Teaching Presence, Social Presence, and Cognitive Presence as Predictors of Students'
Satisfaction in an Online Program at a Saudi University

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This dissertation titled
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Abstract

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Teaching Presence, Social Presence, and Cognitive Presence as Predictors of Students’ Satisfaction in an Online Program at a Saudi University

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This study aimed to examine whether cognitive, social, and teaching presence were significant predictors of the overall students’ satisfaction of the online program in one of the largest Saudi universities. The used research design was non-experimental and correlational in nature. Multiple regression analysis was used to determine to what extent did cognitive, social, and teaching presence predict the overall students’ satisfaction. The data in this quantitative study was collected using a self-report survey. The target population was students who joined the online program, the developed Entesab program, in one of the largest Saudi universities in the eastern region.

The findings of this study showed that overall regression, which had social and teaching presence, was statistically significant, $F(2, 811) = 180.291, p < .05$. Social presence and teaching presence both were found to explain 31.4% of the variance in students’ satisfaction. The overall regression, which predicted students’ satisfaction from social presence, teaching presence, and cognitive presence, was statistically significant, $F(2, 811) = 166.18, p < .05, R^2 = .38$. The three presences together explained 38% of the variance in students’ satisfaction. Cognitive presence was found to have the largest
contribution in predicting students’ satisfaction and it was a better predictor of students satisfaction compared with teaching presence and social presence.

Due to the importance of cognitive, social, and teaching presence in predicting students’ satisfaction, it is recommended that improving these factors in the online courses be taken into consideration. Providing workshops to the online instructors was one of the recommendations made in order to help in improving faculty knowledge regarding the Community of Inquiry elements in the online environment. Another recommendation to the online instructors is to provide timely feedback, interact, and prepare well for the class activities and assignments. Since cognitive presence in this study was found to be a strong predictor of students’ satisfaction, it is recommended that faculty need to focus on this presence especially, and assure that students are able to reach the final stage of cognitive presence.
Dedication

To my parents, Abdulrahman Al-Aulamie and Noura Al-Mutawa who always believe in me and my ability to reach my goals and support me always with their advice and endless prayers.

To my beloved husband, Abdulaziz Alshaqawi, who supports me, believes in me, and never gives up reminding me of my dreams and my ability to get my PhD.

To my lovely daughter and the apple of my eyes, Munira, who accepts a busy mother like me and loves me with all her heart.
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Chapter 1: Introduction

Background of the Study

Distance education and online courses have changed people’s perspectives of education and have opened educational opportunities for people who previously had no way of continuing their education (Alsager, 2012; Aljabre, 2012). In distance education, students are not constrained any more with courses and programs that required them to be personally present on campuses. Indeed, the existence of the Internet has had a positive influence on education; Cho (2011) noted, “Many educators believe that the Internet can play an important role in improving current education” (p. 109). Cho (2011) indicated that now academic institutions actively attempt to follow and implement the online learning trend; this could be because of its anticipated benefits to students, teachers, and institutions. Online education plays a role in connecting students with universities around the world; Li and Irby (2008) added that this kind of education provides a wide range of programs for students that allow them to learn while remaining in their homes or with their families. Another advantage of online education is that online courses provide students with flexibility of learning (Conrad, 2009; Farzaneh, 2011; Vansickle, 2003).

Granger and Bowman (2003) stated, “Distance education worldwide has been driven by the need to provide access to learning for those most in need of education” (p. 169). It is worth noting that university students are not the only students who gain advantages from online education; primary, secondary, postsecondary and continuing-education students are also benefited, as it is clear from the estimated millions of students
who participated in different formats of online education such as online, hybrid, and web-enhanced face-to-face courses (Picciano, 2002).

Nevertheless, some educational experts and learners have concerns regarding online education; they have doubts related to the lack of social communication and a fear that in online education students’ classes, the engagement level is less than what is present in traditional face-to-face courses (Kang, Liew, Kim, & Jung, 2011). These concerns make online education a rich topic to be investigated by researchers. One aspect of this topic that has been discussed in previous studies is students’ satisfaction in online learning. Exploring students’ satisfaction level in the online learning experience is necessary for a variety of reasons (Al-Asfour, 2012). In online courses especially, having unsatisfied students can be associated with low completion rates and low student motivation levels (Kuo, 2010), either of which could take away from the benefits of this new technology and halt its progress. Al-Asfour (2012) suggested that instructors need to discover and understand issues related to students’ satisfaction with online courses in order to make suitable interventions that may resolve any influential factors on students’ satisfaction. Students’ satisfaction is an essential element of online courses since it is an indicator of course quality and the successfulness of the overall learning experience (Cho, 2011; Jackson, Jones, & Rodriguez, 2010). Cho (2011) stated that there are specific elements in online education that formulate students’ satisfaction. This particular study focused on satisfaction and investigated specific factors that could predict this variable. Predictors, which were investigated in this study, were cognitive presence, social presence, and teaching presence. Cognitive presence, social presence, and teaching
presence are components of the Community of Inquiry framework which was developed originally by Garrison, Anderson, and Archer (2000), and through this document the terms of these components will be used as they come from this citation. In the next section, each of these predictors was discussed briefly.

Due to the structure of online courses, students could easily feel isolated compared with face-to-face courses; thus, assuring a high level of social presence among students could result in a more successful online learning experience (Kang et al., 2011). Social presence has been defined in online courses by Shea, Pickett, and Pelz (2003) “as the ability of students to project themselves socially and affectively into a community of inquiry” (p. 65). When students fail to perceive social presence in online courses, anticipated issues may result such as a high drop-out rate, low achievement, and low learning satisfaction (Kang et al., 2011). Noteboom and Claywell (2010) indicated that social presence has been given the most attention in the literature. Many studies have highlighted the topic of social presence in online learning. In the literature, social presence in online learning has been shown to have an impact on students’ satisfaction (Bulu, 2012; Noteboom & Claywell, 2010), student enjoyment (Mansour, El-Said, & Bennett, 2010), interaction level (Cobb, 2009; Mansour et al., 2010; Sung & Mayer, 2012; Wei, Chen, & Kinshuk, 2012), and collaborative learning (Liu, Gomez, & Yen, 2009; Mansour et al., 2010). The importance of social presence in online education is potentially due to its positive influence of leading students to build a community of learning and make a connection with classmates (Sung & Mayer, 2012).
In terms of teaching presence, Jackson, Jones and Rodriguez (2010) found a correlation between instructors’ actions and students’ satisfaction in online courses; their study further showed that instructor’s actions could have an impact students’ satisfaction. Dunlap and Lowenthal, (2009) stated “teaching presence is the ability of a teacher or teachers to support and enhance social and cognitive presence through instructional management, building understanding, and direct instruction” (p. 133). Ladyshewsky (2013) stated, “teaching presence appeared to positively influence students’ satisfaction with an online course of study” (p. 19). Teaching presence emphasizes the teacher’s role and responsibilities in their learning environment. Some studies have shown that one role of teaching presence is to facilitate social presence and cognitive presence, both of which emphasized its importance in the online learning experience (Garrison, Cleveland-Innes, & Fung, 2010; Lear, Isernhagen, LaCost, & King, 2009).

Regarding cognitive presence, assuring this presence in online environment can sustain a high level of thinking and facilitate learning (Kanuka & Garrison, 2004). Cognitive Presence is defined as “A process of practical inquiry distinguished by discourse and reflection for the purpose of constructing meaning and confirming understanding” (Garrison, 2009, p. 355). Cognitive presence has been studied less than the two other presences (Arbaugh et al., 2008; Hosler & Arend, 2012). Bangert (2008) stated that cognitive presence does not co-exist with teaching and social presence; instead cognitive presence is an outcome of their existence in the learning setting. Noteboom and Claywell (2010) stated that cognitive presence “is most closely associated with the
process and outcomes of critical thinking and may be the most challenging element to facilitate and measure in the online environment” (p. 1).

**Statement of the Problem**

The university where the study took place has recently implemented the *Developed Entesab* online program. In the academic year 2009-2010, the university has established this program to present students from all provinces of Saudi Arabia and some of the countries of the Gulf Cooperation Council (GCC) with a chance to obtain a bachelor’s degree in certain majors.

According to the website of the university, the main aim of establishing the online program was to serve some students who are looking toward earning another bachelor degree or female students who do not have the chance to continue their study due to any number of reasons. Having this kind of newly released programs, in one of the largest universities in Saudi Arabia, has led many people to think about the quality and successfulness of this program. A decision has been made in this study to investigate students’ satisfaction in the *Entesab* program. Since Cho (2011) and Jackson, Jones, and Rodriguez (2010) indicated that students’ satisfaction is an indicator of the quality and successfulness of the online courses, it is clear that looking at students’ satisfaction in this particular online program will lead to an initial evaluation of the worthiness of the program. Furthermore, unsatisfied students have been found to result in low motivation and persistence in learning, as well as low completion rates (Kuo, 2010); this shows how truly necessary it is to investigate the topic of students’ satisfaction in this online program.
To examine students’ satisfaction in any online program, different factors could be considered. In this study, as previously indicated, a focus was given to cognitive, social, and teaching presence. Teaching presence and social presence have been chosen due to their importance in dealing with some known issues in online education—particularly a concern with regard to isolating students. In other words, a feeling of loneliness that students may have in the unfamiliar online learning environment is one of the primary issues surrounding online education (Croft, Dalton, & Grant, 2010; Farzaneh, 2011; Kiryakova, 2009; Sung & Mayer, 2012). Kang et al. (2011) concluded that this “feeling of isolation often leads to a lack of perceived presence” (p. 3016), and they think that this may make the topic of presence in online learning one of special interest for researchers. Kang et al. (2011) also mentioned that increasing the perceived presence in online learning could help in solving this exact obstacle. On the other hand, cognitive presence has been known by its association with critical thinking (Noteboom & Claywell, 2010) and its important role in creating higher order learning (Garrison, Anderson, & Archer, 2001). Some studies have found that satisfaction has a positive relationship with social presence (Cobb, 2011; Zhang, 2010), teaching presence (Arbaugh, 2008; Mayne & Wu, 2011), and cognitive presence (Hosler & Arend, 2012; Kang, Kim, & Park, 2008).

This relationship needs to be investigated more in depth in order to uncover whether or not cognitive, social, and teaching presence are significant predictors of students’ satisfaction in the Developed Entesab online program. Cognitive, social, and teaching are components of the Community of Inquiry framework which was developed originally by Garrison, Anderson, and Archer (2000), and through this document the
terms of these components will be used as they come from this citation. Following this discovery, it would also be ideal to explore which type of presence best predicts students’ satisfaction.

**Purpose Statement**

This study investigated three factors predicting students’ satisfaction in an online program, the *Developed Entesab* program, at one of the largest Saudi universities in the eastern region. The *Developed Entesab* program is a fully online program that provides bachelor degrees in Islamic studies, social studies, English language studies, Arabic language, special education, and business administration. In this study, a focus was given to cognitive, social, and teaching presence; specifically, whether or not they provide a statistical significance in predicting the overall students’ satisfaction. Cognitive, social, and teaching presence are the three essential components of the Community of Inquiry framework developed by Garrison, Anderson, and Archer (2000).

**Research Questions**

This study aimed to investigate cognitive, social, and teaching presence in online classes as predictors of students’ satisfaction in a Saudi university. This study takes place in one of the largest universities in Saudi Arabia. It was intended to investigate if there was a relationship between students’ satisfaction and these three presences, cognitive, social, and teaching presence. It was also intended to uncover if cognitive, social, and teaching presence were significant predictors of students’ satisfaction, and which predictor did the best in predicting students’ satisfaction. The predictor variables in this
study are students’ perceptions of cognitive, social, and teaching presence, and the dependent variable is the overall students’ satisfaction with the online program.

The first question examined teaching presence and social presence as predictors of students’ satisfaction, since both of them are focusing on the interaction aspects in the online learning setting. In the second question, cognitive presence was added by itself to a model that has teaching and social presence in order to predict students’ satisfaction. This decision was made since cognitive presence is different from teaching and social presence; it could be implied from the cognitive presence definition of Arbaugh et al. (2008) that cognitive presence focuses on an internal critical thinking process instead of interaction. This study was guided by two main questions:

1. To what extent do social presence and teaching presence predict students’ satisfaction in an online program in Saudi Arabia?
2. To what extent does cognitive presence predict students’ satisfaction after adding it with teaching and social presence in an online program in Saudi Arabia?

Significance of the Study

The focus of this study is on cognitive, social, and teaching presence as predictors of students’ satisfaction with an online program. This study would be helpful for researchers who are interested on investigating some predictors of students’ satisfaction related to teaching, social, cognitive presence in online programs. In addition, the university where the study takes place, is a leader in online education and e-learning in Saudi Arabia, so the results of this study could be valuable for researchers who want to
refer to some information specifically regarding students’ successfulness in online programs in Saudi universities.

If this study ended up showing the importance of cognitive, social, and teaching presence as a significant predictor of students’ satisfaction, the results would be beneficial for practitioners who are interested in making suitable interventions to facilitate online courses. Garrison et al. (2010) noted that these presences have an influence on the ability to understand the online learning experience. With the knowledge that teaching presence is essential for students’ satisfaction, instructors may be motivated to implement or make changes on the instructional design, facilitate discourse, and improve instruction in order to enhance their teaching presence. Instructors could plan to strengthen social presence in online courses by engaging students in more communication and collaboration activities (Greyling & Wentzel, 2007). Through teaching presence, the instructor will be able to facilitate social and cognitive presence (Kanuka & Garrison, 2004).

Knowing the importance of cognitive, social, and teaching presence as predictor of satisfaction will lead instructors to take into consideration all planning steps for online courses. Ke (2010) stated that teaching presence needs a continuous process; it starts early, before the course itself even starts, lasts the whole class, and ends with the assessment. Assuring the importance of this process will help to increase interaction among members of the course and increase online students’ satisfaction (Alman, Frey, & Tomer, 2012). In other words, the literature suggested that taking care of these presences could improve the quality of online learning.
The concept of presence in online courses is totally new to the educational setting in Saudi Arabia. There are no reported studies in Saudi Arabia, until now, that have been conducted related to cognitive, social, and teaching presence in online education. Even though there are some studies in the United States that have showed the importance of cognitive, social, and teaching presence in predicting students’ satisfaction with online courses and program, it is necessary to explore if these factors work in predicting students’ satisfaction in Saudi Arabia. Saudi Arabia has several unique cultural norms concerning online education when compared to the United States and are noted in the delimitations of the study.

Regarding the Community of Inquiry framework, this model matched the appropriate learning design suitable to students at the university level where learning experiences are enriched with individual as well as collaborative learning design (Ke, 2010). Arbaugh et al. (2008) stated that the Community of Inquiry framework “provided a collaborative-constructivist perspective to understanding the dynamics of an online learning experience” (p. 133). Garrison (2007) stated, “Higher education has consistently viewed community as essential to support collaborative learning and discourse associated with higher levels of learning” (p. 61). This model focused on the nature of the teaching and learning process online and the quality of the whole online learning experience (Ke, 2010). Arbaugh (2008) stated that the Community of Inquiry framework was built based on the idea that in order to have an effective online learning experience, there should be an existence and overlap between cognitive, social, and teaching presence.
Limitations

The limitation in this study is the possibility of getting false responses from participants when using a self-report survey. Survey research is defined by Gall, Gall, and Borg (2005) as “a form of descriptive research that involves collecting information about research participants’ beliefs, attitudes, interests, or behavior through questionnaires, interviews, or paper-and-pencil tests” (p. 180). According to Gall et al. (2005) this kind of instrument is based on self-reporting, where participants can hide information that they do not want to reveal to the researcher; there is also a concern that participants may not be telling the truth. Gall et al. (2005) suggested assuring confidentiality of responses in order to get accurate information from the self-report survey. Based on that, participants in this study were informed in the consent form of the confidentiality of information that they provided. The survey questions did not request any identification information.

Delimitation

The participants of this study were students who joined the Developed Entesab program at one of the largest Saudi universities in the eastern region. The Developed Entesab program is a fully online, distance-learning program that provides the opportunity for students to obtain a bachelor’s degree in different majors, which are Islamic studies, social studies, English language studies, Arabic language, special education and business administration. This program provides an equal opportunity of learning as it provides the same course materials and the same instructors who teach traditional courses in the traditional program.
When talking with a current student in the Developed Entesab program, the student mentioned that during the semester, they have three synchronous meetings with each instructor. The student added that on average, they have a synchronous meeting with their instructor each month for about half an hour. The main aim of these meetings is to answer any questions that students may have and to solve any problems that students may struggle with during the month. Female and male students are completely segregated as in teaching in the traditional classes. In the synchronous meeting, instructors conduct a meeting for males and a meeting for females. Even in the discussion forum, there are two separate forums where each gender has no access to the other forum.

The majority of students in the Developed Entesab program could not join the traditional program, which required face-to-face meetings, due to being in a far geographic area, being a busy parent, not having an admission to traditional courses, or being a busy employee. Students are not required to be on the university campus; instead they are only required to be on the main campus by the end of each semester to complete their courses’ final exams. It is worth it to mention that the Developed Entesab program is a for-profit program provided by a public and non-profit university.

Basically, students enrolled in the online courses communicate with their instructors via three ways: interacting during three synchronous conference online meetings, calling instructors on their office phones during fixed office hours, or emailing them anytime. All course materials are delivered using the Blackboard Course Management system. According to the website of the university, in order to solve some issues with Blackboard, the administrators of the program added a Virtual Learning
System (VLS). All asynchronous recorded lectures, assignments, and instructions are available for students via Blackboard. The participants can be reached by communicating with the E-learning and Distance Education Deanship at the university.

**Definitions of Terms**

*Cognitive Presence:* It is defined based on Garrison (2009) as “A process of practical inquiry distinguished by discourse and reflection for the purpose of constructing meaning and confirming understanding” (p. 355).

*Community of Inquiry Framework:* Garrison (2009) defined Community of Inquiry as “a framework that reflects a collaborative-constructivist approach to learning” (p. 355). This framework was developed in a study by Garrison et al. (2000).

*Distance education* is defined by Kiryakova (2009) as “a form of education in which the participants in the educational process teacher and learners are physically separated and communicate by different means and at different times” (p. 29).

*Social presence:* It is one of the frames of the Community of Inquiry Framework that has been defined “as the ability of students to project themselves socially and affectively into a community of inquiry” (Shea et al., 2003, p. 65).

*Students’ satisfaction:* It is defined as, “the resulting emotion when one perceives that a need has been adequately fulfilled” (Bouras, 2009, p. 7).

*Teaching presence:* “teaching presence is the ability of a teacher or teachers to support and enhance social and cognitive presence through instructional management, building understanding, and direct instruction” (Dunlap & Lowenthal, 2009, p. 133).
Chapter Summary

In this particular study, focus was given to students’ satisfaction in an online program since students’ satisfaction is known, based on the literature, as an indicator of the successfulness of educational programs. An investigation into cognitive, social, and teaching presence in an online program was conducted due to their importance to the online learning experience, and as the literature reveals, due to their role in eliminating students’ sense of isolation in taking online courses and improving critical thinking. The purpose of this study was to focus on cognitive, social, and teaching presence and to investigate whether or not they were significant predictors of students’ satisfaction. This study answered two main questions: to what extent do social presence and teaching presence significantly predict students’ satisfaction in an online program; and to what extent does cognitive presence significantly predict students’ satisfaction after adding it with teaching and social presence. The results of this study would be beneficial for making suitable interventions to better facilitate online courses, and also to increase the awareness of the appropriate planning steps for online courses.
Chapter 2: Review of the Literature

This study was meant to explore cognitive, social, and teaching presence in online classes as predictors of students’ satisfaction in a Saudi university. The main purpose of this chapter is to review the existing literature regarding cognitive, social, and teaching presence in an online environment and their relationship with students’ satisfaction.

This literature review introduces the definition of distance education and explains the difference between distance education and online learning. Furthermore, it discusses some definitions of distance education and online learning. It also highlights the history of distance education in general, and covers how distance education has started. Then the literature review covers the educational needs of this type of education and the benefits and barriers of distance education for teachers as well as students. This chapter reviews the existing literature, which emphasize the importance of satisfaction in online learning. Then, it reviews a wide range of literature that focuses on the Community of Inquiry framework and its three components. This chapter focuses on these three presences, since they are the predictors in this study, by highlighting their definitions, importance in online course, and their relationship to satisfaction.

The search terms that were used to complete this literature review are: distance education, online learning, e-learning, Saudi Arabia, barriers, advantages, benefits, obstacles, open university, teaching presence, social presence, cognitive presence, and satisfaction. The main database that was used to search for these keywords was EBSCO, and most of the time searching was completed after checking all databases as a way to identify as many articles as possible.
Introduction

Due to the explosion in knowledge that learners are facing today, online classes have become a new educational trend and an important signature for the 21st Century in most institutions around the world. The use of online classes now is very widespread among teachers of all educational levels. Some teachers are using the online classes as reinforcement for their original traditional classes, while others are thinking of these classes as a replacement for face-to-face classes.

In the past few years, many students have switched from face-to-face classes, which forces them to be personally present during courses, and chosen the learning style by enrolling in the online and distance education classes that they prefer from different institutions (Maguire, 2005). In the United States, most students take online and distance education while taking some traditional classes; however, one-third of students are utilizing online distance education as the only means to earn a degree (Doyle, 2009).

