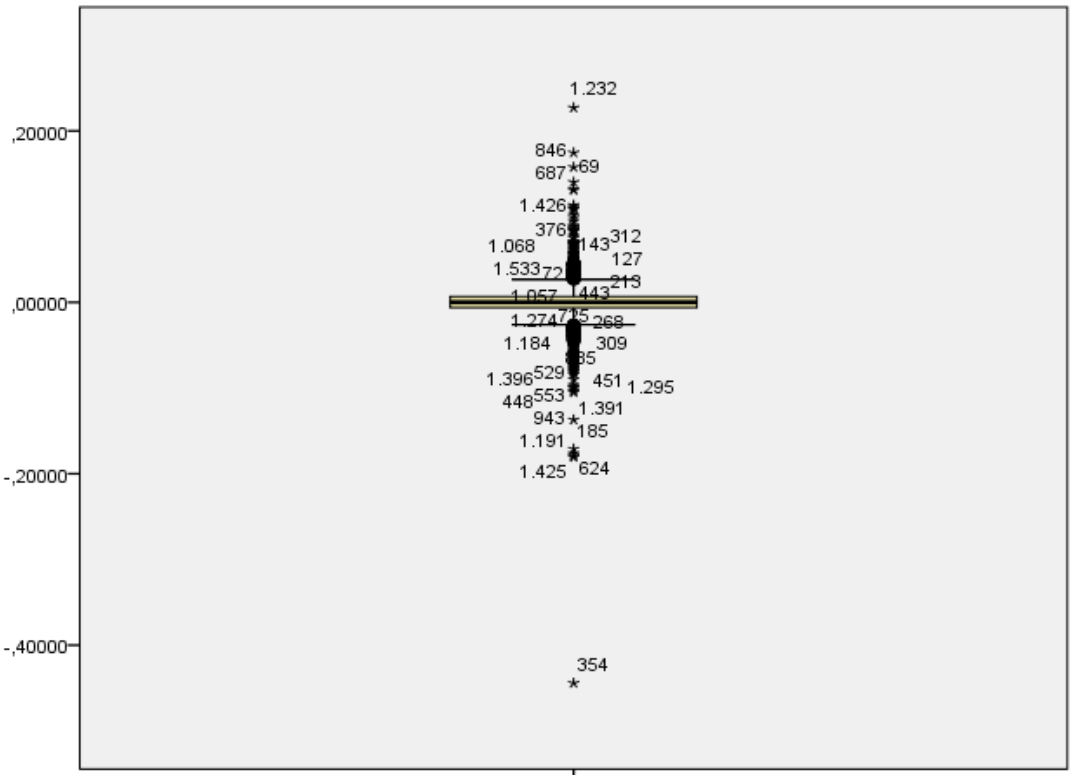

Figure 4.27 Boxplot of Standardized DFBETA Cognitive Presence

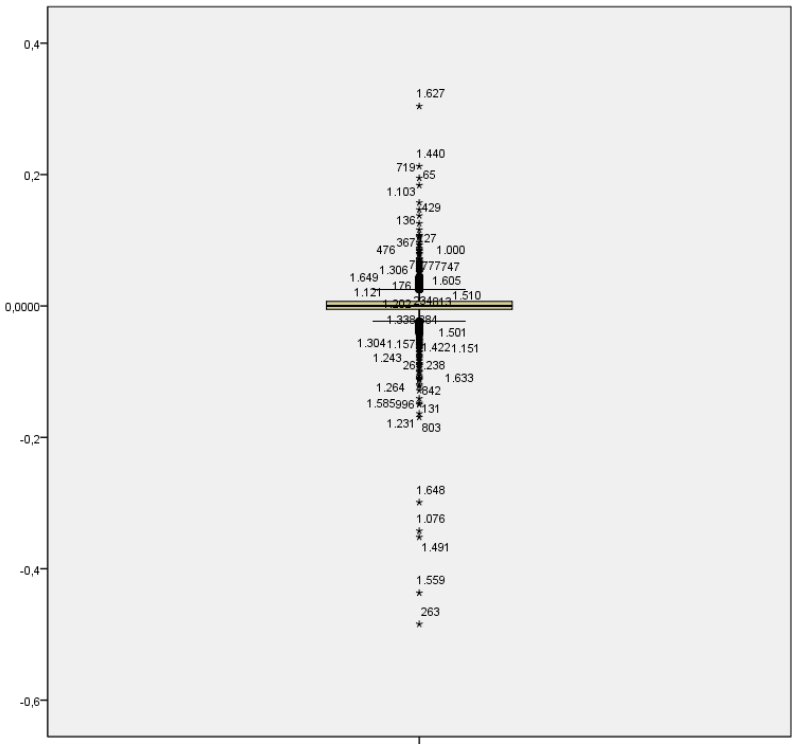

Figure 4.28 Boxplot of Standardized DFBETA Teaching Presence

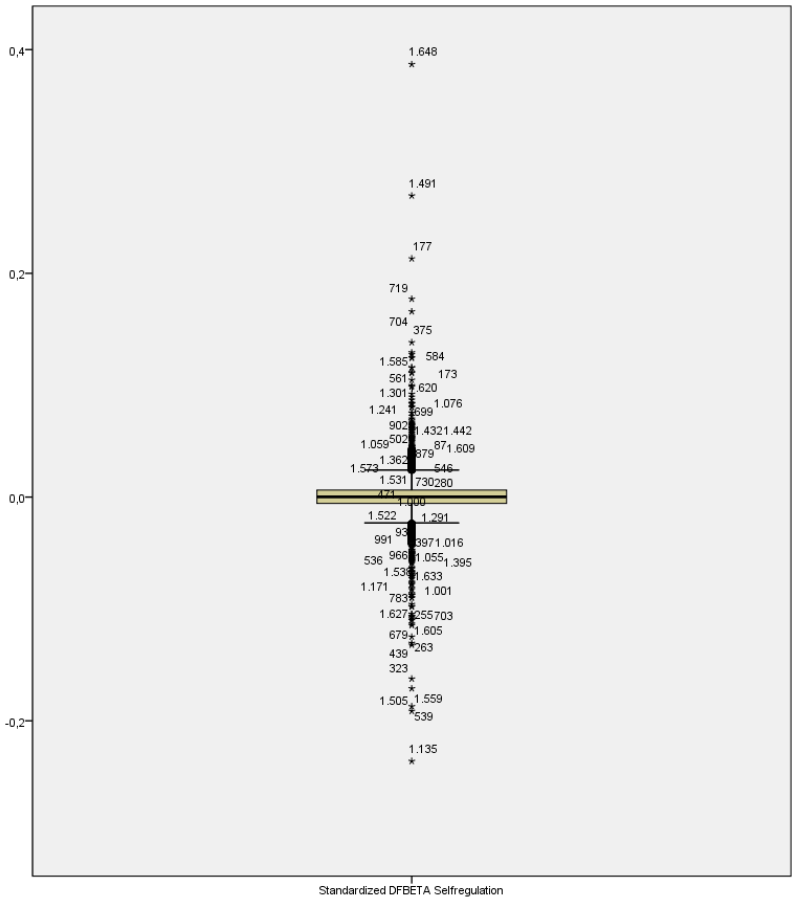

Figure 4.29 Boxplot of Standardized DFBETA Self-regulation

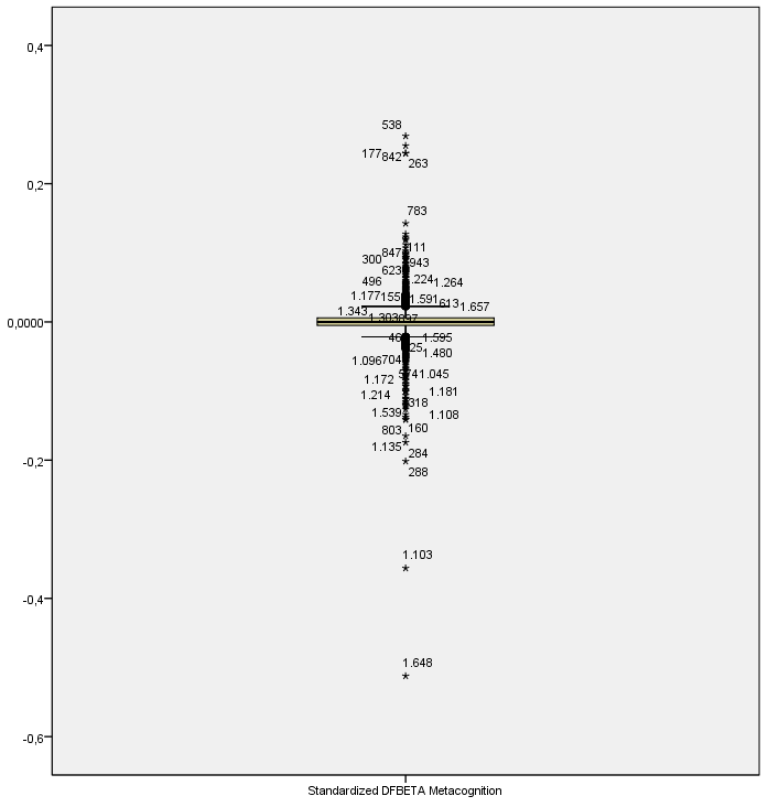

Figure 4.30 Boxplot of Standardized DFBETA Metacognition

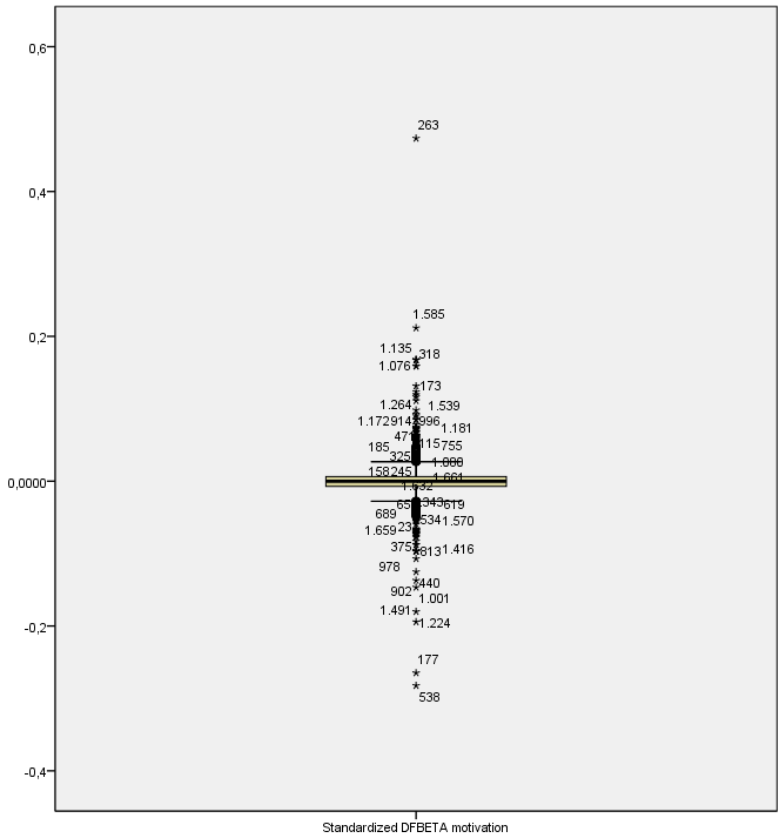

Figure 4.31 Boxplot of Standardized DFBETA Motivation

Appendix R

Turkish Versions of Direct Quotations Used in the Study

Q1. Bilgi ve İletişim Teknolojileri dersi sanal bir ders olmasına rağmen dersi veren hocamız o kadar güzel, canlı anlatıyor ki derste sıkılmak imkânsız. Sorunlarımızla ilgileniyor, anlamadığımız bir konuyu bıkmadan usanmadan tekrar tekrar anlatıyor. Ders o kadar iyi planlanmış ki hiçbir eksik göremiyorum (gülümsüyor)

Q2. Bu ders grubuna çok ait hissediyorum çünkü hocam bir harika. Öğretmenimi uzaktan görüp tanısam da iletişimimiz harika çünkü her sorunumuzda birebir yanıt veren bir hocamız var sağ olsun, onu çok seviyorum.

Q3. Bu derse severek katılıyorum.

