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Saudi Students' Attitudes, Beliefs, And Preferences Toward Coeducational Online Cooperative Learning

Salim Alanazy
Wayne State University

SAUDI STUDENTS' ATTITUDES, BELIEFS, AND PREFERENCES TOWARD COEDUCATIONAL ONLINE COOPERATIVE LEARNING

by

SALIM M. ALANAZY

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Advisor Date

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DEDICATION

This work is dedicated to: My father, Mubarak (May Allah give mercy upon him), whose faith and values shaped my entire life. To my mother, Nafla (may Allah bless her), whose love, prayers, endless inspiration, and encouragement have been a source of light on my way through this journey. To my wife, Manal, and my children, Rakan and Bisan, whose love, encouragement, patience, and understanding made this journey possible. And finally to my brothers, sisters, and friends for their support and encouragement.

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Chapter 1

Introduction

Today's online learning environments offer numerous benefits, attracting a significant number of students who choose the online learning option for their education. According to Johnson, Johnson, and Holubec (2002), online cooperative learning is a learning environment which provides a high level of interaction between learners. In Saudi Arabia, the single-sex learning environment is the only choice for students due to social and religious concerns. Recently, online education is a growing field in Saudi Arabia (National Center for E-learning and Distance Learning, 2010). However, there is a paucity of research examining coeducational online cooperative learning that allows virtual interaction between male and female learners. This study aims to investigate the Saudi student attitude, belief, and preference regarding learning in a coeducation online cooperative learning environment.

Statement of the Problem

The learning environment is one of the most important factors affecting learning. Over the last three decades, research on the learning environment reveals that positive classroom environments are related to student academic improvement (Fraser, 1989; Waxman, 1991). The research also indicates that student and instructor reactions to, and perceptions of, the learning environment bear a significant impact on their performance (Fraser, 2001; Fraser & Fisher, 1994). Molenda and Boling (2008) describe a learning environment as "a physical or virtual space that has been designed to provide optimal conditions for learning" (p. 122). Recently, there have been an increasing number of studies focusing on the online environment in higher education

(Chang & Fisher, 2003). This study focuses specifically on online cooperative learning environments.

Online learning refers to learning that relies upon the Internet as the primary delivery mode of communication and presentation (Appana, 2008). Online learning environments provide flexibility to students by allowing them to access class materials, learning resources, and communication tools which enable them to work individually or cooperatively with peers (Graham, 2005). In addition, online learning provides students with the ideal environment in which to receive their education without being concerned with the physical distance between them and their school. Currently, most institutes of higher education offer online courses and programs. During the fall of 2007, 3.9 million students in the USA were taking at least one online course, a 12 percent increase over the number reported the previous year (Allen & Seaman, 2008). In the last ten years, there has been much interest in applying instructional strategies that provide cooperation, such as cooperative learning, in online learning environments.

Online cooperative learning refers to the use of cooperative learning in an online learning setting (Roberts, 2005). In online cooperative learning environments, students learn and work in small groups using the Internet as the primary means for communicating with their instructors and peers (McInnerney & Roberts, 2004). Studies investigating cooperative learning in an online environment have shown benefits including improving student achievement, increasing class participation, avoiding the sense of isolation, and providing an opportunity for the practice of new knowledge within small groups (Chapman, 2005; Stacey, 1999). Typically, online cooperative learning

takes place in a mixed-gender online education situation, the only exception being those colleges and schools that offer single-sex education.

The debate between single-sex education and coeducation is one of the oldest issues in the learning environment. Each of these learning environments has its own theoretical basis and proponents (Mael, Alonso, Gibson, Rogers, & Smith, 2005). In many parts of the world, including the United States of America, coeducation is the typical setting in public education from preschool through college (Spielhagen, 2008). In the United States today, both single-sex education and coeducation opportunities are widely available, giving parents and students the option to enroll in the educational environment most suited to their specific needs. However, this is not the case in Saudi Arabia, where the sex-segregated system is mandatory in all levels of education due to religious and social concerns. Based on Islamic laws which apply in Saudi Arabia, unrelated men and women are not allowed to interact. This environment limits the opportunity for Saudi Arabian students of the opposite sex to interact while learning. Advocates of coeducation argue that despite the effects on student outcomes, coeducation reflects the reality of social interaction in the real world (Mael, 1998).

In Saudi Arabia, there is a strong movement toward online learning environments. In 2006, the Ministry of Higher Education encouraged universities to devote attention to online education by establishing the National Center for E-learning and Distance Learning (NCEL) to assist universities in initiating their online programs (NCEL, 2010). Students enrolled in online learning environments are able to meet virtually, providing an opportunity for students of the opposite sex to interact without breaking social and religious rules. However, because online learning is new in Saudi

Arabia, there is little discussion of mixing male and female students even in a virtual educational environment.

Previous studies show that Saudi students from both genders have a positive attitude toward online learning (Almogbel, 2002; Alshehri, 2005; Alzaid, 2003). However, the attitudes and beliefs of Saudi students toward coeducation online cooperative learning, the effect of such an environment on student motivation toward learning, and their willingness to interact in such an environment are important unanswered questions. This study aimed to investigate Saudi student attitude, belief, and preference toward learning in coeducation online cooperative learning environments, focusing in particular on the new generation's higher education learners, who make up the majority of the Internet users in Saudi Arabia (Communications and Information Technology Commission (CITC), 2008). The study also attempted to gain an understanding of how to design online environments in order to better facilitate this type of learning.

Purpose of the Study

The purpose of this study was to investigate the attitude of Saudi Arabian students towards learning in a coeducation online cooperative learning environment (CEOCLE). It also attempted to investigate Saudi student belief toward applying coeducation online cooperative learning in Saudi Arabia. Finally, the study looked at student preference regarding web-based communication tools while interacting with their peers in a CEOCLE. The study attempted to answer the following questions:

1. What are Saudi student attitudes toward learning in coeducation online cooperative learning environments?

2. Is there a difference in mean attitude score among the students in terms of their gender, age group, marital status, major, academic level, location, experience with online education, and years of using the Internet?
3. What are Saudi student beliefs regarding the general application of coeducation online cooperative learning in Saudi Arabia?
4. Is there a difference in mean belief score among students in terms of their gender, age group, marital status, major, academic level, location, experience with online education, and years of using the Internet?
5. What are Saudi student preferences regarding the web-based communication tools when learning in a coeducation online cooperative learning environment in Saudi Arabia?
6. Are there relationships between student preference regarding using online communication tools when learning in a CEOCLE in Saudi Arabia and their gender, age group, marital status, major, academic level, location, experience with online education, years of using the Internet, and previous experience with each of those online communication tools?

Study Variables

The independent variables include coeducation online cooperative learning environment, gender, age, marital status, academic level, major, location, experience with online education, years of using the Internet, and experience with online communication tools. The dependent variables of the study include attitude, belief, and preference. Figure 1 shows the conceptual framework of the study:

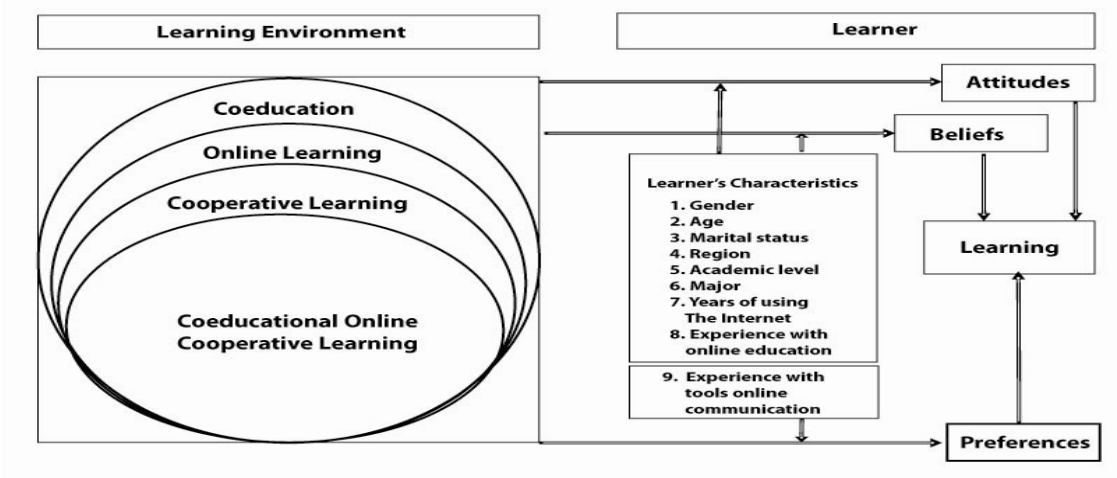

Figure 1. The Conceptual Framework.

Definition of Terms

For the purpose of this study, the following terms were applied:

Attitude. Attitude was defined by Gibson, Ivancevich, and Donnelly (1991) as "positive or negative feeling or mental state of readiness learned and organized through experience that exerts specific influence on a person's response to people, objects, and situations" (p. 70). In this study attitude is defined as individual feelings and perceptions toward learning in a coeducational online cooperative learning environment.

Belief. Belief was defined by the Webster's Dictionary (1913) as the "assent to a proposition or affirmation, or the acceptance of a fact, opinion, or assertion as real or true, without immediate personal knowledge" (p. 134). In this study, belief refers to individual thoughts and perspectives toward the general application of coeducation online cooperative learning in Saudi Arabia.

Coeducation online cooperative learning environment. Coeducation online cooperative learning environment (CEOCLE) refers to an environment where students learn cooperatively with other students of both genders using the Internet. In this environment, students work together in groups in order to accomplish shared goals by

helping and supporting each other, and sharing information and skills (Johnson & Johnson, 1999). These groups must consist of both male and female members.

Online cooperative learning. Cooperative learning has been defined as a group of students working together to accomplish shared goals (Johnson & Johnson, 1999). McInnerney and Roberts (2004) indicated that “in online cooperative learning, students are allocated to, and learn in, small groups and communicate within those groups via the Internet” (p. 211). Therefore, online cooperative learning has been defined as the use of cooperative learning in an online learning setting (Roberts, 2005).

Online learning. According to Appana (2008), online learning is any learning experience or environment that relies upon the Internet as the primary delivery mode of communication and presentation. Through this environment, students interact with their peers and teachers using two types of communication tools: synchronous and asynchronous.

Synchronous and asynchronous online learning. Synchronous online learning supports real-time communications between the students and their peers and between the students and their instructor. This exchange of information happens in different ways: (1) oral communications only, (2) both the exchange of data and voice, or (3) videoconferencing technologies. On the other hand, asynchronous online learning occurs when communication among the students and between the student and the instructor is not performed in real time. An example of asynchronous interaction in an online learning environment is the use of email and through participation in online discussion boards where students respond to questions from the instructor or other students (Holden & Westfall, 2006).

Significance of the Study

Single-sex education is mandatory in Saudi Arabia in all levels of education due to religious and social concerns. However, the Internet opens the door of opportunity for communication and interaction between Saudi males and females. Unfortunately, the majority of the available interaction opportunities are not applicable to educational purposes (CITC, 2008). Coeducation online cooperative learning environments provide Saudi students with the ideal way to work cooperatively with the opposite gender without the considerations of social and religious limitations acting as impediments to their learning. However, student attitude, belief, and preference regarding such an environment are still unknown.

This study was unique in that it investigated both male and female Saudi student attitude, belief, and preference regarding working cooperatively in an online environment. According to Dorman (2005), examining attitudes and preferences is an important step to help instructional designers and stakeholders provide effective online courses that meet learner needs and sequentially improve student achievement, satisfaction, and completion. Therefore, the findings of this study may have an impact on the online educational system in Saudi Arabia in several ways.

First, the study may assist curriculum authors and instructional designers in creating effective learning environments wherever online coeducation is possible in Saudi Arabia, including assisting those instructional designers in the Saudi private sector responsible for the design of online training programs to be delivered inside or outside of the kingdom.

Second, the study may provide the decision makers in Saudi Arabia with information regarding the learning characteristics and needs of new generation higher education learners. This is especially crucial when considering the current movement toward online learning in Saudi Arabia. Findings of the study may also provide the opportunity for a new view of online education from the learner perspective, which may encourage a new movement toward mixed-gender online education in Saudi Arabia.

Lastly, since the majority of Internet users in Saudi Arabia are those involved in higher education, the study may result in state recommendations for the effective use of the Internet with respect to online cooperative coeducation in Saudi Arabia.

Summary

This chapter provides an overview of the problem and the purpose of the study. This study aimed to investigate the attitude, belief, and preference of Saudi Arabian students towards learning in a coeducation online cooperative learning environment. The research questions, significance of the study, variables of the study, and definition of terms were also explored.

Chapter 2

Review of the Literature

Introduction

The literature review covers the different aspects of a coeducational online cooperative learning environment including: coeducation, cooperative learning, and online learning. The first section includes a discussion of the learning environment and the studies that focus on both single-sex education and coeducation environments. This section also provides a brief description of the history of coeducation and coeducation in Saudi Arabia. It covers the debates between single-sex and coeducation learning environments and explores the different views of these different schools.

The second section focuses on online cooperative learning and its effect on student outcomes. Additionally, this section describes the available research on student attitudes toward online cooperative learning and the effect of group diversity in terms of gender on student attitude. It looks at the factors affecting student attitudes toward the online cooperative learning environment. This section also discusses the different types of online communication tools that can be used in online cooperative learning, including asynchronous tools such as email, forums, and blogs and synchronous tools such as text chat, audio conference, and video conference. The benefits and limitations of both types are explored.

The third section focuses on online education in Saudi Arabia, including background information about the Saudi Arabian educational system, girls' education in Saudi Arabia, and the movement toward online education in Saudi Arabia. This section

also explains the studies on Saudi student attitudes toward learning in an online environment.

Coeducation and Single-Sex Education

This section provides a brief description of the history of coeducation and coeducation in Saudi Arabia. It also reports on the debates between single-sex and coeducation learning environments and explores the different views of the different schools.

History of coeducation. Coeducation vs. single-sex education is one of the oldest ongoing debates in education. In the United States, coeducation was introduced first by Oberlin College when it started educating women together with men in 1837 (Riordan, 1990). However, most of the schools continued providing single-sex education until 1862, when President Abraham Lincoln signed the Morrill Land Grant Act which made public lands available to endow state colleges and universities. Although Morrill did not require admission of women, it led to more public universities offering coeducation (Rosenberg, 2004).

According to Spienlhagen (2008), the real movement toward coeducation took place during the 1960s and 1970s, when most of the single-sex schools became coeducational schools for financial and social reasons. This movement toward coeducation was motivated by feminists' claims for equal opportunity of education for both genders. This movement was described by Salomone (2003) in the context of exploring the history of women colleges in the United States:

> During the [1960s], public institutions had begun expanding at breakneck speed to offer affordable quality education to the post–World War II baby boom generation. Fearful of being left behind in the dust of that frenetic whirl, private single-sex institutions tried to remain academically competitive by becoming

> coeducational. Thus the push toward coeducation was driven largely by market forces wrapped in the rhetoric of what was “natural” and “equal.” Between 1960 and 1972, about half of the existing women’s colleges opened their doors to men or closed down completely. During the six-month period between June and December 1968, an astounding sixty-four institutions met one or the other fate. The ones that held fast to their core mission were hard-pressed to justify their existence to a post feminist generation of young women eager to prove themselves equal to men. Coeducation, many of them believed, presented the academic path to full equality and assimilation (p. 192).

Nevertheless, in K-12 education, single-sex education was reconsidered in 2002, when the Bush administration applied the ‘No Child Left Behind’ education plan, and millions of dollars were spent on the creation of single-sex schools and classes in order to raise academic achievement (Matthews, 2005). Numerous studies have been done in response to this reconsideration of single-sex schools to study the effect of single-sex schools on student outcomes (Ferrara & Ferrara, 2008; Gurian, 2001; Mael et al., 2005; Salomone, 2003; Spielhofer, O’Donnell, Benton, Schagen, & Schagen, 2002). Some of these studies will be explored in a following section.

Coeducation in Saudi Arabia. In Saudi Arabia, both public and private universities provide only single-sex education. However, in 2009, King Abdullah Bin Abdulaziz Al Saud, the King of Saudi Arabia, declared the opening of the King Abdullah University of Science and Technology (KAUST), the first Saudi university providing coeducation by teaching men and women in integrated classes (Glain, 2009). To avoid negative social reactions and in order to prevent ramifications as a result of defying Saudi societal laws prohibiting coeducation, the state-owned national oil company Saudi Aramco was contracted to build the campus and create the curriculum rather than this falling under the jurisdiction of the Ministry of Higher Education (Cambanis, 2007). As a result, Saudi citizens look at KAUST as a university operating independently from the

Saudi Ministry of Higher Education; therefore, the coeducational model of KAUST is not limited to those of other universities which are bound by the regulations of the Ministry of Higher Education.

The coeducational system of KAUST started the argument regarding the opportunities of applying coeducation in Saudi Arabia; there is a paucity of research examining the potentials of coeducation in Saudi Arabia. Online education, where virtual interaction between the two sexes is possible, seems to be a more appropriate environment for such studies.

Coeducation vs. single-sex education. The debate between coeducation and single-sex education started in the nineteenth century when anti-coeducation advocates like Dr. Edward H. Clarke critiqued the movement toward coeducation. In his book *Sex in Education: Or, a Fair Chance for Girls*, Clarke argued that men and women are not intellectually and physically stable enough for mixed education (Clarke, 1873). This viewpoint was supported by the social position toward coeducation. In the late nineteenth century, mixed-gender education was not socially acceptable, thus slowing the movement toward coeducation (Salomone, 2003).

Reginald Dale was one researcher who discussed the difference between single-sex education and coeducation in the 1960s. He published three volumes of his book, *Mixed or Single-sex School?* which defended the value of coeducation. Dale's works concluded that coeducation does not hurt male academic achievement and that the presence of girls can have a quieting and civilizing effect on males (Dale, 1969, 1971, 1974). These early arguments were focusing on the sex comparisons of male and female achievement and self-esteem. However, in the last two decades, the debate has

shifted “to better understand the nature of the experiences of females and males within particular contexts” (Brody et al., 2000, p. 16).

According to Matthews (2005), the debate can be placed into two broad categories of emphasis that supporters of both single-sex and co-educational schooling have used to advance their case. The first category emphasizes how academically successful the two types of school environments have been whereas the second category emphasizes equality.

Some of the first studies to support coeducation were by Dale (1969, 1971, 1974). In these studies, Dale focused on grammar schools between 1947 and 1967, concluding that coeducational schools provided a happier school environment for students when compared to single-sex schools without negatively affecting their academic achievement. He also stated that student attitudes toward mixed-sex schools were more positive than their attitudes toward single-sex classes. Even though Dale’s studies seem to be valuable in supporting the movement toward coeducation, they are limited in focusing only on the K-12 setting.

Matthews (2005) has mentioned some advantages of a coeducation environment, including discouraging difference and power differentials; helping the students to experience how it can feel to have less of a power differential; making it possible to explore sameness and difference to bring out the overlap in masculinities and femininities; developing emotional literacy through the use of dialogue with others; and using concrete experiences to make explicit that there are many masculinities and femininities that can be drawn on, making it possible for students to experience and internalize the politics of presence with others. Riordan (1990) has also mentioned

some other advantages of coeducation including economic efficiency, the nature of the situation, reduction of gender stereotypes, egalitarian sex-role development, and equality of educational opportunity.

Matthews (2005) has also indicated some problems that are associated with single-sex education including emphasizing differences, reinforcing power differentials, and implying that what is good for one sex is not good for the other sex. The American Association of University Women Educational Foundation (1998) concluded that there was no evidence that single-sex education in general works better than co-education.

On the other hand, there are some studies which claim that girls can achieve more academically in the single-sex environment (Ferrara & Ferrara, 2008; Gurian, 2001; Lee & Bryk, 1986; Mael, 1998; Riordan, 1990; Smith, 1990; Spielhofer et al., 2002).

An important study was conducted by Lee and Bryk (1986) to compare single-sex and coeducation schooling on students. A sample of 1,807 students was randomly drawn from 75 secondary Catholic schools. The result indicated that students in single-sex schools showed a higher academic achievement. Smith (1990) found similar results at the college level in a study comparing academic performance of women in single-sex and coeducation colleges. The study showed a higher academic achievement favoring single-sex colleges. After an extensive review, Mael's 1998 study stated that there was evidence that females benefited from single-sex education, particularly in the areas of mathematics and science. Spielhofer et al. (2002) looked abroad in their study in England that also concluded girls in single-sex schools achieved better results than their peers in mixed-sex schools, particularly in the area of science. Riordan (1990) has

mentioned some advantages of single-sex environment including: (1) role models, (2) traditional sex-role development, (3) sex differences in curriculum opportunities, (4) teacher-student interaction in the classroom, and (5) sex stereotypes in peer interaction.

According to Matthews (2005), more recently there has been a change in concern regarding academic achievement, as female exam performance has reached or overtaken that of males. With the concern that females are now outperforming males, there has been a focus on ways to improve male achievement in examinations. One of the main methods suggested has been to separate the sexes on the basis that males and females have different learning styles and preferences. However, many researchers argue against the idea of separating students based on gender to improve achievement and criticized the studies that support single-sex education (Ivinson & Murphy, 2007; Matthews, 2005; Salomone, 2003).

Ivinson and Murphy (2007) argued that inconsistent findings and the difficulty of controlling the multiple factors influencing achievement in schools support disagreements about the relationship between single-sex schooling and achievement; therefore, “it seems that there is not a strong case for using academic achievement as a basis for separating boys and girls into separate schools” (Matthews, 2005, p. 137).

Salomone (2003) has also criticized studies supporting single-sex education. First, the nature of the benefits of single-sex education is highly contextual and depends on the individual students and their particular background, ability, and need. Second, the focus of most of the studies was on the possible benefits of single-sex education and coeducation for females. In describing these studies, Salomone (2003) argued that the research on single-sex education did not consider within-school type differences

among students. They also could not control some of the environmental factors such as class size, the percentage of female and male faculty, teaching styles, and the overall curriculum that might influence the outcome. Therefore it is hard to determine whether students perform better in single-sex schools because of the single-sex environment itself or because of some other elements (p. 190).

In summary, the debate between both single-sex education and coeducation environments is still ongoing and both schools have theoretical bases supporting their positions (Dale, 1969, 1971, 1974; Mael et al., 2005; Riordan, 1990; Salomone, 2003). Even though most of the schools in the United States became coeducational after the 1960s, single-sex education was reconsidered in 2002, when the Bush administration applied the 'No Child Left Behind' education plan (Matthews, 2005; Spienlhagen, 2008). As a result of the new legislature, most of the recent research on the debate seems to focus on K-12 education. In addition, while the studies that support coeducation focus on the potential problems associated with single-sex education, other studies mention some advantages of single-sex education, mostly student achievement (Ferrara & Ferrara, 2008; Gurian, 2001; Mael, 1998; Matthews, 2005; Riordan, 1990; Spielhofer et al., 2002).

In conclusion, most of the recent studies on coeducation vs. single-sex education took place in K-12 environments. It was also shown that there is a lack of research on studying single-sex and coeducation in online environments. The new argument between coeducation and single-sex education that was recently started in Saudi Arabia and the new movement toward online education have merged creating opportunity for more studies on coeducation especially in online learning environments.

Online Cooperative Learning

Cooperative learning. Today, many student-centered instructional activities, such as cooperative learning, problem-solving, and discovery learning are replacing traditional teacher-centered instructional strategies (Haefner, 2006). According to Johnson, Johnson, & Smith (1995), cooperative learning was introduced in the field of education when Maller wrote his book *Cooperative and Completion* in 1929. Since the 1970s, cooperative learning has become a widely used instructional strategy beginning with preschool and continuing through graduate school, in all aspects of instruction and learning. It has also become widely used in nontraditional as well as traditional learning situations, including after-school and non-school educational programs (Johnson & Johnson, 2002).