The first time that online and distance education was introduced to the public, many people thought that it would be the revolution that was going to end the era of universities campus, and some people thought that it would become the means that was going to replace the teachers’ roles (Doyle, 2009). Schulte (2010) highlighted that one of the disagreement points that even today causes arguments toward distance education; it is the belief among members of the educational setting that distance education is not an effective means to transfer knowledge in comparison to face-to-face classes.

Despite these concerns, teaching online classes compared with teaching in traditional face-to-face classes provides many benefits for teachers as well as students.
Due to this, many institutions now focus on increasing their number of online classes, and many students are interested in enrolling in these kinds of classes (Cavanaugh, 2006). Cavanaugh (2006) indicated in his study that the number of online classes and students who enrolled in them has increased dramatically. In 2002, 1.6 million students were registering in distance education programs in the United States with a minimum of one online class; five years later, this number was almost doubled (Doyle, 2009). In 2010, the number of students in the United States who registered for at least one online class has increased to reach 6.14 million students (Allen & Seaman, 2011).

**The Definition of Distance Education and Online Learning**

Tracey and Richey (2005) pointed out that many terms are used to refer to distance education by stating, “over the years, many terms have been used to describe distance education. These include distance learning, open learning, networked learning, flexible learning, distributed learning, independent study, learning in connected space and, today, on-line learning is common” (p. 17).

Kiryakova (2009) stated, “distance education is a form of education in which the participants in educational process – teacher and learners are physically separated and communicate by different means and at different times” (p. 29). This matched the distance education’s definition by Moore (2013): “transaction in distance education is the interplay of teachers and learners in environments that have the special characteristic of their being spatially separate from one another” (p. 68). Moore, Dickson-Deane, and Galyen (2011) described distance education as a way to offer learning for students who are in a different geographic area far from their instructors. Similarly, Tabata, and
Johnsrud (2008) defined distance education in their study as a method that “uses technology to deliver instruction and learning freed from the geographical and time constraints associated with face-to-face instruction” (p. 626).

Considering online class, it is defined as an environment that takes place on the Internet; both the learning contents and class activities are available for students online, where teachers and students interact and communicate without being in the same place and also not necessarily the same time (Paulsen, 2002). Lokken and Womer (2007) as cited in Cejda (2010) defined online programs in their ITC survey as a program where students are required to accomplish 70 percent of courses or more completely online in order to obtain a degree. Online education is different from distance education in some basic aspects; however, some people think that online education is better defined as the newest and modified version of distance education (Benson, 2002). Since online education has been recognized as an electronic form of this education, which is provided through the Internet (Beqiri, Chase, & Bishka, 2009), this study focused on online education and online courses. In this paper, the terms, online learning, e-learning and distance learning, were interchangeable terms used to represent a kind of education that is delivered through the internet and in which the students and instructor are separated by distance and time. In fact, these three terms--online learning, e-learning and distance learning--are used interchangeably within Saudi Arabia. Moore et al. (2011) stated that even thought these terms have different definitions, some studies have used them synonymously. The next sections review literature related to the history of distance education and highlight benefits as well as disadvantages of distance and online learning.
The History of Distance Education

The history of distance education started by mailing printed course materials to students, and students were responsible for mailing back their assignments to their instructors (Kiryakova, 2009). The next historical step involved the integration of audio recordings and videos in distance education in addition to the printed materials (Kiryakova, 2009). Tracey and Richey (2005) mentioned that correspondence education, which was an old form of distance education, was a solution for students with financial issues who were not able to afford being on campus. Even though correspondence education was from the past, it still exists in some of the universities around the world. In the 60’s, a new way of delivering the content in distance education was established; satellite television, and by the beginning of the 80’s a new evolution was introduced to the learners in distance education, which was using computers and the Internet to deliver learning material (Tracey & Richey, 2005).

Kiryakova (2009) discussed the previous period of time, mentioning that distance education started to include digital technologies as well as the Internet to transfer learning materials between students and faculty. Panchabakesan (2011) gathered all the history of distance education by stating that:

The old concept of distance education was exclusively associated with print materials, whereas the new concept of distance education includes supplementary material being used through non-print media such as radio, television, computers, laptops, recorded lectures in Mpeg and Avi formats in CDs and DVDs and Self Learning Materials (SLM) through projectors, video conferencing and interactive
sessions between students and faculties via internet. (Panchabakesan, 2011, p. 113)

In this duration, open universities were introduced to the public. According to Panchabakesan (2011), “The first Open University was established in the United Kingdom in 1969” (p. 114), and the main purpose of establishing it was to give adult students who were far from the universities campus the chance to learn. According to the Arab Open University’s website (n.d.), in the Arab world, the distance program was not founded until 1996, and in October 2002, the Arab Open University was established in Saudi Arabia.

**History of Online Education in Saudi Arabia**

Distance education in Saudi Arabia started as a corresponded education, as an attempt of some learners to earn a degree (Albalawi, 2007). Then, the Saudi universities established radio educational channels to provide educational help to students struggling with their traditional classes (Saudi Arabian Information Resource, 2004 as cited in Albalawi, 2007). Saudi universities started to provide female classrooms with televisions that transmitted lectures from the males’ campus as a solution to segregation of gender while having shortage in the number of female faculty members (Albalawi, 2007).

According to Muhmod (2012), distance education was not a new concept in Saudi Arabia, or as they call it *Entesab*. *Entesab* is an Arabic word that means attending a program in a certain university without requiring an attendance to the regular classes, and students need only to show up at the end of the semester to complete their final exams (Muhmod, 2012). Now the developed version of *Entesab* is to integrate technology and
online education in the program to facilitate learning process and to enhance education, and to reach more students; they call this kind of program *Developed Entesab* (Muhmod, 2012).

There is a new revelation in higher education in Saudi Arabia to enhance the given education and to integrate e-learning in the Saudi universities (Alkamdi, 2012). In order to improve the quality of higher education, Saudi universities intend to establish e-learning and distance education deanships (Alkamdi, 2012). According to Alkamdi (2012), this step was the smartest step that puts Saudi universities on the right track in order to enhance their programs, develop technological uses, and integrate technology and e-learning in higher education. In 2006, King Abdulaziz University was the first Saudi university that had established a distance learning programs for its students, and after four years the second two large universities: King Saud University and King Faisal University, applied the distance education program to their own programs (Aljabre, 2012). Due to gender segregation in the education system in Saudi Arabia, male instructors are the only instructors who are allowed to teach in distance education (Al-Khalifa, 2009).

The government of Saudi Arabia encourages every chance that makes education up to date, and due to this, the King of Saudi Arabia has encouraged taking advantage of distance education (Alsager, 2012). In 2011, King Abdullah Bin Abdulaziz, King of Saudi Arabia, has approved establishing the Saudi Electronic University as a governmental institution that provides undergraduate as well as graduate degrees (*History Timeline*, 2013). Based on the Saudi Electronic University site, this university is going to
be built based on a distance education delivery method, and will rely on communication technologies and e-learning to provide a quality learning (Mission, 2013). In an interview with Dr. Khalid Mohammed Al-Angari, the Saudi Minister of Higher Education, he mentioned that within the next five years the Developed Entesab programs in all Saudi universities will be terminated and all Entesab students will be moved to be under the Saudi Electronic University (Althamiri, 2012). He also added that the fee in this university will be less than the fees paid by students in other universities, and students will be required to attend 25% of their programs as a face-to-face format (Althamiri, 2012).

**The Need for Distance Education**

The need for distance education was started by the massive growth of the world population, which produced an enormous number of students who still need to obtain an education and catch up with social change (Rashid & Rashid, 2012). Maguire (2005) pointed out the need for distance education as an effective solution for some non-traditional students who feel that they are stuck with their roles as employers or parents and find that online classes could be a better solution for their situation. Some reasons that demonstrate the need for distance education are the increased number of students who struggle with the limited university capacity to support large numbers of students, and the attempt to individualize learning to match students’ needs and abilities (Farzaneh, 2011). There is a need for distance education as there is an increase in the number of non-traditional students who believe in lifelong education (Farzaneh, 2011; Kiryakova, 2009).
Regarding the need for distance education in Saudi Arabia, Aljabre (2012) noted that the Saudi government was also seeking to increase “…the productivity of its workforce in public sector” (p. 134). Based on this, the government was aware of the serious need to enroll more students in higher education programs in order to graduate citizens who can help with building the country; having limited university capacity and a large student number obliged the government to create an intervention by implementing distance education programs in Saudi universities to accept more students (Aljabre, 2012). The nature of distance education could also help to meet the needs of Saudi women who are enthusiastic to learn within majors that “…were traditionally only offered on men’s campuses”, and could be a solution for some mothers or wives who cannot attend face-to-face classes due to family obligations (Aljabre, 2012, p. 134).

**Benefits of Distance Education and Online Learning**

**Benefits for students.** There are many reasons which make students prefer online and distance classes instead of traditional ones, and there are many students who have discussed some advantages that they gained from taking these kinds of classes. Farzaneh (2011) highlighted some of these advantages of distance education, such as flexibility of learning, providing diverse learning for students, increasing students’ motivation level, communicating with teachers frequently, and reducing educational cost. Vansickle (2003) supported this by highlighting that most students choose to take classes online due to their convenient access and flexibility. Another benefit of distance education could be the accommodation of the massive number of students (Kiryakova, 2009).
Distance education can help some students to handle cultural or disability issues, which are difficult to handle in traditional classes (Farzaneh, 2011; Lei & Gupta, 2010). In addition, Li and Irby (2008) discussed one benefit of distance education and how it could help learners with their learning process by stating that, “since students can review the lectures repeatedly, they gain more control over their learning and have more say on what they wish to learn through the feedback system” (p. 454).

Furthermore, one study showed that online and distance education is a suitable means for learners who have a preference of doing individual work rather than collaborative work, and a good way to improve critical thinking as well as reducing peer distraction (Lei & Gupta, 2010). Li and Irby (2008) discussed in their article that the synchronous and asynchronous discussion feature of distance education could help to reduce fear that some students may have while engaging in discussion in face-of-face classes, and distance education could motivate students to collaborate with their peers and build collaboration skills.

The study by Shoaf (2007) showed that an online environment will help schools to meet students’ needs and their multiple skills due to the freedom that online classes provide by modifying lessons to make them match the students’ needs. Salmon (2004) showed in his book, E-Moderating: The Key to Teaching and Learning Online, the benefits of online classes by stating that, “Although many people find the lack of visual clues strange, messages are ‘neutral’ since you cannot see whether the sender is young or old nor need to consider their appearance or race” (p. 18). Lei and Gupta (2010) supported this discussion when they argued that the nature of the instructors and students’
communication and interaction in online environments could help to reduce any bias that could be found between their relationship in the traditional education setting.

A study by Li and Irby (2008) discussed some of the benefits and barriers of distance education and highlighted some reasons that make this kind of education appealing to a broader population. One of the benefits discussed is the opportunity that distance education provides for learners to pick whatever programs they want and which they need, and does not require them to limit themselves to the available programs options on campuses near to their area (Li & Irby, 2008). Online classes could benefit shy students who hesitate to engage and participate in the class discussion or ask questions; this kind of class offers a comfort zone that helps students to interact with ease (Johnston, Killion, & Oomen, 2005).

Benefits for teachers. Regarding teachers, there are a number of studies, such as Farzaneh (2011); Johnston, Killion, and Oomen (2005); Lei and Gupta (2010); Li and Irby (2008); Shoaf (2007); and Vansickle (2003) that have discussed possible benefits of teaching and integrating distance education classes in the higher education system. A study by Green, Alejandro and Brown (2009) showed that faculty members were motivated to participate in online classes as a way to gain a new teaching experience and to use technology. In addition, distance education could be a way to “create an environment rich in creativity for the update” (Farzaneh, 2011, p. 95), and “increasing the ability to acquire new knowledge” (Farzaneh, 2011, p. 95).

Online education could be a solution for some faculty members who have a concern regarding their verbal communication ability, since distance education allows
them to use other available communication media to express themselves (Lei & Gupta, 2010). Another advantage of distance education could be helping faculty members to provide quick and extensive feedback (Li & Irby, 2008). An advantage of distance education is the ability to record some materials for the class’s lectures or discussion that students can refer later to at anytime and anywhere; this feature could be beneficial for teachers as well since it saves them the time of repeating unnecessary information that has been mentioned previously in the lectures (Li & Irby, 2008).

**Barriers of Distance Education and Online Learning**

**Barriers for students.** Many studies have shown that some students do not feel comfortable or may be struggling while learning in distance education classes. One of the distance education disadvantages is the threat of students being socially isolated (Farzaneh, 2011; Kiryakova, 2009). Another barrier could be technical issues that students and even instructors may face while dealing with distance education classes. The students’ potential lack of technological skills is one of the other perceived barriers in this environment (Alfadhli, 2011; Graham & Jones, 2011). The study by Santilli and Beck (2005) showed that 65% of 47 faculty members that were participating mentioned, that they have concerns about the technology skills of students. They think that this issue may affect their participation in the class and their ability to communicate with others, and as a result affect the successfulness of the online classes (Santilli & Beck, 2005).

One of the noticeable problems in distance education classes is the lack of discipline, since students in this environment are supposed to be self-motivated and when failing to be motivated, students can easily fall behind (Kiryakova, 2009). Li and Irby
(2008) mentioned that distance education is not a good option for students who have an issue with time commitment and discipline and students who are not self-motivated.

Another challenge that students may face is the communication issue. Communication between faculty and students in distance education classes is a challenging issue since communication is done most of the time through written means such as using emails (Cavanaugh, 2006). According to Cavanaugh (2006), the communication process will take more time and effort from students as well as professors compared with the common oral communication between teachers and students in traditional classes. The limitation of the social engagement between students, their peers and their teachers has become a real concern for students’ parents in online classes (Shoaf, 2007).

**Barriers for teachers.** Regardless of all of online classes’ benefits, online instructors are now facing challenges to perform their task as moderators for this new environment. Due to this challenge, instructors could hesitate to transform their classes to online versions. Some instructors tend to think twice before they engage in teaching distance education classes. One of the teachers’ concerns regarding teaching distance education classes is what has been reviewed by Alfadhli (2011) based on previous scholars: that the quality of learning would not necessarily be improved using online learning.

Even though the study by Lee and Busch (2005) showed that there is no significant relationship between the faculty willingness to engage in distance education and their perception of the time they consume dealing with these classes, the study by
Green et al. (2009) showed that some faculty members indicated that they are hesitant to teach online classes due to their feeling that these types of classes are confusing and time-consuming. Another barrier is what Maguire (2005) highlighted in his study that, for some faculty members, it might be their belief that accepting online education could be the next step in replacing them, which may influence their willingness to teach (Maguire, 2005).

Hilton, Graham, Rich, and Wiley (2010) indicated that time commitment is one of the obstacles that may face instructors in online courses. Schifter (2008) showed that faculty members would need more time in the distance education environment due to the long process of modifying and adapting their teaching strategies and methods to focus more on students and to integrate and fit technology into the teaching and learning process. Another study highlighted the time that faculty members spent in two doctoral courses to facilitate distance education classes and be prepared for them:

The results showed that a total of 160 hours were spent online teaching a class of 17 students during a 15-week term. Also, a total of 80 hours were spent teaching a class of 7 students. These hours included weekly time spent grading assignments, reviewing student responses to weekly lectures, conducting chats, responding to individual student’s concerns, and grading student assignments. (Santilli & Beck, 2005, p. 156)

Furthermore, one of the critical issues that instructors must deal with is the technical support issue. Maguire (2005) found that, “Of all of the barriers cited by faculty and administrators, the one mentioned most frequently is the lack of technical support”
Dooly, Lindner, Elbert, Murphy, and Murphrey (2008) indicated that faculty members who have no experience teaching distance education classes could anticipate limited technical support for these classes compared with faculty members who have this experience.

A study by Rashid and Rashid (2012) investigated some possible issues which are related to distance education. They found that the absence of physical communication in distance education classes between teachers and students influenced the thoughts instructors may have towards distance education, its quality and effectiveness. Another barrier could be feedback and evaluation given for students’ assignments, and the time consumed to complete this task, which is a critical issue teachers should be aware of (Rashid & Rashid, 2012).

**Differences Between Online and Face-to-Face Classes**

In online learning, some learners could transfer from being passive in face-to-face classes to active; motivated learners are willing to control and assess their own learning (Kiryakova, 2009). Due to the lack of nonverbal signs in distance education compared with face-to-face classes, it is easier for students to fall behind without the instructors even knowing; this is one of the instructors’ serious concerns (Lee & Busch, 2005). The findings by Santilli and Beck (2005) showed that there was an agreement among faculty that the online class is time-consuming compared with its equivalent face-to-face class. That could be supported by other studies which indicated that time commitment to online classes might inhibit faculty members from participating in these kinds of classes (Graham & Jones, 2011; Green, Alejandro, & Brown, 2009). Another difference that
distinguishes distance education from traditional education could be the flexibility of distance education, where learners can learn at their own pace (Kiryakova, 2009; Lei & Gupta, 2010). Based on Lee and Busch (2005), faculty generally prefer and feel more comfortable toward teaching face-to-face classes rather than teaching distance education since some of them feel frustrated when they face some technological issues while teaching distance education classes.

**Presence in Online Courses**

Social presence and teaching presence are two different concepts. In the online learning experience, students may show different perceptions towards each one of these (Swan & Shih, 2005). Social presence is an essential element in any learning environment and achieving it is challenging (Mansour et al., 2010). Instructor presence is a critical factor, which plays a role in supporting social presence, which leads to better students’ performance (Bouras, 2009). Learners cannot reach effective learning in traditional or online classes if they have not been given the chance to interact with the three components: their peers, their instructor, and the class content (Cho, 2011).

Mansour et al. (2010) mentioned that the existence of “facial expression, direction of gaze, posture, dress, non-verbal, and vocal cues” (p. 2) are necessary in order to establish social presence and responsible for increasing students’ perception of social presence. In fact, less verbal and non-verbal cues in any learning environment will result in some challenges with regard to social presence (Alman et al., 2012). A study by Cho (2011) stated that one aspect that is different between online and face-to-face classes is that face-to-face classes tend to facilitate more direct communication, gestures, verbal,
and non-verbal cues. Indeed, some online students could experience lack of social presence and teacher presence due to the text-based instructions and asynchronous interaction that differentiate online environments (Sung & Mayer, 2012).

Even though research has shown that instruction in online classes lacks facial expression and verbal cues, other studies have shown that online classes have the potential to provide communication between students and instructors, which is equal to what could be provided in traditional classrooms. For example, Wei et al. (2012) indicated that the variety and wide range of media and communication tools make verbal and non-verbal communication possible in online learning environments. Mansour et al. (2010) indicated that even though text-based communication tools, which are widely used in online learning environments, do not provide verbal and non verbal cues, 3-D virtual learning tools for example have reinforced online learning environments and allow for full communication among students. It is clear that the need to assure full communication in online classes between students, their peers, and their instructors has led researchers to study social and teaching presence.

Another disadvantage of online courses is having students separated physically between themselves and their instructors in online courses, which could result in a feeling of isolation (Croft, Dalton, & Grant, 2010). The concern of isolating online students makes social presence and teaching presence a rich topic to be investigated (Kang et al., 2011). The next section examines literature related to the Community of Inquiry framework, which is a well-known framework for explaining presence in online courses.
The Community of Inquiry Framework

Higher education institutions have become interested in helping and encouraging students to build a sense of community; the feeling of being a part of a group of learners could increase interaction between students as well as increase their learning outcome (Nyachae, 2011). Due to the importance of building a learning community, Garrison et al. (2000) developed the Community of Inquiry framework; this framework was built based on three main elements, which are cognitive, social, and teaching presence (Garrison, 2007).

These three presences are overlapped and interact with each other in order to provide a better understanding for the online learning environment (Alman et al., 2012; Annand, 2011). Swan and Shih (2005) found that social presence has a strong association with teaching presence, and there is also a strong relationship between these presences and the perceived learning. The existence of these presences in online learning is necessary since a “high level of perceived presence should lead to successful learning” (Kang et al., 2011, p. 2016).

To explain the meaning of the Community of Inquiry framework, Kupczynski, Ice, Wiesenmayer, and McCluskey (2010) defined this framework as “a theoretical framework that explains the online learning experience in terms of interactions between three overlapping presences: Teaching, Social and Cognitive” (p. 23). Nyachae (2011) added that “The Community of Inquiry (COI) framework is a model that shows the process and theory of research behind online learning and instruction” (p. 21). In online education, cognitive, social, and teaching presence are connected with a strong
relationship (Garrison et al., 2010). Regarding social presence, the Community of Inquiry framework, “suggests that social presence is a mediating variable between teaching presence and cognitive presence” (Garrison et al., 2010, p. 32).

Educators could take advantage of the Community of Inquiry framework by understanding the complicity of course design and designing collaborative activities which build a community of learning (Jinks, 2009). Jinks (2009) also added that “While cognitive presence is highlighted as the purpose for students enrolling in an online higher education course, social presence and teaching presence are more critical for establishing, supporting, and enhancing the educational experience” (p. 31). The following section highlights some studies and their uses of the Community of Inquiry framework.