Q4. Öğretim üyesinin elinden geleni fazlasıyla yaptığını ve haftalık formlar vererek bize puan verecek yer aradığını çok iyi görebiliyoruz (gülümsüyor)

Q5. …Kelime işlemci programlarda çok iyi olduğumu düşünmüyorum sayfa numaralandırma, grafik ekleme, imla kurallarını düzeltme, tablo ekleme, yazıyı pdf dosyasına çevirme... gibi işlemlerin nasıl yapıldığını bazen unutabiliyorum bunun nedeni ise sürekli bu programları kullanmamaktan kaynaklanmaktadır. Böyle durumlarda ise arkadaşlarıma sorarak ya da YouTube'dan videolarını izleyerek tekrar öğrenmek zorunda kaldığım zamanlar oluyor Bu durum benim için sinir bozucu bir hal alıyor. Bildiğin bir şeyi pratiksizlikten yapamayıp zaman kaybına uğrayabiliyorum daha önceden bildiğim bilgileri çalışmak zorunda kalıyorum Bu zaman kaybı bende kaygıya yol açıyor yanlış yapma korkusu veya işlemin zamanında yetiştirmeme korkusu o an negatif olmama yol açıyor.

Q6. Kendimi çok hâkim hissetmiyorum çünkü yeteri kadar bilgi sahibi olmadığımı düşünüyorum. Kimseyle iletişim kuramıyorum çünkü uzaktan olduğu için kimseye kendimi doğru ifade edebileceğimi düşünmüyorum.

Q7. Açık konuşmak ve doğruyu söylemek gerekirse derse pek fazla katılamadığım için pek bir şey diyemeyeceğim ama bilgisayar ile ilgili yeni şeyler öğrenmek bilmek her zaman hoşuma gitmiş ve hayatımda yardımcı olmuştur (gülümsüyor).

Q8. Hocam siz diyorsanız kesin doğrudur (gülümsüyor)

Q9. İş yoğunluğu nedeniyle katılamasam da tekrarlarını izleyerek bilgi sahibi oluyorum ve kolay anlıyorum, anlatım hazırlıklı yapılıyor belli, hepsi SÜPER! Teşekkürler (dersi veren öğretim üyesinin adı ve soyadı)

Q10. Kendimi sanalda değil gerçek sınıfta gibi hissediyorum.

Q11. Kendimi bu ders grubuna fazlasıyla ait hissediyorum sanki kendi evimdeymiş gibi rahatım. Arkadaşlarımızla ve öğretmenimizle iletişimimiz gayet iyi, her konuda yardım alabiliyorum.

Q12. Ders başladıktan sonra yanlış ve eksikliklerimi fark ettim. Öğrendikçe kendimi bu gruba daha ait hissettim.

Q13. Herkes kendi bildiğinin doğruluğuna inanır. Savunduğumuz düşünceyi kanıtlamamız lazım. O zaman doğru bilgi olur ve herkes sorumluluk aldığının bilincinde olmalı. Mazeret üreterek arkadaşlarım yapsın da bende ortak olurum onlara diye bir düşünceye kapılmamak gerek. Bu şekil herkes üzerine düşen görevi yaparsa emin olun ki güzel, keyifli, sıcak bir sohbet ortamıyla başarılı olunur.

Q14. …Herkes üstüne düşerse sorun olmaz…

Q15. Karşılıklı anlayış ile bunun da üstesinden gelebileceğimize inanıyorum.

Q16. Problem kısmını anlayamadım ben.

Q17. Uzaktan eğitimde nasıl olur ki? Ben bilmiyorum.

Q18. Bu dersi seviyorum çünkü bu ders sayesinde kendimi geliştirip eksiklerimi kapattım. Hocamızın ders planlaması gayet güzel ve mükemmel derecede emeğinize sağlık teşekkür ederim hocam.

Q19. Ders konusunda söylenecek tek söz süper. Hocamızın anlatımı olsun soruları tek tek ve anlaşılır şekilde cevaplandırması olsun çok iyi.

Q20. Benim için gayet verimli oldu bu ders. Bilgisayar hakkında o kadar çok bilmediğim varmış ki hala vardır ama en azından hayatıma geçirebileceğim çok güzel pratik bilgiler edindim sayenizde… Bu ders bilgisayarla olan bağımı daha çok artırdı.

Q21. Hayır, bununla ilgili hala yeterli önlemler alınmış olduğu söyleyemeyiz bugün Bakanlıklar gibi büyük kurumlar bile hackerlara maruz kalmaktadır.

Q22. Hepsi super. Teşekkürler (the instructor's name and surname)

Q23. Bizler ise bunu kendi çabalarımızla önüne geçebiliriz.

Q24. Biz de böyle bir destek veren yerlere yönlendirebiliriz…

Q25. … Öncelikle merhaba Hocam; …

Q26. … Hocam merhaba…

Q27. Teşekkürler hocam. Emeğinize sağlık.

Q28. … Bilgisayarla tanışmam ilk 2006 yılında oldu. Ama internet olmadığı için hiç ilgimi bile çekmiyordu. Daha sonra internet bağlanınca bilgisayarda kayboldum gibiydi. Bilgisayarı kullanmakta biraz geç kalmıştım...

Q29. Zamanla alışınca daha rahat kullandığımı fark ettim ve başka özellikler öğrenmek istedim.

Q30. Bilgisayar kullanmak bir ayrıcalık gibi geliyordu. Kullanırken çok korkarak kullanıyorduk bozulacak diye. Her bir tuşuna itina ile basıyorduk.

Q31. O zaman merak ediyordum ve öğrenme sebebim karıştırmam aslında hem bilgi uğraştıkça merakımı dindirmekti aslında.

Q32. O kadar kişi bilinçli kullanmaya çalışırken bir o kadarımız da bilinçsizce sırf zaman katliamı yapmak için kullanıyor. Ne kadar hayatta olsalar da toplum içine oldukların da bir merhaba demeyi ya da dertleşmeyi unutmaya yüz tutmuşlar. Bu acı bir tablo... Sanal iletişim aracı gün geçtikçe bilinçsizce kullananları içine daha fazla çekmeye başlıyor. Bu bağımlılık insanı bağımlılıktan öte psikolojik hastalıklara kadar götürebiliyor. Önlem aslında insanın içindedir. Bilincini kullanarak ne amaçla bu sanal iletişime girmek istediğini bilse tüm önlemler alınmış olacak. Ama bunu engelleyemeyen kişiler için mesela Amerika'da ki gibi verilen psikolojik tedaviler, biz de böyle bir destek veren yerlere yönlendirebiliriz, sanal iletişimin olumsuzlukları adı altında sempozyumlar, programlar yapılabilir ya da sosyal hayata geçirebilen insanlarla iletişime yönlendiren aktiviteler yapılabilir.

Q33. Öncelikle sürekli kullandığım benzer programdan farkı ne, avantajı ne öncelikle bunları sorgularım. Sonrası kullanan ya da öneren arkadaşlarımdan bilgi alır ya da

kullanım videolarını izlerim. En güzel öğrenme metodu bence kurcalamak deneme sayfalarında uygulama yapmak teorik bilgiden daha etkili oluyor.