Seymour (1994) has defined cooperative learning as individuals working with their peers in groups to achieve a common goal rather than competing against their peers or working separately from them. According to Johnson & Johnson (1999), there are three types of cooperative groups: informal, formal, and cooperative-based. Within informal cooperative learning groups, the groups work in tasks that take from a few minutes to one class period, formal groups work from one class period to several weeks, and cooperative-based groups have an extended work relationship that lasts beyond a few weeks.

Students in cooperative learning situations are responsible not only for their own learning but also helping others learn as well. Johnson and Johnson (1999) mention some of the advantages of cooperative learning which include enhancing student academic achievement, fine-tuning student thinking abilities, increasing student

motivation to study, building student self-esteem, and creating positive relationships among students. Furthermore, cooperative learning provides students with positive interdependence, promotes interaction, demands individual and group accountability, and enhances interpersonal and small group skills and group processing (Ngeow, 2000).

Theoretical constructs of cooperative learning. Cooperative learning is based on the idea that working together on a task or a problem can enhance student learning. This idea is grounded to Vygotsky's social constructivism. It is also supported by learning theories including behaviorism and cognitivism.

Based on social constructivism, learning occurs when students are actively engaged in the learning process and work in collaboration with other students to accomplish a shared goal. According to Vygotsky (1978), students can learn only when they interact with people in their environment and cooperate with their peers. He added that in collaboration with peers, a child can always do more than they are able to do independently. Cooperative learning is also supported by the concept of Vygotsky's zones of proximal development which suggest that we should design authentic activities that include problems more difficult than what a student can handle alone, but is possible to solve with the support of their peers (Vygotsky, 1978).

From the cognitive view, cooperative learning helps students build new mental models and reinforce or modify existing mental models. When working as a team, learners are exposed to similar and/or divergent views of team members. Similar views reinforce the existing mental models, while different views can challenge a learner to

modify the existing mental models or build new mental models (Glacer & Bassok, 1989) (as cited in Chen, Wu, & Yang, 2006).

From the behaviorist perspective, cooperative learning provides students with positive reinforcement by working with peers in a group. Because the individual performance of a student is important to the entire group, this acts as a positive stimulus affecting student performance. According to Graham (2006), when students view their contributions as valuable toward the group's success, individual motivation and achievement levels rise. Cooperative learning has also been used as a vehicle to guide and shape student behavior (Johnson & Johnson, 1975).

Online cooperative learning. Online cooperative learning is an advanced form of learning that involves two of the most common used learning strategies: online learning and cooperative learning. Olguin, Delgardo, and Ricarte (2000) indicate “in online cooperative learning, students are allocated to, and learn in, small groups and communicate within those groups via the Internet” (p. 211). Therefore, online cooperative learning has been defined as the use of cooperative learning in an online learning setting (Roberts, 2005). According to Johnson et al. (2002), it appears possible to create a cooperative learning environment through the utilization of web-based communication tools such as e-mail and online chat conversation. The use of web-based communication tools **“**can (a) change the way students and instructors interact, (b) enhance cooperative learning opportunities, (c) facilitate class discussion, and (d) move writing from solitary to more active, social learning” (para, 7).

Collaboration can be synchronous via the use of text-messaging, audio-conferencing, and video-conferencing or asynchronous via the use of email or

discussion forums (Chen et al., 2006). Web-based tools can enhance cooperative learning opportunities by delivering information to students, having students share joint documents and comment on each other's work, support communication between cooperative learning groups, and create and use shared databases (Johnson et al., 2002).

Online communication tools. Online communication tools can be divided into two categories: asynchronous communication tools and synchronous communication tools. Asynchronous online communication tools include email, forums, blogs, and any other tools that enable learners to interact with instructors and peers at different times and in different places. Alternatively, synchronous online communication tools include text chat, voice-conference, video-conference, and any other communication tools that enable learners to interact with instructors or peers at the same time while in different places (Chen et al., 2006).

Based on these types of online communication tools, there are two types of online learning: asynchronous online learning and synchronous online learning. Asynchronous online learning is facilitated by media such as e-mail and discussion boards by providing the learner and instructor with an opportunity to interact even when they cannot be online at the same time. Synchronous online learning can be facilitated by media such as text chat, audio-conference, and video-conference, providing the learner and instructor with a virtual environment to interact online at the same time when they are in different places (Hrastinski, 2008).

Hrastinski (2008) discussed the difference between these two types of online learning as well as their benefits and limitations. The key benefit of asynchronous online

learning is flexibility. Students are able to log on at any time to download materials, post or answer questions, and send messages to instructors or peers. With this mode of online learning, students also have enough time to read the materials, organize their thoughts, and write their contributions. This flexibility improves learner reflection and ability to process information. However, asynchronous online learning has some limitations, such as student feelings of isolation.

Synchronous online learning also has a number of benefits and limitations. Avoiding isolation is one of the most important benefits of the synchronous environment. In this environment, both learners and instructors become “more social and avoid frustration by asking and answering questions in real time” (Hrastinski, 2008, p. 52). Synchronous environments also increase learner commitment and motivation because a quick response from both the student and instructor is expected. Limitations of synchronous online learning include limited time available for discussion sessions and the potential for students to spend time discussing unrelated issues (Hrastinski, 2008).

Both asynchronous and synchronous online communication tools are important for a successful online cooperative learning environment. Cooperative groups can use synchronous online communication tools to plan tasks, discuss less complex issues, and monitor and motivate each other. These groups can also use asynchronous online communication tools to work on complex tasks, reflect on each other’s contributions, and ask for help. In summary, an online environment provides a supportive environment for cooperative learning. Most course management systems used in higher education include both synchronous and asynchronous communication tools that enable the

learner to interact with their peers and their instructor (Simonson, Smaldino, Albright, & Zvacek, 2009).

The course management system is a very teacher-centered environment that is largely controlled by the teachers. Today, Web 2.0 environments such as blogs, wikis, and social networks such as MySpace and Facebook are widely used in both education and business. The Web 2.0 tools are highly participatory and promote cooperation. They also provide learners with more freedom to interact outside the instructor control (Simonson, et al., 2009). Web 2.0 environments provide an ideal environment for online cooperative learning (Safran, Helic, & Guetl, 2007).

Some studies have shown that males and females have different online communication styles (Chou, 2002; Sussman & Tyson, 2000). Sussman and Tyson (2000) indicated gender differences in written and oral communication in an online environment. The study found that females communicate more frequently than males. Chou (2002) also investigated the gender differences in both asynchronous and synchronous learning environments, finding significant differences in the synchronous mode. Female students sent an overall higher number of messages than the male participants while participating in a synchronous communication mode.

This review indicated that most of the studies on student preference in online learning environments focus on gender differences in communication style. However, there is a paucity of research that looks at what online communication tools students prefer to use to communicate with students from each gender when working cooperatively in an online learning environment. Therefore, one of the aims of this study

is to investigate student preference regarding online communication tools when learning in a coeducational online cooperative learning environment in Saudi Arabia.

Designing an online cooperative learning environment. Today, with the growth of the Internet, web-based communication tools are widely used in education and business. Globally, people are working and learning cooperatively. Many software programs have been developed to assist teachers and students in increasing interaction and cooperation through the online experience; with this approach team members do not need to meet face-to-face (Johnson et al., 2002).

As a response of this growth in using web-based communication tools in learning, numerous studies were conducted on the best practice of applying online cooperative learning in order to provide guidance to web designers of effective online cooperative learning environments. Educational researchers Yukselturk and Cagiltay (2008) provide some suggestions for designing online cooperative learning including providing content that is compatible with the student entry behaviors; including real life tasks; helping students form groups; keeping group size small; providing a group leader for each group; and encouraging face-to-face meeting in addition to online interaction.

Learner diversity within groups is also an important element in designing an online cooperative learning environment. Hutchinson (2007) has suggested some recommendations for implementing learner diversity for online cooperative groups. The first step requires conducting a needs assessment and learner analysis to get a good understating of the learner and how they learn. The second criterion is to provide positive interdependence which will play a significant role in the management of the groups when students are undertaking online activities. The third initiative is to provide

multiple tasks including a range of group and individual tasks in the assessment where students are required to work with others, consider the perspectives of their peers, and compare them with their own perspectives.

Ashcraft and Treadwell (2008) provided suggestions to avoid problems associated with group work such as unequal distribution of work among team members and friction among group members. Recommendations include: starting with simple collaborative tasks, encouraging constructive discussion of team concerns, helping students to intellectualize the situation, encouraging understanding of team norms, and encouraging teams to develop rules.

Attitude toward cooperative learning. Research indicates that students have positive attitudes toward cooperative learning (Al-Dawoud, 2001; Armstrong, Chang, & Brickman, 2007; Griffin, 2008; Hagen, 1996; Velez-Caraballo, 2008). Cooperative learning also enhances student attitude toward subject matter (Gömleksiz, 2007; Velez-Caraballo, 2008) and enhances student achievement (Gömleksiz, 2007; Griffin, 2008).

In an empirical study, Hagen (1996) surveyed 172 students enrolled in an introductory human services course to explore their attitudes toward cooperative learning. The study found that students had a positive attitude toward cooperative learning. The results also showed that all of the participants enjoyed cooperative learning and would like to be involved again. The same result was revealed in a study by Phipps, Phipps, Kask, and Higgins (2001) that surveyed 210 students from four different disciplines and found that students had a positive attitude toward cooperative learning.

Velez-Caraballo (2008) investigated the effect of the use of technology and cooperative learning on the achievement of college students and their attitude towards mathematics. Four sections of a pre-calculus course, each comprised of 30 freshmen students, were randomly selected. Two control groups were taught via the traditional method, and two experimental groups were taught using cooperative learning in a computer laboratory for six weeks.

A t-test and ANOVA test were performed to compare results for academic achievement and attitudes towards mathematics. The results found no significant difference in terms of attitude towards mathematics and academic achievement. However, 75 percent of the students in the cooperative learning groups indicated that they would recommend the course to other students and suggested that the laboratory experience and the cooperative learning technique should be used more frequently.

Gömleksiz (2007) compared the effects of the cooperative Jigsaw II method and the traditional teacher-centered teaching method on improving English skills for engineering students and student attitudes towards learning English. Jigsaw is a cooperative learning form that involves small groups of students teaching each other.

Sixty-six participants were randomly assigned into two groups, an experimental group and a control group. The experimental group was taught using cooperative Jigsaw II while the control group was taught via traditional teacher-centered instruction. A pre-test and post-test were used to compare group achievement. The results indicated a significant difference in favor of the experimental group on student achievement. The results also showed that the cooperative learning experience had a significant positive effect on engineering student attitude towards learning English. This

result may due to the effect of student major on attitude toward cooperative learning (Gottschall, 2006).

Gottschall (2006) investigated student attitude toward group work and found the percentage of students in three levels of attitude varied across majors. For example, education students have a more positive attitude toward cooperative learning when compared to business students. This result may be due to the different experiences with group work amongst the majors and also due to the nature of the group projects in each major.

Griffin (2008) examined the effect of using cooperative learning with computer-assisted instruction (CAI) on mathematics achievement compared to working alone using computer-assisted instruction. The study also investigated student attitude toward cooperative learning after working in cooperative learning groups using CAI compared to groups working alone using CAI. Fifty-one students in a math class at The Art Institute of Pittsburgh participated in the study.

The study concluded that using cooperative learning and computer-assisted instruction will improve mathematic achievement scores to a greater degree. It also indicated that differences were found in group attitude toward the instructional method in favor of cooperative learning groups.

Some other studies conducted in Middle Eastern all-female institutes provide more evidences that females have a positive attitude toward cooperative learning especially in single-sex settings (Al-Dawoud, 2001; Alharbi, 2008). In a quasi-experimental study, Al-Dawoud (2001) investigated learner attitude toward cooperative learning after attending a training workshop on cooperative learning in all-female

institutes. Ninety-one teachers enrolled in methods classes at the College of Basic Education (CBE) participated in the study. The participants were divided into two experimental classes and one control class. Twenty-one participants were interviewed. Only the participant group received the training workshop in cooperative learning. A significant difference in attitude towards cooperative learning was found between the experimental classes and the control class. The experimental group showed a more positive attitude toward cooperative learning when compared to the control group. As a result, the researcher suggested that cooperative learning should be introduced in the College of Basic Education in Kuwait and the University of Kuwait as an effective teaching and learning strategy. However, the results of this research are limited to Kuwait females in all-female institutes due to the participation effect and the threat to external validity.

Alharbi (2008) examined the effect of the cooperative learning method in English reading comprehension performance, student attitude toward cooperative learning, and motivation toward reading. Sixty ESL Saudi high school female students participated in this study and were divided into two groups, an experimental group and a control group.

A pretest posttest control group design was administered, and a one-way analysis of covariance (ANCOVA) was performed to test the differences between the experimental and the control group. The results showed no significant difference between experimental and control groups in the level of student motivation toward reading; however, there were significant differences between the two groups in reading comprehension performance and in student attitude toward cooperative learning in favor of the experimental group.

On the other hand, a recent study conducted by McLeish (2009) investigated student attitude towards cooperative learning methods at a community college in Jamaica. The results indicated that due to some fears such as possible low grades, only 50 percent of the students showed a positive attitude toward cooperative learning.

Attitude toward online cooperative learning. Studies also have demonstrated a positive attitude toward cooperative learning in the online environment (Bouras, 2009; Jung, Choi, Lim, & Leem, 2002; Neo, Neo, & Kwok, 2009). Online cooperative learning environments increase the online learning interactions between students (Johnson et al., 2002). According to Jung et al. (2002), student satisfaction with online learning environments was strongly related to the amount of active interaction with their peers. A study by Bouras (2009) indicated that peer interaction was related to learning and satisfaction.

Neo et al. (2009) aimed to determine the impact of online cooperative learning environments on student learning, perception, and learning experience. Multimedia technology and Web 2.0 tools, mainly blogs, were integrated to provide students with the opportunity to cooperate with their teams. Surveys were utilized to determine student reactions toward the online cooperative learning environment. The results showed that the students had very positive experiences learning in the online cooperative learning environment. The students were able to learn in this environment and showed positive attitudes toward using blogs in their learning process.

In summary, the studies conducted on student attitude toward cooperative learning in both face-to-face and online environments indicate that students have positive attitudes toward cooperative learning (Al-Dawoud, 2001; Armstrong et al., 2007;

Bouras, 2009; Griffin, 2008; Hagen, 1996; Jung et al., 2002; Neo et al., 2009; Velez-Caraballo, 2008). Cooperative learning also seems to enhance student attitudes toward the subject matter (Gömleksiz, 2007; Velez-Caraballo, 2008) and enhances student achievement (Gömleksiz, 2007; Griffin, 2008). In online environments, positive attitudes toward cooperative learning may be the result of high amounts of active interaction among learners provided in online cooperative learning (Bouras, 2009; Johnson et al., 2002; Jung et al., 2002). Finally, in Saudi Arabia, cooperative learning was a subject for studies only in traditional face-to-face single-sex settings, therefore, the current study investigates student attitude toward cooperative learning in a coeducation online setting.

The effect of group diversity. Coeducation online cooperative learning environments provide students with more opportunity to interact with students from the opposite sex. This interaction exposes the students to different views that can benefit student's learning (Glacer & Bassok, 1989) (as cited by Chen et al., 2006). Nevertheless, the existence of members of both genders in online cooperative groups is not always a positive factor in cooperative learning (Savicki, Kelley, & Lingenfelter, 1996; Schoenecker, Martell, & Michlitsch, 1997).

Schoenecker et al. (1997) studied the effect diversity had on satisfaction and performance of undergraduate and graduate student teams during a management simulation game. The study included 129 small groups composed of undergraduate and graduate students in 21 class sections. Diversity was based on age, race, gender, and academic performance. The results showed group satisfaction negatively correlated with diversity. The study concluded that the more diverse the group, the less satisfied

the group. It also showed that the negative effect of diversity was most prominent among undergraduates.

Savicki et al. (1996) investigated group gender composition and the relationship between gender roles and group process functions in online environments. The study showed that women in female-only groups were more satisfied with the group process and had more advanced levels of group development than did either male-only or mixed groups. Savicki, Kelley, and Ammon (2002) also showed the same result when investigating group gender composition and communication styles in an online learning environment. The result showed that female-only groups scored higher in group development than either mixed or male-only groups. Additionally, male-only groups showed significantly lower participation than mixed or female-only groups.

In summary, even though theory shows that group diversity can play a significant role in improving learner outcomes in online cooperative learning, the studies conducted on the effect of group diversity in terms of learner gender show that same-gender groups seemed to show a more positive attitude toward online cooperative learning than mixed-gender groups (Glacer & Bassok, 1989; Savicki et al., 1996; Schoenecker et al., 1997). It was also shown that male students seem to have a more positive attitude toward learning in coeducational online cooperative learning environments (Savicki et al., 1996; Savicki et al., 2002).

This review shows that the majority of studies looking at attitude investigated student attitude toward cooperative learning without considering the effect of group diversity in terms of gender. However, more studies are emerging that investigate student attitude toward working cooperatively with the opposite sex in an online

environment. This study will focus on student attitude toward learning in a coeducational online cooperative learning environment.

Factors affecting attitude toward online learning environments. Researchers have identified learner characteristics that may affect student attitude toward learning in online learning environments. Demographic variables such as learner gender, marital status, age, academic major, and academic level can play a role in student attitude toward and perception of learning in an online learning environment (Anderson, 1997; Anderson & Haddad, 2005; Bouras, 2009; Fredericksen, Pickett, Shea, Pelz, & Swan, 2000; Ivers, Lee, & Carter-Wells, 2005; Sahin, 2006).

Gender is considered one of the most influential variables affecting student attitude toward online learning, especially when applying cooperative learning in an online environment. Frederickson et al. (2000) indicated that gender appears to play a role in online learning. Women reported higher levels of perceived learning than did men.

The effect of gender on student perception toward online learning has been studied by Anderson and Haddad (2005). This study included 109 online students at a Midwestern university. The study aimed to compare expression of voice, control over learning, and perceived deep learning outcomes in face-to-face versus online course environments. The findings indicated that females experienced greater perceived deep learning in online courses when compared to face-to-face courses and that expression of voice appeared to contribute to this outcome. This effect of expression of voice did not occur for male students. In explaining this result, Anderson and Haddad (2005) stated:

> Our research suggests that, for females, this greater perceived learning occurs because of the role that voice plays in strengthening perceived deep learning in both online and face-to-face courses. Males did not report significant differences in voice or perceived deep learning in online as compared to face-to-face courses. Thus, female students seem to experience more voice in online environments as compared to face-to-face courses, and this contributes in turn to greater perceived learning for females as compared to male students (Hypothesis 2). Voices that may not emerge in a face-to-face classroom due to gender-based role socialization, cultural differences, or individual personality traits like shyness are heard in the online course because students are required to post analytical viewpoints about weekly topics and readings, except in the most technical of courses (p. 11).

On the other hand, other studies concluded that gender has no effect on student attitude toward learning in an online environment (Laffey, Lin, & Lin, 2006; Witowski, 2008). Witowski (2008) investigated the effect of gender on student satisfaction in an online learning environment using the Distance Education Learning Environments Survey (DELES). This study was comprised of 161 students. The findings of this study stated that gender did not play a role in determining student satisfaction with online learning. According to Witowski (2008), “Students have the luxury of having more time to evaluate and analyze content in an online environment. This luxury breaks down any potential barriers regarding gender differences; the student has time to develop and construct his or her thoughts” (p. 115).

Learner age can also influence attitude and perception toward online learning (Bouras, 2009; Frederickson et al., 2000; Sahin, 2006). Sahin (2006) concluded that students over 21 were significantly more positive with respect to instructor feedback and personal relevance in an online environment than were students between the ages of 18 and 21. Frederickson et al. (2000) also found that age has a significant effect on learner perception toward Web-based learning. The results indicated that the youngest students perceived the least learning and satisfaction, while the oldest students

perceived the most learning and satisfaction. According to the researchers, this result may be due to the higher motivation and expectations older students have (Frederickson et al., 2000). Other studies indicate more factors effecting student attitude toward the online learning environment. Some of these studies will be explored in the following section.

Alugab (2007) looked at the factors affecting Saudi student attitude toward online learning in a Saudi college. A multiple regression test and correlation coefficients were used to determine if any relationship existed between demographic variables and student attitude toward taking online courses. The study concluded that student access to a home computer correlated significantly with student attitude toward online instruction. Similarly, if the students had home Internet access, they were more willing to take courses online. Factors such as age, marital status, major, student status, and location have been shown to have no effect on student attitude toward online instruction. This result is supported by Ivers et al. (2005) who found that student attitude and perception of online instruction can be influenced by their prior experience with computers.

Sahin (2006) investigated the relationships between student characteristics and their perception of web-based learning and satisfaction with online learning. Perception includes instructor interaction, instructor feedback, student interaction and collaboration, personal relevance, authentic learning, active learning, and student autonomy. The study surveyed 279 students in five Web-based undergraduate biology courses at a Midwestern university. The findings from this study indicated that students were

satisfied with their online courses. It also showed significant difference in student perception in relation to gender, age, and academic major.

The results showed that female students were significantly less positive about instructor feedback than males. It also indicated that older students (over 21) were significantly more positive with respect to instructor feedback and personal relevance than were younger students (age 18-21). Finally, the study found student academic major to play a role in student perception of online learning. For example, Family and Consumer Sciences students were significantly more positive with student interactions and collaborations and instructor feedback when compared to Liberal Arts and Sciences students.

Frederickson et al. (2000) examined factors affecting learning and satisfaction in online learning. The study was conducted at The State University of New York and included 1,406 participants. The findings of the study indicated that gender and age can affect student perception of the online learning environment. Female students showed a higher level of positive perception toward online learning environment when compared to men.

The study concluded that the online learning environment appears to be a very female-friendly place. Women stated that “they participated at higher levels online versus in the classroom, that they learn more, that technical difficulties are less likely to impede their learning that they are more likely to want to continue taking on-line courses, and finally … are more satisfied with on-line learning in general than their male classmates” (p. 26).

The study also indicated that age can affect learner perception of online learning. According to the study, the youngest students (age 16-25) reported the least satisfaction with online learning, while students in the 36-45 year old range reported the most satisfaction with online learning. Again, this result may be due to the higher motivation and expectations older students have (Frederickson et al., 2000).

A recent study conducted by Bouras (2009) investigated the effect of instructor presence and learner presence on learning and satisfaction in online learning. Instructor presence indicates instructor support, while learner presence indicates interaction and collaboration with peers. The study concluded that peer interaction was related to learning and satisfaction. Students in the 40s age group and above, those who have the most online experience, postgraduate students, and female students felt that their interaction with peers helped them to learn and to be satisfied with the experience. In explaining this result, Bouras (2009) stated:

> The female students also reported higher levels of learning and satisfaction associated with increased levels of instructor and learner presence than did their male counterparts. This finding highlights differentiated desires among male and female students and is worthy of further study. It seems that male students prefer to interact with the instructor, While females prefer both instructor and learner interaction to perceive they have learned and to be satisfied. While males prefer the straightforward presentation from an instructor, this study found females prefer interaction in the classroom (p. 116).

The results also showed that while both master and doctoral students showed that they learned from their interaction with their instructor and peers, doctoral students reported less satisfaction toward interacting with their peers in an online environment. The study also showed that age can play a role in student satisfaction with respect to interacting with peers in an online environment. According to the study, students 40-49 years old felt they had learned and were satisfied when they interacted with both the

instructor and peers, while no significant result was found for the younger group. Finally, the participants who were 50 years of age or older reported that they were satisfied when interacting with the instructor, but not satisfied when interacting with peers.

Because online cooperative learning involves more peer interaction and less instructor interaction than traditional online learning, the study indicated that females 40 years old or younger and master students will have more positive attitudes toward learning in an online cooperative learning environment. It also indicated that males 50 years old or older and doctoral students seem to have less positive attitudes toward the online cooperative learning environment.