**Studies about the Community of Inquiry Framework**

The study by Bangert (2008) used the Community of Inquiry framework to assess the influence of teaching and social presence on the cognitive presence and in assessing the critical inquiry experience. He invited 33 students who were enrolled in a graduate online course to participate in this study. He conducted an experimental study with three discussion groups: the control group ($N=11$), the first experimental group ($N=10$), which had only social presence, and the second experimental group ($N=12$), which had social presence combined with teaching presence. All groups had been taught by the same instructor. The focus of this study was on discussion activities and whether students were able to promote a critical inquiry. The first experimental group was allowed to engage in team discussion activities, whereas, the second group had their discussion guided and facilitated by the instructor. The control group had to complete the same discussion
activities individually while social presence and teaching presence were not supported. The instructor only communicated with this group via email regarding some comments and instructions of how to complete the activities. Bangert (2008) found that the students in the group that had a social presence associated with teaching presence produced more discussion messages under two main phases of cognitive presence, integration and resolution. He defined integration by the ability to generate new ideas and solving problems, whereas resolution was defined as the ability to support discussion with real life experience. This group, according to Bangert (2008), showed a “deep level of critical inquiry” due to the support of social presence and teaching presence (p. 53).

Huang and Chang (2010) used the Community of Inquiry scale, which was developed by Arbaugh et al. (2008) in order to measure students’ perceptions regarding social, teaching, and cognitive presence. For the purpose of this study, Huang and Chang (2010) analyzed only the results of the social presence scale. The main aim of their study was to investigate the difference in students’ perceptions of social presence between those who were enrolled online and those who were enrolled in face-to-face courses. They conducted an experimental research study with two groups: the experimental and control group. The control group ($N=19$) was made of the students who were in a traditional face-to-face course, while the experiential group ($N=18$) consisted of the students who were in the online version of this course. Both groups completed a pre-test survey that measured their perceptions of social, teaching, and cognitive presence for a previous course, and both of them had the same collaborative activities. The experiential group was supposed to complete these activities via a wiki site. This experiment lasted
for eight weeks. After completing the course, students in both groups were re-tested again using the same survey. Findings of this study “showed there was significant difference between the experimental (online) and control (face-to-face) groups in social presence, $F = 5.01, p = .032$” (Huang & Chang, 2010, p. 1807). The students’ perception of the online group was lower than the perception of their colleagues in the face-to-face group.

Shea (2006) used the Community of Inquiry framework instrument to measure teaching presence in his study, which investigated if there is a relationship between teaching presence, some demographic variables, and the participants’ sense of community. The demographic information was gender, age, employment status, reason for taking the course, duration of the course, status of student’s registration, and distance from campus. He revised the teaching presence scale in the Community of Inquiry framework instrument based on a factor analysis. The revised scale of teaching presence has two components: “instructional design and organization and directed facilitation” (Shea, 2006, p. 39). The dependent variable was learning community; he measured it using the Classroom Community Index. He then conducted a multiple regression analysis to examine this potential relationship. The resulting model was statistically significant: $F (21, 2288) = 183.13, p < .001$ (p. 40). This whole model explained 63% of the variance in the dependent variable.

It appears from the literature that the Community of Inquiry framework is a well-known model that is widely used in online education research in order to understand the online learning experience and to measure social, teaching and cognitive presences. The
following section begins by briefly reviewing literature related to cognitive presence, and then reviews in more detail literature related to social presence and teaching presence.

**Cognitive Presence**

The first element of Community of Inquiry framework that is going to be presented briefly in this literature review is cognitive presence. Cognitive presence has been defined as “the extent to which online learners are able to construct meaning and critical thinking through sustained communication” (Ke, 2010, p. 809). Mayne and Wu (2011) defined this concept as “level and depth of critical thinking evidenced in interaction and communication among members of the online learning community” (p. 111). Garrison (2009) defined it as “A process of practical inquiry distinguished by discourse and reflection for the purpose of constructing meaning and confirming understanding” (p. 355).

Noteboom and Claywell (2010) stated that even though cognitive presence is a complex element which instructors may find somewhat difficult to facilitate, develop, and measure in a learning environment, it is an essential element in any learning setting. It has been found that cognitive presence has a strong relationship with critical thinking (Noteboom & Claywell, 2010). Jinks (2009) stated, “The cognitive presence of a student may be affected by their peers’ interactions (social presence) or may be affected by the design or facilitation of the course (teaching presence)” (p. 30). The study by Noteboom and Claywell (2010) showed that students with high awareness of social and teaching presence reported a high level of cognitive presence.
Creating higher order learning is one of the challenging instructor tasks in online courses (Garrison et al., 2001). Garrison et al. (2001) noted that cognitive presence is operationally defined based on the Practical Inquiry Model, and it is focused on developing higher order thinking; Practical Inquiry Model is a model that emphasized and focused on the process and steps of critical thinking. The construction of cognitive presence based on the Practical Inquiry Model has been driven from the work of John Dewey (Garrison, 2009). Garrison et al. (2001) used the Practical Inquiry Model to assess cognitive presence in an educational environment by defining four main phases:

- Triggering event: according to Garrison et al. (2001) this event is the first step toward gaining critical thinking in the online educational context, and it is the instructors’ role to start and integrate discussion for a target issue that trigger learning process (Garrison et al., 2001, p. 10).

- Exploration event: this is the phase that follows triggering phase where students start with the target problem, go back and forth between their reflection and discussion within the learning community. They added that in order to achieve this phase should be “characterized by brainstorming, questioning, and exchange of information” (Garrison et al., 2001, p. 10).

- Integration event: it is a more advance step in the critical thinking process where students construct deep meaningful knowledge, based on thoughts that they gather and exchange during discourse process with classmates and from their personal reflection (Garrison et al., 2001, p. 10).
Resolution event: is the final stage of the Practical Inquiry Model where the gained new knowledge is tested and being applied; in this phase a new problem will be established to make students go through the loop of the Practical Inquiry Model again in order to develop cognitive presence (Garrison et al., 2001, p. 11).

To reach cognitive presence it is necessary for students to be aware of their level of thinking; one strategy to improve students’ awareness of their level of thinking is to encourage students to rate their contributions (Arbaugh et al., 2008). Cognition awareness and understanding the educational goals and course expectation can help students to reach the resolution phase and as a result could improve cognitive presence (Garrison, 2009). Garrison (2009) added that assuring appropriate course design and facilitating activities and discussion could play a role in influencing cognitive presence. Learners should be guided in the online course by being introduced to a pre-built instruction by instructors to facilitate cognitive presence and to allow them to go through all of its phases, starting from the triggering phase and ending with the resolution phase (Darabi, Arrastia, Nelson, Cornille, & Liang, 2011).

Social Presence

Social presence and teaching presence are essential concepts in online classes as well as their traditional counterpart; it could be misleading to assume that social and teaching presence exist by default in any face-to-face course which may be not accurate all the time (Picciano, 2002). Social presence is the element that has been studied more frequently compared with teaching and cognitive presence, and it is known for its strong
connection with learning outcomes and students satisfaction (Noteboom & Claywell, 2010).

There are many studies, such as Alman et al. (2012); Bulu (2012); Cobb (2009); Garrison (2007); Liu, Gomez, and Yen (2009); Mansour et al. (2010); Rovai (2007); Sung and Mayer (2012); Wei et al., (2012) that shed light on social presence in online learning and its potential benefits. For example, a study by Bulu (2012) found that social presence is an important factor that impacts students’ satisfaction in online learning. Social presence is a factor that influences student enjoyment (Mansour et al., 2010), and interaction level in the online classroom (Mansour et al., 2010; Wei et al., 2012; Cobb, 2009). Other studies have shown that social presence is an influential factor in the successfulness and the quality of online learning experiences (Calli, Balcikanli, Calli, Cebeci, & Seymen, 2013; Cobb, 2009; Mansour et al., 2010), and an essential element in collaborative learning (Mansour et al., 2010). Liu et al. (2009) emphasized this by stating, “A student with a positive perception of social presence maintains a high degree of interaction and collaboration with peers” (p. 173).

Rovai (2007) pointed out that social presence could reduce the feeling of loneliness that online learners may have due to the structure of online learning. In online courses, students and their instructor are physically separated most of the time; assuring social presence and teaching presence is a solution for this reported issue (Sung & Mayer, 2012). Social presence has an important role in helping students to achieve higher-order learning and establish a community of inquiry (Garrison, 2007, p. 69).
Assuring social presence in a learning environment could be a means to enhance and develop a sense of community among students (Alman et al., 2012). In fact, social presence helps to make students feel that they are connected with others (Sung & Mayer, 2012). Social presence was found to be a significant predictor for students’ success represented by their final grade, and the course retention in one of the online courses in a community college (Liu et al., 2009).

Before introducing the definition of social presence, it is better to highlight the concept of presence in online and face-to-face learning settings means. The concept of presence in the online environment has been generally defined as “a student's sense of being in and belonging in a course and the ability to interact with other students and an instructor although physical contact is not available” (Picciano, 2002, p. 22). However, the same concept was defined for face-to-face classes as “a sense of being in a place and belonging to a group” (Picciano, 2002, p. 22). According to Picciano (2002), social presence in face-to-face classes emphasizes the ‘physical presence’.

Regarding social presence, many studies have provided similar definitions for this concept all of which focus on students as the main component of this presence. For example, Tu and McIsaac (2002) believe, “Social presence is a measure of the feeling of community that a learner experience in an online environment” (p. 131). Social presence has been defined in online courses “as the ability of students to project themselves socially and affectively into a community of inquiry and is deemed critical in the absence of physical presence and attendant teacher immediacy necessary to sustain learning in the classroom” (Shea et al., 2003, p. 65). Garrison (2007) in his study defined social
presences in online learning “as the ability to project one’s self and establish personal and purposeful relationships” (p. 63). He examined three constructs that could better explain social presence which are: “effective communication, open communication and group cohesion” (Garrison, 2007, p. 63). Similarly, Ke (2010) stated that social presence means “the ability of individuals to project their personal characteristics into the community, thereby presenting themselves to the other participants as “real people”” (p. 809). In 2012, Sung and Mayer redefined social presence as “…the subjective feeling of being connected and together with others during computer mediated communication” (p. 1739). The definition by Garrison (2007) is the one that was used to define social presence operationally in this study.

**Social Presence and Interaction**

One area that literature has reviewed regarding social presence is its connection with interaction and how social presence differs from interaction. Interaction is a concept, which has been connected with social presence, and people could have misconception regarding its similarity with social presence. In fact, social presence and interaction are two different concepts; having a sign of interaction among students does not mean that there is a social presence; for example, a student could interact with his peers in the online course, and may not have the feeling of belonging to the group (Picciano, 2002).

In an earlier study, Gunawardena and Zittle (1997) mentioned a similar idea about the differences between social presence and interaction; they argued that there is a possibility that when students interact with peers they become aware of this interaction and sometimes they do not. When students have this awareness of their ability to interact
with others this will move them to the next level, which is their ability to feel their connection of community around them; this feeling could be defined as social presence (Gunawardena & Zittle, 1997).

Indeed, the study by Tu and McIssac (2002) has shown that interaction and social presence are two different concepts. They found that social presence has a positive influence in increasing and improving interaction; this could show that social presence and interaction are two concepts, which could have an influence on each other. Also, Wei et al. (2012) stated “Learners must perceive an appropriate degree of social presence before feeling comfortable in interaction with others” (p. 539).

**Teaching Presence**

Teachers’ actions in online courses are an essential element in order to assure students satisfaction; actually there is a strong correlation between students’ satisfaction and instructors actions such as giving clear expectations, timely responses, and instructor enthusiasm (Jackson et al., 2010). Teaching presence has been defined as “the ability of a teacher or teachers to support and enhance social and cognitive presence through instructional management, building understanding, and direct instruction” (Dunlap & Lowenthal, 2009, p. 133). Greyling and Wentzel (2007) stated, “teaching presence includes subject matter expertise and the design, management and facilitation of learning” (p. 656). Shea et al. (2003) in their study defined “Teaching presence is the design, facilitation, and direction of cognitive and social processes for the realization of personally meaningful and educationally worthwhile learning outcomes” (p. 65). Bangert (2008) emphasizes the role of instructors in teaching presence by defining it “as the
‘methods’ that instructors use to create quality online instructional experiences that support and sustain productive communities of inquiry” (p. 40). According to Anderson, Rourke, Garrison, and Archer (2001), teaching presence has three main indicators, which are “design and organization, facilitating discourse, and direct instruction” (p. 1). Anderson et al. (2001) have explained each indicator separately.

The indicator of instructional design and organization could emphasize the role of teacher in designing for class interaction and evaluation, building the course material, planning for individual and group activities, planning the timeframe, and guiding students through net etiquette and technology use (Anderson et al., 2001). The second indicator, which is facilitating discourse, stresses the importance of sustaining students’ interaction, engagement, and motivation in online courses and as a result maintains high social presence (Anderson et al., 2001). Anderson et al. (2001) think that facilitating discourse could be achieved by constant reading of the students’ comments and maintaining feedback and active discourse. Finally, they discussed direct instruction by highlighting the role of the teacher as both a course facilitator and a subject expert in the online course. Teachers need to guide students to achieve the learning outcomes and assure that students meet these outcomes via assessment (Anderson et al., 2001).

In this study, the term ‘teaching presence’ has been used over ‘teacher presence’ (Anderson et al., 2001, p. 6). According to Anderson et al. (2001), they made the decision in their study to refer to the third component of the Community of Inquiry framework “as ‘teaching presence’ rather than ‘teacher presence,’” as a number of individuals who are not teachers often collaborate in carrying out this role” (p.13). Students think that their
instructors are the only people who are responsible of taking care of teaching process, but they may be surprised if they find out that their peers could play a role on this process even though their role was limited compared with teachers’ roles (Shea et al., 2003).

When discussing the benefits of teaching presence, a study by Mayne and Wu (2011) suggested that teaching presence compared with the two other elements of community of inquiry, social and cognitive presence, is more powerful and its existence has an influence in facilitating interaction among students. It appears that teaching presence plays a role in helping online instructors to facilitate online learning activities as well as collaboration work; it also helps students to establish trust between learners and build sense of community between and among the groups (Garrison et al., 2010). Teaching presence has an impact on students’ engagement level in online courses and in building a sense of community (Lear et al., 2009). A study by Garrison et al. (2010) found that teaching presence has the major role in constructing social presence among students and cognitive presence as well as maintaining high level of these presences through the course. Teaching presence has been identified by its essential role of facilitating and designing an effective social and cognitive presence (Noteboom & Claywell, 2010). In fact, taking care of teaching presence and ensuring its effectiveness could influence positively cognitive and social presence in the online classes and also could establish a sense of community among students, which leads to high learning satisfaction (Ke, 2010). Adult students will have the ability to adjust their cognitive and social presence in an online course based on what their instructors have planned and designed for them and that could reinforce the role of teaching presence (Ke, 2010).
The three elements of the Community of Inquiry framework, teaching presence, cognitive presence, and social presence are overlapped and the existence of each element of them in the learning environment has an influence on other elements (Garrison et al., 2010). Indeed, these presences have an influence on the ability to understand and to make sense of the learning experience that students go through while being in an online environment (Garrison et al., 2010). The study by Swan and Shih (2005) showed that both teaching presence and social presence are significant predictors of students’ interaction. Swan and Shih (2005) added that teacher presence is a better predictor than social presence of the perceived interaction since teacher presence explained twice the variance in the outcome variable.

The role of online instructors is complex and critical at the same time. Online instructors “… are often described as “the guide on the side” rather than the “sage on the stage”” (Alman et al., 2012, p. 293). Some of online instructors’ responsibilities are making sure that the course interface is user friendly and designed well in order to facilitate the navigation, and when these features are available, social interaction among students becomes more possible (Wei et al., 2012). Sung and Mayer (2012) stated that in order to maximize social interaction between students themselves and their instructors as well, instructors need to integrate rich resources in the online class.

Ke (2010) stated that effective teaching presence needs continuous follow up. Teaching presence must start early before the course even started by planning well for the course, and designing class instruction and elements (Ke, 2010). Then, it should last the whole class to assure that students are communicating well with each other and facilitate
their learning by providing clear instructions; finally it must end up with assessment for the whole learning experience (Ke, 2010). Focusing on instructional design, and integrating and developing a well-structured course, and facilitating discourse are some of the instructor roles that could help to increase interaction and as a result increase online students satisfaction (Alman et al., 2012). Noteboom and Claywell (2010) suggested taking care of “the selection, presentation, organization and design of course content, learning activities and assessments along with facilitation of both cognitive and social presences” (p. 1) in order to assure the effectiveness of effective teaching presence. Another study highlighted some of the responsibilities that online instructors need to complete in order to establish teaching presence in their classes as follows:

The first of the primary teaching presence responsibilities is establishing curriculum content, learning activities, and timelines. The second responsibility is monitoring and managing purposeful collaboration and reflection. The third is ensuring that the community reaches the intended learning outcomes by diagnosing needs and providing timely information and direction. (Garrison et al., 2010, p. 32)

Another way to help learners perceive teaching presence is that teachers should share their personal interests, beliefs, and experiences with their students and encourage their students to do the same thing which could be a motivator that shows students their connection with their instructors (Sung & Mayer, 2012). They further noted that since the online environment could isolate students, teachers should call students by their names; this strategy in their opinion could make students feel their existence and encourage them
to participate and communicate with others which could lead to high social presence (Sung & Mayer, 2012).

**Social Presence and Teaching Presence in Face-to-Face and Online classes**

Literature shows that the concept of social presence has been introduced in both of the relevant learning environments, face-to-face courses and online courses. A study by Wei et al. (2012) stated, “Social presence was originally investigated as a critical issue in telecommunication” (p. 530). On the other hand, Tu and McIsaac (2002) added, “The phenomenon of social presence was described initially in face-to-face (FTF), audio, and closed-circuit television encounters. However, the computer-mediated communication (CMC) environment presents very different characteristics from the FTF classroom” (p. 132). According to Tu and McIsaac (2002), social presence in the face-to-face classroom is represented in “facial expression, direction of gaze, posture, dress, nonverbal cues, and vocal cues” (p. 133). Greyling and Wentzel (2007) mentioned that in online courses emotion symbols and Internet slang have been established as a solution of the lack of non-verbal communication elements and facial expression that are known for being rich in face-to-face classrooms (p. 656). To highlight how social presence in online courses differs from that in traditional courses, a study highlighted students’ physical presence in face-to-face courses as the following:

A student’s physical presence in a face-to-face course assumes that she or he has a sense of belonging to the class or group of students enrolled in the course. He or she listens to the discussion and may chose to raise a hand to comment, to answer or to ask a question. Furthermore, this same student may develop a relationship
with other students in the class and discuss topics related to the class during a break, at the water fountain, or in the cafeteria. (Picciano, 2002, p. 22)

In terms of teaching presence, it could be inferred from the study by Whipp and Lorentz (2009) that the concept of ‘teacher immediacy’ in face-to-face classrooms is replaced with ‘teaching presence’ in online courses. Whipp and Lorentz (2009) indicated, “Teacher immediacy originally referred to verbal and nonverbal teaching behaviors in face-to-face classrooms that lessen both the physical and psychological distance between teacher and students” (p. 3). For online instructors, it is possible to utilize different teacher immediacy behaviors in online courses in order to eliminate the negative effect of being physically separated from students (Whipp & Lorentz, 2009).

Teaching presence and social presence are two overlapped concepts (Annand, 2011). For the purpose of this particular study, social presence focuses on students’ social presence and their peer presence, whereas, teaching presence focuses on the teacher’s role. Morgan (2011) stated, “both students and instructors can have teaching presence” (p. 4); however, his study focused only on the role of instructors in teaching presence. In the study by Morgan (2011), he justified his choice of the teacher role in teaching presence by mentioning that “this position of the instructors itself engenders a different set of power relations and cultural historical understanding” (p. 4). This particular study examined teaching presence by focusing on that same role, that of instructors. It measured students’ perception regarding teaching presence while focusing only on instructors’ actions and responsibilities in online courses. On the other hand, social presence focuses on learners and to what extent they communicate emotionally and
socially with other class members (Swan et al., 2008). Swan et al. (2008) stated that most studies, studying social presence looked at this variable as a construct that concentrates on the perception of the presence of peer instead of the presence of instructors. Anderson et al. (2001) added that there is an overlap between social presence and teaching presence; in their study, social presence of the instructor, which focuses on facilitating discourse, was measured under teaching presence instead of social presence. It is clear from the study of Anderson et al. (2001) that they considered the social presence of the instructor as a teaching presence. This will solve the overlap issue between these two constructs. In the next section, literature related to students’ satisfaction was addressed.

**Research Focused on Satisfaction**

Regardless of the class setting, having dissatisfied students could result in challenges that instructors may face and they need to deal with seriously. In fact, “Students with high satisfaction are expected to be persistent and successful in online learning compared to their counterparts with low satisfaction” (Kuo, 2010, p. 10). Having satisfied students with online courses could associate with having a high completion rate and increasing students’ motivation level (Kuo, 2010).

Being aware of what could make students dissatisfied with any course is a must; it could help instructors and administrators to make any needed interventions in order to maximize satisfaction level (Al-Asfour, 2012). A study on students’ satisfaction conducted by Johnston et al. (2005) pointed out that students’ satisfaction is an important factor to be studied in online learning since it could pull students behind and affect their ability to take advantage of courses. Two other studies showed that students’ satisfaction
is a critical factor since having unsatisfied students could increase dropout rates and lower the learning benefits (Alman et al., 2012; Al-Asfour, 2012).