Q34. İnternette dolasan her bilgi kesin değildir öncelikle bir siteden ulaştığım bilgiyi en az üç siteden teyit ederim bu da beni tatmin etmezse resmi sitelerde bulabilirsem oralara bakarım o da olmadı bulduğum sitede ulaştığım bilginin kaynağını kütüphane ansiklopedi vb. yerlerden bakarak teyit ederim. Internet sadece hayatta bazı şeylere ulaşmayı kolaylaştırır ama doğruluğu kesin değildir.

Q35. Daha önceden çok zorluklar çekmiştim. Ama bunları aşmak için program hakkında bilgisi olan arkadaşlarımdan, hocalarımdan yardım aldım. Yeterince bilgi sahibi olmadığımı hissettiğim vakitlerde içimde bir eksiklik duydum. Bunu bilen bilgi sahibi olan varsa benimde onlardan bir farkım olmadığını kendime söyleye söyleye bu durum hakkında gerekli bilgiyi öğrenerek ve uygulayarak baş ettim. Çabalamak lazım yani anlayacağınız. Kendine güvenmek her işin ve her başarının anahtarıdır!

Q36. Elektronik ortamlardaki bilgileri korumak mutlaka gereklidir. Bunu ise e-imza vb. güvenlik yolları ile gereksiz kişilerin erişimine kapatmak lazım!

Q37. ...Hiç kimsenin başkasının bilgisine erişmemesi gerekir. Özel hayata müdahale olur bu… Güçlü ve benzersiz bir parola kullanmanız işte bu yüzden çok önemlidir… Bakanlık bunun üzerine yasa tasarısı düzenleyip sunabilir. Güvenlik duvarı daha sağlam hale getirilmeli.

Q38. Bu dersi seviyorum çünkü bu ders sayesinde kendimi geliştirip eksiklerimi kapattım.

Q39. Matematiğin hayatıma kattığı bir olgu; bir problemi çözmek için formülü bilmeli ve yapman gereken işlemleri sıra ile yapmalısın önce çarpma bölme, sonra toplama çıkarma yapılır. Bu sebepledir ki problem çözmek için önce işlem basamaklarını belirlerim hangi işlemi önce yapacağım ise benim için çok önemli, sonra işlem basamaklarını tek tek uygularım… Ve en nihayetinde basamağın zirvesine taşınan nihai ve benim tarafımdan da kabul gören çözüm.

Q40. Uygulamalı olarak anlattığınız için hocam çok memnunum. Bilgisayar ve programlar hakkında o kadar çok eksiğim olduğum anladım. Her derste farklı bir şey öğreniyorum. Bende hemen uygulamaya geçiyorum öğrendiklerimi unutmayım diye. Bence eksikleri yok, ders gayet iyi planlanmış.

Q41. Dersin anlatımı, yönetimi ve içeriği gayet iyi anlaşılır ve güzel gidiyor. Bence dersi veren öğretim üyesi dersi iyi bir şekilde planlamış ve o plan üzerinden devam ettiriyor ders işleyişini.

Q42. Dersi veren öğretim üyesinin ders anlatımı ve derse hâkimiyeti uzaktan eğitim için tam da olması gereken düzeydedir. Dersin konu anlatımlı videoları, sunuları, örneklemeleri göz önünde tutulduğunda planlı bir işleyiş mevcuttur.

Q43. İki kere derse katılabildim ama ders anlatımının akıcı ve basite indirgenmiş anlaşılabilir olduğunu düşünüyorum. Ayrıca her konuda bilgi paylaşmaya ve yardımcı olmaya açık. Her ne kadar çalıştığım için derslere giremesem de tartışmalara dâhil olmaya çalışıyorum. Bu dersten keyif almamdan kaynaklanıyor. Özellikle tartışma konularının ders çok katkısı olduğunu düşünüyorum derslere giremememe rağmen dersten kopmama mı sağlıyor. Haberdar olabiliyorum ve yeni tartışma var mı diye bakma yükümlülüğü hissediyorum. İlginize teşekkür ederim. Sınıfa hâkimsiniz uzaktan eğitim olmasına rağmen. Facebook grubundan da takip ediyorum. Bu durum bile güncel durumu takip etmemizi sağlıyor.

Q44. Ders anlatım biçiminizi seviyorum yalın bir anlatımınız var. Konuları anlattıkça daha çok merakımı cezbediyor dersiniz ve zevk alarak dinliyorum. Tartışma konularını ile fikir alış verişi yapabiliyoruz. Siz bizlere bir nevi beyin jimnastiği yaptırıyorsunuz. Kendimi örgün okuyormuş gibi hissediyorum.

Q45. Bilgi ve İletişim Teknolojileri dersi tamamen sanal bir ders olmasına rağmen dersi veren öğretim üyesi yani hocamız o kadar güzel, canlı anlatıyor ki derste sıkılmak imkânsız.

Q46. Dersin gelmesini dört gözle bekliyorum. Ders o kadar akıcı ve güzel geçiyor ki bırakın sıkılmayı bazı sorulara vakit bile kalmıyor. Bu dersi seviyorum çünkü bu ders sayesinde kendimi geliştirip eksiklerimi kapattım. Hocamızın ders planlaması gayet güzel ve mükemmel derecede emeğinize sağlık teşekkür ederim hocam.

Q47. Hocamız dersi çok detaylı ve benim anlayabileceğim şekilde anlatıyor. Bu da benim motivasyonumu üst seviyeye taşıyor. Soru sorarken çekinmiyorum bana o güveni veriyor. Anlamadığımız yerleri tekrar tekrar anlatıyor.

Q48. Hocamız konuya çok hâkim bence. Benim gibi bilgisayar konusunda zayıf biri bile artık rahatça öğretilen yerleri yapabiliyorsa başarılı olduğunu düşünüyorum.

Q49. Uygulamaya yönelik bir ders ve hocamız konulara çok hakım olduğu için verimli oluyor. Örnekler yaparak konulara daha fazla hâkim olmamızı sağlıyor.

Q50. Derslerimizde öğretmenimizin samimi ve içten anlatımıyla hiç sıkılmadan rahat bir ders işliyoruz.

Q51. Yararlı oluyor evet, şöyle hani bilmediğimiz şeyleri de hani hem beynimizi çalıştırıyoruz kendimize göre yorum yapıyoruz fikirlerimizi söylüyoruz hem başka arkadaşların fikirlerini de öğreniyoruz onların yorumunu okuyunca hem arkadaşları tanıyoruz hem kendimizi ifade ediyoruz bence iyi yani memnunum ben.