In summary, previous studies have identified learner characteristics such as gender, marital status, age, academic major, and academic level that can play a role in student attitude toward an online learning environment (Anderson, 1997; Anderson & Haddad, 2005; Bouras, 2009; Frederickson et al., 2000; Ivers et al., 2005; Sahin, 2006). However, most of the studies investigated online learning environment without focusing on a specific form of online learning. As a result, future studies should focus on investigating factors that affect student attitude toward advanced forms of online learning environments. One of the aims of this study is to investigate the factors that affect student attitude toward coeducational online cooperative learning.

Effects of online cooperative learning on student outcomes. The effect of cooperative learning on academic achievement has been well documented since the 1970s (Johnson et al., 1995). Research suggested that cooperative learning produces greater student achievement than traditional learning methods (Armstrong et al., 2007; Cukras, 2005; Giraud, 1997; Johnson & Johnson, 1979; Jones, 1993; Reid, 1992;

Slavin, 1991; Sharan, 1980; Whicker, Bol, & Nunnery, 1997). On the other hand, even though both cooperative learning and online learning have been the subject of in-depth studies resulting in an abundance of literature over the last three decades, most of the current literature on cooperative learning is applied to face-to-face, K-12 environments (McInnerney & Roberts, 2004). There are some studies that discuss online cooperative learning and its effects on student performance (Ashcraft & Treadwell, 2008; Chapman, 2005; Johnson & Johnson, 2002; McMurray & Dunlop, 1999; Stacey, 1999; Stout, Towns, Sauder, Zielinski, & Long, 1997). This review focused on the research of online cooperative learning at the college level.

In their analysis of the potential of using a cooperative learning environment, Johnson et al. (2002) indicated that online cooperative learning tends to increase academic achievement, boost positive attitudes toward technology and cooperation, foster positive relationships, and produce positive effects on both high and low performing students, both male and female.

Chapman (2005) has examined the effect of online collaborative learning on academic achievement at a multi-campus community college. Of the 972 students who participated in the study during the fall semester, two groups were created randomly by dividing the students in half. The two groups consisted of an online collaborative learning group and a traditional online learning group. There were 40 classes in the study. The online collaborative group worked in small groups to accomplish a common goal and receive the same grade. A t-test was used to compare the final grades of the two groups. The findings of this comprehensive study showed a significant positive effect of online cooperative learning on academic achievement.

In an ethnographic study, Stacey (1999) investigated the effects of online cooperative learning using computer multimedia communication (CMC) technology in distance learning. A total of 31 students participated in the study. These students were working toward their master degree via distance education and were divided into three groups. Only the first group was able to use CMC to communicate in distance. Three data collection methods were used in the study including interviews, electronic observation, and the usage of the electronic system. The study concluded that online cooperative learning using CMC has a positive effect on student achievement and provides an environment for social construction of knowledge.

Additional studies have shown other benefits of online cooperative learning that improve the learning environment and consequently improve student achievement. These benefits of online cooperative learning include: increasing class participation, avoiding the sense of isolation, and providing an opportunity for practicing new knowledge in small groups. Aside from the positive effect on student achievement, the results of Stacey (1999) indicated several attributes of collaborative learning occurred in the online environment including: knowledge construction through student interaction, student clarification of their ideas by obtaining feedback from other group members, providing students with an opportunity to share diverse perspectives within the group, enabling students to share resources, ideas, and expert advice, and providing students with an opportunity to practice new knowledge and skills in small groups. In this study, it appeared that online team members can operate as well as those face-to-face (Chinowsky & Rojas, 2003).

According to McMurray and Dunlop (1999) online cooperative learning can also assist in overcoming the feeling of isolation that often accompanies distance education. Online cooperative learning prepares students to solve problems in a real-world environment by showing students the benefits of group work and initiating them into the real world dynamics of being a team player (Felder & Brent, 2001).

On the other hand, studies revealed a number of drawbacks which make online cooperative learning difficult and in some cases impossible. Wan and Johnson (1994) indicated that "while virtual classrooms and hypermedia systems are successful in improving information access, they do not typically offer explicit mechanisms to help learners better assimilate information, the context surrounding its creation and use, and the perspective of the author and other learners" (p. 851). After implementing online cooperative learning for three weeks, Stout et al. (1997) described some problems in online cooperative learning. The first problem was technical troubles including all that can go wrong with technology. These kinds of problems are difficult to control and always effect how the team works. Another problem was student unwillingness to involve in the online community. However, those problems may have been due to the short period of the study.

In summary, cooperative learning proved a positive effect on both the traditional and online learning environment (Armstrong et al., 2007; Cukras, 2005; Giraud, 1997; Johnson & Johnson, 1979; Jones, 1993; Reid, 1992; Sharan, 1980; Slavin, 1991; Stacey, 1999; Whicker et al., 1997). However, it was shown that most of the current literature on cooperative learning is applied to face-to-face, K-12 environments and

more studies are needed on the effect of cooperative learning in an online higher education setting.

Online Education in Saudi Arabia

This section focuses on online education in Saudi Arabia, including background information about the Saudi Arabian educational system, girls' education in Saudi Arabia, and the movement toward online education in Saudi Arabia. This section also explains the studies on Saudi student attitude toward learning in an online environment.

Higher education in Saudi Arabia. In the last decade, the Saudi Arabian government has paid special attention to higher education, with the number of universities increasing from seven in 1998 to twenty in 2009. In addition, since 2005, the Saudi government has offered more than 70,000 scholarships to different universities in the United States and other first world countries (Ministry of Higher Education, 2010a). In 2010, the government earmarked 25 percent of the national budget ($36.7 billion) for education (Ministry of Finance, 2009).

Today, in addition to the 20 public universities, there are more than 22 private higher education institutes in Saudi Arabia. In 2009, there were 666,662 students enrolled in Saudi higher education institutes, and female students made up more than 60 percent of this number (Ministry Of Higher Education, 2010b).

Girls' education in Saudi Arabia. In the 1960s, the Saudi government recognized the importance of providing educational opportunities to girls. The number of schools, colleges, and institutions allocated for female education in the Kingdom increased remarkably between 1970 and 2000 (Ministry of Education, 2006). Nevertheless, "inequalities of opportunity existed in higher education stemming from the

religious and social imperative of gender segregation" (Metz, 1992, p.133). Due to the social perception toward the importance of female education, fewer resources are dedicated to woman's higher education (Metz, 1992).

Difficulties such as gender segregation, not being allowed to drive a vehicle, and the limited number of female faculty members who hold doctorate degrees were largely affecting girls' higher education in Saudi Arabia (Baki, 2004; Mackey, 2002; Rawaf & Simmons, 1991; Yamami, 1996). Gender segregation is mandatory at all levels of public education (Metz, 1992). As a result, most Saudi universities use Interactive TV (ITV) technology providing the opportunity for male professors to teach female students without breaking religious or social rules. This method allows instruction without the teacher and the students ever meeting face-to-face (Mackey, 2002). Rawaf and Simmons (1991) mentioned some difficulties associated with the use of ITV methods including: communication due to classroom noise, boredom due to a lack of participation, and lack of group discussion.

In 1999, the Internet was introduced in Saudi Arabia, and by 2004, close to six percent of Saudi citizens were using the Internet (Hussein, 2004; Khateeb, 1999). This number grew to 30 percent in 2008. The statistics indicate that most of the Internet users in Saudi Arabia are young citizens from both genders, and 77 percent of their Internet activities are communication activities such as sending and receiving e-mails and participating in forums and chat rooms. Statistics also show that only five percent of users access the Internet for educational purposes (Communications and Information Technology Commission, 2008).

Online learning started in the USA in 1987; however, Saudi Arabia did not effectively utilize this technology until 2003 when the Arab Open University (AOU) was established. Arab Open University has given Saudi young women the opportunity to be involved in online interaction with men through unofficial websites that allow students from both genders to discuss their classes. In 2007, the Ministry of Higher Education established the National Center for E-learning and Distance Learning (NCEL). NCEL has many projects that encourage public universities to offer online classes by providing them with all the technologies and training needed for online education. Fourteen universities have registered to receive the center's services and some of these universities are already offering online courses (NCEL, 2009).

The movement toward online learning is very slow in Saudi Arabia, however, the movement has increased since 2007. Officials believe that by 2010, all the Saudi public universities will be able to offer online classes providing educational opportunities for a larger number of citizens. Women will be one social class benefiting from these opportunities because the major problems associated with female education, such as transportation and limited female faculty members, will be solved. Online education provides Saudi females with an opportunity to receive higher education without needing to travel to the major cities where the campuses are located, or having private drivers to drive them to the campus.

Nevertheless, one of the problems continuing to affect female education will be the lack of interaction. In Saudi Arabia, females are primarily and negatively affected by single-sex environment. Because women are not allowed to drive and have limited access to the outside world, women spend most of their time at home studying or

interacting only with other females while at school. The lack of social interaction has created a gap between the education received by a Saudi male and a Saudi female. Also, because women receive their K-12 and higher education in a single-sex educational environment, women may feel more comfortable working in workplaces that provide the same environment such as all-female schools. The lack of similar same-gender environments in other workplaces limits the employment of Saudi females in special sectors (Morgan, 2008).

Attitude toward online learning in Saudi Arabia. Most of the studies conducted on online education in Saudi Arabia focused on Saudi faculty member attitudes toward online instruction, and only a few of them investigated student attitudes toward online education (Alarfaj, 2001; Alaugab, 2007; Alghonaim, 2005; Alharbi, 2002; Alnujaidi, 2008; Alsalem, 2005; Alshehri, 2005). All of these studies showed positive attitudes toward online education. In this review, the focus will initially be on studies of student attitude toward online learning before exploring some studies targeted toward faculty and administrators.

Alarfaj (2001) examined the perceptions of undergraduate students at King Faisal University and evaluated the differences among student perceptions based on gender, academic major, and computer experience. The study concluded that students had a positive perception toward online instruction. The majority of the participants believed that online instruction is efficient, effective, and convenient. They also believed that online instruction expands learning opportunities, includes a large amount of high quality information, yet increases isolation, and contains many technical problems. Female students were found to believe that online instruction would not be in conflict

with their family responsibilities. They also believed that with online courses they would not feel shy when communicating with male teachers. Female students who agreed to enroll in online courses also believed that online instruction provides a better opportunity to get higher education while overcoming many social and cultural barriers. There was a significant difference found between the perceptions of male and female students toward online instruction. Female students showed a more positive perception toward online instruction. There was no significant difference among student perception based on college. The study also determined that using a computer, as well as accessing the Internet from home, is found to positively influence the perception towards online instruction.

Alaugab (2007) examined Saudi female faculty and student attitude toward adopting online instruction, the benefits of implementing online instruction, and the most important barriers which prevent effective implementation of online instruction. A total of 130 female instructors and 500 students participated in the study at the Girls' Studying Center at Imam University in Riyadh City and the Girls' Education College in Buraidah City. The study concluded that both female faculty and students share a positive attitude toward online instruction. The study also found that the only variables which significantly correlated with student attitude toward online instruction were student access to a home computer, home Internet access, and student English language skills. There was no significant relationship between student attitude and other selected variables: age, marital status, major, and academic level. However, the study was conducted in only two single-sex institutes from the central region of the country and therefore the finding cannot be generalized to male universities and other parts of the country.

Alnujaidi (2008) investigated the relationship between English language faculty members' demographic variables (gender, age, academic rank, nationality, major, country of graduation, and years of teaching experience) and their adoption and integration of web-based instruction (WBI) in Saudi higher education institutions. The study was very significant in demonstrating factors that affect instructor integration of online learning in Saudi Arabia and was one of the few studies that targeted participants from all over the country. A total of 320 participants in 20 higher education institutions in Saudi Arabia participated. The study showed that only three demographic variables (academic rank, major, and country of graduation) were found to have a statistically significant relationship with respect to adoption and integration of WBI.

Alghonaim (2005) conducted another study in the same region of the country. This study investigated administrator and instructor attitude toward the implementation of online instruction at the Buraidah College of Technology in Saudi Arabia. The researcher aimed to study the relationship between administrator and instructor attitude toward the implementation of online instruction with respect to four selected variables: age, major, country of graduation, and experience with information technology (IT). The study concluded that both instructors and administrators had positive attitudes toward online instruction. Out of the four demographic variables, experience with IT had a significant relationship with respect to both administrator and instructor attitude toward the implementation of online instruction.

Alshehri (2005) explored faculty member attitude toward the implementation of online courses at the Institute of Public Administration in Saudi Arabia. The study also examined the relationship between faculty attitude toward the implementation of online

courses and several demographic variables such as gender, place of work, age, academic rank, qualifications, number of years teaching, and number of years of technology experience. The study concluded that faculty members possessed positive attitudes toward online courses. The study also stated that there was a significant relationship between faculty attitude and demographic variables including gender, place of work, age, academic rank, qualifications, number of years teaching, and the number of years of technology experience.

In a qualitative study, Alsalem (2005) explored Saudi female self-image, their developing perception of their environment, and their changing social attitudes as a result of using the Internet, especially the effect of online interaction. The participants were nine female Saudi Arabian college students majoring in English. The participants were also members of an online writing collaborative project. The study showed that the Internet influenced the female students in several ways:

> The participants reported that their Internet experiences have broadened their knowledge as well as improved their writing skills and have stimulated their critical thinking, an essential element or pre-requisite for perspective transformation. The Internet has also provided these students with an easy access to much information that was not available to them before; this rich source of varied information available online has helped them explore the world, see things differently, and transcend the limitations of their previous perceptions (p. v).

Alharbi's study (2002) investigated faculty and administrator attitudes toward online courses at Imam Muhammad Ben Saud University. The study also looked at the relationship between faculty and administrator attitude toward online courses and several independent variables including gender, age, academic major, experience with distance education, and country of graduation. The study concluded that both faculty and administrators had positive attitudes toward online courses. The study also showed

that there was a significant relationship between faculty attitude and four independent variables of age, academic major, experience, and country of graduation. There was also a significant relationship between administrator attitude and three independent variables of major, experience, and country of graduation.

Saudi student belief about the benefits of online education in Saudi Arabia. Both Saudi male and female students have been shown to demonstrate a positive attitude toward online learning (Alarfaj, 2001). However, there is still some question about the quality of this type of education. The study that explored Saudi student and faculty opinion toward applying online education in Saudi Arabia showed that both Saudi students and faculty are motivated and excited to become involved in online education (Alarfaj, 2001; Alaugab, 2007).

Female Saudi students seem to have more positive beliefs regarding the value of online education (Alarfaj, 2001; Alaugab, 2007). Alarfaj (2001) found that female students favored online education and believe it provides a better opportunity for them to obtain a higher education. They also believe that online education can overcome many social and cultural barriers they face. In addition, Saudi females believe that it would not be in conflict with their family responsibilities. Furthermore, they believed that they would not feel shy when communicating with male teachers through online learning.

Alaugab (2007) also found that Saudi female students were “very excited about online learning” (p. 172). When they answered open-ended questions, they stated that they support online learning, and they wish to have it. They also believed that “online learning is a good idea for females in Saudi Arabia” (p. 172). The study also showed

that 71.5 percent of Saudi female students who participated in the study believed that “online courses do not conflict with the female culture in Saudi Arabia” (p. 145). The results also indicated that Saudi female students believe that online instruction:

- Facilitates the learning process for students and increases their achievement.
- Enables students to keep up with new information in their fields.
- Facilitates communication and discussion between students and instructors
- Increases student familiarity with the use of technology and allows them to keep up with innovation in the world.

In summary, most of the studies conducted on attitude and belief toward online education in Saudi Arabia revealed positive attitudes and beliefs toward online education (Alarfaj, 2001; Alaugab, 2007; Alghonaim, 2005; Alharbi, 2002; Alnujaidi, 2008; Alshehri, 2005). However, some facts were noticed based on this review of the literature. First, there is a paucity of literature with respect to cooperative learning in higher education, especially in an online setting. Second, most of the studies on online learning in Saudi Arabia focus on the attitudes and perceptions of faculty (Alaugab, 2007; Alghonaim, 2005; Alharbi, 2002; Alnujaidi, 2008; Alshehri, 2005); only a limited number of the studies focus on student attitudes toward online learning (Alarfaj, 2001; Alaugab, 2007). Third, most of the online learning studies in Saudi Arabia focus on online learning in general rather than focusing on specific online learning strategies. Finally, no studies were found to focus on the potential of coeducation in the online learning environment in Saudi Arabia. This study aimed to investigate Saudi student attitude toward coeducational online cooperative learning environment specifically and Saudi student belief toward applying this environment in Saudi Arabia.

Conclusion

Based on the previous review, both single-sex education and coeducation environments have theoretical bases which support their positions (Dale, 1969, 1971, 1974; Mael et al., 2005; Riordan, 1990; Salomone, 2003). The literature review explored several studies that support coeducation and mention potential problems associated with single-sex education (Matthews, 2005). In addition, other studies stood against coeducation and some advantages of single-sex education were also explored (Ferrara & Ferrara, 2008; Gurian, 2001; Mael, 1998; Riordan, 1990; Spielhofer et al., 2002). While early studies of coeducation focused on coeducation in higher education, recent research on the debate seems to focus on K-12 education. This may be due to the influence of the No Child Left Behind Act and the subsequent school district concerns with improvement of student achievement (Matthews, 2005).

The debate between both single-sex education and coeducation environments is ongoing and both schools have theoretical bases supporting their positions (Dale, 1969, 1971, 1974; Mael et al., 2005; Riordan, 1990; Salomone, 2003). Even though most of US schools became coeducational schools since the 1960s, single-sex education was reconsidered in 2002, when the Bush administration applied the ‘No Child Left Behind’ education plan (Matthews, 2005; Spienlhagen, 2008). As a result, most of the recent research on the debate seems to focus on K-12 education. While the studies that support coeducation focus on the potential problems associated with single-sex education (Matthews 2005), other studies mention advantages of single-sex education (Ferrara & Ferrara, 2008; Gurian, 2001; Mael, 1998; Riordan, 1990; Spielhofer et al., 2002). The literature review shows a need for more studies on coeducation vs. single-

sex education in higher education and also in online learning environments. In Saudi Arabia, the new debate between coeducation and single-sex education that recently started after the opening of KAUST as well as the new movement toward online education have emerged to show the importance for more studies on coeducation especially in online learning environments.

The literature reveals that most of the studies focusing on cooperative learning were conducted in a K-12 face-to-face environment (McInnerney & Roberts, 2004). Only a limited number of cooperative learning studies focus on online environments or higher education. The literature also shows that students seem to have a positive attitude toward cooperative learning in both face-to-face and online setting (Al-Dawoud, 2001; Griffin, 2008; Hagen, 1996; Velez-Caraballo, 2008). The literature indicates that online cooperative learning has a positive effect on student achievement and attitudes toward the subject matter (Gömleksiz, 2007; Griffin, 2008; Velez-Caraballo, 2008). Some learner characteristics such as gender, age, academic major, academic level, and experience with computers have been found to play a role in student attitude toward cooperative learning and learning in an online environment (Anderson, 1997; Anderson & Haddad, 2005; Bouras, 2009; Frederickson et al., 2000; Ivers et al., 2005; Sahin, 2006).

The review of literature shows that most of the studies on student preference in online learning environments focus on the communication patterns of each sex. However, there is a paucity of studies that look at what online communication tools students prefer to use to communicate with students from both sexes when working cooperatively in an online learning environment. One of the aims of this study was to

investigate student preference regarding online communication tools when learning in a coeducational online cooperative learning environment in Saudi Arabia.

In summary, cooperative learning proves to have a positive effect on both traditional and online learning environments (Armstrong et al., 2007; Cukras, 2005; Giraud, 1997; Johnson & Johnson, 1979; Jones, 1993; Reid, 1992; Sharan, 1980; Slavin, 1991; Stacey, 1999; Whicker, Bol, & Nunnery, 1997). However, it was shown that most of the current literature on cooperative learning is applied to face-to-face, K-12 environments and more studies are needed on the effect of cooperative learning in online higher education settings.

The studies conducted on student attitude toward cooperative learning in both face-to-face and online environments indicate that students have positive attitudes toward cooperative learning (Al-Dawoud, 2001; Armstrong et al., 2007; Bouras, 2009; Griffin, 2008; Hagen, 1996; Jung et al., 2002; Neo et al., 2009; Velez-Caraballo, 2008). Cooperative learning also seems to enhance student attitude toward the subject matter and student achievement (Gömleksiz, 2007; Griffin, 2008; Velez-Caraballo, 2008). In online environments, positive attitude toward cooperative learning may be due to the high amount of active interaction among learners provided by online cooperative learning (Bouras, 2009; Johnson et al., 2002; Jung et al., 2002).

In addition, theory shows that group diversity can play a significant role in improving learner outcomes in online cooperative learning. Glacer and Bassok (1989) conducted a study looking at the effect of group diversity in terms of learner gender. The study shows that same-gender groups seem to show more attitude toward online cooperative than mixed-gender groups (Savicki et al., 1996; Schoenecker et al., 1997).

It was also shown that female students seem to have less of a positive attitude toward learning in coeducational online cooperative learning environments (Savicki et al., 1996; Savicki et al., 2002).

The literature review also shows that the majority of attitude studies investigate student attitude toward cooperative learning without considering the effect of group diversity in terms of gender. More studies are emerging that investigate student attitude toward working cooperatively with the opposite sex in an online environment. This study will focus on student attitude toward learning in a coeducational online cooperative learning environment.

Furthermore, previous studies have identified learner characteristics such as gender, marital status, age, academic major, and academic level that effect student attitude toward an online learning environment (Anderson, 1997; Anderson & Haddad, 2005; Bouras, 2009; Fredericksen et al., 2000; Ivers et al., 2005; Sahin, 2006). However, most of the studies investigate online learning environments as a whole and did not focus on a specific form of online learning. As a result, future studies should focus on investigating the factors that affect student attitude toward advanced forms of online learning environments. One of the aims of this study was to investigate the factors that affect student attitude toward coeducational online cooperative learning.

The literature showed that of the studies conducted on online education in Saudi Arabia, many focus on Saudi faculty member attitude toward online instruction (Alaugab, 2007; Alghonaim, 2005; Alharbi, 2002; Alnujaidi, 2008; Alshehri, 2005). Only a few studies conducted on online education in Saudi Arabia look at student attitude (Alarfaj, 2001; Alaugab, 2007). All of the studies reveal positive attitudes toward online

education. The literature also demonstrates that Saudi students have positive beliefs regarding applying online learning in Saudi Arabia (Alarfaj, 2001; Alaugab, 2007).

Based on the review of the literature, some facts are noticed. First, there is a paucity of literature with respect to cooperative learning in higher education, especially in an online setting. Second, most of the studies on online learning in Saudi Arabia focus on attitudes and perceptions of faculty; only a limited number of studies focus on student attitudes toward online learning. Third, most of the online learning studies in Saudi Arabia focus on online learning in general rather than focusing on specific online learning strategies. Finally, no studies were found to focus on the potential of coeducation in the online learning environment in Saudi Arabia. This study specifically aims to investigate Saudi student attitude toward a coeducational online cooperative learning environment and their belief toward applying this environment in Saudi Arabia.

Summary

The purpose of this study was to investigate the attitude of the Saudi Arabian student towards learning in a coeducation online cooperative learning environment (CEOCLE). It also attempted to investigate Saudi student belief toward applying coeducation online cooperative learning in Saudi Arabia. Finally, the study looked at student preference regarding web-based communication tools while interacting with their peers in a CEOCLE.

Therefore, the literature review covered three areas: cooperative learning, online learning, and coeducation. The first section included a discussion of the learning environments and the studies that focus on both single-sex education and coeducation environments. The section provided a brief description of the history of coeducation and

coeducation in Saudi Arabia. It also covered the debates between single-sex and coeducation learning environments and explored the different views of the different schools.