There is a wide range of studies that covered the topic of students’ satisfaction in online learning as well as covering possible factors influencing students’ satisfaction. Some factors that could influence student satisfaction in online classes are “interaction, course design, learning community, tech support, and program policy” (Cho, 2011, p. 114). Another study highlighted instructor role as a core factor, which has an influence on students’ satisfaction (Ladyshewsky, 2013). The study by Kuo (2010) added that interaction and self-efficacy are some of the significant factors, which affect students’ satisfaction level in online classes. Abdel-Maksoud (2007) stated that overall interaction was the most important predictor of students’ satisfaction. Joo, Lim, and Kim (2011) found “that teaching presence, cognitive presence, and perceived usefulness and ease of use were significant predictors of learner satisfaction” (p. 1654). According to Joo et al. (2011) the concept of presence is associated with pedagogical aspects while perceived usefulness and ease of use is associated with “the students’ perceptions of the intervention” (p. 1655). This present research attempted to study students’ satisfaction while focusing on only factors related to the pedagogical aspects, which are the components of the Community of Inquiry framework. This research did not study the factors, such as course design, tech support, and program policy since all these variables focus on students’ perception of the technological aspects. This research excluded self-efficacy as well since it is considered as a personal trait.
It seems that interaction is one of the predictors that could affect students’ satisfaction; however, this study sought to study the elements of the Community of Inquiry framework instead of interaction as unlike the concept of presence, students’ interaction according to Gunawardena and Zittle (1997) does not necessarily mean that students have the awareness of their interaction. Cognitive presence focuses on an internal critical thinking process instead of interaction. It is clear that of these many factors, this study focused on cognitive presence, social presence, and teaching presence as predictors of students’ satisfaction as have been mentioned for their association with pedagogical aspects. Cognitive presence, social presence, and teaching presence are components of the Community of Inquiry framework which was developed originally by Garrison, Anderson, and Archer (2000), and through this document the terms of these components will be used as they come from this citation. For the purpose of this research, the following section examines previous studies on student satisfaction related to cognitive, social, and teaching presence.

Studies on Social, Teaching, and Cognitive Presence and Students’ Satisfaction

There were only a few studies that discussed the social, teaching, and cognitive presence together as predictors of the topic satisfaction. One study by Joo et al. (2011) aimed to study if “teaching presence, social presence, cognitive presence, and perceived technology usefulness and ease of use” (p. 1654) could predict students’ satisfaction and persistence. They also studied the relationships between these variables. They distributed two surveys. The total participants in this study, who completed the both surveys was 709 students and these students were enrolled in a computer class in an online Korean
university. Teaching presence \((t = 2.076, p = .038)\), cognitive presence \((t = 2.434, p = .015)\), and perceived technology usefulness and ease of use \((t = 4.420, p = .000)\) were the only variables that significantly predict students’ satisfaction. Social presence in this study did not predict students’ satisfaction.

Another study, which is the study by Arbaugh (2008), focused on delivery of medium satisfaction and if it could be predicted from social, teaching, and cognitive presence. Arbaugh (2008) investigated the three components of the Community of Inquiry framework and if they are predictors of perceived learning and delivery medium satisfaction. The sample was drawn from 55 online courses in the MBA program in one of the United States universities. A survey was sent to 1,200 students with a 54.7% response rate. The findings showed that social presence \((\beta = .45)\) was the best element in predicting delivery medium satisfaction compared with teaching presence \((\beta = .15)\). In terms of perceived learning, Arbaugh (2008) reported that teaching presence \((\beta = .54)\) is a better predictor of perceived learning compared with social presence \((\beta = .20)\). Another finding of this study showed that cognitive presence plays a strong role in predicting perceived learning \((\beta = .55)\), but it does not predict delivery medium satisfaction. Arbaugh (2008) found that teaching presence and cognitive presence were major elements for assuring an effective learning experience in online courses, and even though the existence of social presence is necessary, it is not adequate to assure deep and meaningful learning. However, teaching presence and social presence were the only positive predictors of delivery medium satisfaction. The author construed this finding due to the association
between delivery medium satisfaction and triggering aspects of cognitive presence, which was not measured completely in this study.

Another study is the study by Wanstreet and Stein (2006), which examined the influence of the three presences, cognitive, social, and teaching presence, on students’ satisfaction with online course activities. Wanstreet and Stein (2006) used the Community of Inquiry framework to measure cognitive, social, and teaching presence. The main goal of this study was to explore the impact of the three presences on students’ satisfaction with online course activities. They divided social presence into two variables, class social presence and group social presence. Forty-four students out of fifty-five students in two blended courses participated in this study. The researchers used correlation and regression analysis, and they ran two hierarchical steps relying on previous studies, which suggested this model. They entered teaching presence in the first step, and in the second step they entered, by order: cognitive presence, class social presence, and finally group social presence. Their findings indicated that students’ satisfaction was significantly associated only with teaching presence, $r (42)= .778, p < .01$, and cognitive presence, $r (42)= .778, p < .01$. The first model, which included teaching presence only, was significant at the significant level of .01, and it “accounted for 60% ($R^2 = .60$) of the unique variance” (p. 782). The second model, which had cognitive presence, class social presence, and group social presence, explained 68% of the variance in the students’ satisfaction, $F(4, 21.06) < .001$.

**Studies on social presence and students’ satisfaction.** A study by Richardson and Swan (2003) examined relationships between social presence, perceived learning,
and student satisfaction in online learning. They distributed a survey to 369 students, and only 97 students responded. They used a modified version of social presence scale, which was constructed by Gunawardena and Zittle (1997). They conducted a correlational design study. The findings of this study showed that social presence has a correlation with perceived learning $r = .68, p < .05$, and with students' satisfaction with their instructor $r = .60, p < .05$ (Richardson & Swan, 2003, p. 73). Then when conducting regression analysis to examine if social presence could predict perceived learning, they found that social presence could predict perceived learning, $R^2 = .46, F(1, 931)= 78.83, p<.05$ (Richardson & Swan, 2003, p. 74).

A study by Hostetter and Busch (2006) aimed to explore the relationship between social presence and learning satisfaction. They studied this relationship by surveying 112 undergraduate students in two sections of an online course and one face-to-face section of the same course. Their findings showed that there is no significant difference between students in the online section and the face-to-face section regarding their perceptions of social presence; however, there was a significant difference in the students’ perception of social presence between students who studied on urban campus and rural campus. In fact, they found that students who studied in urban campus have higher perception of social presence compared with those who studied in rural campus. The main finding in this study showed that social presence could predict students learning satisfaction, and it “explained 40% of the variance in the Learner Satisfaction scores” (Hostetter & Busch, 2006, p. 6), and this result supports the study by Gunawardena and Zittle (1997) which
addressed the same results. They found that there was no impact of social presence on students’ learning outcome (Hostetter & Busch, 2006).

Zhang (2010) studied students’ perception of social presence and its relationship with their learning satisfaction in a 3D virtual world and in a traditional classroom. There were 69 students to participate in this study and who were registered in two sessions of the same course; there were 56 students in the face-to-face session while there were only 13 students in the distance session. The findings of this study showed that there is no significant difference between the two classes with regard to social presence and satisfaction. He also found that regardless of the class setting, social presence correlated with satisfaction; data showed that correlation between these two variables is 0.60 in distance learning and 0.40 in traditional classes.

A study by Cobb (2011) explored social presence and its relationship with students’ satisfaction and perceived learning in online nursing courses. The majority of the 128 responders were females. The survey in this study had a 48% return rate. The results of this study indicated that the perceived social presence showed a high correlation with overall satisfaction scores ($r = 0.63$); the correlation was almost constant among subdomains of satisfaction that the researcher measured except for the subdomain, students’ satisfaction with usefulness of course, where data showed lower correlation with social presence ($r = 0.41$). Data indicated that perceived social presence showed a high correlation with perceived learning ($r = .62$). Cobb (2011) showed that social presence predicted and accounted for 44% of the variance in satisfaction and 36% of the variance in perceived learning.
Some studies tried to shed light on potential strategies that could be used in order to increase social presence in online learning. Hostetter and Busch (2006); for example, indicated that high social presence could be met by taking care of the course design, and they indicated that students’ perception of social presence in the online environment could be improved by taking more online courses which could help students to build skills that allow them to deal with challenges in this learning environment.

Sung and Mayer (2012) suggested an instructional design strategy that may enforce social presence in an online environment. They suggested that in the online format, interaction and feedback from peers requires patience, so students must respect other people’s time and effort, and understand that not having a quick response to their question or participation does not mean they are being ignored (Sung & Mayer, 2012). Further, being open minded and accepting other students’ opinions could be a way to develop social presence and encourage students to interact with others (Sung & Mayer, 2012). According to Sung and Mayer (2012), it is the instructor’s role to set the environment that allows learners to share their feedback and opinions freely and to accept other peoples’ thoughts.

Students in an online course could easily feel frustrated and lonely due to the lack of immediacy in other learners’ responses (Sung & Mayer, 2012). A study on social presence and teachers’ immediacy by Hostetter and Busch (2006) indicated that teacher immediacy in responding and interacting with students could result in an increase in their perception of social presence. They presented teacher immediacy behaviors in a face-to-face environment as “Smiling, having a relaxed body posture and position, speaking to
the students rather than to the chalkboard, using humor, and modulating the voice”
(Hostetter & Busch, 2006, p. 2).

On the other hand, a few studies have shown that social presence is not a predictor of students’ satisfaction in online learning environment. One is the article by Kang et al. (2011), which focused on achievement and satisfaction on online courses and if this could be predicted from learning presence, by conducting three studies. In their first and second study, in terms of social presence, they found that social presence is significantly correlated with satisfaction and not with achievement. However, data analysis showed that social presence did not make any contribution to predict satisfaction, or to predict achievement. In their third study, they showed that social presence predicted only 8% of the variance in achievement and it did not significantly predict students’ satisfaction. The findings of the first and second study by Kang et al. (2011) are similar to the findings of an earlier study in 2008 by Kang, Kim, and Park; they found that social presence did not predict satisfaction (Kang et al., 2008).

Kang, Kang, and Jung (2008) conducted a study in a Korean university. Forty undergraduate students in a blended courses participated in this study. Kang et al. (2008) investigated the best predictors among social, cognitive, and emotional presence that predict learning outcomes. The learning outcomes focused on by this study were students’ achievement and students’ satisfaction. They used an instrument to measure these presences known as the BK 21 Presence Scale. According to Kang et al. (2008), the BK21 Presence Scale is a scale with 78 items to measure three levels of presence: social, cognitive, and emotional. They noted that it is a validated instrument. Emotional presence
according to Kang et al. (2008) focuses on expressing and managing emotions. They used a multiple regression to analyze data, and to explore if social, cognitive, and emotional presences predict achievement and satisfaction. The findings showed that cognitive presence was the only significant predictor of achievement, $F(1,39) = 6.78, p < .05$; it was also the only significant predictor of satisfaction, $F(1,39) = 8.576, p < .05$.

**Studies on teaching presence and students’ satisfaction.** Based on literature, there are a few studies, which have explored the relationship between teaching presence and satisfaction compared with many studies that discuss the relationship between social presence and satisfaction. Regarding overall satisfaction, Mayne and Wu (2011) stated that teaching presence has the most dominant effect on students satisfaction compared to social presence. Students reported a high learning satisfaction in online courses where instructors showed high teaching presence (Ke, 2010). Online instructors, according to Ke (2010) need to show a moderate presence in the course by interacting with students in the class discussion, giving them feedback, and monitoring their learning process.

Bush, Castelli, Lowry and Cole (2010) studied social, cognitive, and teaching presences. They examined if these presences support the community of inquiry in online and blended courses. The focus of this study was to investigate if the Community of Inquiry framework existed in online and blended university classrooms. They were interested in the relationship between teaching presence and students’ satisfaction. A survey was sent to 97 students, 64 male and 33 female students. Students who perceived high teaching presence reported high satisfaction scores (Bush et al., 2010). The researchers recommended that using effective teaching techniques could enhance
students’ learning process as well as their satisfaction with courses. To emphasize the importance of teaching presence, Bush et al. (2010) mentioned that teaching presence is necessary in the learning environment in order to improve satisfaction and knowledge. Bush et al. (2010) stated, “Teaching presence is crucial to establishing a learning environment that will allow the social and cognitive presences to take shape and create a community where learning can be effective” (p. 11).

A causal study on teaching presence was conducted by Wise, Chang, Duffy, and Del Valle (2004) to examine the impact on learning, satisfaction, and perceived social presence after manipulating teaching presence. They explored two main questions: first, does high teaching presence have an impact on students’ perception of social presence; second, is there a causal relationship between teaching presence and the perceived learning and satisfaction. The instructors in the high teaching presence class were trained to use communication cues that have been identified as indicators of high teaching presence. However, in the low teaching presence class, these cues were not used. Wise et al. (2004) found a causal relationship between teaching presence and social presence; however, there was no a causal relationship between teaching presence and learning or satisfaction. They concluded that even though literature showed that a correlation between teaching presence and learning and satisfaction is exist, their study showed that there is no causal relationship.

Jackson et al. (2010) investigated instructors’ actions and their influence on students’ satisfaction in online courses at two community colleges in Texas. Jackson et al. (2010) defined the immediacy behaviors of the instructors as the “faculty
communications within the online classroom, including prompt feedback and use of humor or emoticons, which reduce social and psychological distances” (p. 83). They collected data using the evaluation form of online courses in these colleges. Their survey was sent to 2862 students in both colleges, though only 1430 students responded to it. Based on students’ responses in the first college, the most effective instructors’ actions were listed under six categories: clear directions, timeliness of responses, expectations, instructor’s enthusiasm, conformable climate, and classroom activities. All these variables became the independent variables in this study for the first college. However, based on students’ responses in the second college, the most effective instructors’ actions were labeled under only two categories: timeliness of responses and classroom activities. The findings of the first college showed that there is a correlation between students’ satisfaction, and the independent variables of timeliness, expectations, enthusiasm, and climate. However, students’ satisfaction showed only a moderate relationship with two other variables, which are clear directions and classroom activities. Jackson et al. (2010) used a stepwise method for multiple regression analysis. They found that the resulting model, which has timeliness, expectations, enthusiasm, climate, and activities, explained 69% of the variance in students’ satisfaction. In the second college, students’ satisfaction showed a moderate relationship with activities and a low relationship with timeliness. When conducting a multiple regression analysis, Jackson et al. (2010) found that the resulting model explained just 47% of the variance in students’ satisfaction. They concluded that instructors’ actions do influence students’ satisfaction in an online environment.
Studies on cognitive presence and students’ satisfaction. In general, cognitive presence is the element that has been least studied compared with teaching and social presence (Hosler & Arend, 2012). There are only a few studies that explored the relationship between cognitive presence and satisfaction. The study by Hosler and Arend (2012) aimed to investigate the relationship between teaching and cognitive presence and if there is a significant difference between students who learn in online and face to face classes in their perceptions of this relationship. The survey was distributed to 582, and only 208 students had completed the survey. One of the questions was highlighted in this study: whether students’ satisfaction could be predicted from teaching and cognitive presences. They found that teaching presence and cognitive presence accounted for 78.3% of the variance in students’ satisfaction, adjusted $R = .783$, $F(2, 195) = 356.489$, $p < .001$. Cognitive presence was found to be responsible of the largest unique contribution in explaining satisfaction.

The study by Kang et al. (2008), which has been mentioned earlier in the studies related to social presence, showed that cognitive presence plays a role in predicting students’ satisfaction. Kang et al. (2008) found that among social, cognitive, and emotional presence, cognitive presence was the only presence that predicts learning outcomes. As it had been mentioned before that Kang et al. (2008) used a multiple regression to analyze data in order to explore if social, cognitive, and emotional presences predict achievement and satisfaction. Their findings indicated that cognitive presence was the only significant predictor of achievement and satisfaction.
Summary of Literature Review

Several studies have reported potential benefits of social presence (Alman et al., 2012; Bulu, 2012; Cobb, 2009; Garrison, 2007; Liu et al., 2009; Mansour et al., 2010; Rovai, 2007; Sung & Mayer, 2012; Wei et al., 2012), teaching presence (Garrison et al., 2010; Ke, 2010; Lear et al., 2009; Noteboom & Claywell, 2010), and cognitive presence in online learning (Hosler & Arend, 2012; Kang et al., 2008). The benefits of cognitive, social, and teaching presence have made them a rich topic for researchers in the domain of online learning.

Students’ satisfaction is one topic that has been examined widely in online learning. Many studies have focused on studying students’ satisfaction with online courses due to its effect on the successfulness of the online experience (Al-Asfour, 2012; Alman et al., 2012; Johnston et al., 2005; Kuo, 2010). There is a wide range of studies that focused on the factors that influence satisfaction; there are studies which chose to explore predictors of satisfaction, specifically the role of satisfaction in relationship with social presence (Cobb, 2011; Zhang, 2010), teaching presence (Arbaugh, 2008; Bush et al., 2010; Mayne & Wu, 2011), and cognitive presence (Hosler & Arend, 2012; Kang et al., 2008).

The reviewed literature reveals that social presence has been considered as a predictor of students satisfaction in online courses (Cobb, 2011; Gunawardena & Zittle, 1997; Hostetter & Busch, 2006; Zhang, 2010); however, there are two studies that reported that social presence was not a predictor of students’ satisfaction (Kang et al., 2008; Kang et al., 2011). Regarding teaching presence and cognitive presence, the review
of literature indicates that there are a relatively small number of studies, which have examined teaching and cognitive presence as predictors of students’ satisfaction in online courses. The review of literature also reveals that there are a limited number of studies that discuss cognitive, social, and teaching presence as predictors of students’ satisfaction. Based on this, there is a need for more studies to investigate the relationship between cognitive, social, and teaching presence and students’ satisfaction and to investigate which presence best predicts students’ satisfaction.
Chapter 3: Methodology

This chapter provides detailed information about the methodology that was used for this study by including: research design, operational definitions of variables, population, and sampling procedures. Information about instrumentation with data about the pilot study and validity and reliability issues is explained. Finally, information with regard to the assumptions of multiple regression analysis, data collection procedures, data analysis procedures, and ethical issues is included.

Research Questions

The predictor variables in this study are students’ perceptions of cognitive, social, and teaching presence, and the dependent variable is overall students’ satisfaction with the online program. This study was guided by two main questions:

1. To what extent do social presence and teaching presence predict students’ satisfaction in an online program in Saudi Arabia?
2. To what extent does cognitive presence predict students’ satisfaction after adding it with teaching and social presence in an online program in Saudi Arabia?

The Null Hypotheses and Regression Model Equations

The null hypotheses being tested in this study are as follow:

- The null hypothesis research question 1: Social presence and teaching presence are not predictors of overall students’ satisfaction with an online program in a Saudi university. The null hypothesis for this question is $H_0: \beta_1 = \beta_2 = 0$; whereas
\( \beta_1 \) is the coefficient on the teaching presence, \( \beta_2 \) is the coefficient on the social presence.

- The null hypothesis research question 2: Cognitive presence is not a predictor of overall students’ satisfaction with an online program in a Saudi university when adding it with social presence and teaching presence. The null hypothesis for this question is \( H_0: r^2 = \phi \).

The regression equation model for the first question is as follows: Predicted Value of Students’ Satisfaction = \( \beta_0 + \beta_1 x_1 + \beta_2 x_2 \); whereas \( \beta_0 \) is constant, \( \beta_1 \) is the coefficient on the teaching presence, \( \beta_2 \) is the coefficient on the social presence, \( x_1 \) is teaching presence score, and \( x_2 \) is social presence score.

The regression equation model for the second question is as follows: Predicted Value of Students’ Satisfaction = \( \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 \); whereas \( \beta_0 \) is constant, \( \beta_1 \) is the coefficient on the teaching presence, \( \beta_2 \) is the coefficient on the social presence, \( \beta_3 \) is the coefficient on the cognitive presence, \( x_1 \) is teaching presence score, \( x_2 \) is social presence score, and \( x_3 \) is cognitive presence score.

**Research Design**

The research design used in this study is non-experimental and correlational in nature. According to Gall et al. (2005), correlational research investigates the relationship between variables and the extent of this relationship (p. 219). When a researcher is exploring the relationship between more than two variables, a special kind of statistics known as multivariate correlational statistics is used; one kind of these multivariate correlational statistics is multiple regression analysis (Gall et al., 2005). Multiple
regression analysis is used when having two or more predictors and researchers are planning to determine to what extent an outcome variable could be predicted from all these predictors (Gall et al., 2005). In this study, the correlational design investigated if there was a relationship between the three independent variables (cognitive presence, social presence, and teaching presence) and the dependent variable (students’ satisfaction). Also, it investigated whether these variables could predict students’ satisfaction or not.

The research question was analyzed by using a multiple linear regression method to see if cognitive, social, and teaching presence play a role in explaining the variance in students’ satisfaction, and as a result predicts students’ satisfaction. This was a quantitative research design, which used descriptive and inferential statistical methods, and quantitative data collected using a self-report survey. Two open-ended questions were included in the survey and asked participants to describe situations where they felt the presence of their instructor and peers.

**Operational Definitions of Variables**

*Cognitive presence* is defined operationally based on the Practical Inquiry Model, which focused on developing higher order thinking and emphasized the steps of critical thinking which are triggering, exploration, integration, and resolution (Arbaugh et al., 2008).

*Social presence* is defined operationally by Arbaugh et al. (2008) by three categories “open communication, group cohesion and personal/affective projection” (p. 134).
Students’ overall satisfaction with the program is defined operationally based on Kuo’s study (2008) as the students’ satisfaction with the online learning experience, the students’ satisfaction with the level of the interaction within the program, the students’ willingness to take another online program in the future, and the students’ perception if the online program contributed to their educational and professional development.

Teaching presence is defined by Anderson et al. (2001) as “the design, facilitation and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes” (p. 5), and teaching presence has been focused on the teacher actions and behaviors in the course. This is the same definition that has been discussed by Arbaugh et al. (2008) in Chapter 2.