Q52. Ben bu tartışmaları sevdim evet, çünkü diğer derslerde yok burada yeni, atıyorum mesela gruptaki arkadaşlarımızla bit dersinde tartışma açıldı diyoruz hemen görüp cevabımızı yazıyoruz; iyi oluyor. Diğer derslerde öyle olmuyor ders programı var derse girip hemen geri çıkıyoruz ama bit dersinde en azından tartışma formu yayınlanıyor belli zamanlarda, giriyoruz cevap yazıyoruz daha iyi ve sağlıklı oluyor bence.

Q53. Ama bu dersteki ödev de tartışma forumları da çok iyi bence, hatta net olarak söyleyebilirim aktif ve içinde bulunabildiğim tek ders.

Q54. Ders sırasında biz de arkadaşlarla birbirimize sorular soruyoruz ya da hocamıza. Ayrıca Facebook grubu var, WhatsApp grubu var, duyurular buradan yapılıyor böylece hemen öğreniyoruz, iyi oluyor.

Q55. Mesela Facebook'tan oluyor genelde bizim iletişimlerimiz. Hani mesela arkadaşlarımızın tartışma forumlarındaki iletileri ve Facebook'taki ileti ve yorumları aydınlatıyor bizi, iyi oluyor, iletişimde kopukluk olmuyor böylece. Birkaç soru olduğunda hemen Facebook'a yazıyoruz bazen de Whatsapp'a, cevabı hemen geliyor. Arkadaşlar genelde cevaplıyorlar sağ olsunlar. Hocamız da genelde yardımcı oluyor.

Q56. Yani ıı iletişimimiz gayet güzel Facebook ve Whatsapp sayesinde tabii ki. Aklına soru takılan biri hemen oraya yazıyor, ıı diğerleri de hemen cevaplıyor. Dönem başında beri yani sorup da cevabını alamadığım bir şey olmadı, iletişimim de kopukluk olmadı hiç.

Q57. Mesela ödevde ben pek bilmiyordum, arkadaşlarıma sordum yardım ettiler öğrettiler bana böylece öğrendim ve ödevimi yapabildim, sağ olsunlar hiç sınıftan ayrı

hissetmedim kendimi, hep sıcak davrandılar benim biraz da yaşım büyük ama abla diyor bazıları bana (gülümsüyor).

Q58. Sınıfta bu bilgisayar dersi konularından çok iyi anlayan arkadaşlar var, az bilenler var, ya da hiç anlamayan arkadaşlar. Ama çok iyi anlayanlar mesela anlamayanlara çok iyi yardımcı oldular, anlamadığı konularda sorularına cevap verdiler, herkes gayet sıcak ve samimiydi ve sorunlarımızı kolayca çözdük en azından o şekilde…

Q59. Mesela 15 günde bir yüz yüze ders olsa bizler için iyi olurdu. Ayda bir filan da olurdu aslında. Yani dersten kopmamak için ve sürekli katılmak ilgilenmek için bu iyi olurdu.

Q60. Yüz yüze eğitimi daha çok seviyorum, çünkü dersler yüz yüze olsa daha kolay öğrenebilirim, tüm sorularımı sorabilirim; ama uzakta olanlar için çok külfetli olur bu.

Q61. Hem çalışıyorum hem hastane işleriyle uğraşıyorum pek derse giremiyorum, vakit kalmıyor.

Q62. Uzaktan eğitime gelen çoğu kişi genelde çalışıyor, ben dâhil, bu yüzden pek zamanı yok. Ben mesela sabah 8'den akşam 7'ye kadar çalışıyorum. Ödev verildiği zaman ve teslim tarihinde işimle ilgili bir konferanstaydım, ödevimi otelde yapmaya çalıştım o sırada. Yani dolayısıyla öğrenci iken aynı zamanda çalışan kişiler olarak pek vaktimiz yok.

Q63. Diğer arkadaşlarla ve dersi veren sizinle pek iletişime giremiyorum çünkü evliyim 7.sınıfa giden bir oğlum ve 3.sınıfa giden bir kızım var onların dersleri benim derslerim ve gün içindeki işlerin yoğunluğu nedeniyle olduğunu düşünüyorum.

Q64. Ev hanımıyım, çocuklarım var 3 tane, bunlarla birlikte dersler ödevler konuya çalış vakit yetmiyor, aslında zaman olsa kendimiz çalışsak yeterince olur.

Q65. Yararlı oluyor evet, şöyle hani bilmediğimiz şeyleri de hani hem beynimizi çalıştırıyoruz kendimize göre yorum yapıyoruz fikirlerimizi söylüyoruz hem başka arkadaşların fikirlerini de öğreniyoruz onların yorumunu okuyunca hem arkadaşları tanıyoruz hem kendimizi ifade ediyoruz bence iyi yani memnunum ben.

Q66. Bence tartışma formları yararlı ya. En azından derse daha çok katılmamızı sağlıyor, daha çok araştırma yapıyoruz filan.

Q67. Arkadaşlarla birbirimize çok destek olduk, sıkıntı yaşadığımız yerlerde resmini çekip birbirimize gönderdik (gülümsüyor), konuyu ya da ödevi birbirimizle tartıştık ve böylece konunun farklı yönlerini anlamış olduk.

Q68. Arkadaşlarımızla yardımlaşma konusunda iyiydik, arkadaşlarımın çok iyiliği dokundu bana; yen şeyler ya da konunu yeni boyutlarını filan öğrenmiş oldum onlardan.

Q69. Günlük hayatımda bu derste öğrendiğim şeyleri kullanıyorum, yani tabii ki çok şey kattı bana. Çünkü ilgi çekici konular var. Artık yaşamımızda herkes bilgisayar kullanıyor sanırım ve bu derste günlük hayatta karşımıza çıkacak şeyleri görüyoruz. Hiç bilmediğim yeni bir sürü şey öğrendim, yanlış bildiklerimi düzelttim, vs.

Q70. Benim açımdan çok etkili oldu. Mesela ben bu dersteki programları yeni kullanmaya başladım. Eskiden bu kadar bilmiyordum, ama bu dersten sonra bayağı öğrendim, normal günlük hayatta da işime yaradı bunlar. Şimdi yeni programları öğrenmeye çalışıyorum.