The second section focused on online cooperative learning and its effect on student outcomes. Additionally, this section described the available research on student attitude toward online cooperative learning and the factors affecting attitude toward the online cooperative learning environment. The section also discussed the different types of online communication tools that can be used in online cooperative learning, including asynchronous tools such as email, forums, and blogs and synchronous tools such as text chat, audio-conference, and video-conference. The benefits and limitations of both types were also explored.

The third section focused on online education in Saudi Arabia, including background information about the Saudi Arabian educational system, girls' education in Saudi Arabia, and the movement toward online education in Saudi Arabia. The section also explained the studies on Saudi student attitude toward learning in an online environment.

The literature review showed that there is a paucity of research examining coeducational online cooperative learning allowing virtual interaction between male and female learners in Saudi Arabia.

Chapter 3

Methodology

This study used a survey research design. The study examined the overall attitude, belief, and preference of Saudi students regarding studying in a coeducation online cooperative learning environment. The respondents' attitudes, beliefs, and preferences were expected to be affected by a number of demographic factors including: (1) gender, (2) age, (3) marital status, (4) major, (5) region of residence, (6) academic level, (7) experience with online education, (8) years of Internet experience, and (9) previous experience with online communication tools. Therefore, the study examined if student attitude, belief, and preference were affected by each of the aforementioned demographic variables. The participants of the study were 707 Saudi students studying in the USA. The data was collected using a questionnaire developed to answer specific research questions. The questionnaire begins with three inclusion criteria including: the participant must have taken at least one online class that included cooperative learning (i.e. participating in discussions, group projects), have had at least one group member of the opposite sex in cooperative learning, and have had completed K-12 education in Saudi Arabia. A descriptive analysis, t-test, and analysis of variance (ANOVA) were used to treat the data in order to determine the overall attitude, belief, and preference and additionally analyze the effect, if any, the dependent variables had on independent variables. Finally, a Chi-square test was used to determine relationships between student preference and the independent variables.

Participants

The participants in the study were comprised of Saudi Arabian students attending American universities during the period from January 2010 to June 2010. According to the Saudi Arabian Cultural Mission (SACM), the governmental agency responsible for serving Saudi students in the USA, the number of current Saudi students in the USA totals approximately 19,118 (SACM, 2009).

The IT database at SACM includes the names of the Saudi students in the USA along with their gender, major, and academic level. According to the IT department at SACM, there are approximately 19,118 Saudi students from both genders currently studying in the USA. These students attend schools in 50 different states and are engaged in a variety of courses of study.

From those who met the participation criteria, 707 students participated in the study. Male students comprised the majority of the sample (83%, n=586), while the number of female participants totaled 121 students (17%). The largest number of participants were between 20 and 29 years old (76.5%, n=541), while the smallest number of participants were older than 40 years old (1.1%, n=8). There were 287 married participants, while the remaining participants were unmarried. Students from the center region of the country made up the largest portion of the participants (36.9%, n=261), while students from the north made up the smallest number (2.7%, n=19). The participants included students from nine academic majors. Business (36.1%, n=225) and engineering (25.3%, n=179) were the most common majors, while only 10 students (1.4%) were art majors. Finally, most of the participants were bachelor degree students

(56%, n=402), while 239 (33.8%) were master students, and 66 (9.3%) were doctoral students.

Research Setting

The study took place online in the United States. The participants were 707 students from the list of Saudi students in the SACM database. The SACM was established in 1951 by the Saudi Ministry of Higher Education in order to administer programs and policies designed to meet the educational and cultural needs of Saudi students studying in the United States. The SACM is located in Washington, D.C. and employs approximately 800 employees. The Academic Affairs Department is described by the SACM as follows:

> The Academic Affairs Department has a supervisory role over the academic performance and progress of Saudi students nominated for study in the U.S. from the commencement of their program until their graduation. Each student is assigned to an academic advisor who assists, monitors and reports their academic progress and communicates directly with the student's advisor and other related offices in the educational institution that the student attends (SACM, 2008, p. 5).

In 2007, the SACM created a new IT department tasked with the management of student and employee information. The IT department has created databases containing all student personal, academic, and contact information, including email addresses. It has also created mailing lists used for the purpose of sending news, announcements, and requests to the student population.

Most of the US universities offer online and blended courses (Allen & Seaman, 2008). Course management systems such as Blackboard, WebCT, and Moodle are used to deliver these courses. Based on SACM policy, Saudi students are allowed to enroll in two online courses (or a maximum of six credit hours) throughout their

academic study. Through these courses, students interact with each other and with the instructor via the Internet. As with traditional courses, online courses include individual and group projects where the students interact and work cooperatively with their peers. Only students who had already taken online courses that included online cooperative learning participated in the study.

Instrumentation

An online questionnaire was developed in order to address the research questions (Appendix D). The questionnaire begins with three inclusion criteria including: the participant must have taken at least one online class that included cooperative learning (i.e. participating in discussions, group projects), have had at least one group member of the opposite sex in cooperative learning, and have had completed K-12 education in Saudi Arabia. The survey consists of four parts.

Part 1: This part gathered demographic information about the participant including: gender, age, marital status, major, academic level, region of residence in Saudi Arabia, experience with online education, years of Internet experience, experience with online communication tools.

Part 2: This section is the attitude scale and includes 23 items using a five-point Likert-type scale: (1) strongly disagree, (2) disagree, (3) undecided, (4) agree, and (5) strongly agree. Each item in this part investigated student attitude toward learning in CEOCLE.

Part 3: This section is the belief scale and includes 10 items using a five-point Likert-type scale: (1) strongly disagree, (2) disagree, (3) undecided, (4) agree, and (5) strongly agree. The items contained in this section investigated student belief regarding

CEOCLE. The questions in this section measured student belief regarding the application of CEOCLE in Saudi Arabia (*e.g., Learning in CEOCLE does not conflict with Saudi social values*).

Part 4: This section includes 6 items using a three-point Likert-type scale: (1) Not preferred, (2) preferred with the same sex only, and (3) preferred with both sexes. This section contains a list of the six most popular web-based communication tools used in online learning interaction. This list includes text chat, voice chat, video conference, email, forum boards, and blogs. Participants were asked to describe their preference in using each of the web-based communication tools when learning in CEOCLE.

Translation of the survey to Arabic. An Arabic version of the survey was also created (Appendix F). The forward/back translation procedure was used to translate the instrument from English to Arabic. The researcher translated the original survey into Arabic. The Arabic version was retranslated back to English by a PhD candidate at Wayne State University (WSU) who mastered both languages. The translated and original English versions were compared by the researcher and minor changes were made. Lastly, the final English and Arabic versions were reviewed by two PhD candidates at WSU who mastered both languages. The results indicated that the Arabic version of the questionnaire was consistent and accurate.

Validity and reliability. The questionnaire was initially reviewed by three faculty members from the Department of Instructional Technology at Wayne State University in order to ensure face validity of the questionnaire. The survey was also reviewed by two experts in online learning environments to ensure content validity. The online learning environment experts were provided with a four-point content validity index: (1) not

relevant, (2) item needs some revision, (3) relevant but needs minor revision, and (4) very relevant (Waltz and Bausell, 1983). Some changes were made on the original questionnaire based on the experts' review and comments. In addition, because the survey was used with students from a specific culture, the survey was also reviewed by three cultural experts. The cultural experts' review focused on the face and cultural validity of the survey to be used with Saudi students. Some changes were made on the Arabic version of the survey by avoiding some Arabic concepts that may cause confusion. In addition, minor changes were also made on the Arabic version as a result of a focus group of five Saudi students studying in the USA. The focus group was organized to ensure the cultural validity of the instrument.

A pilot study was conducted with a small number of participants (n= 20) to ensure validity and reliability. Twenty Saudi students from Wayne State University participated in the pilot study. The participants of the pilot study were asked to complete the survey and were also provided with three extra questions asking them about their opinion regarding the clarity of the instructions and questions, and the amount of time spent completing the survey. The extra questions were used to improve the instructions and questions of the survey and to decide about the time participants needed to complete the survey. The result of the pilot study indicated sufficient internal consistency reliability for attitude and belief scales. Cronbach Alpha was 0.87 for attitude and 0.79 for beliefs. The result also showed that the instruction and question of the instrument were clear and the average time that students spent to complete the survey was 7.5 minutes.

Procedures

After creating the initial version of the instrument, the questionnaire was reviewed by three educational evaluation experts from the Department of Instructional Technology at Wayne State University in order to ensure face validity of the questionnaire. The survey was also reviewed by two experts in online learning environments to ensure content validity. The online learning environment experts were provided with a four-point content validity index: (1) not relevant, (2) item needs some revision, (3) relevant but needs minor revision, and (4) very relevant (Waltz and Bausell, 1983). After making the required revisions such as removing irrelevant items and rephrasing other items, the final version of the survey was developed.

An Arabic version of the survey was also created. The forward/back translation procedure was used to translate the instrument from English to Arabic. The survey was also reviewed by three cultural experts to ensure face validity of the survey for use with Saudi students. Some changes were made on the Arabic version of the survey to avoid some Arabic concepts that may cause confusion. In addition, a focus group of five Saudi students studying in the USA reviewed the instrument to ensure cultural appropriateness. Minor changes were made on the Arabic version as a result of the focus group.

The Survey Monkey website was used to design and develop the electronic survey. A hyperlink to the questionnaire was sent by email to the sample of the pilot study (n= 20) to ensure the validity and reliability. The participants of the pilot study had one week to finish the online survey. The result of the pilot study indicated sufficient internal consistency reliability for attitude and belief scales. Cronbach Alpha was 0.87

for attitude and 0.79 for beliefs. The result also showed that the instructions and questions of the instrument were clear and the average time that students spent to complete the survey was 7.5 minutes. The final version of the survey – the version which was ultimately sent to the survey participants – was developed using the same Survey Monkey website.

After receiving permission from the Saudi Cultural Mission to email the survey to the participants, a recruitment email (Appendix B) including links to the online questionnaires was sent to the Saudi Cultural Mission who then emailed the questionnaire to the Saudi students in the USA (total of approximately 19,118 students). Participants were provided with an informed consent statement (Appendix C & E) that had a written description of the purpose of the study and how the data would be used. It also informed them that participation in the study was voluntary and their responses would not be personally identified. The participants had three weeks to complete the survey.

The online questionnaire began with three inclusion criteria a participant had to meet to qualify for participation

1. Have taken at least one online class that included cooperative learning (i.e. participating in discussions, group projects).
2. Have had at least one group member of the opposite sex in cooperative learning.
3. Have completed K-12 education in Saudi Arabia.

Only participants who met the criteria were able to complete the questionnaire (total of 707 students). Students who did not meet the criteria were forwarded to a page

thanking them for their time and informing them that they were not qualified to participate in the study.

After finishing the questionnaire, participants were asked to click on a “Submit” button, which sent the filled questionnaire directly to the “Thank you” page to thank the participants for their time.

Data Analysis

Data entry was done directly by study participants using the web-based questionnaire. Data was routinely saved and backed-up on the computer hard drive. Data analysis began with preparatory activities such as the treatment of missing data, identification of outliers, and other data cleaning tasks. The latest version of the SPSS computer program (Version 18) was used for data management and analysis. Preliminary analysis examined the internal consistency and validity of established scales. The internal consistency of scales was estimated using Cronbach's Alpha. The first phase of the analysis consisted of using descriptive statistics on demographic variables in computing the summary measures (mean, median, standard deviation, and range) for the variables measured on interval and ratio scales and frequency distributions (absolute frequency and percent) for the variables measured on nominal and ordinal scales.

Research question 1. What are Saudi student attitudes toward learning in coeducation online cooperative learning environments?

Analysis. The total score in the attitude toward learning questionnaire was used to address this question. The attitude part of the instrument consists of 23 questions on a 5-item Likert Scale. The responses range from 1 to 5 with higher scores indicating

higher positive attitude toward learning. Descriptive statistics were used to determine the summary statistics (mean, standard deviation, median, minimum, and maximum) of responses. The empirical rule, or a more conservative rule—called Tchebycheff's rule, was used to describe the distribution of the attitude scores in terms of mean and standard deviation. In addition, item analysis was performed by computing the frequency and percent of positive responses for each item of the attitude part of the questionnaire.

Research question 2. Is there a difference in mean attitude score among the students in terms of their gender, age group, marital status, major, academic level, location, experience with online education, and years of using the Internet?

Analysis. T-test was used for testing the mean difference in attitude score in terms of gender and marital status. For comparing the mean difference in attitude score with respect to age group, major, academic level, location, experience with online education, and years of using the Internet, analysis of variance (ANOVA) was used. For the post hoc analysis, the Bonferroni method was utilized to control the overall error rate.

Research question 3. What are Saudi student beliefs regarding the general application of coeducation online cooperative learning in Saudi Arabia?

Analysis. The total score in the belief toward applying learning questionnaire was used to address this question. The belief part of the instrument consists of 10 questions on a 5-item Likert Scale. The responses range from 1 to 5 with higher scores indicating higher positive belief toward learning. Descriptive statistics (mean, standard deviation, median, minimum, and maximum) were used to summarize results. The

empirical and Tchebycheff's rules were utilized to describe the distribution of the belief score in terms of mean and standard deviation. In addition, item analysis was performed by computing the frequency and percent of positive responses for each item of the belief part of the questionnaire.

Research question 4. Is there a difference in mean belief score among students in terms of their gender, age group, marital status, major, academic level, location, experience with online education, and years of using the Internet?

Analysis. For testing the mean difference in belief score in terms of gender and marital status, the t-test was used. For comparing the mean difference in belief score with respect to age group, major, academic level, location, experience with online education, and years of using the Internet, analysis of variance (ANOVA) was used. For the post hoc analysis, the Bonferroni method was utilized to control the overall error rate.

Research question 5. What are Saudi student preferences regarding the web-based communication tools when learning in a coeducational online cooperative learning environment in Saudi Arabia?

Analysis. The preference part of the instrument consists of six questions that provide students with six types of web-based communication tools. Item analysis was performed by computing the frequency and percent of each item of the preference part of the questionnaire.

Research question 6. Are there relationships between student preference regarding using online communication tools when learning in a CEOCLE in Saudi Arabia and their gender, age group, marital status, major, academic level, location,

experience with online education, years of using the Internet, and previous experience with each of those online communication tools?

Analysis. A Chi-Square test was used to determine relationships between student preference and their gender, age group, marital status, major, academic level, location, experience with online education, years of using the Internet, and their level of previous experience with each of the six online communication tools. Table (1) summarizes the research questions, instrument parts, and data analysis techniques used to address each question.

Table 1.

Summary of Research Questions, Instruments, and Data Analysis Techniques

Research Questions	Instrument (Online Survey)	Data Analysis Techniques
1. What are Saudi student attitudes toward learning in coeducation online cooperative learning environments?	Part 2: Student attitude toward CEOCL	Frequency/ percentage Mean/standard deviation (Descriptive analysis)
2. Is there a difference in mean attitude score among the students in terms of their gender, age group, marital status, major, academic level, location, experience with online education, and years of using the Internet?	Part 1: Demographic variables Part 2: Student attitude toward CEOCL	t-test ANOVA
3. What are Saudi student beliefs regarding the general application of coeducation online cooperative learning in Saudi Arabia?	Part 3: Student belief toward CEOCL	Frequency/ percentage Mean/standard deviation (Descriptive analysis)
4. Is there a difference in mean belief score among students in terms of their gender, age group, marital status, major, academic level, location, experience with online education, and years of using the Internet?	Part 1: Demographic variables Part 3: Student belief toward CEOCL	t-test ANOVA
5. What are Saudi student preferences regarding the web-based communication tools when learning in a coeducational online cooperative learning environment in Saudi Arabia?	Part 1: Demographic variables Part 4: Student preference toward CEOCL	Frequency/ percentage (Descriptive analysis)

Table 1 continued

Research Questions	Instrument (Online Survey)	Data Analysis Techniques
6. Are there relationships between student preference regarding using online communication tools when learning in a coeducational online cooperative learning environment in Saudi Arabia and their gender, age group, marital status, major, academic level, location, experience with online education, years of using the Internet, and previous experience with each of those online communication tools?	Part 1: Demographic variables: experience with online communication tools Part 4: Student preference toward CEOCL	Chi-Square test

Summary

The purpose of the study was to investigate the attitude, belief, and preference of Saudi students regarding working in a coeducation online cooperative learning environment. The participants of the study were 707 Saudi students currently studying in the USA. A questionnaire was developed by the researcher for the purpose of the study. The questionnaire contained five parts. The first part included three inclusion criteria. The second part included questions for the purpose of collecting demographic information about the participants. The subsequent parts contained questions regarding student attitude, belief, and preference toward learning in a coeducational online cooperative learning environment. In order to analyze the data, mean, standard deviation, t-test, ANOVA, and Chi-Square test were utilized.

Chapter 4

Results

Sample Characteristics

The survey was emailed by the Saudi Cultural Mission to Saudi students in the USA. From those who met the participation criteria, 707 students chose to participate in the study. Table 2 provides a summary of the sample characteristics. As shown in Table 3, male students comprised the majority of the sample (82.9%, n=586), while the number of female participants totaled 121 students (17.1%). The largest number of participants were of traditional college age, between 20 and 29 years old (76.5%, n=541), while the smallest number of participants were older than 40 years old (1.1%, n=8). There were 287 married participants with the rest of participants unmarried. Students from the center of the country made up the largest portion of the participants (36.9%, n=261), while students from the north made up the smallest number (2.7%, n=19). The participants included students from nine academic majors. Business (36.1%, n=225) and engineering (25.3%, n=179) were the most common majors, while only 10 students (1.4%) were art majors.

Table 2 also illustrates that most of the participants were bachelor degree students (56.9%, n=402), while 239 (33.8%) were master students, and 66 (9.3%) were doctoral students. The majority of the participants had more than three years of experience using the Internet (93.9%, n=664), and only 1.7% (n=12) of the participants had less than one year of experience with using the Internet. Additionally, 47.4% (n=335) of the participants reported having completed only one online course, 30.1% (n=213) of the participants reported having completed two or three online courses, and

22.5% (n=159) of the participating students reported having had more than three online courses.

Table 2.

Frequencies and Percentages of Demographics Variables

Variables		Frequency	Percent
Gender			
	Male	586	82.9
	Female	121	17.1
Age			
	Under 20	32	4.5
	20 – 29	541	76.5
	30 – 39	126	17.8
	40 and older	8	1.1
Marital Status			
	Married	287	40.6
	Unmarried	420	59.4
Region			
	North	19	2.7
	South	42	5.9
	Center	261	36.9
	East	212	30.0
	West	173	24.5
Academic Level			
	Bachelor	402	56.9
	Master	239	33.8
	Doctorate	66	9.3
Major			
	Art	10	1.4
	Business	255	36.1
	Education	45	6.4
	Engineering	179	25.3
	Political science	14	2.0
	Medicine	67	9.5
	Law	17	2.4
	Science	31	4.4
	Computer Science	89	12.6
Experience of using the Internet			
	Less than 1 year	12	1.7
	1-3 years	31	4.4
	More than 3 years	664	93.9
Experience with online courses			
	1 course	335	47.4
	2-3 courses	213	30.1
	More than 3 courses	159	22.5

Experience with Online Communication Tools

Table 3 summarizes the participants' previous experience with six types of online communication tools. The participants were provided with a 3-item Likert Scale: (1) no experience, (2) some experience, and (3) a lot of experience to describe their previous experience with each of the online communication tools depending on their frequency and skills of using the online communication tools. Saudi students who participated in the study generally reported having strong experience with most of the online communication tools. Most of the participants reported having significant experience with text-only chat (86.4%, n=611). In terms of their experience with voice chat, 77.5 percent, (n=548) of the participants considered their experience with voice chat as "a lot of experience." Additionally, 71.0 percent (n=502) of students reported having strong experience with video-conference. Less than 1 percent (n=6) of the participants reported no experience with email, while 93.4 percent (n=660) of them described having "a lot of experience" using email. There were 447 (63.2%) students who reported "a lot of experience" with forums, while 202 (28.6%) students related "some experience" with forums, and only 48 (6.8%) students recalled "no experience" with forums. Finally, the study participants seemed to have less experience with blogs, with only 58.1 percent reporting "a lot of experience" with blogs, while more than 10.2 percent of the participants reported having no experience with using blogs.

Table 3.

Frequencies and Percentages of Student Prior Experience With Online Communication Tools

Variables	Frequency	Percent
Experience with text-only chat		
No experience	9	1.3
Some experience	85	12.0
A lot of experience	611	86.4
Experience with voice chat		
No experience	27	3.8
Some experience	132	18.7
A lot of experience	548	77.5
Experience with video conference		
No experience	53	7.5
Some experience	147	20.8
A lot of experience	502	71.0
Experience with Email		
No experience	6	0.80
Some experience	40	5.7
A lot of experience	660	93.4
Experience with Forums		
No experience	48	6.8
Some experience	202	28.6
A lot of experience	447	63.2
Experience with Blogs		
No experience	72	10.2
Some experience	223	31.5
A lot of experience	411	58.1

Question One

The first question investigated Saudi student attitude toward coeducational online cooperative learning. The average score in the attitude toward learning questionnaire was used to address this question. The attitude part of the instrument consisted of 23 questions on a 5-item Likert Scale: (1) strongly disagree, (2) disagree, (3) undecided,

(4) agree, and (5) strongly agree. The highest score relates to the greatest positive attitude toward learning. Descriptive statistics were used to summarize the data. In addition, item analysis was performed by computing the mean, standard deviation, and percent of positive responses for each item of the attitude part of the questionnaire.

Table 4.

Student Overall Attitude Toward Coeducational Online Cooperative Learning

	N	Mean	Std. Deviation	Std. Error
Attitude	707	3.65	0.87	0.033

As shown in Table 4, the data reveals that Saudi students reported a largely positive attitude toward coeducation online cooperative learning (M=3.65, SD=0.87). Table 5 provides a summary of the item analysis for the attitude part of the questionnaire. Saudi students seemed to express a greater positive attitude in the first 8 items which addressed online cooperative learning. The results indicated that 68.3 percent of the participants either agreed or strongly agreed that they prefer to work cooperatively with group rather than working alone. These results also revealed a positive attitude toward learning cooperatively with students from the opposite gender in an online environment. The results found that more than two-thirds of the participants either agreed or strongly agreed that they enjoy learning in a mixed-gender group. In addition, three-fourths of the participants believed that female and male students each possess specific skills and abilities which contribute to the success of a group. More than half of the participants either agreed or strongly agreed that they will choose to work within a mixed-gender group for their next online project. Finally, 58.5 percent of the participants answered positively when asked if they prefer to study in a coeducational online cooperative learning environment.

Table 5.

Attitude Scale Items and Percent of Positive Responses for Each Item

Items	N	Mean	Std. Deviation	Positive Responses
I enjoy studying through the internet.	705	3.70	1.08	65.1
Using the internet to communicate with my group is easy for me.	704	4.32	0.84	91.7
I feel comfortable interacting with my group online.	702	4.03	0.99	80.2
I feel comfortable communicating with the instructor online.	702	4.06	1.05	78.7
Learning with a group helps me to do the tasks.	700	4.12	.97	79.4
Learning with a group helps me understand the content.	703	4.03	1.03	74.4
Learning with a group makes me an active participant in online discussion.	704	4.03	0.98	77.3
In online courses, I prefer to work cooperatively with group rather than working alone.	701	3.84	1.18	68.3
I enjoy learning in a mixed-gender group.	705	3.66	1.27	63.4
Learning with students from the opposite sex is appropriate.	704	3.88	1.19	75.5
Learning with students from the opposite sex is beneficial.	703	3.60	1.28	59.0
If my group was comprised of only the same sex, it would be less interesting.	703	2.98	1.38	37.3
I prefer learning with a group comprised of mixed-gender members.	702	3.55	1.31	58.5
The existence of both male and female members in my group is important for me.	702	3.21	1.34	44.3
The female and male students each possess specific skills and abilities which contribute to the success of the group.	702	3.89	1.22	73.8
In my next online project, I will choose to work with a mixed-gender group.	702	3.45	1.26	50.6
Coeducational online cooperative learning makes online courses more interactive.	704	3.45	1.26	54.9
Coeducational online cooperative learning is beneficial for me.	705	3.50	1.23	57.8
Coeducational online cooperative learning is comfortable for me.	701	3.57	1.26	62.1
Coeducational online cooperative learning is appropriate for my studying behaviors.	703	3.51	1.23	59.3

Table 5. Continued

Items	N	Mean	Std. Deviation	Positive Responses
Coeducational online cooperative learning gives me more opportunity to express my ideas.	703	3.35	1.32	51.9
Coeducational online cooperative learning gives me more opportunity to be an active learner.	704	3.34	1.30	51.7
In general, I like to study in a coeducational online cooperative learning environment.	704	3.47	1.32	58.5

Question Two

The second question investigated the difference in mean attitude score among the students in terms of gender, age group, marital status, major, academic level, location, experience with online education, and years of using the Internet. For testing the mean difference in attitude score in terms of gender and marital status, the t-test was used. For comparing the mean difference in attitude score with respect to age group, major, academic level, location, experience with online education, and years of using the Internet, analysis of variance (ANOVA) was used.