Population

The target population of this study was students who joined an online program, the Developed Entesab program, under the E-learning and Distance Education Deanship at one of the largest Saudi universities in the eastern region; both male and female students were included in this study. The Developed Entesab program is a fully online program at this university. It provides the opportunity for students to be taught by the same professors who teach in the regular face-to-face programs at the same university. It allows students to obtain a bachelor degree in several different majors, which are: Islamic studies, social studies, Arabic language, English language, special education, and business administration.
Sampling Procedure

The sample of participants was drawn from a list of students who were enrolled in the Spring Semester 2013 of the Developed Entesab program at one of the largest Saudi universities in the eastern region. Participants in this study were randomly selected. After receiving the approval of Institutional Review Board (IRB) at Ohio University, a request letter was sent to the Saudi university in order to obtain permission for conducting the study at their university. After obtaining this permission, E-Learning and Distance Education Deanship at the university was contacted, and an email with the online survey was sent to the deanship in order to distribute it to the participants.

The deanship randomly sent the survey to 30,000 students’ cell phones using a list of 90,000 students that they had in their system and requested an active participation from students. It was planned in the beginning to send the survey to the students via email; however, the deanship suggested that cell phones are a better communication mode that they usually used to communicate with students especially when knowing that the time of distributing the survey was close to the duration of the final exams. The deanship thought that there was a chance that the response rate would be very low if the survey was sent via email in this duration. It is worth knowing that in the pilot study the survey was distributed via email by the researcher. The deanship thought that sending the survey to students’ cell phone as a text message, which had a link to the online survey, instead of sending it via email could help to get a better response rate. A decision was made to distribute the survey electronically via cell phones for both genders through E-Learning and Distance Education Deanship due to three reasons.
First, obtaining help from the deanship to identify participants provided a wide range of students who were enrolled in this program. This choice was better than meeting students face to face at the centers where the final exams are held. These centers are spread out through all provinces of Saudi Arabia and some of the countries of the Gulf Cooperation Council (GCC). It is worth mentioning that to meet students in the Developed Entesah program in person, visiting these examination centers is the only way. It is almost impossible to visit all examination centers in a short time in order to obtain a representative sample due to the large number of these centers and their spatial divergence.

Second, this study intended to collect data from both genders, so distributing surveys to students via cell phones will be a more suitable choice due to the structure of the educational system in Saudi Arabia. The educational system in Saudi Arabia embraces gender segregation in all schools and universities. There is a separate campus for each gender, and it is impossible for a female researcher to collect data personally on a male campus. The E-Learning and Distance Education Deanship served as an intermediary between the researcher and male students.

Third, in order to assure the confidentiality of the students’ names and personal information, the deanship completed the distribution of the survey instead of the researcher. For the three reasons above, it is clear that it was better to distribute the survey electronically rather than meeting students face-to-face.
Instrumentation

The data collected from this survey obtained information regarding students’ perception of cognitive, social, and teaching presence, and their overall satisfaction. Specifically, the survey focused on five main components. The first part was 7 questions asking participants to provide demographic information. The demographic information helped to describe and understand the population better. The instrument was designed to ask demographic questions that investigate age, gender, and major. This section included questions about whether or not a student owned a personal computer, used a cell phone to view class content, and has Internet access at home. The four other scales focused on asking students about their perception of teaching presence, social presence, cognitive presence, and overall satisfaction with the Developed Entesab program.

In total, the survey had 49 questions: 7 demographics information items, 5 items to measure students’ satisfaction, 13 items to measure teaching presence, 9 items to measure social presence, 12 items to measure cognitive presence, one question about the quality of the program, and two open-ended questions. The satisfaction scale was adapted from Kuo (2010), while cognitive, social, and teaching presence scales were taken from Arbaugh et al. (2008). All scales were assessed for validity and reliability issues in the previous studies where they were used. For more confirmation, a pilot study was conducted to evaluate any issues related to content validity and reliability as it might apply to this population. The results of this pilot study were reported in the pilot study section. The last component in this survey contains one yes/ no question and two open-ended questions, asked students to explain or describe a situation related to teaching and
social presences. Responses from open-ended questions were read and possible themes were detected. The main goal of adding a yes/no question to the survey is to assess students’ beliefs about what they think about the quality of their online program. The general results from this question could be compared with the results from the satisfaction scale. Having the majority of students believe that online programs are equal to face-to-face programs should associate with a majority of students who are satisfied with the program. The next section discusses validity and reliability issues of the satisfaction scale, teaching presence scale, social presence scale, and cognitive presence scale as they were reported in their original studies.

**Satisfaction scale.** The satisfaction scale was adapted from the study by Kuo (2010). According to Kuo (2010) this satisfaction instrument is a modified version of a satisfaction scale, which was used, in a prior research by Kuo, Eastmond, Schroder, and Bennett (2009). Kuo (2010) investigated “interaction, Internet self-efficacy, and self-regulated learning as predictors of student satisfaction” (p. 1); however, Kuo et al. (2009) examined only interaction and course satisfaction in a hybrid course. The modified version of satisfaction scale by Kuo (2010) has five items on a five-point Likert scale ranging from (strongly disagree) to (strongly agree). A pilot study for this scale was conducted by distributing the scale initially to only 22 students; analyzing the data from the pilot study showed that this scale had a strong reliability (Cronbach's $\alpha = .90$).

Kuo (2010) conducted another pilot study for the whole instrument that he used in her study, and the Cronbach's alpha coefficient of satisfaction scale was 0.93, which suggested a high reliability. This Cronbach's alpha coefficient supports the initial results
of the pilot study, which was equal to 0.90. To evaluate the validity of the scale, six experts have reviewed the satisfaction scale to rate the items’ appropriateness of representing the scale. These six experts are professors who have experience teaching online courses. They were supposed to rate each item by deciding if it is “essential, useful but not essential, and neither essential nor useful” (Kuo, 2010, p. 41). Kuo (2010) followed this process with calculating the Content Validity Ratio (CVR) of each item based on the expert rating. He calculated the CVR for each item by calculating the ratio between the number of total experts and the number of experts who marked the item as an essential item. Regarding the satisfaction scale, Kuo (2010) has deleted two items that showed low CVR and ended up with five items that scored high CVR. For the purpose of this study, slight changes were made to this scale. Instead of having this scale asking students about satisfaction regarding a certain course, the items were changed to ask about the online program in general. In other words, the term ‘course’ was changed to ‘online program’ in this study. The permission letter to use and modify the survey is attached in Appendix D and Appendix E.

There are different measures in order to assess different aspects of student satisfaction. This study focused on measuring the overall students’ satisfaction with the program. Students were asked if they are satisfied with the learning experience being in a completely online program. They were asked if the online program contributed to their educational and professional development. They were asked about the level of the interaction within the program. According to Cho (2011) interaction is one of the critical issues in the online setting. Finally, they were asked if they are willing to take another
online program in the future. Lim (2001) suggested that there is a positive relationship between students’ satisfaction with their online class and their willingness to engage in another online course in the future. The researcher in this present study is interested in looking at the students’ satisfaction level of the whole program. Sorden (2011) mentioned that having students being satisfied with the online course as a whole could increase the chance of achievement and the possibility of repeating this learning experience. Kuo (2010) defined satisfaction “as student's perception related to learning experiences and perceived value of a distance course” (p. 11). Johnston et al. (2005) stated, “if the educational goal is accomplished and the students is satisfied with the experience, the institution and the students benefit” (p. 2).

**Teaching presence, social presence and cognitive presence scales.** The scales of cognitive, social, and teaching presence were used from an instrument, which was developed by Arbaugh et al. (2008). Their aim was to develop an instrument to measure the three frames of Community of Inquiry framework, which are cognitive, social, and teaching presence. They used a sample size of 287 from institutions in the United States and Canada. They decided to gather the sample from four institutions in order to increase the possibility to generalize the findings. When Arbaugh et al. (2008) conducted the factor analysis, they found that cognitive, social, and teaching presence “accounted for 61% of the total variance in scores” (p. 135). According to Arbaugh et al. (2008) the results of the factor analysis supported the suggested model by the Community of Inquiry framework, which has three factors: social, teaching, and cognitive presence.
In the study by Arbaugh et al. (2008), internal consistency was high for social, teaching, and cognitive presence scales. Cronbach’s alpha was equal to 0.91 for social presence scale, equal to .94 for teaching presence scale, and equal to 0.95 for cognitive presence scale. Arbaugh et al. (2008) concluded that the instrument as a whole is a valid and reliable instrument to measure the three presences.

Shea and Bidjerano (2009) used the same instrument, which they referred to as a cumulative effort of researchers over many years. The survey was distributed to students taking online courses from 30 different institutions. The number of students who responded to the survey was 2605 students; however, the analysis procedure was run for only 2159 cases. When running a factor analysis procedure, they found that all items were loading on the related factor. The internal consistency of this survey showed a constant result with the previous studies; Shea and Bidjerano (2009) reported a high internal consistency regarding cognitive, social, and teaching presence scales in their survey. Cronbach’s alpha was equal to 0.92 for social presence scale, equal to .96 for teaching presence scale, and equal to 0.95 for cognitive presence scale. This attempt was followed the next year by the study of Noteboom and Claywell (2010). Noteboom and Claywell (2010) had used the same instrument that Shea and Bidjerano (2009) had utilized in their study, but they applied it on students with different demographics. The aim of this study was to explore students’ perceptions of cognitive, social, and teaching presence. It also aimed to replicate the instrument of Shea and Bidjerano (2009) and explore if the same presence constructs could emerge using a different sample. They distributed the survey to 716 students and received 337 responses. When Noteboom and
Claywell (2010) conducted a factor analysis, they ended up with similar results of the study by Shea and Bidjerano (2009). The only difference that they found was two items, which loaded, unexpectedly in a different factor. An item had loaded on social presence instead of teaching presence, and another item had loaded on cognitive presence rather than social presence.

Garrison et al. (2010) used the same instrument to collect data in their study, which investigated causal relationships between cognitive, social, and teaching presence. The participants who completed the survey were 205 students from 14 different courses. Garrison et al. (2010) conducted factor analysis to assess the validity of the instrument, and they found that each item in the instrument loaded on the appropriate factor. This is the same result of factor analysis that Arbaugh et al. (2008) got in their study.

The Community of Inquiry instrument was used also by Hosler and Arend (2012) to measure only teaching presence and cognitive presence. Their study aimed to explore the difference in the students’ perceptions of teaching and cognitive presence in online and face-to-face courses. They distributed the survey to 582 participants, and they only received 208 responses. They reported high internal consistency for both teaching and cognitive scales since Cronbach’s alpha was equal to .96 for teaching presence scale and equal to 0.95 for cognitive presence scale. No factor analysis had been run for this study and the author had to rely on the history of this instrument of being a valid and widely used instrument.

Alman et al. (2012) had utilized a modified version of Arbaugh et al. (2007), which is the same survey that was used in this current study. Mainly, the modification
was reducing the items of some constructs, adding some questions to the social presence scale, and rephrasing some items. According to Alman et al. (2012), they modified the survey in order to reflect the courses’ design, which had been used in their own study. The author did not identify or mention any evidence of conducting factor analysis or internal validity for their modified version of the survey. It seems that they relied on the original survey of Arbaugh et al. (2007), which has been known as a reliable and valid instrument. This study explored the effect of cohort-based learning on students’ satisfaction of learning presences by comparing two groups of students. According to Alman et al. (2012), “In the cohort delivery format, students moved through the program together” (p. 290). One of these groups has been taking the course online with a support of cohort-based learning; the other group was taking the same courses on campus. The participants in the cohort group were 19 students while their number in the non-cohort group was 17 students.

It seems that this instrument is widely used. This instrument is almost the only instrument that measures the three presences together while having clear evidence from previous studies of a high internal consistency for all presences. Regarding the validity of the instrument scores, factor analysis, some of the previous reviewed studies such as Arbaugh et al. (2008), Shea and Bidjerano (2009), Garrison et al. (2010) showed a constant result of having all items loading appropriately on the expected factor. Only one study, Noteboom and Claywell (2010), which reported conducting a factor analysis, showed a similar result with only two items loaded differently of what they were expected. On the other hand, other available studies had utilized instruments that measure
only one presence or two presences while some of them not taking care of the slight overlapping between presences. This issue had forced the researcher of this present study to exclude them from being an appropriate measurement tool to the target variables.

Mayne and Wu (2010), as an example, used an instrument to measure only social presence rather than all of the three presences. This scale had not been used in this present study to measure the social presence variable. The reason behind not using it is because this scale focuses on two concepts, which are learner-to-learner interaction and learner-to-instructor interaction, which does not match the operational definition for social presence in this study. The same issue was presented in the study by Cobb (2009) where the author measured only social presence. The internal consistency was high with a Cronbach’s alpha equal to .87 for this scale; however, social presence scale in their study covers students perception towards their instructors and learners, which have not been attempted to be measured under social presence scale in this presented study.

Pilot Study

A pilot study was a primary testing process to investigate and assure whether conducting a certain study is worth the effort; this process could also help to highlight issues that researchers did not consider before (Lanphear, 2001). According to Lanphear (2001), some benefits of conducting a pilot study are to validate the used instruments, test the statistical methods, or assess the success of a certain treatment. The pilot study can be helpful to assess issues related to internal consistency of the survey’s items (Johanson & Brooks, 2010).
In this study, the pilot study was conducted to determine that all items in the developed survey were clear, comprehensible, and suitable for university-student level. This pilot study aimed to assess whether the items of the survey have a high internal consistency or not. Furthermore, it was meant to investigate if there is an issue with the Arabic translation of the survey, and whether students have some difficulties in understanding a certain item or not. The original survey was in English, and since this study took place in Saudi Arabia, the survey was translated into Arabic. The English version of the survey was sent to a bilingual teacher, who teaches English language at one of the American universities in the Midwest in order to be translated into Arabic. After translating the survey, the Arabic version was given to a bilingual graduate student majoring in computer science and networking in order to do the backward translation. Then a comparison was conducted to assess whether or not the original survey matched the back-translated version. The result of this comparison indicated that both versions are matched.

For the purpose of piloting a survey, Johanson and Brooks (2010) recommended a sample size of thirty participants, who represent the target population. Based on this, the Arabic version of the survey was distributed to 50 female and male students in the Developed Entesab program at one of the largest Saudi universities, and only 29 students have responded to the survey. A snowball sampling procedure was used for piloting the survey. The process was started with students in the Developed Entesab program at the same university, who have been previously known by the researcher. With the help of these students, it was possible to distribute the survey to their peers. The pilot survey was
sent via email with a link to the online survey. The participants have been told that they were participating in a pilot study, and they have been told also to not fill out the same survey next time when the main study is going to be conducted. The students were given three days to complete the survey. After collecting data from the pilot study, Cronbach’s alpha coefficient was calculated to evaluate the reliability of the instrument scores. To assess any issue with the instrument, one person with an instructional technology major examined the instrument to assess if there were any typos or technical issues. The next section explains reliability and validity of the scores used in detail.

**Reliability**

After obtaining the responses of the pilot survey, a Cronbach’s alpha coefficient was calculated in order to assess the internal consistency of the items in the instrument and as a result assess the score’s reliability. Data from the pilot study was entered in Statistical Package for the Social Sciences (SPSS) version 21. The results showed that all scales have a good internal consistency, which suggests a high reliability. Cronbach’s alpha was equal to .845 for teaching presence scale, .880 for social presence scale, and .915 for satisfaction scale. The cognitive presence scale was added later to the survey after conducting the pilot study, so it was not possible to calculate its Cronbach’s alpha. These results were supported by the two previous studies by Arbaugh et al. (2008) and Garrison et al. (2010) who obtained similar results.

**Validity**

The survey was reviewed by a faculty member in the same university to evaluate if there were any cultural aspects that needed to be added to the survey’s items. The
results of this review showed that all items are suitable for Saudi students and there was no specific cultural aspect that needed to be added to the survey. The survey was reviewed also by one person; more specifically, a bilingual PhD student in instructional technology for cultural bias. This kind of review helped to determine if there are any ambiguous questions in Arabic, technical issues, typos, or any other issues that could be affecting the survey. The results showed that all questions were clear, and there were no reported technical issues with the survey, so no changes have been made to the questions. One issue was diagnosed by one of the students; that the major of special education was not listed under the major question. Based on the website of the university, there are only five majors in the Developed Entesab program and special education is not one of them. After contacting the university, it appears that this major is closed, and they are not admitting any more students to it; however, there are some students who are still studying in this major. Based on that, this major was added to the list in order to cover all students in the Developed Entesab program.

**Data Collection Procedures**

Data was collected using an online survey created using Qualtrics’ Online Survey. It was sent to students to their cell phone through the E-learning and Distance Education Deanship at one of the largest Saudi universities. Students enrolled in the Developed Entesab program at one of the largest Saudi universities in the eastern region in Spring Semester of the year 2013 were invited to complete the survey. To start the process of collecting data, a request was written to the university to obtain their permission of distributing the survey. After obtaining their permission, the E-learning and Distance
Education Deanship was contacted by the researcher via email. The email had a link to the online survey. The survey was accompanied with an informed consent, contact information of the researcher, purpose of the study, and benefits from conducting the study. Students who are not willing to participate in this study were able to leave the survey whenever they wanted; students were informed about this in the informed consent form. The deanship distributed the survey under its authority by sending it to the students’ cell phones. Students were invited to participate in this study by the end of the Spring Semester 2013, and they were given two weeks to complete the survey. After two weeks of distributing the survey, the researcher started the process of analyzing the received data.

**Data Analysis Procedures**

The main aim of this study was to investigate if cognitive, social, and teaching presence are significant predictors of students’ satisfaction of the online program. Multiple regression analysis was chosen to determine if cognitive, social, and teaching presence are significant predictors of students’ satisfaction. A Statistical Package for the Social Science (SPSS) version 21 was used to analyze data. Descriptive statistics including mean and standard deviation were provided in order to explain clearly the sample of this study and as a result provide a clear understanding of this sample. Correlation coefficients were computed to determine if there were significant relationships between variables. Assumptions of multiple regression analysis were tested. The next section explains in detail these assumptions.
The Assumptions of Multiple Regression Analysis

The assumptions of multiple regression methods, which were tested, are normality, linearity, and homoscedasticity assumptions. Multicollinearity among predictors was tested. In this section, the researcher attempted to see if there was any extreme violation of these assumptions. There was an exploration to see if there were any outliers or missing data. A histogram was utilized to determine if there was a violation of the normality assumption. Warner (2008) noted that all quantitative variables should be examined to determine if they have a normal distribution shape, and the especially outcome variable; this assumption was tested by examining histograms. In terms of linearity, Warner (2008) indicated that the relationship between each of the two variables should be linear, and this was examined by looking at bivariate scatter plots (p. 432). Having many bivariate outliers showed in the scatter plots can violate the linearity assumption (Warner, 2008).

Regarding the homoscedasticity assumption, scatter plots were used to determine if the variances of the residuals in the independent variable were homogenous across all levels of the predicted variable (Warner, 2008). If these variances are not homogenous across levels of the predicted variable, then there is a violation of homoscedasticity assumption. To investigate the multicollinearity among predictors, the researcher examined the coefficient table, particularly the Variance Inflation Factor (VIF) and the value of tolerance. A tolerance value of a predictor closer to 1.00 suggests that this predictor provides new information, which is not explained by other variables (Warner,
In this case, if all predictors in this study have a tolerance value close to 1.00, this suggested no concern regarding multicollinearity among predictors.

Screening data was done to assess any outliers or influential cases. According to Warner (2008) if there are any outliers or influential cases that may impact the findings and could result in a violation of some of the assumptions, more investigation into these cases should be conducted to make a decision if they need to be removed or not. To screen the data using SPSS version 21, scatter plots were utilized to assess the bivariate outliers. To assess multivariate outliers and influential cases, Mahalanobis distance and Cook’s distance techniques were used.

The null hypotheses in this study were rejected using the alpha = 0.05, and two-tailed test, and which suggests that there is a chance that the researcher will commit a 5% Type I error (Warner, 2009). Type I error is when the researcher decides to reject the null hypothesis while it is in fact true, and Type II error is when the researcher decides to accept the null hypothesis while it is false and the alternative hypothesis is true (Warner, 2009). The researcher should reject the null hypothesis if the level of the significant is less than the alpha level (Warner, 2009); it could be said in this situation “the result probably did not occur by chance” (Gall et al., 2005, p. 173). In this case, the result is statistically significant and it is possible to generalize the results from the sample of the study to its representative population (Gall et al., 2005).

Brooks and Barcikowski (2012) suggested that larger precision efficacy (PE) could indicate that a certain regression model could be generalized to another sample, so a large precision efficacy (PE) of .80 was chosen. Based on Brooks and Barcikowski
(2012) with an expected effect size of .25, 3 predictors, and precision efficacy (PE) of .80 a sample size with a minimum of 112 participants was needed for the multiple regression analysis in this study. To deal with missing data, Warner (2008) mentioned that listwise deletion, which excludes cases with missing data on any variable from the regression, would provide consistent sample size for all correlations, but it could be an issue if there are many cases with missing data.