Q71. Tabi ki! Kesinlikle yani çok şey öğrendim bu derste, bu da iyi oldu tabii; çünkü konular günlük hayatta zaten ihtiyaç duyacağımız türden.

Q72. Hocamızın hazzı, onun bizim için sürekli bir şeyler yapması, motive etmesi…

Q73. Ders içeriği ilgi çekici aslında ama bazen öyle olmayabiliyor ya sıkılıyorum filan. Ama yani şöyle ki benim açımdan başarılı olmamda en önemli şey hocamızın ilgisi, motive edişi falan bunlardı.

Q74. Yani mesela en son ki ödev de bireyseldi, ben çok zorlandım açıkçası. Hatta tam olarak yapamadım da. Öyle olunca ben de eşime gönderdim, o da yapamamış, işyerinde arkadaşları da bakmışlar hatta onlar yapmış.

Q75. Ödevi yaparken çok zorladım, zaten tam olarak yapamadım da. Ben zaten pek bilmiyorum bilgisayarı. Yeni başladım kullanmaya, bu ders olunca bir bilgisayar aldım işte. Önceden pek bilmediğim için yani benim açımdan kötü oldu bu, zor oluyor.

Q76. Ders içeriği hani Word ve Excel işleniyor bu aralar. Hani bence daha farklı konular olsa daha iyi olur. Mesela, programlama gibi.

Q77. Mesela yani şey yapılabilir, daha fazla uygulama. Örneğin, işte bazı şeylerin kısa yolları, daha çok örnek filan. Ben mesela hastaneye çalışıyorum ve bazı şeylerin kısa yollarına çok ihtiyaç duyuyorum çalışırken, ama bulamıyorum.

Q78. Hocamla benim bir sıkıntım yok hani. Gayet güzel gidiyor, hocamız gayet anlayışlı, samimi ve hoşgörülü biri.

Q79. Hocamız gayet anlayışlı birisi. Yakın, samimi, ders hakkındaki sorunlarımızı dinleyip anlayan çözüm üreten birisi, ne zaman bir sorunumuz olsa zamanında ve yeteri kadar bildirim verdi açıklama yaptı.

Q80. Bildiğim kadarıyla söyleyeyim, Hoca Facebook grubu açtı ve zaten kendisi dersiyle çok ilgili. Mesela bir şey olduğunda, ödev verse ya da tartışma konusu açtığında veya bizim için önemli olan bir şey olsa falan direk Facebook grubundan bildiriyor. Özelden atılan mesajlara da cevap veriyor.

Q81. Hocamızın dersini dinleyerek uygulama yaparak tekrar ederek yeni bilgiler edindim, öneri konusunda da tartışma formu veya ödev vererek ve bunlara puan vermesi ve sınavlarımızdan aldığımız notlara katkı sağlamasını devam ettirmesini istiyorum.

Q82. Ders her ne kadar kafa karıştırıcı olsa da öğretim üyesinin elinden geleni fazlasıyla yaptığını ve haftalık formlar vererek bize puan verecek yer aradığını çok iyi görebiliyoruz (gülümsüyor)

Q83. Ders aldığımız öğretim üyemiz gayet akıcı ve sade anlatımıyla her zaman gerek forum, gerek sanal sınıf ve gerekse sosyal paylaşım sitelerinde ders hakkında önemli bilgileri veriyor, her zaman destek sağlıyor. Sorunlara çözüm üretmemiz için bizi teşvik ediyor. Öğretim tarzını yeterli buluyorum. Gayet iyi bir ders planı yapılmış ve konular akıcı şekilde ilerliyor, tamamlayıcı nitelikte.

Q84. Hocamız Allah razı olsun çok iyi bir hoca, ne sorsak hemen anlatıyor ya da anlamayınca bıkmadan usanmadan anlatıyor tekrar tekrar.

Q85. Dersi anlatan öğretim üyesi sabırlı fazlasıyla. Tekrar tekrar anlamadığımızı anlatıyor.

Q86. Ders anlatan öğretim üyesinden memnunum çünkü ders anlatma şekli anlaşılır ve her şeyi uygulamalı olarak gösteriyor anlamadığımız her konu hakkında tekrar edip yardımcı oluyor gerektiği yerde geriye dönüp tekrar anlatıyor.

Q87. Sorunlarımızla ilgileniyor, anlamadığımız bir konuyu bıkmadan usanmadan tekrar tekrar anlatıyor.

Q88. Mesela hocamızın hem ders anlatımı hem sohbeti gayet güzel ve anlaşılır, hiç bilmeyenlerin bile anlayacağı gibi anlatıyor basit.

Q89. Dersi veren öğretim üyesinin anlatımından memnunum. Anlayabileceğim şekilde sade ve samimi bir anlatım tarzı var.

Q90. Hocamızın hoşgörüsü ve dersin işleniş şekli güzel.

Q91. Ders veren (öğretim üyesinin adı soyadı) öğretmenimiz ders anlatımı gayet güzel yalın bir dille anlatım içerisindedir.

Q92. Endişelerim vardı evet tabii ki. Çünkü hani yazılıdan ziyade, görmem tanımam gereken birçok araç gereç vardı derste ve yani bu yüzden kaygılıydım. Zorluk çekebileceğimi düşündüm.

Q93. Iım aslında dönem başında değil de derse başladıktan sonra endişe duymaya başladım. Şimdi bu dersin başlamasıyla bilgisayarda ne kadar eksik olduğumuzu görünce insan endişe ediyor. İşte uzaktan eğitim olduğu için, uygulamalı bir ders zaten bir de, o yüzden endişelerim çok aslında.

Q94. Sadece ödevle ilgili benim sıkıntım oldu ilk notum düşük geldi. Hoca hemen herkesin aynı yaptığını zannedip 60 vermişti ama aslında kendim yapmıştım bu beni üzdü çok yoğun… Bir önyargıyla yaklaşmış hoca ödeve. Ama uzaktan eğitime gelen çoğu kişi genelde çalışıyor zamanı pek yok bu yüzden geliyoruz uzaktan eğitime ben dâhil. Ben mesela sabah 8 akşam 7 çalışıyorum ödev döneminde kongredeydim otelde yaptım ödevimi. Kendim yaptım ama buna rağmen düşük not aldım çok önemli değil ama direk kopya gibi değerlendirilmesi çok üzücü oldu.

Q95. İyi bir şey bekliyordum ama böyle oldu işte. Ama başkasına bir bölümünü başka arkadaşımdan almıştım ödevin, o yüzden notuma itiraz edemedim tabii, hoca daha da otumu düşürür diye.