The results revealed that marital status was the only factor which made a significant difference in Saudi student attitude ($t= -2.11$, $p=0.035$). Unmarried students showed a more positive attitude toward online cooperative learning than married students. In addition, while male student attitudes toward online cooperative learning ($M=3.67$, $SD=0.87$) was more positive than that of female students ($M=3.60$, $SD=0.87$), the difference in means was not significant ($t=0.85$, $p=0.349$). Additionally, the difference in means among regional groups was not significant ($t=2.207$, $p=0.067$). The largest difference was between the north region students ($M=3.89$, $SD=0.91$) and the central region students ($M=3.53$, $SD=0.92$). Bachelor degree students reported a more

positive attitude (M=3.7, SD=0.87) than master degree students (M=3.61, SD=0.88) and doctoral students (M=3.54, SD=0.79).

In terms of academic major, the most positive attitudes were expressed by political science (M=3.91, SD=0.85) and science (M=3.74, SD=0.81) majors, while art (M=3.48, SD=0.82) and education (M=3.59, SD=0.88) students showed the least positive attitudes. Business and engineering students, which made up the largest academic segment of the participants, showed very comparable levels of attitude (M=3.68 and SD=0.86) for business and (M=3.63 and SD=0.85) for engineering. In terms of the difference in mean attitude score among the age groups, the data revealed that the oldest group reported the most positive attitudes (M=3.78, SD=0.57), the youngest groups reported the least positive attitudes (M=3.58, SD=0.96), and the difference in means among the age groups was not significant. Experience in using the Internet did not appear to have any effect on student attitude toward coeducational online cooperative learning.

The results also showed that students who had less than one year experience in using the Internet showed a more positive attitude (M=3.83, SD=0.84) than those who had more than one year of experience in using the Internet. This difference may be due to variances in the sample among the three groups of experience with respect to using the Internet. Finally, it was interesting to see that students who had less experience with online courses had the most positive attitude toward coeducational online cooperative learning (M=3.68, SD=0.80). However, the difference between the three groups was very small. Tables 6 & 7 summarize measures and tests of significance of student attitude toward the online communication tools and demographic variables.

Table 6.

Test of Significance of Student Attitude Toward Coeducational Online Cooperative Learning and Their Demographic Variables (Gender and Marital Status)

Variables		N	Mean	Std. Deviation	t	P-Value
Gender						
	Male	586	3.67	0.87	0.85	0.394
	Female	121	3.60	0.87		
Marital Status						
	Married	287	3.57	.82	-2.11	0.035
	Unmarried	420	3.71	0.90		

Table 7.

Test of Significance of Student Attitude Toward Coeducational Online Cooperative Learning and Their Demographic Variables (Age, Region, Academic Level, Major, Experience of Using The Internet, and Experience With Online Courses)

Variables		N	Mean	Std. Deviation	F	P-Value
Age						
	Under 20	32	3.58	0.96	0.292	0.831
	20 – 29	541	3.67	0.88		
	30 – 39	126	3.61	0.82		
	40 and older	8	3.78	0.57		
Region						
	North	19	3.89	0.91	2.207	0.067
	South	42	3.71	0.81		
	Center	261	3.53	0.92		
	East	212	3.73	0.78		
	West	173	3.71	0.88		
Academic Level						
	Bachelor	402	3.70	0.87	1.342	0.262
	Master	239	3.61	0.88		
	Doctorate	66	3.54	0.79		
Major						
	Art	10	3.48	0.82	.340	0.950
	Business	255	3.68	0.86		
	Education	45	3.59	0.88		
	Engineering	179	3.63	0.85		
	Political science	14	3.91	0.85		
	Medicine	67	3.67	0.84		
	Law	17	3.65	0.92		
	Science	31	3.74	0.81		
	Computer Science	89	3.62	0.98		
Experience of using the Internet						
	Less than 1 year	12	3.83	0.84	1.242	0.295
	1-3 years	31	3.44	0.91		
	More than 3 years	664	3.66	0.87		
Experience with online courses						
	1 course	335	3.68	0.80	0.347	0.707
	2-3 courses	213	3.62	0.89		
	More than 3 courses	159	3.65	0.96		

Question Three

The third question investigated Saudi student belief toward applying coeducational online cooperative learning in Saudi Arabia. The total score for the belief toward applying coeducation online cooperative learning in Saudi Arabia questionnaire was used to address this question. The belief part of the instrument consisted of 10 questions on a 5-item Likert Scale: (1) strongly disagree, (2) disagree, (3) undecided, (4) agree, and (5) strongly agree. The highest score reflects the most positive belief toward applying coeducation online cooperative learning in Saudi Arabia. Descriptive statistics were used to summarize the data. In addition, item analysis was performed by computing the mean, standard deviation, frequency, and percent of positive responses for each item of the belief part of the questionnaire.

Table 8.

Student Overall Belief Toward Applying Coeducational Online Cooperative Learning in Saudi Arabia

	N	Mean	Std. Deviation	Std. Error
Belief	707	3.47	1.24	0.047

As Table 8 showed, Saudi students tended to convey a positive belief with respect to applying coeducation online cooperative learning in Saudi Arabia (M=3.47, SD=1.24). Table 9 provides a summary of the item analysis for the belief part of the questionnaire. The data revealed that 57.8 percent of the participants either agreed or strongly agreed that learning in a mixed-gender online cooperative learning environment will be possible in Saudi Arabia, and 52.4 percent of the participants reported a belief that learning in a mixed-gender online cooperative learning environment will be appropriate in Saudi Arabia.

The results also revealed that 55.6 percent of the participants either agreed or strongly agreed that it is possible to be comfortable while learning in a mixed-gender online cooperative learning environment in Saudi Arabia. The highest means were shown in the items addressing the social and religious factors (items 6 & 7). Most of the participants believed that learning in a mixed-gender online cooperative learning environment does not conflict with Saudi social values (M=3.55, SD=1.45). Further, the data also reflects that most of the participants believed that learning in a mixed-gender online cooperative learning environment does not conflict with their religious principles (M= 3.63, SD=1.41). Finally, almost two-thirds of the participants reported that they support applying coeducational online cooperative learning in Saudi Arabia.

Table 9.

Belief Scale Items and Percent of Positive Responses for Each Item

Items	N	Mean	Std. Deviation	Positive Responses
Learning in a mixed-gender online cooperative learning environment will be possible in Saudi Arabia.	705	3.49	1.35	57.8
Learning in a mixed-gender online cooperative learning environment will be appropriate in Saudi Arabia.	706	3.31	1.38	52.4
Applying mixed-gender online cooperative learning in Saudi Arabia will enhance student learning.	704	3.32	1.42	52.0
Saudi male and female students each possess specific skills and abilities that make learning in a mixed-gender online cooperative learning helpful for each of them.	706	3.51	1.38	58.6
It is possible to be comfortable while learning in a mixed-gender online cooperative learning environment in Saudi Arabia.	705	3.38	1.37	55.6
Learning in a mixed-gender online cooperative learning environment does not conflict with my social values.	703	3.55	1.45	62.9
Learning in a mixed-gender online cooperative learning environment does not conflict with my religious principles.	706	3.63	1.41	63.6
Learning in a mixed-gender online cooperative learning environment does not conflict with the Saudi social values.	702	3.22	1.41	47.5
My family will allow me to learn in a mixed-gender online cooperative learning environment in Saudi Arabia.	704	3.49	1.35	60.5
In general, I support applying coeducational online cooperative learning in Saudi Arabia.	704	3.31	1.38	63.1

Question Four

The fourth question investigated the difference in mean belief score among the students in terms of their gender, age group, marital status, major, academic level, location, experience with online education, and years of using the Internet. For testing the mean difference in belief score in terms of gender and marital status, the t-test was

used. For comparing the mean difference in belief score with respect to age group, major, academic level, location, experience with online education, and years of using the Internet, analysis of variance (ANOVA) was used.

The regional factor was the only demographic factor that had a significant effect on student belief with respect to applying coeducational online cooperative learning in Saudi Arabia ($F=2.602$, $p=0.035$). Students from the western region showed the most positive beliefs ($M=3.62$, $SD=1.22$), while students from the central region showed the least positive beliefs ($M=3.28$, $SD=1.31$) toward applying coeducation online cooperative learning in Saudi Arabia. Female respondents displayed more positive beliefs ($M=3.56$, $SD=1.17$) than male respondents ($M=3.45$, $SD=1.26$); however, the difference between the two groups was not significant ($t= -0.83$, $p=0.405$). On the other hand, when performing the t-test between male and female students for each item in the scale, it appeared that there were significant differences between the two groups with respect to two statements (items 6 & 7) that addressed the social values and religious principles (Table 10). Female students reported more positive beliefs than male students regarding the premise that learning in a mixed-gender online cooperative learning environment does not conflict with their social values ($p=0.025$) or with their religious principles ($p=0.031$).

Table 10.

Test of Significance of Items 6 & 7 of The Belief Scale and Gender

Items	Gender	N	Mean	Std. Deviation	t	P-Value
Learning in a mixed-gender online cooperative learning environment does not conflict with my social values.	Male	586	3.50	1.47	-2.25	0.025
	Female	121	3.83	1.34		
Learning in a mixed-gender online cooperative learning environment does not conflict with my religious principles.	Male	586	3.58	1.42	-2.17	0.031
	Female	121	3.88	1.34		

Unmarried students also expressed more positive beliefs (M=3.54, SD=1.27) than married students (M=3.38, SD=1.20). While there was not a significant difference in means between married and unmarried students, significant differences appeared when performing the t-test for each item in the belief scale (Table 11). The data revealed that there was a significant difference between the beliefs of married and unmarried students regarding the question of whether it is possible to be comfortable while learning in a mixed-gender online cooperative learning environment in Saudi Arabia (Item 5). Married students reported less positive beliefs than unmarried students with respect to this item. Additionally, married students tended to report less positive feelings regarding the question of whether or not their families would allow them to learn in a mixed-gender online cooperative learning environment in Saudi Arabia (Item 9).

Table 11.

Test of Significance of Items 5 & 9 of The Belief Scale and Marital Status

Items	Marital Status	N	Mean	Std. Deviation	t	P-Value
It is possible to be comfortable while learning in a mixed-gender online cooperative learning environment in Saudi Arabia.	Married	287	3.25	1.30	-1.96	0.050
	Unmarried	420	3.46	1.40		
My family will allow me to learn in a mixed-gender online cooperative learning environment in Saudi Arabia.	Married	287	3.71	1.36	-1.97	0.049
	Unmarried	420	3.91	1.34		

In terms of age groups, the oldest group displayed the most positive beliefs (M=3.49, SD=0.85), while the youngest group reported the least positive beliefs (M=3.3, SD=1.25) toward applying coeducation online cooperative learning in Saudi Arabia. Master degree students showed the highest level of positive beliefs (M=3.51, SD=1.26), while the bachelor degree (M=3.45, SD=1.25) and doctoral (M=3.47, SD=1.15) students reported very comparable belief means.

Interestingly, political science students related the most positive belief scores among groups (M=3.67, SD=1.30), while the law students showed the least positive belief scores (M=3.07, SD=1.43) with respect to applying coeducation online cooperative learning in Saudi Arabia. Students with less than one year of experience with the Internet reported the lowest belief scores (M=3.13, SD=1.31), while students with the greatest amount of experience with using the Internet reported the most positive belief scores (M=3.49, SD=1.23). Finally, experience with online courses

seemed to have little effect on student belief toward applying coeducation online cooperative learning in Saudi Arabia (F=0.010, p=0.990). Students who have had one online course displayed greater positive beliefs (M=3.48, SD=1.17) than those who have had two or more online courses. Tables 12 & 13 summarize measures and tests of significance of student belief toward online communication tools and the demographic variables.

Table 12.

Test of Significance of Student Belief Toward Coeducational Online Cooperative Learning and Their Demographic Variables (Gender and Marital Status)

Variables		N	Mean	Std. Deviation	t	P-Value
Gender						
	Male	586	3.45	1.26	- 0.83	0.405
	Female	121	3.56	1.17		
Marital Status						
	Married	287	3.38	1.20	- 1.68	0.094
	Unmarried	420	3.54	1.27		

Table 13.

Test of Significance of Student Belief Toward Coeducational Online Cooperative Learning and Their Demographic Variables (Age, Region, Academic Level, Major, Experience of Using The Internet, and Experience With Online Courses)

Variables		N	Mean	Std. Deviation	F	P-Value
Age						
	Under 20	32	3.30	1.25	0.246	0.865
	20 – 29	541	3.45	1.27		
	30 – 39	126	3.44	1.15		
	40 and older	8	3.49	0.85		
Region						
	North	19	3.49	1.18	2.602	0.035
	South	42	3.52	1.33		
	Center	261	3.28	1.31		
	East	212	3.58	1.13		
	West	173	3.62	1.22		
Academic Level						
	Bachelor	402	3.45	1.25	0.208	0.812
	Master	239	3.51	1.26		
	Doctorate	66	3.47	1.15		
Major						
	Art	10	3.46	1.14	0.603	0.776
	Business	255	3.55	1.20		
	Education	45	3.49	1.18		
	Engineering	179	3.37	1.28		
	Political science	14	3.67	1.30		
	Medicine	67	3.47	1.17		
	Law	17	3.07	1.43		
	Science	31	3.62	1.22		
	Computer Science	89	3.44	1.35		
Experience of using the Internet						
	Less than 1 year	12	3.13	1.31	0.150	0.224
	1-3 years	31	3.16	1.41		
	More than 3 years	664	3.49	1.23		
Experience with online courses						
	1 course	335	3.48	1.17	0.010	0.990
	2-3 courses	213	3.46	1.28		
	More than 3 courses	159	3.47	1.35		

Question Five

The fifth question investigated Saudi student preference regarding web-based communication tools when learning in a coeducational online cooperative learning environment in Saudi Arabia. In the preference part of the questionnaire, the participants were provided with a 3-item scale: (1) not preferred, (2) preferred with same sex only, and (3) preferred with both sexes, in order to describe their preference in using each of the six online communication tools. In order to address this question, item analysis was performed by computing the frequency and percent of each item included in the preference part of the questionnaire. The frequency and percent of each item was also used to describe each group of student preference.

The results showed that 72.4 percent of Saudi students who participated in the study prefer to use text-only chat with both sexes, 17.3 percent prefer to use it with the same sex, and only 10.2 percent of study participants do not prefer to use text-only chat at all when learning in a coeducational online cooperative learning environment in Saudi Arabia. In terms of using voice chat, 54.2 percent of the participants prefer to use it with both sexes, while 33.2 percent prefer to use it with the same sex, and 12.3 percent prefer not to use voice chat when learning in a coeducational online cooperative learning environment in Saudi Arabia.

Table 14 summarizes percentages of student preference toward using each of the online communication tools. The result also revealed that 42.9 percent of the participants prefer to use video-conference with both sexes, 35.4 percent prefer to use it with the same sex, and 21.4 percent do not prefer to use it at all when learning in a coeducational online cooperative learning environment in Saudi Arabia. Most of the

participants (82.6%) prefer to use email with both sexes, while 13.3 percent prefer to use email with the same sex only, and only 3.7 percent prefer not to use email at all when learning in a coeducational online cooperative learning environment in Saudi Arabia.

In term of student preference toward using forums, 81.6 percent of the participants prefer to use forums with both sexes, while 10.0 percent prefer to use them with the same sex only, and 8.1 percent do not prefer to use forums at all when learning in a coeducational online cooperative learning environment in Saudi Arabia. Finally, 70.3 percent of the Saudi students who participated in the study prefer to use blogs with both sexes, while 13.7 percent prefer to use them with the same sex only, and 15.3 percent prefer not to use blogs at all when learning in a coeducational online cooperative learning environment in Saudi Arabia.

Table 14.

Percentage of Student Preference Toward Using Online Communication Tools

Variables	N	Not Preferred	Preferred with the same sex only	Preferred with both sexes
Text-only chat	706	10.2	17.3	72.4
Voice chat	705	12.3	33.2	54.2
Video conference	704	21.4	35.4	42.9
Email	704	3.7	13.3	82.6
Forums	705	8.1	10.0	81.6
Blogs	702	15.3	13.7	70.3

Question Six

Question six investigated the relationship between student preference using online communication tools when learning in a CEOCLE in Saudi Arabia and demographic variables of gender, age group, marital status, major, academic level, location, experience with online education, years of using the Internet, and previous

experience with each of those online communication tools. Chi-square test was used to determine relationships between student preference and the independent variables.

Text-only Chat. As shown in Table 15, previous experience in using text-only chat was the only independent variable which had a significant relationship with student preference regarding the online communication tools when learning in a coeducational online cooperative learning environment in Saudi Arabia (Chi Square=46.14, $p < 0.0001$). Students who had “a lot of experience” with text-only chat seemed to prefer to use text-only chat with both sexes, while those who had no experience with text-only chat reported no such preference when using text-only chat when learning in a coeducational online cooperative learning environment in Saudi Arabia.

Table 15.

Test of Significance of Student Preference Toward Using Text-Only Chat and Their Demographic Variables

Variables		Preference toward text-only chat			Chi Square	P-Value
		Not Preferred	Preferred with the same sex only	Preferred with both sexes		
Gender						
	Male	10.8%	17.4%	71.8%	1.39	0.50
	Female	7.4%	16.5%	76.0%		
Age						
	Under 20	9.4%	28.1%	62.5%	4.17	0.65
	20 – 29	10.0%	16.1%	73.9%		
	30 – 39	11.1%	19.8%	69.0%		
	40 and older	12.5%	12.5%	75.0%		
Marital Status						
	Married	9.1%	20.2%	70.7%	3.23	0.20
	Unmarried	11.0%	15.3%	73.7%		
Region						
	North	21.1%	5.3%	73.7%	8.50	0.39
	South	14.3%	11.9%	73.8%		
	Center	11.9%	18.5%	69.6%		
	East	8.5%	17.5%	74.1%		
	West	10.2%	17.3%	72.5%		
Academic Level						
	Bachelor	11.0%	18.0%	71.1%	3.080	0.55
	Master	8.8%	18.0%	73.2%		
	Doctorate	10.6%	10.6%	78.8%		
Major						
	Art	10.0%	10.0%	80.0%	10.63	0.83
	Business	9.8%	17.3%	72.8%		
	Education	6.7%	22.2%	71.1%		
	Engineering	10.6%	21.2%	68.2%		
	Political science	14.3%	14.3%	71.4%		
	Medicine	10.4%	13.4%	76.1%		
	Law	17.6%	5.9%	76.5%		
	Science	12.9%	22.6%	64.5%		
	Computer Science	9.0%	11.2%	79.8%		

Table 15 continued

Variables		Preference toward text-only chat			Chi Square	P-Value
		Not Preferred	Preferred with the same sex only	Preferred with both sexes		
Experience of using the Internet						
	Less than 1 year	0.0%	25.0%	75.0%	3.84	0.42
	1-3 years	16.1%	22.6%	61.3%		
	More than 3 years	10.1%	16.9%	73.0%		
Experience with online courses						
	1 course	8.4%	16.4%	75.2%	4.16	0.39
	2-3 courses	11.3%	16.5%	72.2%		
	More than 3 courses	12.6%	20.1%	67.3%		
Experience with text-only chat						
	No experience	55.6%	22.2%	22.2%	46.14	0.00
	Some experience	23.5%	22.4%	54.1%		
	A lot of experience	7.7%	16.6%	75.7%		

Voice Chat. Table 16 revealed that there were significant relationships between student preference in using voice chat when learning in a coeducational online cooperative learning environment in Saudi Arabia and their gender (Chi Square=6.73, p=0.035), marital status (Chi Square=15.87, p=0.00), and previous experience with voice chat (Chi Square=13.71, p=0.008). Most female participants reported preferring to use voice chat either with both sexes (43.8%) or with the same sex only (42.1%), while most male respondents preferred to use voice chat with both sexes (56.5%). On the other hand, most married participants preferred to use voice chat either with both sexes (48.1%) or with the same sex only (41.8%), while most of the unmarried students preferred to use voice chat with both sexes (58.6%). The results also revealed that

students who reported having “a lot experience” with voice chat seemed to prefer to use voice chat with both sexes, while respondents who had no experience with voice chat showed no such preference with respect to using voice chat when learning in a coeducational online cooperative learning environment in Saudi Arabia.

Table 16.

Test of Significance of Student Preference Toward Using Voice Chat and Their Demographic Variables

Variables		Preference toward voice chat			Chi Square	P-Value
		Not Preferred	Preferred with the same sex only	Preferred with both sexes		
Gender						
	Male	12.0%	31.5%	56.5%	6.73	0.035
	Female	14.0%	42.1%	43.8%		
Age						
	Under 20	12.5%	37.5%	50.0%	4.57	0.60
	20 – 29	12.8%	31.7%	55.5%		
	30 – 39	9.5%	38.9%	51.6%		
	40 and older	25.0%	37.5%	37.5%		
Marital Status						
	Married	10.1%	41.8%	48.1%	15.87	0.00
	Unmarried	13.9%	27.5%	58.6%		
Region						
	North	10.5%	26.3%	63.2%	9.83	0.28
	South	21.4%	16.7%	61.9%		
	Center	11.5%	36.4%	52.1%		
	East	13.3%	34.6%	52.1%		
	West	10.5%	32.0%	57.6%		
Academic Level						
	Bachelor	12.7%	31.9%	55.4%	1.57	0.81
	Master	12.2%	36.1%	51.7%		
	Doctorate	10.6%	31.8%	57.6%		
Major						
	Art	10.0%	30.0%	60.0%	17.13	0.38
	Business	9.4%	32.9%	57.6%		
	Education	8.9%	51.1%	40.0%		
	Engineering	18.0%	32.6%	49.4%		
	Political science	14.3%	21.4%	64.3%		
	Medicine	14.9%	31.3%	53.7%		
	Law	5.9%	35.3%	58.8%		
	Science	12.9%	32.3%	54.8%		
	Computer Science	10.2%	30.7%	59.1%		

Table 16 continued

Variables		Preference toward voice chat: Not Preferred	Preferred with the same sex only	Preferred with both sexes	Chi Square	P-Value
Experience of using the Internet						
	Less than 1 year	8.3%	50.0%	41.7%	3.04	0.55
	1-3 years	19.4%	32.3%	48.4%		
	More than 3 years	12.1%	33.1%	54.8%		
Experience with online courses						
	1 course	11.1%	33.8%	55.1%	1.91	0.75
	2-3 courses	12.7%	34.9%	52.4%		
	More than 3 courses	14.5%	30.2%	55.3%		
Experience with voice chat						
	No experience	25.9%	44.4%	29.6%	13.71	0.008
	Some experience	17.4%	33.3%	49.2%		
	A lot of experience	10.4%	32.8%	56.8%		

Video-Conference. As Table 17 indicated, there were also significant relationships between student preference in using video conference when learning in a coeducational online cooperative learning environment in Saudi Arabia and their gender (Chi Square=10.48, p=0.005) and marital status (Chi Square=16.6, p=0.00). Most male students reported a preference toward video-conference with both sexes (45.5%), while most female students reported a preference for using video-conference with the same sex only (39.2%). On the other hand, most married students preferred to use video-conference with the same sex only (43%), while most unmarried students preferred to use the video-conference with both sexes (49%).