**Ethical Consideration**

In order to protect human rights, avoid any potential ethical issues, and prevent any harm to the participants in this study, a request to review this study was submitted to the Institutional Review Board for approval (IRB). The process of data collection was started after receiving their approval. In general, students were asked in this study to report some educational information related to their daily educational life in the online program and their satisfaction of the overall online experience. Based on that, it could be predicted that this study did not involve any kind of physical or emotional danger and did not cause any kind of risk to any of the participants. The survey was completely anonymous; students were not asked to provide any kind of identification information, and all information was used with a high level of confidentiality. The participants were aware of this important information via a consent form, which was available to them before they decided to fill out the survey.
Chapter 4: Results

Introduction

The purpose of this study was to examine cognitive, social, and teaching presence as significant predictors of students’ satisfaction. The research design is non-experimental and correlational in nature. Multiple regression analysis was used to determine to what extent do cognitive, social, and teaching presence predict students’ satisfaction. The research question was analyzed by using a multiple linear regression method. This is a quantitative study, which used descriptive and inferential statistical methods, and data was collected using a self-report survey. The target population was students who joined the online program in one of the largest Saudi universities in the eastern region. This study focused on two main questions:

1. To what extent do social presence and teaching presence predict students’ satisfaction in an online program in Saudi Arabia?

2. To what extent does cognitive presence predict students’ satisfaction after adding it with teaching and social presence in an online program in Saudi Arabia?

This chapter includes information regarding reliability of the instrument scores, validity of the instrument scores, data collection procedure, cross validation, descriptive statistics, checking outliers and influential points, checking regression assumptions, regression analysis, and finally a further analysis section.
Evidence of Reliability of the Scores

Calculating Cronbach’s alpha Reliability Coefficient provides researchers with information about how well certain items measure a specific scale, and this can be met by having these items correlate well with each other (Warner, 2008). According to Johanson and Brooks (2010), “Cronbach’s coefficient alpha is arguably the most commonly reported measure of internal consistency in survey research” (p. 396). Since the instrument in this present study consists of a multiple items scale, Cronbach’s alpha was used to evaluate reliability of the instrument scores. Warner (2009) stated that Cronbach’s alpha is the most popular way to assess reliability for this kind of scales.

The Cronbach’s alpha coefficients were calculated in this present study and they were .89 for the Social Presence Scale, .92 for the Teaching Presence Scale, and finally .93 for the Cognitive Presence Scale (Table 1). George and Mallery (2003) suggested that a scale with a Cronbach alpha of .9 has an excellent internal consistency, and a scale with a Cronbach alpha of .8 has a good internal consistency. Gliem and Gliem (2003) added that a Cronbach alpha of .8 is considered a reasonable target in research, and having scales with high Cronbach’s alpha reflects a good internal consistency. Thus, the Teaching Presence scale and the Cognitive Presence scale have an excellent internal consistency, while the Social Presence scale has a good internal consistency.
Table 1

**Reliability Analysis of the Instrument**

<table>
<thead>
<tr>
<th>Scale</th>
<th>Cronbach’s Alpha</th>
<th>Items Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching Presence</td>
<td>.92</td>
<td>13</td>
</tr>
<tr>
<td>Social Presence</td>
<td>.89</td>
<td>9</td>
</tr>
<tr>
<td>Cognitive Presence</td>
<td>.93</td>
<td>12</td>
</tr>
</tbody>
</table>

**Evidence of Validity of the Scores**

To test the construct validity, factor analysis procedure was run. Principal Component Analysis with Promax rotation was conducted while specifying 4 factors. Promax is one of the Oblique rotation methods, which can be used in order to improve the way of interpreting data (Hair, Black, Babin, & Anderson, 2010). During the interpretation process of the factor analysis, Hair et al. (2010) suggested when having a sample size of 350 or greater, all loadings of .3 are considered as significant factor loading. Due to a sample size of 814 in this present study, a factor loading of .3 or higher would be significant, and the pattern matrix table for the factor analysis was interpreted based on that. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was high (KMO= .96) and this result suggested that conducting factor analysis on this data is appropriate.

Referring to the factor analysis table in Appendix G, thirteen items, item 9 to item 21, loaded heavily onto Factor 1. It seems that these items were all related to teaching
presence scale, and due to this reason this factor was labeled as teaching presence. Next nine items, item 22 to item 30, were loaded well and mostly onto Factor 3; however, one item of the group, which is item 24, had a cross-loading issue. In other words, item 24 was moderately correlated with two factors, Factor 3 and Factor 4. According to Hair et al. (2010), cross-loading is identified as a situation “when a variable is found to have more than one significant loading” (p. 119). Item 24 loaded onto Factor 3 with a correlation coefficient of .570 while the same item loaded onto Factor 4 with a correlation coefficient of .306. Excluding item 24, the rest of the nine items were all related to social presence scale, and due to this reason this factor was labeled as social presence. For future use of social presence scale, researchers are advised to consider deleting this item or editing it if used in the Saudi Arabian context. The next twelve items, item 31 to item 42, loaded significantly and heavily as expected onto Factor 2. Obviously, these items were all correlated with cognitive presence scale, so this factor was labeled as cognitive presence. The last five items, item 43 to item 47, also loaded heavily as expected onto Factor 4, which represented the satisfaction scale.

**Data Collection**

The survey was sent to the E-learning and Distance Education Deanship at the university. Due to the low response rate while piloting this study, the deanship suggested sending the survey to the students’ cell phones as a message via the deanship communication system and under their authorization. They survey was sent to 30,000 random students in the online program. The total number of students in this program is around 90,000 female and male students. The survey was opened for two weeks as it was
planned, and then by the end of the two weeks the survey was closed in order to collect data. The number of students who decided to participate in this study and complete the survey is 2442 female and male students from different majors in the online program. The demographic information for this sample is presented in the descriptive statistics section.

**Descriptive Statistics**

The data was collected from the online program at one of the largest universities in Saudi Arabia which provides undergraduate-level degrees in 6 majors: Islamic studies, Special education, Social studies, Arabic language, English language, and Business. The number of collected responses was 2442. A third of this sample, 814 responses, was used to run the multiple regression; however, the whole sample was used to conduct the cross-validity procedure in order to assure the validity of the data. The 814 cases were collected randomly from the 2442 cases. Of the 814 participants, 40.5% were female and 59.5% were male. The majority of the participants (80.7%) were between 23-37 years old. Participants between the ages of 18 to 22 were 53 participants that represented only 6.5% of the whole sample, and only 11 participants were 48 or older which represented only 1.4%. Approximately 97.8% of the participants reported that they have their own laptop to access the online program, and 95.8% of them reported that they access the Internet from their houses. Regarding majors of the participants, 53.8% of the participants are studying Business, 22.5% of them are in Social Studies, 14.5% in English language program, 5.3% in Special Education, 2.7% in Islamic Studies and lastly 1.2% of them in the Arabic Language program. The participants were asked if they display their class
content on their cell phones, 23% of them answered by never, 23% by rarely, and 35% by sometimes. When asked if they contact their classmates via email, 51% of the participants answered that they never do that while 22% of them answered that they rarely email their classmates, and 17.9% of them answered that they email their classmates sometimes.

Data Screening

This section includes information regarding missing data, outliers, and influential points. A data screening procedure was done for only a third of the whole sample, which consists of 2442 cases. That is, only 814 random cases were used to do data screening and to run the regression analysis.

Missing data. Looking at the descriptive statistics provided by SPSS in Table 2, it is clear that the completed surveys had no missing data for any of the variables.

Table 2

Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching Presence</td>
<td>814</td>
<td>3.6257</td>
<td>.63034</td>
</tr>
<tr>
<td>Social Presence</td>
<td>814</td>
<td>3.9092</td>
<td>.65471</td>
</tr>
<tr>
<td>Cognitive Presence</td>
<td>814</td>
<td>3.8140</td>
<td>.64034</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>814</td>
<td>4.2843</td>
<td>.68620</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>814</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Checking outliers and influential points. Outliers, in general, are cases, which do not fit appropriately with the rest of data (Tabachnick & Fidell, 2007). To assess Univariate outliers, Tabachnick and Fidell (2007) suggested investigating cases with “very large standardized scores, z scores, on one or more variables” (p. 73). The impact of outliers is more serious when dealing with a small sample size (Warner, 2009). Hair et al. (2010) recommended that in order to examine Univariate outliers in a large sample size, any case with a standard score equal to 4 or greater could be a potential Univariate outlier. In the present study, a case is considered to be an outlier if its standardized score is more than +4 or less than -4. After calculating standardized scores of each case on all variables, a closer individual screening of these scores on each variable using the cutoff ±4 showed that there are some Univariate outliers. Table 3 showed that of the 814 cases, there are 7 Univariate outliers.
Table 3

*Univariate Outliers Detecting*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cases with Standardized Values exceeding +4 and -4</th>
<th>Standardized Values of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching presence</td>
<td>237</td>
<td>-4.16</td>
</tr>
<tr>
<td>Social presence</td>
<td>13</td>
<td>-4.1</td>
</tr>
<tr>
<td>Social presence</td>
<td>237</td>
<td>-4.1</td>
</tr>
<tr>
<td>Social presence</td>
<td>552</td>
<td>-4.1</td>
</tr>
<tr>
<td>Cognitive presence</td>
<td>11</td>
<td>-4.39</td>
</tr>
<tr>
<td>Cognitive presence</td>
<td>13</td>
<td>-4.39</td>
</tr>
<tr>
<td>Cognitive presence</td>
<td>329</td>
<td>-4.0</td>
</tr>
<tr>
<td>Cognitive presence</td>
<td>404</td>
<td>-4.13</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>11</td>
<td>-4.78</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>237</td>
<td>-4.2</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>325</td>
<td>-4.2</td>
</tr>
</tbody>
</table>

When detecting multivariate outliers, observations are being considered within a multidimensional position where more than two variables are involved (Hair et al., 2010). Mahalanobis Distance is one way that could be used to detect Multivariate outliers that may impact the regression model. Mahalanobis Distance is a measure that could be used to assess data if a certain case is a Multivariate outlier; this value provides information of
how far a certain case is from the mean center of other cases (Hair et al., 2010). Hair et al. (2010) suggested calculating the value of \( \frac{D^2}{df} \) in order to assess Multivariate outliers whereas \( D^2 \) is Mahalanobis Distance for a certain case, \( df \) is the number of independent variables. For a large sample size, Hair et al. (2010) recommended that any case with a value of \( \frac{D^2}{df} \) greater than 3 or 4 should be considered as a Multivariate outlier. Due to the large sample size in this present study, any case with a value of \( \frac{D^2}{df} \) greater than the cutoff 4 should be suspected to be an outlier. Mahalanobis Distance was calculated and saved using SPSS for all data. Using Compute Variable Command, the value of \( \frac{D^2}{df} \) was calculated for all data while \( df \) is equal to 3. Based on this measure, there are 22 observations that exceed the cutoff value of 4, and they are suspected to be multivariate outliers (Appendix H).

Hair et al. (2010) recommended to do further investigation to assess if these multivariate outliers were seen in Univariate and Bivariate analysis. A closer look has been given to these 22 cases to assess if they are Univariate and Bivariate outliers as well. The analysis process showed that only 6 of the 22 cases are also considered as Univariate and Bivariate outliers, which are cases (11, 13, 404, 237, 5, and 329). These cases were further examined to assess if they had any influence on the regression model. Using Cook’s Distance is one method that could help in investigating whether a certain outlier is a possible influential case, which could influence the regression equation (Stevens, 1999). Cases with a Cook’s Distance value greater than 1, may be possible influencing cases which should be investigated further (Tabachnick & Fidell, 2007). Among the 22 Multivariate outliers showing in the Multivariate outliers table in Appendix H, the case
with label 11 has the maximum value of .26437 which is much smaller than the cut off required for Cook’s Distance measure. All other outliers showed the same result, their Cook’s Distance values are below 1. Thus, all diagnosed multivariate outliers were not considered to be influential points. Hair et al. (2010) suggested that if researchers have no evidence that outliers do not represent part of the population and also if these outliers have no bad impact on the analysis, these outliers should be retained; retaining these outliers could help to improve the ability to generalize the result to the whole population. A decision was made to keep outliers in the data since they showed no serious influence on the regression model.

**Checking for Assumptions of Regression**

**Normality.** The normality assumption is the assumption that assesses if variables are normally distributed; in case this assumption is met, it could be assume that residuals also form a normal distribution (Tabachnick & Fidell, 2007). Testing the distribution’s skewness and kurtosis are one way to examine the distribution normality. Regarding the use of skewness and kurtosis to test normality, Tabachnick and Fidell (2007) stated:

If the sample is large, it is a good idea to look at the shape of the distribution instead of using formal inference tests. Because the standard errors for both skewness and kurtosis with larger N, the null hypothesis is likely to be rejected with large samples when there are only minor deviations from normality. (p. 80)

In regression analysis, examining the residuals plot is an alternative screening to normality that could replace screening the normality of each variable (Tabachnick & Fidell, 2007). Thus, if residuals form a normal distribution, then there is no violation
regarding normality assumption. The histogram of regression standardized predicted values against regression-standardized residuals showed that residuals are normally distributed, so normality assumption was met (Figure 1). Normal P-P Plots confirms that data was approximately normally distributed (Figure 2).

**Figure 1.** Histogram of Regression Standardized Predicted Values against Regression Standardized Residuals.

**Figure 2.** Normal P-P Plot.
**Linearity.** Linearity could be defined as having a straight line in the scatterplots to represent the relationship between each pair of variables (Tabachnick & Fidell, 2007). According to Warner (2008) if there is a linear relationship among variables, a Pearson r will be a suitable way to measure and describe the strength of the relationship; thus, Pearson r cannot be used if variables show a non-linear relationship. Linearity could be detected using bivariate scatterplots (Tabachnick & Fidell, 2007). Examining the scatterplots of regression standardized predicted values against regression-standardized residuals in Figure 3 showed that cases are shaping up in a straight line. It could be said that there are linear relationships among variables. There was no violation regarding the linearity assumption.

**Homoscedasticity.** Homoscedasticity assumption deals with the variability of scores, and if the variance of the outcome variable is homogenous across the levels of independent variables (Warner, 2008). One way to check the homoscedasticity assumption is to evaluate residual scatter plots, which could be gotten when running the linear regression in SPSS. Based on the residual scatter plot in Figure 3, it seems that the variance of the residuals is not homogenous across all levels of the predicted value. Overall, there was no extreme violation for the homoscedasticity assumption. To assure this result, a significant test was run. The Koenker test is a test, which was used for checking heteroscedasticity. This test was run using a specific syntax in the SPSS. The result of this test came out as significant, and it could reject the null that the variance of the residuals is homogenous across levels of the predicted value. Koenker test gives a significant result, \( X^2 (3, N = 814) = 97.899, p < .05 \), confirming that the homoscedasticity
assumption was violated. Even though the homoscedasticity was violated in this present study, Saunders, Lewis, and Thornhill (2009) suggested that it is still possible to conduct the statistical analysis.

![Figure 3. Scatterplot of Regression Standardized Predicted Values against Regression Standardized Residuals.](scatterplot.png)

**Figure 3.** Scatterplot of Regression Standardized Predicted Values against Regression Standardized Residuals.

**Multicollinearity.** Multicollinearity is an issue, which occurs when independent variables have a high correlation with each other (Hair et al., 2006). Having highly correlated independent variables is an indication that these variables are similar measures and there is an overlap between them (Tabachnick & Fidell, 2007). One way to check collinearity is to check correlation matrix, and if any two variables have high correlation, around 0.90 or above, this is an indication of an existence of collinearity (Tabachnick & Fidell, 2007). When checking the Pearson correlations among independent variables in
the correlation table, it is clear that there was no high correlation between variables
(Table 4). It could be said that there was no multicollinearity among variables. The most
commonly used measures to evaluate multicollinearity are tolerance and the variance
inflation factor (VIF); data with a VIF value of 10 or above, or with a tolerance value of
.10 or below should indicate an issue regarding multicollinearity (Hair et al., 2006).
Referring to Table 5, values of tolerance are larger than the cut off .10 and values of VIF
are lower than 10. This measure confirmed the results from correlation matrix that there
was no concern regarding multicollinearity among the independent variables.

Table 4

Correlations

<table>
<thead>
<tr>
<th></th>
<th>Teaching Presence</th>
<th>Social Presence</th>
<th>Cognitive Presence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching Presence</td>
<td>–</td>
<td>.491*</td>
<td>.649*</td>
</tr>
<tr>
<td>Social Presence</td>
<td>.491*</td>
<td>–</td>
<td>.605*</td>
</tr>
<tr>
<td>Cognitive Presence</td>
<td>.649*</td>
<td>.605*</td>
<td>–</td>
</tr>
</tbody>
</table>

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

Table 5

Tolerance and VIF of Predictors

<table>
<thead>
<tr>
<th>Model</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching Presence</td>
<td>.564</td>
<td>1.773</td>
</tr>
<tr>
<td>Social Presence</td>
<td>.617</td>
<td>1.622</td>
</tr>
<tr>
<td>Cognitive Presence</td>
<td>.471</td>
<td>2.123</td>
</tr>
</tbody>
</table>
Regression Analysis

It seems from the data screening procedures that multiple regression analysis could be conducted on this data; no cases were dropped and no data transformation were applied. The research questions, which were examined in this study, are as follows:

1. To what extent do social presence and teaching presence predict students’ satisfaction in an online program in Saudi Arabia?

2. To what extent does cognitive presence predict students’ satisfaction after adding it with teaching and social presence in an online program in Saudi Arabia?

The null and alternative hypotheses being tested via the research questions in this study are as follows:

• The null hypothesis research question 1: Social presence and teaching presence are not predictors of overall students’ satisfaction with an online program in a Saudi university.

• The alternative hypothesis research question 1: Social presence and teaching presence are predictors of overall students’ satisfaction with an online program in a Saudi University.

• The null hypothesis research question 2: Cognitive presence is not a predictor of overall students’ satisfaction with an online program in a Saudi university when adding it with social presence and teaching presence.
The alternative hypothesis research question 2: Cognitive presence is a predictor of overall students’ satisfaction with an online program in a Saudi university when adding it with social presence and teaching presence.

**Analyzing the first research question.** The first question examined whether teaching presence and social presence were significant predictors of students satisfaction. Examining Pearson correlation in (Table 6) suggests that the correlation between teaching presence and the dependent variable, students satisfaction was statistically significant, $r(812) = .456, p < .05$ (two tailed). The social presence variable was also positively correlated with the dependent variable, students satisfaction, $r(812) = .50, p < .05$ (two tailed). That is, participants who perceived a high level of teaching presence also indicated they were highly satisfied with the online program. Furthermore, participants who perceived a high social presence also indicated a high satisfaction with the online program.

**Table 6**

*Pearson Correlations among Variables*

<table>
<thead>
<tr>
<th></th>
<th>Satisfaction</th>
<th>Teaching Presence</th>
<th>Social Presence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction</td>
<td>–</td>
<td>.456*</td>
<td>.500*</td>
</tr>
<tr>
<td>Teaching Presence</td>
<td>.456*</td>
<td>–</td>
<td>.491*</td>
</tr>
<tr>
<td>Social Presence</td>
<td>.500*</td>
<td>.491*</td>
<td>–</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).
In order to assess whether social presence and teaching presence were significant predictors of students’ satisfaction, a multiple regression was performed using students’ satisfaction as the dependent variable. For the overall regression to predict students’ satisfaction from social presence and teaching presence, $R = .56$ and $R^2 = .314$ (Table 7). That means, social presence and teaching presence together predict 31.4% of the variance in students satisfaction. The adjusted $R^2$ was .306. The overall regression was statistically significant, $F(2, 811) = 180.291, p < .05$ (Table 8). When looking at the coefficients table (Table 9), it indicated that teaching presence was a significant predictor of students satisfaction when social presence was controlled: $t(811) = 8.262, p < .05$. Social presence was also a significant predictor of students satisfaction when teaching presence was controlled: $t(811) = 10.83, p < .05$.

Referring to the coefficient table (Table 9), the effect size of each individual predictors variables, which could be referred to as, semipartial correlation, $sr^2$, was determined. The $sr^2$ for teaching presence was .058 after controlling for social presence. That is, when controlling social presence, teaching presence uniquely explained 5.8% of the variance in students’ satisfaction. The $sr^2$ for social presence was .10 after controlling for teaching presence. That is, when controlling teaching presence, social presence uniquely explained 10% of the variance in students’ satisfaction.

After comparing the standardized coefficients in Table 9, it is clear that social presence was responsible for the most change in students satisfaction with $\beta = .363$; however, teaching presence with $\beta = .277$ was responsible for the least change in students satisfaction. Social presence was a better predictor of students’ satisfaction. The
standardized coefficients values explained that for every 1 Standard Deviation increase in social presence, there was a change in students’ satisfaction by .363 Standard Deviation, and for every 1 Standard Deviation increased in teaching presence, there was a change in students satisfaction by .277 Standard Deviation. The multiple regression model equation for predicting the students satisfaction score is $Y_1 = 1.702 + .302X_1 + .381X_2$; whereas $X_1$ is the score for the Teaching Presence Scale, and $X_2$ is the score for the Social Presence Scale.

Table 7

*Model Summary Table of the First Model*

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.555*</td>
<td>.308</td>
<td>.306</td>
<td>.57162</td>
</tr>
<tr>
<td></td>
<td>a. Predictors: (Constant), Social Presence, Teaching Presence</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 8

*ANOVA Table of the First Model*

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Regression</td>
<td>117.822</td>
<td>2</td>
<td>58.911</td>
</tr>
<tr>
<td>1</td>
<td>Residual</td>
<td>264.997</td>
<td>811</td>
<td>.327</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>382.819</td>
<td>813</td>
<td></td>
</tr>
</tbody>
</table>

*P < 0.5.
Table 9

*Coefficients Table of the First Model*

<table>
<thead>
<tr>
<th>Model</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Correlations Part</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1.702</td>
<td>.138</td>
<td>12.36*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Teaching Presence</td>
<td>.302</td>
<td>.037</td>
<td>.277</td>
<td>8.26*</td>
<td>.241</td>
</tr>
<tr>
<td>Social Presence</td>
<td>.381</td>
<td>.035</td>
<td>.363</td>
<td>10.83*</td>
<td>.316</td>
</tr>
</tbody>
</table>

*P < 0.5.