Q96. Hocamızın notlandırması ya da bu tavrı, açık konuşmak gerekirse bana göre çok adil davrandı ve gerektiği şekilde not verdi. Niye diye sorarsanız, mesela ben ödevimi kendim yaptım ama günlerce uğraştım yapmak için. Ama mesela bazıları birilerinden almış tamamını ya da bir bölümünü, sonra onu değiştirip teslim etmiş öylece. Hoca da fark etmiş tabii ve onların notunu düşürmüş, ama açıklamasını da yapmış tabii. Ben 100 aldım, ama hak ederek aldım.

Q97. Bence daha iyi olurdu çünkü öğrenmem gereken çok şey var ve bunu yüz yüze hocaya daha rahat sorabilirdim burada belirli sure var hep ben soramam ya arkadaşlarım da var yüz yüze olsa ders çıkışı hocayla konuşabilirim. Burada en fazla mesaj atarım ama derdimi anlatamam ki o kadar, bir insanın kendini yüz yüze ifade etmesi var bir de mesajda.

Q98. Arada sırada en azından yüz yüze dersler olsa çok farklı olurdu kesinlikle, daha da konuya hâkim olurdum ayrıca yani böylece motivasyonum ve isteğim de artardı hem, çünkü evde o kadar verimli olmuyor. Bir dosyayı açıyorum uygulamaya çalışıyorum ama dikkat ister istemez dağılıyor.

Q99. İyi olurdu aslında yüz yüze ders olsa. Fakat geliş gidişler biraz sorun olabilir; uzaktan eğitim olduğu için herkes gelemeyebilir.

Q100. Sistemin sorunları yüzünden ara ara koptuğum bir ders. Sistem sorunları formların karışıklığı, mesajların gelmemesi ve ders notları için bile birçok defa denemelerle sistemde kalma çabası. Ders videoları izlerken donuyor. Kopma sorunları oluyor... Ama bunun yanında daha da önemli sorun eski güncellenmemiş ve sorunlu karma karmaşık bir sistem, ders programına bakabilirsiniz bende olan hala bazı dersler yer almamakta ya da ders programı diye yayınlanan dersler saatinde yapılmamakta.

Q101. …Sitenin güncellenmesi, eski verilerin silinmesi, Türkçe olan bir sitede yabancı yerlerin kaldırılması gerekmektedir. Form ya da mesaj tek bir kanaldan iletişim sağlanması hem daha sağlıklı bilginin daha çok kişiye ulaşmasını hem de güncel olarak bir ağ kurulmasını sağlayacaktır. Daha sade daha eğitim portalı formatı sağlanmalıdır…

Q102. Grup ödevleri diğer arkadaşlarla birlikte çalışarak konuyu daha iyi anlamak için aslında iyi olabilir.

Q103. Grup aktivitelerine katılmak kaynaşmak hem sınıftakileri tanıyıp daha samimi olmak açısından iyi olabilir, okulda sonrada kurulacak dostluklar açısından da önemlidir.

Q104. Ders kapsamında grup aktiviteleri yapılması bence zor çünkü çoğumuz aynı anda derse çevrimiçi katılamıyor ya da bazısı daha çok bilgi araştırıyor, uğraş veriyor bazısı hiçbir şey yapmadan hazıra konuyor.

Q105. Grup aktiviteleri güzel olurdu ancak çalışan kişiler çoğunlukta olduğu için zor olacağını düşünüyorum. Herkesin uygun zamanı birbirinden farklı olabilir.

Q106. Grup aktiviteleri yararlı olabilir fakat bunu tam anlamıyla başarmak kolay olmaz. Çünkü sanal ortamda iletişimde ve katılımda kopukluk olabiliyor.

CURRICULUM VITAE

PERSONAL INFORMATION

Surname, Name: Kilis, Selcan
Nationality: Turkish (TC)
E-mail: k1selcan@gmail.com

EDUCATION

Degree	Institution	Year
Integrated Ph.D.	METU, Computer Education and Instructional Technology	2011-2016
B.S.	METU, Computer Education and Instructional Technology	2005-2010
High School	- Mustafa Kemal High School (Gazi Mustafa Kemal Anatolian High School), Eskişehir	2003-2005
	- Kırşehir High School, Kırşehir	2002-2003

WORK EXPERIENCE

Year	Institution	Enrollment
Research Assistant	METU, Computer Education and Instructional Technology	December, 2011-June, 2016
Research Assistant	Giresun University, Computer Education and Instructional Technology	February-December, 2011

FOREIGN LANGUAGES

English (Advanced)

PUBLICATIONS

Articles

Gülbahar, Y., Rapp, C., **Kilis, S.,** Sitnikova, A. (2016). Enriching Higher Education with Social Media: Development and Evaluation of Social Media Toolkit. *The International Review of Research in Open and Distributed Learning [IRRODL]*, *17*(4). [In press] [SSCI]

Kilis, S., Gülbahar, Y., & Rapp, C. (2016). Exploration of Teaching Preferences of Instructors' use of Social Media. *European Journal of Open, Distance and E-learning [EURODL]*, *19*(1).

Kilis, S., Rapp, C., & Gülbahar, Y. (2014). Eğitimde Sosyal Medya Kullanımına Yönelik Yükseköğretim Düzeyindeki Eğitmenlerin Algısı: Türkiye-Almanya Örneklemi [Perception of Instructors about Social Media Usage in Higher Education: The Cases of Turkey and Germany]. Journal *of Instructional Technologies & Teacher Education [JITTE]*, *3*(3), 20-28. ISSN: 2149-4495.

Kilis, S. (2013). Impacts of Mobile Learning in Motivation, Engagement and Achievement Scores of Learners: Review of Literature. *Journal of Social Sciences [JSS]*, *12*(2), 375-383. ISSN: 1303-0094.

Prooceedings

Kamalı Arslantaş, T., Bakay, S., Bulut, İ.H. & **Kilis, S.** (2015). Faculty Members' Perception toward Computer Education and Instructional Technology Field in terms of Opportunities and Risks & Future of the Field. In S. Carliner, C. Fulford & N. Ostashewski (Eds.), *Proceedings of EdMedia: World Conference on Educational Media and Technology 2015* (pp. 1334-1342). Association for the Advancement of Computing in Education (AACE).

Kilis, S., Rapp, C., & Gülbahar, Y. (2014). Reliability and Validity of Social Media Toolkit. *In Local Proceedings of Ireland International Conference on Education.* Dublin: Ireland.