Table 17.

Test of Significance of Student Preference Toward Using Video-Conference and Their Demographic Variables

Variables		Preference toward Video Conference			Chi Square	P-Value
		Not Preferred	Preferred with the same sex only	Preferred with both sexes		
Gender						
	Male	19.7%	34.8%	45.5%	10.48	0.005
	Female	30.0%	39.2%	30.8%		
Age						
	Under 20	15.6%	37.5%	46.9%	5.41	0.49
	20 – 29	22.3%	34.3%	43.4%		
	30 – 39	18.4%	41.6%	40.0%		
	40 and older	37.5%	12.5%	50.0%		
Marital Status						
	Married	22.7%	43.0%	34.3%	16.60	0.00
	Unmarried	20.6%	30.4%	49.0%		
Region						
	North	26.3%	26.3%	47.4%	11.95	0.15
	South	19.5%	19.5%	61.0%		
	Center	20.0%	40.4%	39.6%		
	East	24.6%	35.1%	40.3%		
	West	19.7%	33.5%	46.8%		
Academic Level						
	Bachelor	21.5%	33.8%	44.8%	1.44	0.84
	Master	21.4%	37.8%	40.8%		
	Doctorate	21.2%	37.9%	40.9%		
Major						
	Art	40.0%	40.0%	20.0%	9.47	0.89
	Business	20.9%	34.4%	44.7%		
	Education	20.0%	46.7%	33.3%		
	Engineering	22.5%	37.6%	39.9%		
	Political science	14.3%	28.6%	57.1%		
	Medicine	20.9%	29.9%	49.3%		
	Law	17.6%	41.2%	41.2%		
	Science	22.6%	32.3%	45.2%		
	Computer Science	21.3%	33.7%	44.9%		

Table 17. contented

Variables		Preference toward Video Conference			Chi Square	P-Value
		Not Preferred	Preferred with the same sex only	Preferred with both sexes		
Experience of using the Internet						
	Less than 1 year	9.1%	27.3%	63.6%	4.70	0.32
	1-3 years	32.3%	25.8%	41.9%		
	More than 3 years	21.1%	36.1%	42.7%		
Experience with online courses						
	1 course	19.9%	37.0%	43.1%	2.26	0.69
	2-3 courses	23.0%	36.2%	40.8%		
	More than 3 courses	22.6%	31.4%	45.9%		
Experience with video-conference						
	No experience	32.1%	43.4%	24.5%	8.49	0.075
	Some experience	21.4%	34.5%	44.1%		
	A lot of experience	20.4%	35.3%	44.3%		

Email. As shown in Table 18, age (Chi Square=14.51, p=0.02), experience with the Internet (Chi Square=19.12, p=0.01), and previous experience with email (Chi Square=53.98, p=0.00) were all revealed to have a significant relationship with respect to student preference in using video-conference when learning in a coeducational online cooperative learning environment in Saudi Arabia. The data revealed that 84.8 percent of students 20-29 years old prefer to use email with both sexes, 62.5 percent of respondents under 20 years old prefer to use email with both sexes, and 12 percent of students age 40 and older prefer to use email with both sexes when learning in a coeducational online cooperative learning environment in Saudi Arabia. The data also

revealed that students who had “a lot experience” with email seemed to prefer the use of email with both sexes, while those who had no experience with email showed no such preference with respect to using email when learning in a coeducational online cooperative learning environment in Saudi Arabia.

The data revealed that students with the most experience in using the Internet seemed to prefer using email with both sexes (84%). Additionally, 66.7 percent of those with the least experience in using the Internet preferred to use email with both sexes, 33.3 percent preferred to use email with the same sex only, and none of them preferred not to use email when learning in a coeducational online cooperative learning environment in Saudi Arabia.

Table 18.

Test of Significance of Student Preference Toward Using Email and Their Demographic Variables

Variables		Preference toward email			Chi Square	P-Value
		Not Preferred	Preferred with the same sex only	Preferred with both sexes		
Gender						
	Male	3.8%	13.7%	82.6%	0.38	0.83
	Female	3.4%	11.8%	84.9%		
Age						
	Under 20	9.4%	28.1%	62.5%	14.51	0.02
	20 – 29	3.5%	11.7%	84.8%		
	30 – 39	2.4%	16.8%	80.8%		
	40 and older	12.5%	12.5%	75.0%		
Marital Status						
	Married	2.4%	13.9%	83.6%	2.21	0.33
	Unmarried	4.6%	12.9%	82.5%		
Region						
	North	5.3%	5.3%	89.5%	2.31	0.97
	South	2.4%	11.9%	85.7%		
	Center	4.2%	13.9%	81.9%		
	East	3.8%	12.7%	83.5%		
	West	2.9%	14.5%	82.6%		
Academic Level						
	Bachelor	5.2%	14.4%	80.3%	8.93	0.06
	Master	1.7%	13.1%	85.2%		
	Doctorate	1.5%	7.6%	90.9%		
Major						
	Art	.0%	.0%	100.0%	21.69	0.15
	Business	2.4%	13.4%	84.2%		
	Education	.0%	15.6%	84.4%		
	Engineering	5.0%	17.9%	77.1%		
	Political science	.0%	14.3%	85.7%		
	Medicine	1.5%	10.4%	88.1%		
	Law	5.9%	11.8%	82.4%		
	Science	9.7%	16.1%	74.2%		
	Computer Science	6.8%	5.7%	87.5%		

Table 18. Continued

Variables		Preference toward email			Chi Square	P-Value
		Not Preferred	Preferred with the same sex only	Preferred with both sexes		
Experience of using the Internet						
	Less than 1 year	0.0%	33.3%	66.7%	19.12	0.001
	1-3 years	16.1%	16.1%	67.7%		
	More than 3 years	3.2%	12.9%	84.0%		
Experience with online courses						
	1 course	4.8%	13.2%	82.0%	2.37	0.67
	2-3 courses	2.4%	13.2%	84.4%		
	More than 3 courses	3.2%	13.9%	82.9%		
Experience with email						
	No experience	50.0%	33.3%	16.7%	53.98	0.0001
	Some experience	10.0%	27.5%	62.5%		
	A lot of experience	2.9%	12.3%	84.8%		

Forums. Table 19 showed that experience in using the Internet (Chi Square=14.58, p=0.006) and previous experience with forums (Chi Square=78.59, p=0.000) were the only dependent variables that had a significant relationship with respect to student preference toward using forums when learning in a coeducational online cooperative learning environment in Saudi Arabia. Students with 2-3 years experience with using the Internet showed the lowest preference for using forums with both sexes (61.3%), while 25.8 percent of respondents reported that they do not prefer to use forums at all when learning in a coeducational online cooperative learning environment in Saudi Arabia. On the other hand, 83.3 percent of those who have more

than three years in using the Internet prefer to use forums with both sexes, and only 7.3 percent of them prefer not to use forums at all when learning in a coeducational online cooperative learning environment in Saudi Arabia. The result also showed that students who had “a lot of experience” with forums seemed to prefer to use forums with both sexes, while those who had no experience with forums showed no such preference for the use of forums when learning in a coeducational online cooperative learning environment in Saudi Arabia.

Table 19.

Test of Significance of Student Preference Toward Using Forums and Their Demographic Variables

Variables		Preference toward forums			Chi Square	P-Value
		Not Preferred	Preferred with the same sex only	Preferred with both sexes		
Gender						
	Male	7.9%	10.6%	81.5%	1.20	0.55
	Female	9.2%	7.5%	83.3%		
Age						
	Under 20	15.6%	15.6%	68.8%	9.40	0.15
	20 – 29	7.8%	9.3%	82.9%		
	30 – 39	6.3%	12.7%	81.0%		
	40 and older	25.0%	.0%	75.0%		
Marital Status						
	Married	5.6%	10.1%	84.3%	4.04	0.13
	Unmarried	9.8%	10.0%	80.2%		
Region						
	North	0.0%	5.3%	94.7%	5.66	0.69
	South	11.9%	4.8%	83.3%		
	Center	7.3%	11.9%	80.8%		
	East	8.5%	9.9%	81.6%		
	West	8.7%	9.3%	82.0%		
Academic Level						
	Bachelor	10.0%	10.2%	79.9%	7.44	0.11
	Master	5.9%	11.4%	82.7%		
	Doctorate	4.5%	4.5%	90.9%		
Major						
	Art	0.0%	0.0%	100.0%	14.68	0.55
	Business	7.9%	11.1%	81.0%		
	Education	4.4%	11.1%	84.4%		
	Engineering	10.1%	13.4%	76.5%		
	Political science	21.4%	7.1%	71.4%		
	Medicine	6.0%	7.5%	86.6%		
	Law	11.8%	5.9%	82.4%		
	Science	6.5%	6.5%	87.1%		
	Computer Science	6.7%	5.6%	87.6%		

Table 19 continued

Variables		Preference toward forums: Not Preferred	Preferred with the same sex only	Preferred with both sexes	Chi Square	P-Value
Experience of using the Internet						
	Less than 1 year	8.3%	8.3%	83.3%	14.58	0.006
	1-3 years	25.8%	12.9%	61.3%		
	More than 3 years	7.3%	10.0%	82.8%		
Experience with online courses						
	1 course	10.7%	9.3%	80.0%	8.73	0.07
	2-3 courses	7.6%	10.9%	81.5%		
	More than 3 courses	3.1%	10.7%	86.2%		
Experience with forums						
	No experience	39.6%	12.5%	47.9%	78.59	0.000
	Some experience	9.9%	10.4%	79.7%		
	A lot of experience	3.8%	9.6%	86.5%		

Blogs. Table 20 indicated that both marital status (Chi Square=7.85, p=0.02) and previous experience with blogs (Chi Square=62.33, p=0.00) have a significant relationship with respect to student preference toward using blogs when learning in a coeducational online cooperative learning environment in Saudi Arabia. Most married students prefer to use blogs with both sexes (69%), while 18 percent prefer to use it with the same sex only, and 13 percent do not prefer to use blogs at all when learning in a coeducational online cooperative learning environment in Saudi Arabia. On the other hand, 72 percent of unmarried students prefer to use blogs with both sexes, while 11 percent prefer to use it with the same sex only, and 17 percent do not prefer to use blogs at all when learning in a coeducational online cooperative learning environment in

Saudi Arabia. The result also illustrated that students who had “a lot of experience” with blogs seemed to have more of a preference to use blogs with both sexes, while those who had no experience with blogs showed no such preference with respect to using blogs when learning in a coeducational online cooperative learning environment in Saudi Arabia.

Table 20.

Test of Significance of Student Preference Toward Using Blogs and Their Demographic Variables

Variables		Preference toward blogs			Chi Square	P-Value
		Not Preferred	Preferred with the same sex only	Preferred with both sexes		
Gender						
	Male	15.8%	14.4%	69.8%	1.69	0.43
	Female	13.4%	10.9%	75.6%		
Age						
	Under 20	9.7%	19.4%	71.0%	8.50	0.39
	20 – 29	16.5%	12.2%	71.3%		
	30 – 39	10.6%	19.5%	69.9%		
	40 and older	37.5%	12.5%	50.0%		
Marital Status						
	Married	13.0%	18.0%	69.0%	7.85	0.02
	Unmarried	17.0%	11.0%	72.0%		
Region						
	North	15.8%	15.8%	68.4%	5.67	0.68
	South	12.2%	4.9%	82.9%		
	Center	16.2%	15.1%	68.7%		
	East	17.1%	14.2%	68.7%		
	West	12.8%	13.4%	73.8%		
Academic Level						
	Bachelor	17.5%	13.0%	69.5%	3.72	0.45
	Master	12.3%	14.4%	73.3%		
	Doctorate	13.6%	16.7%	69.7%		
Major						
	Art	.0%	10.0%	90.0%	13.92	0.61
	Business	15.1%	12.7%	72.2%		
	Education	8.9%	20.0%	71.1%		
	Engineering	16.9%	17.5%	65.5%		
	Political science	7.1%	14.3%	78.6%		
	Medicine	17.9%	16.4%	65.7%		
	Law	23.5%	5.9%	70.6%		
	Science	16.1%	9.7%	74.2%		
	Computer Science	15.7%	7.9%	76.4%		

Table 20 continued

Variables		Preference toward blogs: Not Preferred	Preferred with the same sex only	Preferred with both sexes	Chi Square	P-Value
Experience of using the Internet						
	Less than 1 year	16.7%	33.3%	50.0%	8.46	0.08
	1-3 years	25.8%	19.4%	54.8%		
	More than 3 years	14.9%	13.2%	71.9%		
Experience with online courses						
	1 course	15.1%	13.6%	71.3%	0.67	0.96
	2-3 courses	14.6%	13.6%	71.8%		
	More than 3 courses	17.1%	14.6%	68.4%		
Experience with Blogs						
	No experience	43.1%	18.1%	38.9%	62.33	0.000
	Some experience	15.0%	17.7%	67.3%		
	A lot of experience	10.5%	11.0%	78.5%		

Reliability Test

The Statistical Package for Social Science (SPSS) program was used to measure Cronbach's Alpha in order to ensure the reliability of the questionnaire items. Cronbach Alpha is a powerful method used to measure reliability for instruments using Likert scales. The result showed very strong internal consistency reliability for the attitude and belief scales. Cronbach Alpha was 0.96 for attitude and 0.97 for belief.

Table 21.

Reliability testing for attitude and belief scales of the questionnaire

Scale	N of Items	Cronbach Alpha
Attitude	23	0.96
Belief	10	0.97

Chapter 5

Conclusion and Discussion

The purpose of this study was to investigate the attitude of Saudi Arabian students towards learning in a coeducational online cooperative learning environment as well as their belief with respect to applying this environment in Saudi Arabia. The study also examined student preferences regarding the utilization of web-based communication tools for the purpose of interacting with peers while learning in a CEOCLE in Saudi Arabia. A web-based questionnaire was developed to address the study questions, and 707 Saudi students participated in the study.

Saudi Student Attitude Toward Coeducational Online Cooperative Learning

The findings revealed that Saudi students generally report a positive overall attitude toward coeducational online cooperative learning (M=3.56, SD=0.87). The results indicated that most of the participants either agree or strongly agree that they prefer to work cooperatively with a group rather than working alone while participating in online courses. This result aligns with prior studies which have demonstrated a positive attitude toward cooperative learning in the online environment (Jung et al., 2002; Bouras, 2009; Neo et al., 2009). This result is also supported by previous studies which indicated positive attitudes of Saudi students toward online learning in general (Alarfaj, 2001; Alaugab, 2007).

The findings also revealed that Saudi students generally have a positive attitude toward learning cooperatively with students of the opposite gender while in an online environment. The data additionally showed that most of the participants either agree or strongly agree that they enjoy learning in a mixed-gender group. In addition, most of the

participants reported that they believe that female and male students each possess specific skills and abilities which contribute to the overall success of the group. The result also indicated that the new generation of higher education students in Saudi Arabia feels that working with students from the opposite gender benefits their learning and makes online courses more interactive.

These results are based on participant experiences interacting with students from the opposite sex in universities in the United States and are representative of the perceptions of the participants regarding the value that members of the opposite sex added to their cooperative groups. The results can be further explained by the experiences of the students when interacting with other Saudi students of the opposite sex in open forums and chat rooms. According to CITC (2008), higher education students make up the majority of Internet users in Saudi Arabia. Additionally, these students report that communication is the most common purpose of their Internet use. This prior experience of unofficial online interaction with people from the opposite sex may make the Saudi students value the benefits of studying cooperatively with students from the opposite sex.

Factors Affecting Saudi Student Attitude toward Coeducational Online Cooperative Learning

The findings additionally showed that only one demographic factor – marital status – affected student attitude toward coeducational online cooperative learning. Unmarried students participating in the study reported a more positive attitude toward this method of learning than married students. This result is in conflict with that of Alaugab (2007), which reported no significant effect of marital status on student attitude

toward online learning. This result can be explained by the Saudi culture that denies coeducation on the basis of social values. According Surkyn and Lesthaeghe (2004), married people tend to be more conservative in their value orientations than single individuals. As a result, it does not seem to be surprising to see married Saudi students showing more conservative attitudes toward learning in an online coeducational environment and therefore they may need more preparation before accepting this environment.

It was interesting to see that the results of this study revealed that male and female students have nearly the same level of positive attitude toward online cooperative learning. In contrast, most of the previous studies showed a difference in attitude toward online learning environments in favor of females (Alarfaj, 2001; Anderson & Haddad, 2005; Bouras, 2009; Frederickson et al., 2000). This can be explained due to the fact that Saudi culture has traditionally put more responsibility on females to avoid being placed in a mixed-gender environment; therefore, male students were expected to have more of a positive attitude toward coeducational online cooperative learning. However, this study revealed that female students seemed to have the same level of positive attitude as their male counterparts. This may be due to the advantages they perceive from being with the opposite sex while studying in American universities. This does not align with previous studies that indicated gender as an important factor that can affect student attitude toward online learning environments (Alarfaj, 2001; Anderson & Haddad, 2005; Bouras, 2009; Frederickson et al., 2000; Sahin, 2006).

Additionally, region did not appear to have any major effect on student attitude. It was not surprising to see that students from the center region of Saudi Arabia had the poorest attitudes toward coeducational online cooperative learning. The center region in Saudi Arabia is considered to be one of the most radical regions with respect to issues such as coeducation (Long, 2005). On the other hand, it was expected that the more open west and east regions would have a higher level of positive attitudes. The only surprise in terms of the effect of regions in student attitude was the high positive attitude of the students of the north region, which showed the highest positive attitude among all of the regional groups. This result could be due either to the small sample size (n=19) or to cultural effects. Even though the north region is considered to be a conservative region, its geographic location puts it in touch with other more open countries such as Jordan, Iraq, and Syria (Long, 2005). Nevertheless, all of the regions showed a predominantly positive attitude toward coeducational online cooperative learning.

Additionally, all of the represented academic level groups reported a positive attitude toward coeducational online cooperative learning, and no significant difference was found among those groups. That being said, bachelor students did show a slightly more positive attitude than master and doctoral students. According to Bouras (2009), “The doctoral students may also feel the need for interaction with their peers is less necessary than interaction with the instructor to make the process seem satisfying” (p. 116). This can also be explained by the age factor, where older students seemed to be more conservative than younger students. However, this explanation is not valid when looking at the difference among age groups.

Unexpectedly, the oldest group of students (age 40 and older) reported the highest numbers of positive attitude, while the youngest group (younger than 20 years old) showed the lowest numbers of positive attitude. This result aligns with the findings of Frederickson et al. (2000), Sahin (2006), and Bouras (2009). The sample size may play a role in this result, as students age 40 and older made up only 1.1 percent of the sample and students under 20 years of age made up only 4.5 percent of the sample. To get a better sense of the effect of age on attitude and looking at the differences between the biggest age groups (20-29 & 30-39), we found that younger students (20-29) had a slightly higher level of positive attitude when compared to older students (30-39). Bouras (2009) explained this difference by stating that because online cooperative learning involves more peer interaction and less instructor interaction than traditional online learning, younger students will have more positive attitudes toward learning in an online cooperative learning environment. Again, all of the age groups demonstrated a positive attitude toward coeducational online cooperative learning, and no significant difference was found among the age groups in terms of their attitude toward coeducational online cooperative learning, aligning with results from Alaugab (2007).

In terms of academic major, the study revealed no major differences between student attitudes based on their academic major. This result was in conflict with the previous studies, which found academic major to play a significant role in student attitude toward online learning environments (Gottschall, 2006; Sahin, 2006). However, this result was supported by the work of Alarfaj (2001) and Alaugab (2007), which studied Saudi student attitude toward online learning and found no significant effect of academic major on attitude. This result indicated that Saudi students seem to have a

positive attitude toward studying in an online cooperative learning environment regardless of their academic major.

Nevertheless, it was surprising to see that education majors tended to show a less positive attitude than their peers in other majors. Education students might be expected to have a higher level of positive attitudes due to their preparation in modern learning theories and philosophies. These theories and philosophies emphasize the important of interacting with people with different views and typically consider gender as one of the most important characteristics affecting student views of issues around them. This finding indicated that a large number of education students do not believe in the importance of interaction with students from the opposite sex.

The most positive attitudes were shown by political science students. This belief in the importance of working cooperatively and sharing ideas with people from the other sex may be driven by their concerns with respect to human rights issues and the negative effect of sex segregation on society overall. This result may be due to the different experiences with group work among the majors and also to the nature of the group projects in each major (Gottschall, 2006). The nature of some majors such as business may require more teamwork than other majors that depend more upon individual effort such as education.

The high positive attitudes shown by business and engineering students can be explained by the nature of these fields. While business requires students to work in mixed-gender environments, engineering is a new field for females in Saudi Arabia. Until recently, no Saudi university has offered engineering programs for females. Therefore, female engineering students value the importance of learning with students

from the opposite sex more than female students from other fields of study. This result also may be due to the different experiences with group work among the majors and also to the nature of the group projects in each major (Gottschall, 2006).

Experience with the Internet did not appear to have any effect on student attitude toward coeducational online learning environments. This result was in opposition with the study results of Bouras (2009) that claimed that students who have the most online experience will have more positive attitudes and a higher level of satisfaction toward online cooperative learning. Experience with online courses also did not appear to make a difference with respect to student attitude. This may indicate that Saudi students tend to have the same positive perception toward online learning regardless of the number of online courses they have completed.

Saudi Student Belief Toward Applying Coeducational Online Cooperative Learning in Saudi Arabia

The findings of the study reveal that Saudi students generally maintain positive beliefs toward applying coeducational online cooperative learning in Saudi Arabia. Saudi students in the United States who have had experience in a coeducational online cooperative learning environment believe that it is possible and appropriate to apply this environment in Saudi Arabia, and they further believe that this environment will be effective if it is applied in Saudi Arabia. Most of the participants believe that learning in a mixed-gender online cooperative learning environment does not conflict with their social values. They also believe that learning in a mixed-gender online cooperative learning environment does not conflict with their religious principles. Finally, almost two-thirds of

the participants reported that they support applying coeducational online cooperative learning in Saudi Arabia.

This strong belief may be due to their experiences within this environment during their studies in the United States, experiences which made them more able to evaluate the possibility, appropriateness, and effectiveness of applying this environment in Saudi Arabia. This also reflects the characteristics of the new higher education generation, a generation which believes in the power of online learning technologies to overcome some of the social and religious issues such as gender segregation. These results were aligned with the findings of previous studies which investigated the beliefs of Saudi students toward online learning in general and revealed largely positive beliefs with respect to applying online learning in Saudi Arabia (Alarfaj, 2001; Alaugab, 2007).

Factors Affecting Saudi Student Belief Toward Applying Coeducational Online Cooperative Learning in Saudi Arabia

The results showed that region was the only demographic factor affecting student belief toward applying coeducational online cooperative learning in Saudi Arabia. It was not surprising to see students from the west and east reporting the highest positive beliefs toward applying coeducational online cooperative learning in Saudi Arabia due to the open culture that exists in the west and east compared to other regions. People in the west and east regions are typically recognized by Saudi society as open-minded people due to their exposure to different cultures. Each year, millions of people from all over the world visit the western region of Saudi Arabia of Omra and Hajj. The east region was also the location where western oil first came to Saudi Arabia and provided the people of this region with an opportunity to be exposed to western culture. In

addition, the eastern region has a variety of Islamic faiths; therefore, some people in this region have different beliefs and perspectives toward some of the Islamic rules that are applied in other regions. This exposure to different cultures gave western and eastern region inhabitants a wider perspective when considering social issues in Saudi Arabia. It was also expected that students from the center region have the lowest number of positive beliefs. The center region of Saudi Arabia is considered to be the base for the radical believers who typically resist social change.