Analyzing the second research question. In order to assess whether cognitive presence was a significant predictor of students’ satisfaction when added to the model that had social and teaching presence, a hierarchical multiple regression was performed using students’ satisfaction as the dependent variable. First, social presence and teaching presence were entered to the regression, and then cognitive presence was entered. This new model had three predictors: cognitive presence, social presence, and teaching presence.

Examining Pearson correlation in Table 10 showed that the correlation between the three predictors and students satisfaction were positively correlated. The correlation between teaching presence and students satisfaction was statistically significant, \( r(812) = .456, p < .05 \) (two tailed). The correlation between social presence variable and students satisfaction was statistically significant, \( r(812) = .50, p < .05 \) (two tailed). Pearson correlation was also significant between cognitive presence and students satisfaction, \( r(812) = .59, p < .05 \) (two tailed). Participants who had a high perception toward teaching presence had a high satisfaction with the online program. Participants who had a high
perception toward social presence also had a high satisfaction with the online program. Finally, participants who had a high perception toward cognitive presence had also a high satisfaction. For the overall regression to predict students satisfaction from social presence, teaching presence, and cognitive presence, \( R = .617 \) and \( R^2 = .38 \) (Table 11). That means, social presence, teaching presence, and cognitive presence as a group predicted 38% of the variance in students’ satisfaction. The adjusted \( R^2 \) was .379. The overall regression, which had all the three predictors, was statistically significant, \( F(3, 811) = 166.18, p < .05 \) (Table 12).

When looking at the coefficients table (Table 13), teaching presence was a significant predictor of students satisfaction when social presence and cognitive presence were controlled: \( t(810) = 2.57, p < .05 \). Social presence was also a significant predictor of students satisfaction when teaching presence and cognitive presence were controlled: \( t(810) = 6.09, p < .05 \). Cognitive presence was also a significant predictor of students satisfaction when teaching presence and social presence were controlled: \( t(810) = 9.79, p < .05 \).

Referring to the coefficient table in Table 13, the \( sr^2 \) for teaching presence after controlling for social presence and cognitive presence was .005. That is, when controlling social and cognitive presence, teaching presence uniquely explained only .5% of the variance in students’ satisfaction. The \( sr^2 \) for social presence after controlling for teaching and cognitive presence was .028. That is, when controlling teaching and cognitive presence, social presence uniquely explained only 2.8% of the variance in students’ satisfaction. The \( sr^2 \) for cognitive presence after controlling for teaching and social
When controlling teaching and social presence, cognitive presence uniquely explained only 7.3% of the variance in students’ satisfaction.

After comparing the standardized coefficients for the three predictors, it is clear that among the three predictors, cognitive presence was responsible for the most change in students satisfaction with $\beta = .394$. It followed with social presence with $\beta = .214$ and then teaching presence with $\beta = .095$. It seems that teaching presence was responsible for the least change in students’ satisfaction. It is noticeable that entering cognitive presence to the model had reduced the effect of teaching and social presence. The addition of cognitive presence to the first model, which had only social and teaching presence, resulted in an additional 7.3% of the variance being explained ($R^2_{\text{change}} = .073$).

Cognitive presence was found to be a better predictor of students’ satisfaction compared with the two other predictors. The multiple regression model equation for predicting the students satisfaction score from the three predictors is $Y_1 = 1.421 + .103X_1 + .225X_2 + .423X_3$; whereas $X_1$ is the score for the Teaching Presence Scale, $X_2$ is the score for the Social Presence Scale, and $X_3$ is the score for the Cognitive Presence scale.

Table 10

*Pearson Correlations Among Variables*

<table>
<thead>
<tr>
<th></th>
<th>Satisfaction</th>
<th>Teaching Presence</th>
<th>Social Presence</th>
<th>Cognitive Presence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction</td>
<td>−</td>
<td>.456*</td>
<td>.500*</td>
<td>.585*</td>
</tr>
<tr>
<td>Teaching Presence</td>
<td>.456*</td>
<td>−</td>
<td>.491*</td>
<td>.649*</td>
</tr>
<tr>
<td>Social Presence</td>
<td>.500*</td>
<td>.491*</td>
<td>−</td>
<td>.605*</td>
</tr>
<tr>
<td>Cognitive Presence</td>
<td>.585*</td>
<td>.649*</td>
<td>.605*</td>
<td>−</td>
</tr>
</tbody>
</table>

*. Correlation is significant at the 0.05 level (2-tailed).
Table 11

Model Summary of the Second Model

<table>
<thead>
<tr>
<th>Mode</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
<th>R Square Change</th>
<th>F</th>
<th>df1</th>
<th>df2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.555&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.308</td>
<td>.306</td>
<td>.57162</td>
<td></td>
<td>.308</td>
<td>180.29*</td>
<td>2</td>
<td>811</td>
</tr>
<tr>
<td>2</td>
<td>.617&lt;sup&gt;b&lt;/sup&gt;</td>
<td>.381</td>
<td>.379</td>
<td>.54088</td>
<td></td>
<td>.073</td>
<td>95.80*</td>
<td>1</td>
<td>810</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Social Presence, Teaching Presence
b. Predictors: (Constant), Social Presence, Teaching Presence, Cognitive Presence

*<i>P < 0.5.</i>

Table 12

ANOVA Table of the Second Model

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>117.822</td>
<td>2</td>
<td>58.911</td>
<td>180.29*</td>
</tr>
<tr>
<td>1 Residual</td>
<td>264.997</td>
<td>811</td>
<td>.327</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>382.819</td>
<td>813</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression</td>
<td>145.850</td>
<td>3</td>
<td>48.617</td>
<td>166.180*</td>
</tr>
<tr>
<td>2 Residual</td>
<td>236.969</td>
<td>810</td>
<td>.293</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>382.819</td>
<td>813</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*<i>P < 0.5.</i>
### Table 13

*Coefficients Table of the Second Model*

<table>
<thead>
<tr>
<th>Model</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Correlation Part</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.702</td>
<td>.138</td>
<td>12.367*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching Presence</td>
<td>.302</td>
<td>.037</td>
<td>.277</td>
<td>8.262*</td>
<td>.241</td>
</tr>
<tr>
<td>Social Presence</td>
<td>.381</td>
<td>.035</td>
<td>.363</td>
<td>10.830*</td>
<td>.316</td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.421</td>
<td>.133</td>
<td>10.659*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching Presence</td>
<td>.103</td>
<td>.040</td>
<td>.095</td>
<td>2.573*</td>
<td>.071</td>
</tr>
<tr>
<td>Social Presence</td>
<td>.225</td>
<td>.037</td>
<td>.214</td>
<td>6.086*</td>
<td>.168</td>
</tr>
<tr>
<td>Cognitive Presence</td>
<td>.423</td>
<td>.043</td>
<td>.394</td>
<td>9.788*</td>
<td>.271</td>
</tr>
</tbody>
</table>

*P < 0.5.

### Cross Validation Procedure

Cross validation is a procedure that started with dividing a large sample into two groups; the first group was used to run the analysis procedure and the second group was used to validate the results (Hair et al., 2010). To validate the data in this study, the whole data set was divided to three equal groups randomly. The total collected responses were 2442 cases, so each group has 814 cases. A multiple regression analysis was run on the first group. Then the regression equation of the first group was used to calculate the predicted satisfaction values of the second group. The regression equation was Predicted Value = 1.421+ .103X1 + .225X2 + .423X3; whereas X1 stands for teaching presence, X2 stands for social presence, and X3 stands for cognitive presence. Using Compute command in SPSS, a new variable was created using the regression equation of the first group to calculate the predicted satisfaction values of the second group. Then a Pearson
correlation was run to determine if there is a correlation between the predicted
satisfaction values and the actual observed satisfaction values of the second group, which
were collected from the survey. The correlation between predicted value and observed
value of satisfaction for the second group was statistically significant, $r(812) = .648, p < .05$ (two tailed) as shown in Table 14. The first group was used to run the regression
analysis. The second group was used to validate the analysis from the first group. It was
planned to use the third group to validate the analysis from the first group, in case the
second group was not able to validate the analysis. Since it is clear that the cross
validation was strong, there was no need to use the third group.

Table 14

*Correlations between Predicted Value and Observed Score*

<table>
<thead>
<tr>
<th></th>
<th>Predicted Value</th>
<th>Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicted Value</td>
<td></td>
<td>.648*</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>.648*</td>
<td></td>
</tr>
</tbody>
</table>

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

To assure that these two samples involved in the cross-validation procedure have
similar characteristics, descriptive statistics analysis was run for each one of them and the
results showed that these two samples were similar (Table 15, 16, 17, and 18).
Table 15

*Gender*

<table>
<thead>
<tr>
<th></th>
<th>Frequency in Sample 1</th>
<th>Frequency in Sample 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>484</td>
<td>465</td>
</tr>
<tr>
<td>Female</td>
<td>330</td>
<td>349</td>
</tr>
<tr>
<td>Total</td>
<td>814</td>
<td>814</td>
</tr>
</tbody>
</table>

Table 16

*Major*

<table>
<thead>
<tr>
<th></th>
<th>Frequency in Sample 1</th>
<th>Frequency in Sample 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Islamic Studies</td>
<td>22</td>
<td>25</td>
</tr>
<tr>
<td>Special Education</td>
<td>43</td>
<td>37</td>
</tr>
<tr>
<td>Social studies</td>
<td>183</td>
<td>202</td>
</tr>
<tr>
<td>Arabic language</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>English language</td>
<td>118</td>
<td>110</td>
</tr>
<tr>
<td>Business</td>
<td>438</td>
<td>434</td>
</tr>
<tr>
<td>Total</td>
<td>814</td>
<td>814</td>
</tr>
</tbody>
</table>
Table 17

**Age**

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency in Sample 1</th>
<th>Frequency in Sample 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>22-18</td>
<td>53</td>
<td>63</td>
</tr>
<tr>
<td>23-27</td>
<td>224</td>
<td>214</td>
</tr>
<tr>
<td>28-32</td>
<td>232</td>
<td>217</td>
</tr>
<tr>
<td>Valid</td>
<td>814</td>
<td>814</td>
</tr>
<tr>
<td>33-37</td>
<td>201</td>
<td>209</td>
</tr>
<tr>
<td>38-42</td>
<td>67</td>
<td>84</td>
</tr>
<tr>
<td>43-47</td>
<td>25</td>
<td>23</td>
</tr>
<tr>
<td>48 or more</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>814</td>
<td>814</td>
</tr>
</tbody>
</table>

Table 18

**Students Owning Laptop**

<table>
<thead>
<tr>
<th>Students Owning Laptop</th>
<th>Frequency in Sample 1</th>
<th>Frequency in Sample 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>18</td>
<td>24</td>
</tr>
<tr>
<td>Valid</td>
<td>814</td>
<td>814</td>
</tr>
<tr>
<td>Yes</td>
<td>796</td>
<td>790</td>
</tr>
</tbody>
</table>

**Further Analyses**

The participants were asked to provide their opinion of the quality of their online program. They were asked about whether they think that the online program is equal to the traditional programs or not. The main goal of this question was to assess students’ beliefs about what they think about the quality of their online program. The responses showed that 64% of the 814 participants believe that online and face-to-face programs are equal, 22.9% of them think that they are not equal, and only 13.1 of them were not sure
about giving their opinion. Regarding students satisfaction, the majority of the participants, around 77.3% of them were satisfied with the online program ($M = 4.28$, $SD = .68$), and they answered with ‘agree’ or ‘strongly agree’ to the satisfaction scale items.

Responses from open-ended questions were examined and possible themes were detected. When the participants were asked if they could describe a situation where they felt of signs of teaching presence in class, the majority of them answered that they felt their instructors’ teaching presence during the online live lectures that they received occasionally.

A couple of students mentioned that they felt the teaching presence when having their emails answered by their instructors, having their instructors taking care of the course, having their instructors allowing discussion in the online live lectures, or having their instructors participating with them and other students in discussion boards. A couple of students indicated that they consider getting timely and constant feedback from instructors as a sign of teaching presence. One student mentioned, “I felt my instructor’s teaching presence when I get responses from him regarding my question any time.” Another student said “I can feel my instructor’s teaching presence when I got the feeling that he is there for me whenever I need him.”

When the participants were asked to explain how they interact with their colleagues in class, the most presented theme was that students were interacting constantly with their colleagues via discussion forum. This forum, provided by the university, was made available for all students in this online program, and also via other discussion forums, which are not under the university authority. Another common
The detected theme is the communication with colleagues using emails, phone calls, and social media such as Facebook, WhatsApp, Twitter, and Windows Live Messenger. Only a couple of students mentioned that they chose to meet their colleagues face to face to discuss the class materials, and only few of them mentioned that the examination centers were a way to meet new colleagues. One student mentioned, “I met my current colleagues in one of the examination centers, we formed together a studying group on WhatsApp, and to collect some useful materials that could help us with studying, we created an email and all of us has the password, so all of us have an access to the collected materials.”

Summary

This chapter focused on displaying the descriptive information of the sample used in this study, screening data, checking the multiple regression assumptions, and analyzing the data using multiple regression analysis. There was no missing data, and there were some outliers that the researcher decided not to delete since they showed no influential effect on the regression model. When checking the regression assumptions, the data showed no violation regarding normality, linearity, and multicollinearity; however, homoscedasticity assumption was violated. Saunders et al. (2009) think that violating homoscedasticity assumption does not prevent researchers from conducting the statistical analysis. The first question aimed to investigate whether social presence and teaching presence were significant predictors of students’ satisfaction. Results showed that overall regression was statistically significant, $F(2, 811) = 180.291, p < .05$. Social presence and teaching presence both were found to explain 31.4% of the variance in students’
satisfaction. The second question explored the effect of cognitive presence as a significant predictor of students’ satisfaction when adding it with social and teaching presence. The overall regression, which predicted students’ satisfaction from social presence, teaching presence, and cognitive presence, was statistically significant, $F(2, 811) = 166.18, p < .05, R^2 = .38$. The combination of all the three presences explained 38% of the variance in students’ satisfaction. Cognitive presence was found to have the largest contribution in predicting students’ satisfaction and it was a better predictor of students satisfaction compared with teaching presence and social presence. The next chapter discusses findings, highlights limitations of this study and implications of the findings, and suggests some recommendations for future studies.
Chapter 5: Discussion, Implication, Recommendation, and Conclusion

Introduction

This chapter includes a summary of the entire study. It includes a review of the purpose of this study, methodology, and the results. Then it covers an explanation of the findings and supports it with the literature. Finally, the chapter focuses on limitations, implications, and recommendations for this study.

Summary of the Study

This study aimed to explore the Community of Inquiry elements: cognitive, social, and teaching presence as significant predictors of students’ satisfaction in one of the Developed Entesab Programs in one of the largest Saudi universities. A non-experimental and correlational method was used in this study to see if the Community of Inquiry elements could predict students’ satisfaction. Multiple regression analysis was used to determine to what extent students’ satisfaction could be predicted from cognitive, social, and teaching presence. This research was quantitative and data was collected using a self-report survey. The target population in this study was students who joined the online program, Developed Entesab Program, in one of the Saudi universities. This study aimed to answer two main questions:

1. To what extent do social presence and teaching presence predict students’ satisfaction in an online program in Saudi Arabia?
2. To what extent does cognitive presence predict students’ satisfaction after adding it with teaching and social presence in an online program in Saudi Arabia?
The instrument, which was used in this study, was valid and reliable. The satisfaction scale was adapted from the study by Kuo (2010). Cognitive, social, and teaching presence scales were taken from the study by Arbaugh et al. (2008). To assess the internal consistency for this instrument, the Cronbach’s alpha coefficients were calculated in this present study for each scale and for the entire instrument. Cronbach’s alpha coefficients were .89 for the Social Presence Scale, .92 for the Teaching Presence Scale, and .93 for the Cognitive Presence Scale. Factor analysis showed that items were loading appropriately in the expected factor. Only one item in the instrument, which is item 24, was showing a cross loading issue. This item could be dropped for future uses or it may need more investigation by researchers. The survey was distributed to students in the online program via the deanship of Distance education and E-learning of the same university. Students received the survey as a text message that they received on their cell phones. The completed survey was 2442 responses. A third of the 2442 responses, 814 responses, were used to run the multiple regression. In order to benefit from this large sample size, a cross-validation process was run to assure the validity of the data.

The findings of the first question in this study showed that there was positive correlation between teaching and social presence and the dependent variable, students’ satisfaction. Social presence and teaching presence were found to be significant predictors of students’ satisfaction and they both predicted 31.4% of the variance in students’ satisfaction. Social presence was the most responsible predictor of the change in students’ satisfaction; however, teaching presence was responsible for the least change in
students’ satisfaction. It could be said that social presence was a better predictor of students’ satisfaction in a model that had social and teaching presence.

The findings of the second question showed that when adding cognitive presence to the previous model, social and teaching presence were still significant predictors of students’ satisfaction. Cognitive presence was found to be a significant predictor as well of students’ satisfaction. Social, teaching, and cognitive presence predicted 38% of the variance in students’ satisfaction. Among the three predictors, cognitive presence had the largest contribution in predicting students’ satisfaction, and it was followed with social presence. Cognitive presence was a better predictor of students satisfaction compared with other predictors.

Discussion

Discussion of the first and second research questions. The findings of this present study showed that social presence was an important and a significant predictor of students’ satisfaction. This was consistent with the previous studies; for example, Zhang (2010) pointed out that there is a strong correlation between social presence and learning satisfaction. The study by Hostetter and Busch (2006) found that social presence has a role in predicting students learning satisfaction. Cobb (2011) showed that social presence was a significant predictor of satisfaction.

Another finding of this research study was that teaching presence serves as a significant predictor of students’ satisfaction. Jackson et al. (2010) found that instructors’ actions do influence students’ satisfaction in an online environment. Wanstreet and Stein (2006) showed similar results in a study related to students’ satisfaction that focuses on
satisfaction with course activities instead of overall satisfaction. They found that
students’ satisfaction with course activities was significantly and positively correlated
with teaching presence, and teaching presence was a significant predictor of students’
satisfaction with course activities.

The findings of this present study showed that cognitive presence was a
significant predictor of students’ satisfaction. This result was supported by a couple of
studies. The first study is the study by Kang, Kang, and Jung (2008) that found, when
exploring social, emotional and cognitive presence as predictors of students achievement
and satisfaction, that cognitive presence was the only significant predictor of satisfaction,
$F(1,39) = 8.576, p < .05, R^2 = .184$. This study concluded that cognitive presence could
be an acceptable predictor for student’s satisfaction and students’ outcomes. The second
study is the study by Wanstreet and Stein (2006), which studied satisfaction with course
activities. They showed that students’ satisfaction with course activities could be
significantly predicted from cognitive presence and this presence accounted for 13% of
the variance in students’ satisfaction.

Social presence and teaching presence together were found in this study to
significantly predict students’ satisfaction and they both predicted 31.4% of the variance
in students’ satisfaction. In the second question, cognitive presence was added to explore
its effect on the regression equation. When adding cognitive presence to the overall
regression, which predicted students’ satisfaction from cognitive presence, social
presence, and teaching presence, the overall regression model was also statistically
significant. All of the three factors were able to explain 38% of the variance in students’
satisfaction. The addition of cognitive presence by itself resulted in a significant contribution into the regression equation. Adding cognitive presence contributed an additional 7.3% of the variance being explained in the final model. The results showed that among the three factors (i.e. teaching presence, social presence, cognitive presence) cognitive presence was found to be the strongest predictor of students’ satisfaction. Akyol and Garrison (2008) supported this result when they stated, “cognitive presence goes to the heart of the CoI framework” (p. 17).

Cognitive presence is important due to its strong correlation with the learning process (Akyol & Garrison, 2008; Akyol & Garrison, 2011). Cognitive presence has showed up as the strongest predictor of students’ satisfaction, maybe because it does not coexist with teaching and social presence; instead it is an outcome of their existence in the learning setting (Bangert, 2008). Cognition aspect in the learning setting is the main target of the learning process; due to this, students could look at it as the main factor affecting their satisfaction in online program. Jinks (2009) stated “…cognitive presence is highlighted as the purpose for students enrolling in an online higher education course” (p. 31).

Students were also asked about if they believe that the online program is equal to the traditional programs or not. Their responses showed that 64% of the 814 participants believe that online and face-to-face programs are equal. Regarding students satisfaction, 77.3% of them were satisfied with the online program ($M = 4.28, SD = .68$). It seems that the majority of the participants believe that this online program has a quality equal to the face-to-face program, and they were satisfied with this program. This could suggest a
relationship between students’ perceptions of online program quality and their satisfaction with this program that needs further investigation in future research.

**Discussion of the open-ended questions.** In the first open-ended question the students were asked to describe a situation where they felt of signs of teaching presence in online classes. From the students’ responses to this question, it appears that the majority of students associated teaching presence in their online program with only the direct and one-to-one interaction with their instructors during the synchronous live meeting. It seems that hearing the instructor’s voice and interacting directly with him via the synchronous meetings, is one of the main signs that makes students in this program feel their teacher’s teaching presence. Few of them mentioned timely feedback, students-teachers interaction, and instructors’ role of doing courses preparation and class activities as signs of teaching presence. That may show a lack in students understanding of the teaching presence concept in the online environment represented in the question or it could be a possible lack in the teaching presence itself in this program.