Kilis, S., Rapp, C., Gülbahar, Y. (2014). Eğitimde Sosyal Medya Kullanımına Yönelik Yükseköğretim Düzeyindeki Eğitmenlerin Algısı: Türkiye-Almanya Örneklemi [Perception of Instructors about Social Media Usage in Higher Education: The Cases of Turkey and Germany]. *8th International Computer & Instructional Technologies Symposium Proceedings.* Edirne: Turkey.

Gülbahar, Y., İlkhan, M., **Kilis, S.,** & Arslan, O. (2013). Informatics Education in Turkey: National ICT Curriculum and Teacher Training at Elementary Level. In *Informatics in Schools: Local Proceedings of the 6th International Conference ISSEP 2013–Selected Papers* (p. 77). Oldenburg: Germany.

Arslan, O., **Kilis, S.,** Yıldırım, S. (2013). Determination of Teachers' and Students' Usage Index of E-Content Developed For F@Tıh Project And Published On Eba Based On Subject Areas. *In Local Proceedings of the 7th International Computer and Instructional Technologies Symposium*, Erzurum: Turkey.

Kilis, S. (2012). Impacts of Mobile Learning in Motivation, Engagement and Achievement Scores of Learners: Review of Literature. *In Local Proceedings of the 6th International Computer and Instructional Technologies Symposium*, Gaziantep: Turkey.

Yıldırım, Z., Delialioğlu, Ö., Aşkun, C. S., Çiçek, M. Ataş, A. H., **Kilis, S.** & İlçi, A. (2012). Mobil Destekli Kesintisiz Öğrenme Ortamına İlişkin Böte Öğrencilerinin İhtiyacı [The Needs of CEIT Students in Mobile Ubiquitous Learning Environment]. *In Local Proceedings of the 6th International Computer and Instructional Technologies Symposium*. Gaziantep: Turkey.

Posters

Arslan, O., **Kilis, S.** (2015). Informatics Teacher Education in Turkey. Poster presented at *The International Conference on Informatics in Schools: Situation, Evolution, and Perspective (ISSEP) 2015*, Ljubljana, Slovenia.

TEACHING EXPERIENCE

Assisted Undergraduate Courses:

- ✓ Computer Applications in Education
- ✓ Information Technology in Education 1
- ✓ Information Technology in Education 2
- ✓ Instructional Design
- ✓ Instructional Technology and Material Development
- ✓ Database Management Systems
- ✓ Practice Teaching
- ✓ School Experience
- ✓ Research Methods

- ✓ Project Development and Management 1
- ✓ Project Development and Management 2

Assisted Graduate Courses:

- ✓ Instructional Message Design: Theory, Research and Practice
- ✓ Research Methods in Computer Education
- ✓ Computers as Cognitive Tools
- ✓ Theories of Learning and Instruction

PROJECT EXPERIENCE

Social Media as Catalyser for Cross National Learning (SoMeCAT, Ülkeler Arası Öğrenme için Katalizör olarak Sosyal Medya) ERANET.RUS FPU7 TÜBİTAK Project. 112K362, 2012-2014.

Internet ve Bilişim Teknolojilerinin Doğru ve Etik Kullanımına yönelik Dijital Öykülerin Tasarlanması, Geliştirilmesi ve Kullanımının Biçimsel Değerlendirilmesi (Design, Development and Formal Evaluation of Digital Storytelling About Ethical Use of Internet and ICT), BAP Project, Middle East Technical University, 2014.

F@TİH Projesi Kapsamında Geliştirilen ve EBA Üzerinden Yayınlanan e-İçeriklerin Öğretmenler Tarafından Seçilme ve Kullanımına Etki Eden Faktörlerin ve Öğretmen-Öğrenci Kullanım İndekslerinin Belirlenmesi (Determination of Factors for the Instructors' Preferences to Choose E-Content and Teachers' and Students' Usage Index of E-Content Developed For F@TİH Project and Published on EBA Based on Subject Areas), BAP Project, Middle East Technical University, 2013.

Mobil Destekli Kesintisiz Öğrenme Uygulamalarının Geliştirilmesi Ve Etkinliğinin Bilişsel Yük Kuramı Çerçevesinde Değerlendirilmesi (The Development and Evaluation of Mobil Ubiqutous Learning Activites Based on Cognitive Load Theory), BAP Project, Middle East Technical University, 2012-2013.

OTHERS

Became the top student in the primary school

Became the top student in the middle school

Became the top student in the high school

Got a scholarship from the government in the high school

Included in Undergraduate Honor List of METU at the terms of 2006 Fall & Spring, 2007 Fall, 2009 Fall & Spring

Included in Undergraduate Honor List of METU in graduation, 2010

Worked in the preparation and organization of ICT teachers' professional development program *Bilişim Sohbetleri* funded by Directorate General for Innovation and Education [Yenilik ve Eğitim Teknolojileri Genel Müdürlüğü, YEĞİTEK], 2012-2013

Attended as a speaker in an international workshop GMW14 http://www.gmw2014.ch/: Social Media Toolkit

TEZ FOTOKOPİ İZİN FORMU

ENSTİTÜ

Fen Bilimleri Enstitüsü [X]

Sosyal Bilimler Enstitüsü [ ]

Uygulamalı Matematik Enstitüsü [ ]

Enformatik Enstitüsü [ ]

Deniz Bilimleri Enstitüsü [ ]

YAZARIN

Soyadı : KİLİS

Adı : SELCAN

Bölümü : Bilgisayar ve Öğretim Teknolojileri Eğitimi

TEZİN ADI (İngilizce) : Investigation of Community of Inquiry Framework In Regard to Self-regulation, Metacognition, And Motivation

TEZİN TÜRÜ : Yüksek Lisans [ ] Doktora [X]

1. Tezimin tamamı dünya çapında erişime açılsın ve kaynak gösterilmek şartıyla tezimin bir kısmı veya tamamının fotokopisi alınsın. [ ]
2. Tezimin tamamı yalnızca Orta Doğu Teknik Üniversitesi kullancılarının erişimine açılsın. (Bu seçenekle tezinizin fotokopisi ya da elektronik kopyası Kütüphane aracılığı ile ODTÜ dışına dağıtılmayacaktır.) [ ]
3. Tezim bir (1) yıl süreyle erişime kapalı olsun. (Bu seçenekle tezinizin fotokopisi ya da elektronik kopyası Kütüphane aracılığı ile ODTÜ dışına dağıtılmayacaktır.) [X]

Yazarın imzası ..... Tarih 15.07.2016