Additionally, while other demographic variables did not appear to have any significant effect on student belief toward applying a coeducational environment in Saudi Arabia, some interesting results were revealed. For example, female students reported more positive beliefs than male students with respect to the idea that learning in a mixed-gender online cooperative learning environment does not conflict with their social values or with their religious principles. This result was interesting because of the high degree of pressure the Saudi society puts on women to be more concerned about social values in comparison to men. This result can be explained by the experience those female students had in American universities, experiences which made them more capable to evaluate how coeducation in online environments may or may not conflict with their social or religious values. This result also reflects two other important factors. First, it reflects the frustration that many Saudi females feel with the social and religious values which place strict limitations on their activities, educational opportunities, and general feelings of equality with men. Second, this result reveals that there is a new generation of higher education female students who are more liberal and ready to express their opinions regarding the social issues that are related to them. This

new generation appears to be more motivated than male students to overcome those radical social rules because they are more affected by those rules than their male peers.

The result is supported by the findings of Alarfaj (2001), who showed that female students believe that online learning, in general, can overcome many social and cultural barriers they face. In addition, Saudi females believe that they would not feel shy when communicating with male teachers through online learning and that they would feel their privacy was respected.

This idea is also supported by Alaugab (2007), who found that Saudi females believe that “online learning is a good idea for females in Saudi Arabia” (p. 172). They further believe that “online courses do not conflict with the female culture in Saudi Arabia” (p. 145).

Marital status was an important factor in student attitude toward coeducational online cooperative learning and also appears to have an important effect on some aspects of student belief toward applying coeducational environments in Saudi Arabia. The result showed there was a significant difference between married and unmarried students in terms of the belief that it is possible to be comfortable while learning in a mixed-gender online cooperative learning environment in Saudi Arabia. Married students seem to have less positive belief regarding whether or not their family would allow them to learn in a mixed-gender online cooperative learning environment in Saudi Arabia. This reflects the concern married Saudis have regarding studying in mixed-gender environments, even in an online environment. Unmarried people may experience more freedom than those who are married. Again, married people in Saudi

Arabia receive more attention as far as the expectation to follow the social rules than those who are unmarried. This attention may put them under pressure when they learn in a mixed-gender environment and may subsequently decrease the level of comfort.

The difference in family position with respect to learning in a coeducational online cooperative learning environment may play a very important role in the difference in attitude between married and unmarried students. The idea of coeducational study is less popular with married students, as study with members of the opposite sex could be perceived in Saudi culture as a possible threat to the sanctity of the marriage relationship and consequently, coeducational study may not be supported by the spouse of the student. On the other hand, unmarried students do not have to consider the feelings of a spouse; therefore, these students may face less opposition from their parents when expressing the desire to study in a mixed-gender environment, as there is no perceived threat to the family within this type of study environment.

Another interesting result is shown in terms of the effect of academic major on student belief toward applying coeducational online cooperative learning in Saudi Arabia. It was interesting to see that political science students showed the highest positive attitude scores among the major groups, while the law students reported the lowest attitude scores toward applying coeducational online cooperative learning in Saudi Arabia. This result clearly showed the effect of the nature of the students' major on their beliefs. Political science students tend toward more concern for social movement toward modernism, equal opportunity, and human rights and therefore display a higher positive belief toward applying coeducational online cooperative learning environment in Saudi Arabia. On the other hand, law students are more

concerned with rules and the legality of applying such an environment in Saudi Arabia under the current Islamic justice system in Saudi Arabia. This may explain why law students reported the lowest positive attitudes toward applying coeducational online cooperative learning environments in Saudi Arabia.

Saudi Student Preference Regarding Online Communication Tools When Learning in a Coeducational Online Cooperative Learning Environment in Saudi Arabia

In general, most Saudi students reported preferring to use text-only chat, email, forums, and blogs with both sexes when learning in a coeducational online cooperative learning environment in Saudi Arabia. On the other hand, only half of them reported preferring to use voice chat with both sexes. Lastly, video-conferencing was the least preferred method of communication, with only 43 percent of the participants preferring to use it with both sexes. Asynchronous communication tools were reported as the most preferred method of coeducational communication due of the degree of flexibility they provide (Hrastinski, 2008). The low preference for using voice chat and video-conference may be due to the aspect of Saudi culture that is concerned with the appearance of the female voice and picture to unrelated males. The study data showed that Saudi students prefer to use communication technologies that do not include any voice interactions when communicating with the opposite gender. However, Saudi students did show a preference to use those technologies with voice interactions when communicating with the same sex. Video-conference received the highest resistance percentage, with 21.4 percent of the participants preferring not to use it. This result may reflect the Saudi students' position toward of the importance of the video element in

online interactions. The high student preference toward using text-only chat to communicate with both sexes may indicate students' strong beliefs that effective online communication can be reached by text-only chat without the need to include voice or video tools.

Factors Affecting Saudi Student Preference Regarding Online Communication Tools When Learning in a Coeducational Online Cooperative Learning Environment in Saudi Arabia

Gender. In terms of student gender, male students showed a higher preference to use text chat, email, forums, and blogs. However, males showed a significantly higher preference toward using video-conference with both sexes. This result was supported by the claims of Sussman and Tyson (2000) and Chou (2002) that gender can play a role in student preference toward online communication tools.

Based on the Saudi culture rooted in a radical comprehension of Islam, a male does not have to be concerned about his voice and appearance to unrelated females, while females must be concerned about their voice and appearance to unrelated males. These rules may put females under pressure when interacting with males by voice and may also require them to be inordinately careful and selective with their words. The significant effect of gender on student preference toward using voice chat and video-conference may due to the influence of these radical Islamic principles. However, more than 43 percent of the female respondents preferred to use voice chat with both sexes, and 42 percent of respondents prefer to use them with the same sex only. The female students' position toward using video conference was almost equal between not preferred, preferred with the same sex only, and preferred with both sexes. Again, the

large percentage of resistance to using video conference among females may due to the above religious principals.

Male students seemed to be more open than their female peers with respect to the use of audio/video communication technologies when learning in a coeducational online cooperative learning environment in Saudi Arabia.

Marital Status. Marital status has also played a role in student preference regarding online communication tools when learning in a coeducational online cooperative learning environment in Saudi Arabia. While both married and unmarried students showed a high preference toward using text-only chat, email, and forums, the significant effect of marital status was reflected in student preference with respect to the use of voice chat, video-conference, and blogs with both sexes. Unmarried students showed a significantly higher preference toward using audio and video communication technologies when compared to married students. This difference in preference between the two groups can be explained by the influence of Saudi culture that puts pressure on married people to be more concerned about social rules. Unmarried students also reported more experience with using blogs than their married peers. This result may be explained by the factor of age. Unmarried people tend to be younger than those who are married and, therefore, more updated with new technology such as blogs.

Age. The results showed that student age affected the preference toward using email when learning in a coeducational online cooperative learning environment in Saudi Arabia. Compared to other age groups, a high percentage of the youngest group (under 20 years of age) preferred to use email only with students from the same gender.

This result is due either to the small sample size (4.5%, n=32) or to their preference for using other more interactive technologies such as forums when interacting with students from the opposite sex.

Region. Student region has not shown any significant effect on student preference toward using any of the online communication tools. It was surprising to see students from the south showing the highest preference rate toward using video-conference with both sexes; however, this may be explained by the fact that only one participant from the south region was female, while the rest of the participants were male. Therefore, the regional factor seemed to have no effect on student preference.

Academic level. The bachelor, master, and doctoral students all showed a high positive preference toward using text-only chat, email, forums, and blogs with both sexes, and these students also admitted a preference toward using voice chat and video-conference with both sexes. While doctoral students showed a higher preference rate toward using voice chat with both sexes than the other academic level groups, bachelor students expressed the highest preferences rate toward using video-conference with both sexes among the groups. However, student academic level did not appear to play any significant role in student preference.

Major. Students from all majors exhibited a high positive preference toward the use of text-only chat, email, forums, and blogs with both sexes when learning in a coeducational online cooperative learning environment in Saudi Arabia. While education students showed the least preference toward voice chat and video-conference with both sexes, political science majors showed the most preference toward using them with

both sexes. However, academic major did not seem to have any significant effect on student preference toward any of the online communication tools.

Experience with the Internet. Students with greater levels of Internet experience showed a higher positive preference toward using text chat, email, forums, and blogs with both sexes when learning in a coeducational online cooperative learning environment in Saudi Arabia. Due to the small sample size of students with less than one year experience with the Internet, this section of the sample will be ignored in the analysis. The results revealed that students with a high level of Internet experience, more than three years, expressed a greater positive preference toward using all of the available online communication tools with both sexes than those who reported only 1-3 years experience in using the Internet. Those differences were significant with two tools, emails and forums. Students with less experience with the Internet showed a higher no-preference rate toward the two tools, while those with more experience with the Internet showed a higher positive preference rate toward using the two tools with both sexes. This result can be explained by the previous experience students had with using the Internet and the fact that this made them more confident and comfortable with using those online communication tools with both sexes.

Experience with online courses. Students with more experience with online courses showed a high positive preference rate toward using email, forums, and blogs with both sexes. However, while students with the most experience with online courses (more than 3 courses) showed a greater positive preference toward using voice chat and video-conference with both sexes, experience with online courses has not shown

any significant effect in student preference toward using any of the other online communication tools.

Prior experience with online communication tools. Prior experience with online communication tools seemed to play a significant role in student preference toward using online communication tools when learning in a coeducational online cooperative learning environment in Saudi Arabia. For all of the online communication tools in this study, prior experience with the tools was significantly related to student preference to use them when learning in a coeducational online cooperative learning environment in Saudi Arabia. The only exception to this was video-conferencing. Student experience with video-conference did not seem to affect their preference toward using video-conference when learning in a coeducational online cooperative learning environment in Saudi Arabia. This result may reflect student belief about the social and religious values affected by using video-conference and is therefore not affected by prior experience.

Recommendations for Practice

This study provided an understanding of how the new higher education generation in Saudi Arabia looks at the important issue of “sex-segregation” in higher institutes of learning in Saudi Arabia. As mentioned in the first chapter, traditional coeducation is not applicable to the Saudi society due to religious and social concerns. However, as the Internet opened the door for young Saudis from both genders to interact with each other through the use of public forums, chat rooms, and social networks, it also seems that the Internet can be an ideal environment for coeducation in Saudi Arabia. In this study, both male and female Saudi Arabian students agreed that

working cooperatively in online environments with members of the opposite sex does not conflict with their social and religious values. They also believe that their families will not prohibit them from learning in this type of mixed-gender online environment.

The Ministry of Higher Education in Saudi Arabia should take a serious step toward coeducation in online environments in Saudi Arabia. This step can begin with applying coeducation in private universities and universities located in regions that seem to be more open to the idea of online coeducation (east & west) and evaluating the implementation before generalizing online coeducation to other public universities in other regions. This implementation will be supported by the largely positive attitudes young students from both genders share toward learning together in online environments.

As the study showed, Saudi students feel that there are important advantages to learning with students from the opposite sex. Saudi males and females have very different experiences and viewpoints, thus giving them different views of the world and the issues facing them. This variety of perspectives is highly desired in today's education to assist learners with constructing their own knowledge and interpretations (Jonassen, 1999). Saudi educators should consider taking advantage of the Internet by supporting the movement toward online coeducation in order to increase learning interactions between the two genders and for the academic advantages students can get from learning in such environments.

The area of effectiveness of online coeducation should be the focus of online learning research in the near future. These studies can help reach an effective form of this constructivist environment. As this study showed, student region and local culture

can play an important role in their perception toward mixed-gender online education; therefore, it is expected that each region should adopt a different form of mixed-gender online education. The important elements that should be presented in all forms of mixed-gender education environments are to be leaner-centered and involve a sufficient level of interaction among students.

One of the aims of this study is to provide some recommendation regarding designing coeducational online cooperative learning environments in Saudi Arabia based on the data collected by this study. According to Morrison, Ross and Kemp (2001), instructional design is a systematic method of planning, developing, evaluating, and managing the instructional process effectively so that it will ensure competent performance by students. Examining attitude and preference is a fundamental step to help instructional designers prepare effective online courses that meet learner needs and sequentially improve student achievement, satisfaction, and completion (Dorman, 2005).

Based on the findings of this study, coeducational online cooperative learning seemed to be more appropriate for unmarried, young, bachelor degree students from the western and eastern regions. However, students from different regions, marital status, age, and degree seemed to maintain positive attitudes toward learning in this environment. It will also be appropriate for students from different genders, majors, and different levels of experience with both the Internet and online education. Therefore, an extensive analysis of the demographic information of learners is important before designing coeducational online cooperative learning in Saudi Arabia.

Instead of having a list of males and females working individually, instructional designers should also focus on providing cooperative learning activities that require students from both genders to learn together and exchange ideas in order to accomplish a shared goal. Studies investigating cooperative learning in an online environment have shown benefits including improving student achievement, increasing class participation, avoiding the sense of isolation, and providing an opportunity for the practice of new knowledge within small groups (Stacey, 1999; Chapman, 2005). As the study showed, both male and female Saudi students showed a high positive attitude toward online cooperative learning.

The recommendations for instructional designers in Saudi Arabia include focusing on asynchronous communication tools and text-online chat when designing online cooperative learning in mixed-gender environments in Saudi Arabia. The introduction of voice chat or video-conference should begin before implementation, and the designer should consider assessing student preference toward audio/video communication tools in the learner analysis. This stage should also assess student experience with online communication tools.

Limitations of the Study

The study includes some potential limitations due to the lack of available coeducation environments (including online educational environments) in Saudi Arabia. Therefore, the participants were randomly selected from the Saudi students in the United States. In addition, the participants were selected from Saudi students who have had their K-12 education in a mandatory gender-segregated educational system which may affect the generalization of the results outside of Saudi Arabia. The findings of this

study are also limited to online higher education settings only and may not be generalized to face-to-face or online k-12 settings.

Finally, the survey used in this study was developed by the researcher and was first used in this study. Therefore, despite the strong reliability level the data proved and the validity evidence collected in this study, more validity evidence is needed in the future to support the validity of the survey.

Future Studies

The current study is unique in terms of its aims and the target area. Investigating Saudi student attitudes toward coeducation in an online environment and their beliefs toward applying this environment in Saudi Arabia has not been studied in the past. However, this effort toward effective application of coeducational online cooperative learning should be continued, as more studies are needed. Some suggestions for future studies include replicating this study in Saudi Arabia. One of the limitations of this study was selecting the participants from Saudi students in the USA. Replicating this study in Saudi Arabia may give better understanding regarding study of student attitude, belief, and preference toward coeducational cooperative learning in Saudi Arabia. This will also increase the probability of generalizing the findings. Second, since this study focused only on attitude, belief, and preference toward coeducational online cooperative learning, it seems to be important that future studies look at the effect of learning in a coeducational online cooperative environment on Saudi student motivation. The existence of members from the opposite sex in online groups can be viewed as a positional motivational factor. Studying the effect of coeducational online cooperative learning on student achievement in specific subjects is also a significant topic to be

studied in the future. Such studies can provide evidence on where coeducational online cooperative learning works and where it does not.

Studying the pattern of communications occurring between the two genders in a coeducational online cooperative learning environment in Saudi Arabia will also be an interesting topic for future studies. The data collected from such studies can help with understanding the online learning communications occurring between the two genders in order to improve the way online learners communicate with the opposite sex.

In the management perspective, future studies can be conducted on studying Saudi faculty and administrator perceptions toward applying coeducational online cooperative learning environments in Saudi Arabia. According to Simonson (1995), positive faculty attitude is fundamental for successful implementation of online learning.

Some other ideas for future studies include conducting experimental studies regarding the best practice of coeducational online cooperative learning, conducting experimental studies on the effectiveness of online learning strategies such as problem solving in coeducation online learning environments, and investigating the policies and procedures for controlling interactions among students in coeducational online environments.

Conclusion

This study reached its aims of providing an understanding of Saudi student attitude toward learning cooperatively with students from the opposite gender as well as their beliefs toward applying this environment in Saudi Arabia. The absence of such environments in Saudi Arabia made the researcher choose to apply the study to Saudi students in the USA who had already completed an experience with a coeducational

online cooperative learning environment in their American universities. Therefore, students shared their attitudes after completing an experience with coeducational online cooperative learning, thus making their feelings and perspectives more reflective and valid.

The study concluded that Saudi students from both genders show a generally positive attitude toward learning in a coeducational online cooperative learning environment. The study also revealed that the participants believe that coeducational online cooperative learning will be possible, appropriate, and effective if applied in Saudi Arabia. Marital status was found to significantly affect student attitude toward coeducational online cooperative learning, while region was found to play a significant role on student belief toward applying coeducational online cooperative learning in Saudi Arabia.

Saudi students also showed a high positive preference for the use of text-only chat, email, forums, and blogs with both sexes when studying in a coeducational online cooperative learning environment in Saudi Arabia. However, they showed a greater positive preference toward using voice chat and video-conference with the same sex only.

Based on the results, the study suggests that the Ministry of Higher Education in Saudi Arabia should consider mixed-gender online education and take a step forward to apply this environment in Saudi Arabia. The study also suggests that Saudi educators should support this movement toward online coeducation in Saudi Arabia by recognizing the academic advantages of online coeducation, taking advantage of the capabilities of online learning technologies, and the positive attitudes that the new

generation of higher education students' show toward this environment in order to create and apply such environment. Finally, because this study was unique in its aims, the study states that more research is needed on mixed-gender online education in Saudi Arabia to reach the highest effective form of this environment.

Appendix A: HIC Approval

WAYNE STATE UNIVERSITY

HUMAN INVESTIGATION COMMITTEE
101 East Alexandrine Building
Detroit, Michigan 48201
Phone: (313) 577-1628
FAX: (313) 993-7122
http://hic.wayne.edu

Full AAHRPP Accreditation

MEMORANDUM

NOTE: This is not an IRB approval
(Specific Minor Revisions Required)

To: Salim Alanazy
Administration & Organization Stud

From: Ellen Barton, Ph.D. N. Nathan for/5
Chairperson, Behavioral Institutional Review Board (B3)

Date: April 30, 2010

RE: HIC #: 0411910B3X
Protocol Title: Saudi Students' Attitude, Beliefs, and Preferences Toward Coeducational Online Coopertative Learning
Sponsor:
Protocol #: 1004008302

The above-referenced exempt protocol was reviewed by the Chairperson/designee of the Wayne State University Institutional Review Board (B3). The following is requested:

- Protocol Summary Form, #7 - Salim Alanzy and Monica Tracey must answer the financial conflict of interest question.
- Protocol Summary Form, #36 - Please provide a copy of the recruitment email that will be sent to participants.
- Consent Form/Internet nformation Sheet - Please revise the heading of the consent document to read "Information Sheet" instead of "Consent Form."

Please direct your response to Erin Stohl, Research Compliance Administrator.

Include with your resubmission:

- A cover memo addressing the above issues.
- One copy of this memo and accompanying papers.
- *As applicable*, one copy of the revised pages of the protocol, protocol summary form, consent/assent/information sheet, advertisements/flyers/participant brochures, and/or HIPAA forms with **highlighting** of all changes made (please **do not** use the Microsoft tracking tool).
- Two clean copies (without highlighting) each of the revised consent form requiring HIC approval stamp.
- Note: Forms should be downloaded from the HIC website at **each** use.

Failure to respond within 60 days of the date of this memo will be interpreted as a withdrawal of the study.

Appendix B: The Recruitment Email

Dear Saudi Student,
I am inviting you to participate in my study: Saudi Students' Attitudes, Beliefs, and Preferences Toward Coeducational Online Cooperative Learning. The survey is provided in both English and Arabic languages. If you are interested, please click on any of the following links to participate:
Arabic Version of the Survey
English Version of the Survey
Thank you,
Salim Alanazy
3134453756

عزيزي الطالب، عزيزتي الطالبة:
أدعوكم للمشاركة في هذه دراسة إتجاهات و تصورات و تفضيلات الطلاب الطلاب السعوديين تجاه التعليم التعاوني المختلط الجنسين عن طريق الإنترنت. تتوفر الإستبانة باللغتين العربية و الإنجليزية. إذا كنت ترغب بالمشاركة أرجوا الضغط على أحد الروابط التالية:
الإستبانة باللغة العربية
الإستبانة باللغة الإنجليزية
و لكم جزيل الشكر،
سالم العنزي
3134453756

Appendix C: Research Information Sheet (English)

Research Information Sheet

Title of Study: *Saudi Students' Attitudes, Beliefs, and Preferences Toward Coeducation Online Cooperative Learning.*

Principal Investigator (PI): Salim Alanazy
Department of Instructional Technology
313-445-3756

Purpose:
You are being asked to be in a research study of investigating *Saudi students' attitudes, beliefs, and preferences toward coeducation online cooperative learning* because you are a Saudi student who currently enrolled in an American university. This study is being conducted through the Internet at Wayne State University. **Please read this form and ask any questions you may have before agreeing to be in the study.**

In this research study the attitudes and beliefs of the Saudi Arabian student towards learning in a coeducation online cooperative learning environment will be investigated. The study will also look at student preference regarding web-based communication tools while interacting with their peers in CEOCL in Saudi Arabia. The respondents' attitudes, beliefs, and preferences are expected to be affected by a number of demographic factors, including: 1) gender, 2) age, 3) marital status, 4) major, 5) region of residence, 6) academic level, 7) experience with online courses, and 8) years of Internet experience.

Study Procedures:
If you agree to take part in this research study, you will be asked to fill out a web-based questionnaire. The questionnaire starts with three inclusion criteria questions. The questionnaire consists of four parts and it will take about 10-15 minutes to complete and by clicking on the *submit* icon at end of the questionnaire indicates your consent to participate in the study.

Benefits:
As a participant in this research study, there may be no direct benefit for you; however, information from this study may benefit other people now or in the future. The results of this study will also help in improving online education in Saudi Arabia.

Risks:
There are no known risks at this time to participation in this study.

Study Costs:
Participation in this study will be of no cost to you.

Compensation:
You will not be paid for taking part in this study.

Confidentiality:
All information collected about you during the course of this study will be kept without any identifiers. You will not be asked about your personal identification.

Voluntary Participation/Withdraw:
Taking part in this study is voluntary. You have the right to choose not to take part in this study. If you decide to take part in the study you can later change your mind and withdraw from the study. You are free to only answer questions that you want to answer. You are free to withdraw from participation in this study at any time. Your decisions will not change any present or future relationship with Wayne State University or its affiliates, or other services you are entitled to receive.
The PI may stop your participation in this study without your consent. The PI will make the decision and let you know if it is not possible for you to continue. The decision that is made is to protect your health and safety, or because you did not follow the instructions to take part in the study.

Questions:
If you have any questions about this study now or in the future, you may contact Salim Alanazy or one of his research team members at the following phone number 313-445-3756. If you have questions or concerns about your rights as a research participant, the Chair of the Human Investigation Committee can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call (313) 577-1628 to ask questions or voice concerns or complaints.

Consent to Participate in a Research Study
By clicking on the *submit* icon at end of the questionnaire indicates your consent to participate in the study. Clicking on the *submit* icon at end of the questionnaire also indicates that you have read this entire consent form, including the risks and benefits, and have had all of your questions answered.

Appendix D: Saudi Students' Attitudes, Beliefs, and Preferences Toward Coeducational Online Cooperative Learning Survey (English)

Welcome

Welcome to Saudi Students' Attitudes, Beliefs, and Preferences Toward Coeducational Online Cooperative Learning Survey

Wayne State University

College Of Education

Administrative and Organizational Studies Division

Department of Instructional Technology

Part1. Learner Characteristics

This section includes personal information. Please click on the choice that describe your personality.