Regarding the open-ended question related to social presence, students were asked to explain how they interact with their colleagues. The majority of the students showed possible ways to communicate with their colleagues, and it seems that they are doing well in finding different ways to keep in touch with their colleagues. Discussion forums were one of the students’ favorite ways to communicate with other students while emails, phone calls, and face-to-face meeting were also some of the ways of communication. It appears that students in this online program utilized social media such as Facebook, WhatsApp, Twitter, and Windows Live Messenger as a way to form study
groups with other students. It could be said that some students in this program are doing fine regarding social presence and they are trying to find some innovative ways to communicate with other colleagues.

**Limitations**

The original researchers, who developed the instrument used in this present study, showed evidence that this instrument has high reliability and validity. To assure that there were no issues related to content, a bilingual PhD student with a major of instructional technology reviewed this instrument. The instrument was found to be clear and suitable for the level of university students. However, when a factor analysis was conducted to see if items were all loaded appropriately on their expected factor, this analysis showed that one item, which is item 24, had a cross-loading issue. This item will need more examination in future studies to assess any issue that may cause the cross-loading issues. Applying the Arabic version of this instrument in further studies could help to improve the issue of this item.

**Implications and Recommendations for Improving Social, Cognitive, and Teaching Presence**

This study examined students’ satisfaction and showed that it could be predicted from the elements of the Community of Inquiry framework. Students’ satisfaction is an essential factor to be investigated in online learning settings (Al-Asfour, 2012). This is clear that students’ satisfaction with online courses associates with a high completion rate and motivation level among students (Kuo, 2010). Students’ satisfaction could impact the chances of students to be successful in the online courses (Kuo, 2010; Johnston et al.,
2005). Having issues with students’ satisfaction, alternatively, could increase dropout rates and lower learning benefits (Al-Asfour, 2012; Alman et al., 2012). Finally, students’ satisfaction is an indicator of course quality and the successfulness of the overall learning experience (Cho, 2011; Jackson, Jones, & Rodriguez, 2010). This present study showed that social, teaching, and cognitive presence play a role in predicting students’ satisfaction in an online program. That is, fostering these presences in online programs could fulfill the promise of improving students’ satisfaction. Based on that, it is recommended that future researchers consider investigating if there is any causal relationship between the element of the Community of Inquiry framework and students’ satisfaction with online programs.

This study found that satisfaction was associated with cognitive, social, and teaching presence. Students who perceived high cognitive, social, and teaching presence also had high overall satisfaction with their online program. This study also found that satisfaction could be predicted from these three factors. Thus, instructors and administrators in the online programs should take into consideration improving cognitive, social, and teaching presence in their program.

Faculty should be well prepared to guide their courses while taking into consideration the elements of Community of Inquiry. This need could be met by providing more workshops that may help to improve faculty knowledge regarding the Community of Inquiry elements in the online environment. Such a workshop might focus on strategies that faculty may use to improve cognitive, social, and teaching presence, and should stress their importance to the students. Faculty should be aware of the
requirements of how to build online courses in a way that may improve their presence and their students presence, as well as content presence, in order to enhance the whole online learning experience.

Moving from traditional classes to online courses is challenging, and requires an adjustment to the traditional roles held by the instructor (Redmond, 2011). Due to this, special workshops should be held to prepare online instructors for adjusting to their new teaching responsibility and moving smoothly from face-to-face format to online format. These workshops should prepare faculty for how to perceive online course structure, and educate them on how to build pedagogy that match learners’ needs in this learning environment. According to Jackson et al. (2010) instructors should be educated about the importance of their actions in online courses; starting from developing the online course and then delivering it, instructors should promote their existence in the course. Based on the qualitative data in this study, instructors could do that by, for example, providing timely feedback, interacting, and preparing well for the class activities and assignments. Since participants in this study highlighted the importance of direct and one-to-one interaction with their instructors during the synchronous live meeting, it is recommended that instructors increase the number of their synchronous meetings, as well as provide videos or recorded lectures which should be available on the course site for students at any time.

Since cognitive presence in this study was found to be a strong predictor of students’ satisfaction, it is recommended that faculty need to focus on this presence and assure that students are able to reach the final stage of cognitive presence, which is the
resolution phase. Instructors must make sure that students are able to move through the whole cycle of the Practical Inquiry Model (Darabi et al., 2011; Garrison et al., 2001). Activities should be set for students in a way that guides them through the process of critical thinking (Garrison et al., 2010). Instructors should start such an activity by triggering the learning process, encouraging students to reflect on it within the learning community, and making sure that they construct meaningful knowledge and start learning new knowledge (Garrison et al., 2001). According to Zirbel (2008) instructors can help students to reach the last two phases by fostering their ability to challenge themselves and think critically beyond the boundaries of the problem. Encouraging learners to rate their contributions and to become aware of their level of thinking is another way to promote cognitive presence (Arbaugh et al., 2008). Assuring appropriate course design and facilitating activities and discussion could play an additional role in influencing cognitive presence (Garrison, 2009). Bangert (2008) and Jinks (2009) add that cognitive presence could be reached through support from teaching and social presence; this highlights the importance of these presences as well in the learning setting.

Due to the importance of social presence, it is necessary to engage learners in activities and to use strategies that could foster this presence. Encouraging learners to be active and engage in group activities and discussion could improve social presence (Greyling & Wentzel, 2007). On an educator level, taking advantage of technology could help instructors to improve social aspects in online courses (Greyling & Wentzel, 2007). This present study showed that using social media such as Facebook, WhatsApp, Twitter, and Windows Live Messenger have helped many students who participated in the study.
with communicating with their peers and perceiving themselves as a part of a community. Based on this, instructors are recommended to integrate this kind of media in their online courses. As well, taking care to build the course to have a friendly user interface could help with improving social presence (Wei et al., 2012). Online instructors should familiarize learners with online courses and how to deal with their functions in order to further enhance this presence (Wei et al., 2012). Encouraging students to form a learning community is another way to enhance their social presence (Cobb, 2011).

**Recommendations for Further Study**

This study was conducted at one of the largest universities in Saudi Arabia, which provides one of the strongest online programs in Saudi Arabia. It is recommended that this study could be replicated in other Saudi universities that have similar programs in order to improve the ability of generalizing the result into a bigger population.

The topic of satisfaction and the Community of Inquiry elements is a rich topic that could be explored using a qualitative method. Since cognitive, social, and teaching presence are all new concepts to the online learning community in Saudi Arabia, future studies are recommended to investigate their existence and importance in the Saudi online program by interviewing faculty as well as students.

Students’ satisfaction was found to be a good indicator of the quality and the effectiveness of learning experience (Cho, 2011). Low satisfaction could lead to low completion rates and low student motivation levels (Kuo, 2010). Thus, its is recommended to conduct more studies about students’ satisfaction in the online
environment in Saudi Arabia, and investigate more variables that could affect students’ satisfaction with the provided program.

**Conclusion**

The main purpose of this study was to investigate if cognitive, social, and teaching presence were significant predictors of the overall students’ satisfaction of online programs in one of the Saudi universities. This study was a quantitative study, and data was collected using a self-report survey. The survey was distributed randomly to male and female students from different majors who are studying in the *Developed Entesab* program at one of the largest Saudi universities.

The frames of the Community of Inquiry, which are cognitive, social, and teaching presence, were found to be significant predictors of students’ satisfaction. Cognitive presence was found to be the best predictor of students’ satisfaction since it explained the most variance in students’ satisfaction. This result suggested integrating the Community of Inquiry framework within the online programs due to its importance and positive influence on students’ satisfaction. This study recommended replicating this study in other Saudi universities that have similar online programs, exploring this topic using a qualitative method, and conducting more studies about variables affecting students’ satisfaction in online programs.
References


Gliem, J. A., & Gliem, R. R. (2003, October). Calculating, interpreting, and reporting *Cronbach’s Alpha Reliability Coefficient for Likert-type scales.* Paper presented at the Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education, The Ohio State University, Columbus, OH.


Noteboom, J. T., & Claywell, L. (2010). *Student perceptions of cognitive, social, and teaching presence*. Paper presented at the 26th Annual Conference on Distance Teaching & Learning, USA.


Appendix A: The Survey of Study in English

What is your gender?
- Male
- Female

What is your age?
- 18-25
- 26-35
- 36-45
- 46-55
- Above 56

What is your major?
- Islamic studies
- Social studies
- Arabic language
- English language studies
- Business administration.

Do you own a personal computer?
- Yes
- No

Do you have Internet connection at home?
- Yes
- No

Can you view your class content on your cell phone?
- Never
- Rarely
- Sometimes
- Often
- Always

Do you email your classmates?
- Never
- Rarely
- Sometimes
- Often
- Always

The instructor clearly communicated important course topics.
- Strongly agree
The instructor clearly communicated important course goals.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

The instructor provided clear instructions on how to participate in course learning activities.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

The instructor clearly communicated important due dates/time frames for learning activities.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

The instructor was helpful in identifying areas of agreement and disagreement on course topics that helped me to learn.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

The instructor was helpful in guiding the class towards understanding course topics in a way that helped me clarify my thinking.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree
The instructor helped to keep course participants engaged and participating in productive dialogue.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

The instructor helped keep the course participants on task in a way that helped me to learn.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

The instructor encouraged course participants to explore new concepts in this course.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Instructor actions reinforced the development of a sense of community among course participants.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

The instructor helped to focus discussion on relevant issues in a way that helped me to learn.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

The instructor provided feedback that helped me understand my strengths and weaknesses relative to the course's goals and objectives.

- Strongly agree
- Agree
- Neutral
The instructor provided feedback in a timely fashion.
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Getting to know other course participants gave me a sense of belonging in the course.
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

I was able to form distinct impressions of some course participants.
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Online or web-based communication is an excellent medium for social interaction.
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

I felt comfortable conversing through the online medium.
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

I felt comfortable participating in the course discussions.
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree
I felt comfortable interacting with other course participants.
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

I felt that my point of view was acknowledged by other course participants.
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Online discussions help me to develop a sense of collaboration.
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Problems posed increased my interest in course issues.
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Course activities piqued my curiosity.
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree
I felt motivated to explore content related questions.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

I utilized a variety of information sources to explore problems posed in this course.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Brainstorming and finding relevant information helped me resolve content related questions.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Online discussions were valuable in helping me appreciate different perspectives.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Combining new information helped me answer questions raised in course activities.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Learning activities helped me construct explanations/solutions.

- Strongly agree
- Agree
- Neutral
Reflection on course content and discussions helped me understand fundamental concepts in this class.

I can describe ways to test and apply the knowledge created in this course.

I have developed solutions to course problems that can be applied in practice.

I can apply the knowledge created in this course to my work or other non-class related activities.

Overall, I am satisfied with this class.

This online program contributed to my educational development.
This online program contributed to my professional development.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

I am satisfied with the level of interaction that happened in this online program.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

In the future, I would be willing to take a fully online program again.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Do you think that the quality of the online program is the same as the face-to-face program?
- Yes, they are the same
- No, they are not the same
- Not sure about this

Can you describe a situation where you felt the signs of teaching presence in class?

Can you explain how you interact with your classmates in class?
Appendix B: The Informed Consent

Ohio University Consent Form

Title of Research: Studying teaching and social presence as predictors of students’ satisfaction.
Researchers: Lamees Alaulamie

You have received this email because you are being asked to participate in a study. You have the full right of whether to accept to participate in this study or not. In this form, you are going to be introduced to the study’s purpose, benefits, and any possible risks. This survey has been sent to you specifically because you have been identified as a student in the Intesab program at King Faisal University.

Explanation of Study
This survey will investigate your perception of teaching presence and social presence as well as your satisfaction level with the involved program. Your valuable response will help to make clear whether teaching presence and social presence could predict students’ satisfaction with the Intesab program at King Faisal University. Data collected from this survey is going to be beneficial for students in this program since this study could recommend giving more attention to teaching presence and social presence in this program. Your participation in the study will last only for 10-15 minutes, the time necessary to complete the 49 items in the survey.

Risks and Discomforts
No risks or discomforts are anticipated from your precipitation in this study.

Benefits
The results would be beneficial for you if institutions decide to make suitable interventions to facilitate teaching and social presence in online courses. This study may show the need to implement or make changes on instructional design of the involved course, organization, facilitation of discourse, and direct instruction in order to improve teaching presence. This will also positively affect your social presence in the involved online courses.

Confidentiality and Records
Your study information will be kept confidential by the researcher, Lamees Alaulamie.

Contact Information
If you have any questions regarding this study or any concerns, please feel free to contact [the researcher: Lamees Alaulamie la350207@ohio.edu, phone number: (330)-990-6720/the advisor: Teresa Franklin franklit@ohio.edu]
If you have any questions regarding your rights as a research participant, please contact Jo Ellen Sherow, Director of Research Compliance, Ohio University, (740)593-0664.

By clicking on agree button below, you are agreeing that:

- You want to participate in this study
- You have read this consent form
- You are 18 years of age or older
- Your participation in this research is completely voluntary
- You may leave the study at any time. If you decide to stop participating in the study, there will be no penalty to you and you will not lose any benefits to which you are otherwise entitled.

If you do not want to participate in this study, please click “disagree” button, it will close the survey or just close the browser page.

- Agree
- Disagree
Appendix C: The Survey of Study in Arabic
من أي مكان تستطيع الإتصال بالبلاتين؟

هل تطلع على محوريات القرآن الكريم عبر هذه الواجهة؟

هل تواصل زملاءك بطرق القراءة عبر الإنترنت?

قام الطالب بشرح المواضيع الرئيسية للchapter القرآني موضحًا

قام الطالب بشرح المواضيع الرئيسية للchapter القرآني موضحًا

قام الطالب بشرح المواضيع الرئيسية للchapter القرآني موضحًا

قام الطالب بشرح المواضيع الرئيسية للchapter القرآني موضحًا

قام الطالب بشرح المواضيع الرئيسية للchapter القرآني موضحًا

قام الطالب بشرح المواضيع الرئيسية للchapter القرآني موضحًا

ساعة الدراسة في توجيه مواقف وإنتاج النافذة حول مواضيع القرآن الكريم بما ساعدني على الفهم.

ساعة الدراسة في توجيه مواقف وإنتاج النافذة حول مواضيع القرآن الكريم بما ساعدني على الفهم.

ساعة الدراسة في توجيه مواقف وإنتاج النافذة حول مواضيع القرآن الكريم بما ساعدني على الفهم.

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ساعة الدراسة في توجيه مواقف وإنتاج النافذة حول مواضيع القرآن الكريم بما ساعدني على الفهم.
تشجيع للدراسات العليا على استكشاف قضايا وقضايا جديدة في تقارير الدراسات.

ساعد فيزان على تدريس دروس تهتم بالتحفظ المعرفي، وتقديم أوراق ملحة للتحفظ العقلي.

قائم التقويم بيكيز مراقين على فصول تعليمية تدريسية ملزمة، إذ أدى فيما يخص أهداف تقارير الدراسات.

قائم التقويم بيكيز مراقين على فصول تعليمية تدريسية ملزمة، إذ أدى فيما يخص أهداف تقارير الدراسات.

معرشتي بيفيزة عرضي في تقارير الدراسات جمعية انتشرت بالالتزام.

تمكنت من اختراع ملحة مميزة عن بعض زمانيات في تقارير الدراسات.

التواصل عبر الإنترنت وسيلة جديدة للتواصل الإجتماعي.

شعرت بارائج نحو رفع الإنترنت.

الانطلاق بارائج المشاركة في المناقشات MPGétrée التحفيزية في تقارير الدراسات.
الشريعة بارتياح للتفاعل مع جمعية دعامة

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الشريعة بالرغم في حالة عدم الاعتراف بالبيئة، مع دعامة في القانون الدايمي مع المناطحة على روح الالتفات بينك.

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ساهمك حال النقااشات عبر الإنترنت في توقيع روح للشريعة.

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إن القضايا المحرومة في قانون الدايمي ذات من اهتمامي ببعض النقر.

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ادت انطباع القرار الدايمي إلى تحقيق قضائي.

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استخدم مجموعة من مدارس المعلومات (السكتش) القضايا المحرومة في القمي الدايمي.

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ساهمعتي لميزة القصص الهندي وفي توضيح المحذفة أن القضايا المحرومة على حل القضايا المرتبطة بالناشري الدايمي.

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ساهمعتي النقااشات الهندي عبر الإنترنت على نافذة وجهات النظر المختلفة.
لا يوجد نص يمكن قراءته بشكل طبيعي من الصورة المقدمة.
إذا على استعداد للدراسة في برنامج كامل عبر الإنترنت في المستقبل مرة أخرى.

- غير موافق
- موافق
- غير محدد

هل تحاليل مستوى البرنامج عبر الإنترنت بفاعل البرامج الذي يمضى وحدها لوحة?
- أصل المتقدم ممتعان
- أصل المتقدم غير ممتعان
- غير محدد

هل بإمكاني وصف حالة تظهر مؤشرات للخضوع الدراسي، حيث في أي مقرر دراسي؟

هل بإمكاني وصف المعيد التي تتعلق فيها بفترة معينة في التقرير الدراسي؟

- غير موافق
- موافق
- غير محدد
Appendix D: Letters Seeking Permission to Use Presence Scales

Date: Thu, 11 Apr 2013 08:48:22 -0500
Subject: Re: Seeking a Permission in order to Use Your Instrument
From: arbaugh@uwosh.edu
To: la350207@ohio.edu

Hello Lamees,
Please feel free to use our instrument. I wish you the best with your study. Thanks for checking, Ben

J. B. (Ben) Arbaugh, Ph.D.
John McNaughton Rosebush Professor
College of Business
University of Wisconsin Oshkosh
800 Algoma Blvd.
Oshkosh, WI 54901
(920) 203-2647
email: arbaugh@uwosh.edu

On Thu, Apr 11, 2013 at 7:36 AM, Alaulamie, Lamees <la350207@ohio.edu> wrote:

Dear Dr. Arbaugh,

My name is Lamees Alaulamie. I am a doctoral student at Ohio University. I came across your article “Developing a community of inquiry instrument: Testing a measure of the Community of Inquiry framework using a multi-institutional sample”, and I would like to use your instrument in my study. Specifically, I would like to use the teaching and social scales included to measure these same variables in my study. I am doing my research on teaching and social presence as predictors of students’ satisfaction, so both scales would be quite applicable.

I am sending this email to seek your permission to use your instrument and also to translate it into Arabic.

Thank you in advance.

Sincerely,
Lamees Alaulamie
Appendix E: Letters Seeking Permission to Use Satisfaction scale

Date: Thu, 11 Apr 2013 14:09:08 -0500
Subject: Re: Seeking a Permission in order to Use Your Instrument
From: yuchun.kuo@aggiemail.usu.edu
To: la350207@ohio.edu

Dear Alaulamie,

Thank you for letting me know that you are interested in using the satisfaction scale in my dissertation. You are more than welcome to use it in your research. Thank you and good luck with your dissertation!

Best,
Yu-Chun

On Thu, Apr 11, 2013 at 7:41 AM, Alaulamie, Lamees <la350207@ohio.edu> wrote:
   Dear Dr. Kuo,

   My name is Lamees Alaulamie. I am a doctoral student at Ohio University. I came across your dissertation “Interaction, internet self-efficacy, and self-regulated learning as predictors of student satisfaction in distance education courses”, and I would like to use your instrument in my study. Specifically, I would like to use the satisfaction scale included to measure the same variable in my study. I am doing my research on teaching and social presence as predictors of students’ satisfaction, so this scale would be quite applicable. I am sending this email to seek your permission to use your instrument and also to translate it into Arabic.

   Thank you in advance.

   Sincerely,
   Lamees Alaulamie
Appendix F: Letters Seeking Permission to Make Changes on the Satisfaction scale

Date: Thu, 2 May 2013 09:11:41 -0500
Subject: Re: Seeking a Permission in order to Use Your Instrument
From: yuchun.kuo@aggiemail.usu.edu
To: la350207@ohio.edu
CC: yuchun100@gmail.com

Dear Lamees,

Sure, go ahead. It's totally fine with me. Good luck!

Best,
Yu-Chun

On Wed, May 1, 2013 at 11:56 AM, lamees alaulamie <la350207@ohio.edu> wrote:

Hello Dr. Kuo,

Thank you for giving me your permission to use your satisfaction scale in your dissertation. Due to the reason that I am going to use your scale in order to measure the overall students' satisfaction with an online program instead of an online course, I will need to make changes on your scale. Changes will be made only to replace "online course" with "online program" and "class" with "program". I am sending this email to seek your permission to do this change.

Thank you so much

Sincerely,
Lamees Alaulamie
**Appendix G: Factor Analysis**

*Pattern Matrix*

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Extraction Method: Principal Component Analysis.
Rotation Method: Promax with Kaiser Normalization.
a. Rotation converged in 6 iterations.
b. Factor loadings > .3 are showed as blank.
**Structure Matrix**

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Extraction Method: Principal Component Analysis.
Rotation Method: Promax with Kaiser Normalization.
b. Factor loadings > .3 are showed as blank.
### Component Correlation Matrix

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Extraction Method: Principal Component Analysis.
Rotation Method: Promax with Kaiser Normalization.
### Appendix H: Multivariate Outliers

**Multivariate Outliers**

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