Gender

- ◯ Male
- ◯ Female

Age

- ◯ under 20
- ◯ 20-29
- ◯ 30-39
- ◯ 40 and older

Marital status

- ◯ Married
- ◯ Unmarried

Region of resident in Saudi Arabia:

- ◯ North: Northen Borders, Aljouf, Hail, and Tabook
- ◯ South: Jajran, Asser, and Albaha
- ◯ Center: Riyadh and Alqassem
- ◯ East: Eastern Region
- ◯ West: Makkah, Almadenah, and Jazan

Current academic level:

- ◯ Bachelor
- ◯ Master
- ◯ Doctorate

Major:

- ◯ Art
- ◯ Business
- ◯ Education
- ◯ Engineering
- ◯ Political science
- ◯ Medicine
- ◯ Law
- ◯ Science
- ◯ Computer Science

Experience of using the Internet:

- ◯ Less than 1 year
- ◯ 1-3 years
- ◯ More than 3 years

Experience with online courses:

- ◯ One course
- ◯ 2-3 courses
- ◯ More than 3 courses

Part1. Learner Characteristics

This section includes questions regarding your experience in using online communication tools.

Experience with online communication tools:

Please click on the choice that best describes your level of experience of using each of the following online communication tools.

	No Experience	Some Experience	A lot of Experience
Text-only chat (e.g. communicating by text (only) using Skype, MSN messenger, Yahoo messenger, etc.)	◯	◯	◯
Voice chat (e.g. communicating by microphone/speakers using Skype, MSN messenger, Yahoo messenger, etc.)	◯	◯	◯
Video conference (audio & video) (e.g. communicating by microphone/speakers & web cam using Skype, MSN messenger, Yahoo messenger, etc.)	◯	◯	◯
Email (e.g. Hotmail, Yahoo, Gmail...etc.)	◯	◯	◯
Forums (e.g. discussion board)	◯	◯	◯
Blogs (e.g. Facebook, MySpace, Maktoob blogs, Blogger)	◯	◯	◯

Part2. Attitude toward Learning in CEOCLE

This section includes questions regarding your attitude toward learning in a coeducational online cooperative learning environment. For each statement, please click on the box that best describes to what extent you would agree or disagree with that statement

When learning in a coeducational online cooperative learning environment,

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
I enjoy studying through the internet.	◯	◯	◯	◯	◯
Using the internet to communicate with my group is easy for me.	◯	◯	◯	◯	◯
I feel comfortable interacting with my group online.	◯	◯	◯	◯	◯
I feel comfortable communicating with the instructor online.	◯	◯	◯	◯	◯
Learning with a group helps me to do the tasks.	◯	◯	◯	◯	◯
Learning with a group helps me understand the content.	◯	◯	◯	◯	◯
Learning with a group makes me an active participant in online discussion.	◯	◯	◯	◯	◯
In online courses, I prefer to work cooperatively with group rather than working alone.	◯	◯	◯	◯	◯

Part2. Attitude toward Learning in CEOCLE (Cont.)

When learning in a coeducational online cooperative learning environment,

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
I enjoy learning in a mixed-gender group.	○	○	○	○	○
Learning with students from the opposite sex is appropriate.	○	○	○	○	○
Learning with students from the opposite sex is beneficial.	○	○	○	○	○
If my group was comprised of only the same sex, it would be less interesting.	○	○	○	○	○
I prefer learning with a group comprised of mixed-gender members.	○	○	○	○	○
The existence of both male and female members in my group is important for me.	○	○	○	○	○
The female and male students each possess specific skills and abilities which contribute to the success of the group.	○	○	○	○	○
In my next online project, I will choose to work with a mixed-gender group.	○	○	○	○	○
Coeducational online cooperative learning makes online courses more interactive.	○	○	○	○	○
Coeducational online cooperative learning is beneficial for me.	○	○	○	○	○
Coeducational online cooperative learning is comfortable for me.	○	○	○	○	○
Coeducational online cooperative learning is appropriate for my studying behaviors.	○	○	○	○	○
Coeducational online cooperative learning gives me more opportunity to express my ideas.	○	○	○	○	○
Coeducational online cooperative learning gives me more opportunity to be an active learner.	○	○	○	○	○
In general, I like to study in a coeducational online cooperative learning environment.	○	○	○	○	○

Part3. Beliefs toward Learning in CEOCLE in Saudi Arabia

This section includes questions regarding your beliefes toward applying coeducation online cooperative learning in Saudi Arabia. For each statement, please click on the box that best describes to what extent you would agree or disagree with that statement.

I believe that,

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Learning in a mixed-gender online cooperative learning environment will be possible in Saudi Arabia.	○	○	○	○	○
Learning in a mixed-gender online cooperative learning environment will be appropriate in Saudi Arabia.	○	○	○	○	○
Applying mixed-gender online cooperative learning in Saudi Arabia will enhance student learning.	○	○	○	○	○
Saudi male and female students each possess specific skills and abilities that make learning in a mixed-gender online cooperative learning helpful for each of them.	○	○	○	○	○
It is possible to be comfortable while learning in a mixed-gender online cooperative learning environment in Saudi Arabia.	○	○	○	○	○
Learning in a mixed-gender online cooperative learning environment does not conflict with my social values.	○	○	○	○	○
Learning in a mixed-gender online cooperative learning environment does not conflict with my religious principles.	○	○	○	○	○
Learning in a mixed-gender online cooperative learning environment does not conflict with the Saudi social values.	○	○	○	○	○
My family will allow me to learn in a mixed-gender online cooperative learning environment in Saudi Arabia.	○	○	○	○	○
In general, I support applying coeducational online cooperative learning in Saudi Arabia.	○	○	○	○	○

Part4. Preferences regarding the online communication tools when learning i...

This section includes questions regarding the web-based communication tools you prefer to use when learning in a coeducational online cooperative learning environment in Saudi Arabia. Please click on the choice that best describes your level of preference with each of the following online communication tools:

If I learn in a coeducation online cooperative learning environment in Saudi Arabia, I prefer to communicate with my group (from both sexes) using:

	Not Preferred	Preferred with the Same Sex Only	Preferred with both Sexes
Text-only chat (e.g. communicating by only text using MSN messenger, Yahoo messenger, etc.)	○	○	○
Voice chat (e.g. communicating by microphone/speakers using MSN messenger, Yahoo messenger, etc.)	○	○	○
Video conference (audio & video) (e.g. communicating by microphone/speakers & web cam using MSN messenger, Yahoo messenger, etc.)	○	○	○
Email (e.g. Hotmail, Yahoo, Gmail)	○	○	○
Forums (e.g. discussion board)	○	○	○
Blogs (e.g. Facebook, MySpace, Maktoob blogs, Blogger)	○	○	○

Appendix E: Research Information Sheet (Arabic)

معلومات البحث

عنوان الدراسة: *إتجاهات و تصورات و تفضيلات الطلاب السعوديين تجاة التعليم التعاوني المختلط الجنسين عن طريق الإنترنت*

الباحث الرئيسي :

سالم مبارك العنزي
قسم تكنولوجيا التعليم
جامعة وين ستيت
(313) 445-3756

الغرض من الدراسة
كطالب (طالبة) سعودي بدرس حاليا في جامعة أمريكية فقد تمت دعوتك للمشاركة في دراسة إتجاهات و تصورات و تفضيلات الطلاب السعوديين تجاة الدراسة في بئية تعليمية تعاونية مختلطة الجنسين عن طريق الإنترنت. أرجوا قراءة هذا النموذج و القيام بطرح أي أسئلة لديك قبل الموافقة على المشاركة في هذة الدراسة.

هذة الدراسة سوف تبحث إتجاهات و تصورات الطلاب السعوديين تجاة الدراسة في بئية تعليمية تعاونية مختلطة الجنسين عن طريق الإنترنت. سوف تنظر الدراسة أيضا إلى تفضيلات الطلاب بخصوص أدوات الأتصال عن طريق الإنترنت التى يفضلون أستخدامها عند التفاعل مع الطلاب الأخرين عند التعلم في بيئة تعليمية مختلطة الجنسين في المملكة العربية السعودية. إتجاهات و تصورات و تفضيلات الطلاب يتوقع أن تتأثر بعدد من العوامل الديموقرافية مثل: 1) الجنس، 2) العمر، 3) الحالة الإجتماعية، 4) التخصص، 5) منطقة الإقامة، 6) الدرجة الأكاديمية، 7) الخبرة في الدراسة بالأنترنت، 8) الخبرة في أستخدام الإنترنت.

إجراءات الدراسة

أذا وافقت على المشاركة بالدراسة سوف يطلب منك تعبئة إستبانة عن طريق الإنترنت. هذة الإستبانة تبدأ بثلاثة أسئلة لتحديد مدى مطابقتك لشروط المشاركة. تتكون الإستبانة من أربعة أقسام و سوف تستغرق من 10 إلى 15 دقيقة لإكمالها. الضغط على الزر (أعتمد) في نهاية الإستبانة يعني موافقتك على المشاركة في الدراسة.

فوائد الدراسة
كمشارك في هذة الدراسة قد لايكون هناك فائدة مباشرة لك من خلال مشاركتك في الدراسة. لكن المعلومات التى سوف توفرها هذة الدراسة سوف تفيد أناس أخرين الأن أو في المستقبل. كما أن نتائج هذة الدراسة سوف تسهم في تطوير التعليم عن الطريق الإنترنت في المملكة العربية السعودية.

مخاطر هذه الدراسة
لايوجد هناك أي مخاطر معروفة في الوقت الحالى للمشاركة في هذة الدراسة.

التكلفة
لن يكون هناك أي تكلفة مترتبة عليك خلال المشاركة في هذه الدراسة.

التعويض
مشاركتك في هذة الدراسة مجانية وسوف لن تتلقى أي مقابل لقاء مشاركتك في هذة الدراسة.

الخصوصية
جميع المعلومات التى سوف يتم جمعها خلال الدراسة سوف تكون محمية الخصوصية و سوف لن يتم توجية أي أسئلة لتحديد الهوية الشخصية كالإسم أو الهوية أو بينات الإتصال. عند إجابتك على الإستبانة و إرسالها سوف لن يتضمن ذلك أي معلومات عن شخصيتك و سوف تصل إجاباتك فقط بحث لن يتمكن أحد من ربط أجابات محددة بشخص معين.

المشاركة والإنسحاب
المشاركة في هذه الدراسة تطوعية. عند رغبتك في المشاركة فأنة يحق لك تغيير رائيك و الإنسحاب من الدراسة. كما أن لك الحرية في أختيار الأسئلة التى تريد إجابتها. و لك الحق أيضا في التوقف و الإنسحاب من المشاركة في هذة الدراسة في أي وقت تشاء. علما بأن قرارتك حيال المشاركة أو الإنسحاب من الدراسة سوف لن يؤثر على علاقتك بجامعة وين ستيت حاليا أو مستقبلا.

الاسئلة:
أذا كان لديك أي أسئلة حول هذه الدراسة في الوقت الحالى او في المستقبل يمكنك الإتصال بالباحث سالم العنزي أو أي من فريق البحث على الرقم التالي 3134453756. أذا كان لديك أي أسئلة حول حقوقك كمشارك في هذه الدراسة يمكنك الإتصال على لجنة أخلاقيات البحث العلمي **بجامعة وين ستيت على الرقم 3135771628.**

الموافقة على المشاركة:
بالضغط على الزر (أعتمد) في نهاية الإستبانة فهذا يعني موافقتك على المشاركة بالدراسة. كما أن ذلك يعني أيضا قرأتك لجميع ماذكر في تقرير الموافقة على المشاركة . و أنة قد أجيبت جميع تساؤلاتك حول المشاركة في الدراسة.

Appendix F: Saudi Students' Attitudes, Beliefs, And Preferences Toward Coeducational Online Cooperative Learning Survey (Arabic)

أهلا و سهلا

مرحبا بك في دراسة إتجاهات و تصورات و تفضيلات الطلاب السعوديين تجاه التعليم التعاوني المختلط الجنسين عن طريق الإنترنت

جامعة وين ستيت

كلية التربية

قسم تكنولوجيا التعليم

Wayne State University

College of Education

Department Of Instructional Technology

الجزء الاول: خصائص المتعلم

هذا الجزء يتضمن أسئلة حول معلوماتك الشخصية. أرجوا الضغط على الخيار المنطبق على شخصيتك

الجنس

- ذكر
- أنثى

العمر

- أقل من 20 سنة
- من 20 الى 29 سنة
- من 30 الى 39 سنة
- سنة فما فوق 40

الحالة الإجتماعية

- متزوج
- غير متزوج

منطقة الإقامة في المملكة العربية السعودية

- الشمال: الحدود الشمالية – الجوف – حائل - تبوك
- الجنوب: نجران – عسير - الباحة
- الوسط: الرياض - القصيم
- الشرق: المنطقة الشرقية
- الغرب: مكة المكرمة – المدينة المنورة - جيزان

المرحلة التعليمية الحالية

- بكالوريس
- ماجستير
- دكتوراة

التخصص

- ◯ الفنون
- ◯ إدارة الأعمال
- ◯ التربية و التعلم
- ◯ الهندسة
- ◯ العلوم السياسية
- ◯ العلوم الطبية
- ◯ القانون
- ◯ العلوم الطبيعية
- ◯ العلوم الكمبيوتر

الخبرة في إستخدام الإنترنت

- ◯ أقل من سنة واحدة
- ◯ من سنة الى ثلاث سنوات
- ◯ أكثر من ثلاث سنوات

عدد المقرارات الدراسية التى قمت بدارستها عن طريق الإنترنت

- ◯ مقرر واحد
- ◯ من مقررين الى ثلاثة مقررات
- ◯ أكثر من ثلاثة مقررات

الجزء الأول: خصائص المتعلم

هذا الجزء يتضمن أسئلة حول خبرتك في إستخدام أدوات الإتصال عن طريق الإنترنت

الخبرة في إستخدام أدوات الإتصال عن طريق الإنترنت

أرجوا الضغط على الخيار الذي ينطبق على مستوى خبرتك في إستخدام كل من أدوات الإتصال عن طريق الإنترنت التالية

	لدي خبرة كبيرة	لدي بعض الخبرة	ليس لدي خبرة
المحادثة الكتابية: مثل إستخدام ماسنجر الهوتميل او الياهو كتابياً فقط	◯	◯	◯
المحادثة الصوتية: مثل إستخدام المايكرفون و السماعات للتواصل صوتيا عن طريق ماسنجر الهوتميل أو الياهو	◯	◯	◯
مؤتمر الفيديو(محادثة الفيديو): مثل إستخدام المايكرفون و السماعات و كاميرة الفيديو للتواصل بالصوت و الصورة بإستخدام سكايب او ماسنجر الهوتميل او الياهو و غيرها من برامج التواصل	◯	◯	◯
الإيميل: مثل إستخدام إيميل الهوتميل أو الياهو أو الجي ميل	◯	◯	◯
المنتديات: مثل إستخدام المنتديات أو لوحة النقاش (Disscussion Board)	◯	◯	◯
المدونات: مثل إستخدام Bloggers أو الفيس بوك أو ماي سبيس أو مدونات مكتوب أو غيرها من المدونات للتواصل مع الآخرين	◯	◯	◯

...الجزء الثاني: الموقف من التعلم في بئية تعليمة تعاونية مختلطة الجنسين عن طري

هذا الجزء يتضمن أسئلة حول موقفك تجاة التعلم في بيئة تعليمية تعاونية مختلطة الجنسين عن طريق الإنترنت. في كل من العبارات التالية أرجوا الضغط على الخيار الذي يعبر عن مدى موافقتك او عدم موافقتك مع العبارة

عند التعلم في بئية تعليمية تعاونية مختلطة الجنسين عن طريق الإنترنت فإن (فإنني) :-

	موافق بشدة	موافق	غير متأكد	غير موافق	غير موافق بشدة
الدراسة عن طريق الإنترنت ممتعة بالنسبة لي	○	○	○	○	○
أستخدم الإنترنت بسهولة للتواصل مع مجموعتي	○	○	○	○	○
التفاعل مع مجموعتي عن طريق الإنترنت ملائم بالنسبة لي	○	○	○	○	○
التواصل مع الأستاذ عن طريق الإنترنت ملائم بالنسبة لي	○	○	○	○	○
التعلم مع مجموعة يساعدني على أداء الواجبات المطلوبة	○	○	○	○	○
التعلم مع مجموعة يساعدني على فهم المحتوى التعليمي	○	○	○	○	○
التعلم مع مجموعة يجعلني مشاركاً نشيطاً في النقاشات التعليمية	○	○	○	○	○
في المقررات عن طريق الإنترنت، أفضل العمل مع مجموعه تعاونياً بدلاً من العمل وحيداً	○	○	○	○	○

الموقف من التعلم في بئية تعليمة تعاونية مختلطة الجنسين عن طريق الإنترنت - 2

أرجوا الملاحظة أن هذا البحث يستهدف الإختلاط بين الجنسين في الدراسة عن طريق الإنترنت (Online Courses) فقط

عند التعلم في بئية تعليمية تعاونية مختلطة الجنسين عن طريق الإنترنت فإن (فإنني) :-

	موافق بشدة	موافق	غير متأكد	غير موافق	غير موافق بشدة
التعلم مع مجموعة مختلطة الجنسين (ذكور و إناث) ممتع بالنسبة لي	○	○	○	○	○
التعلم مع أفراد من الجنس الأخر مقبول بالنسبة لي	○	○	○	○	○
التعلم مع أفراد من الجنس الأخر مفيد بالنسبة لي	○	○	○	○	○
لو كانت مجموعتي تتكون فقط من أفراد من نفس الجنس لكانت أقل تشويقاً	○	○	○	○	○
أفضل التعلم مع مجموعه تتكون من أفراد من الجنسين	○	○	○	○	○
وجود أفراد ذكور و إناث في مجموعتي مهم بالنسبة لي	○	○	○	○	○
الطلاب الذكور و الطالبات الإناث لكل منهم مهارات و إمكانيات خاصة تسهم في نجاح المجموعة	○	○	○	○	○
في المشروع القادم عن طريق الإنترنت، سوف أختار أن أعمل مع مجموعة مختلطة الجنسين	○	○	○	○	○
التعلم التعاوني المختلط الجنسين عن طريق الإنترنت يجعل المقررات أكثر تفاعلية	○	○	○	○	○
التعلم التعاوني المختلط الجنسين عن طريق الإنترنت مفيد بالنسبة لي	○	○	○	○	○
التعلم التعاوني المختلط الجنسين عن طريق الإنترنت ملائم بالنسبة لي	○	○	○	○	○
التعلم التعاوني المختلط الجنسين عن طريق الإنترنت يتماشى مع سلوكياتي في الدراسة	○	○	○	○	○
التعلم التعاوني المختلط الجنسين عن طريق الإنترنت يمنحني فرصة أكبر للتعبير عن أفكاري	○	○	○	○	○
التعلم التعاوني المختلط الجنسين عن طريق الإنترنت يمنحني فرصة أكبر لأكون متعلماً نشيطاً	○	○	○	○	○
بشكل عام، أنا أحب أن أدرس في بيئة تعليمية تعاونية مختلطة الجنسين عن طريق الإنترنت	○	○	○	○	○

...الجزء الثالث: التصورات بخصوص تطبيق التعليم في بيئة تعاونية مختلطة الجنسين ع

هذا القسم يتضمن أسئلة عن إعتقاداتك و تصوراتك بخصوص تطبيق بيئة التعليم التعاونية مختطلة الجنسين عن طريق الانترنت في المملكة العربية السعودية. في كل من العبارات التالية أرجوا الضغط على الخيار الذي يعبر عن مدى موافقتك أو عدم موافقتك مع العبارة

أرجوا الملاحظة أن هذا البحث يستهدف الإختلاط بين الجنسين في الدراسة عن طريق الإنترنت (Online Courses) فقط

من وجهة نظري الشخصية، أعتقد أن

	موافق بشدة	موافق	غير متأكد	غير موافق	غير موافق بشدة
التعلم في بيئة تعليمية تعاونية مختلطة الجنسين عن طريق الإنترنت سوف يكون ممكناً في المملكة العربية السعودية	○	○	○	○	○
التعلم في بيئة تعليمية تعاونية مختلطة الجنسين عن طريق الإنترنت سوف يكون مناسباً في السعودية	○	○	○	○	○
تطبيق التعليم التعاوني المختلط الجنسين عن طريق الإنترنت في السعودية سوف يسهم في تحسين تعلم الطلاب	○	○	○	○	○
الطلاب السعوديين الذكور و الإناث لكل منهم مهارات و قدرات خاصة تجعل تعلمهم معاً في بيئة تعليمة مختلطة الجنسين عن طريق الإنترنت مفيد لهم جميعاً	○	○	○	○	○
من الممكن أن تشعر بالإرتياح و التأقلم و أنت تتعلم في بيئة تعلمية تعاونيه مختلطه الجنسين عن طريق الإنترنت في السعودية	○	○	○	○	○
التعلم في بيئة تعليمية تعاونية مختلطة الجنسين عن طريق الإنترنت لايتعارض مع قيمي الاجتماعية	○	○	○	○	○
التعلم في بيئة تعليمية تعاونية مختلطة الجنسين عن طريق الإنترنت لا يتعارض مع مبادئي الدينية	○	○	○	○	○
التعلم في بيئة تعليمية تعاونية مختلطة الجنسين عن طريق الإنترنت لا يتعارض مع قيم المجتمع السعودي بشكل عام	○	○	○	○	○
عائلتي سوف تسمح لي بالتعلم في بيئة تعليمية تعاونية مختلطة الجنسين عن طريق الإنترنت في السعودية	○	○	○	○	○
بشكل عام، أنا أؤيد تطبيق التعليم التعاوني المختلط الجنسين عن طريق الإنترنت في المملكة العربية السعودية	○	○	○	○	○

الجزء الرابع: تفضيلات بخصوص وسائل الاتصال عند التعلم في بئية تعليمية تعاوني...

هذا الجزء يتضمن أسئلة حول أدوات الإتصال عن طريق الإنترنت التى تفضل إستخدامها عند التعلم في بيئة تعليمية تعاونية مختلطة الجنسين في المملكة العربية السعودية. أرجوا الضغط على الخيار الذي ينطبق على مدى تفضيلك لإستخدام كل من أدوات الإتصال التالية للتواصل مع فريقك عند التعلم في بيئة تعليمية تعاونية مختلطة الجنسين في المملكة العربية السعودية

أرجوا الملاحظة أن هذا البحث يستهدف الإختلاط بين الجنسين في الدراسة عن طريق الإنترنت (Online Courses) فقط

لو تعلمت في بئية تعليمية تعاونية مختلطة الجنسين عن طريق الإنترنت في المملكة العربية السعودية، فانني أفضل التواصل مع أعضاء فريقي عن طريق:-

	أفضلها مع كلا الجنسين	أفضلها مع نفس الجنس فقط	لا أفضلها
المحادثة الكتابية: مثل إستخدام ماسنجر الهوتميل أو الياهو كتابيا فقط	○	○	○
المحادثة الصوتية: مثل إستخدام المايكرفون و السماعات للتواصل صوتيا عن طريق ماسنجر الهوتميل أو الياهو	○	○	○
مؤتمر الفيديو (محادثة الفيديو): مثل إستخدام المايكرفون و السماعات و كاميرة الفيديو للتواصل بالصوت و الصورة بإستخدام ماسنجر الهوتميل أو الياهو و غيرها من برامج التواصل	○	○	○
الإيميل: مثل إستخدام إيميل الهوتميل أو الياهو أو الجي ميل	○	○	○
المنتديات: مثل إستخدام المنتديات أو لوحة النقاش (Disscussion Board)	○	○	○
المدونات: مثل إستخدام Bloggers أو الفيس بوك أو ماي سبيس أو مدونات مكتوب أو غيرها من المدونات للتواصل مع الأخرين	○	○	○

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ABSTRACT

SAUDI STUDENTS' ATTITUDES, BELIEFS, AND PREFERENCES TOWARD COEDUCATIONAL ONLINE COOPERATIVE LEARNING

by

SALIM MUBARAK ALANAZY

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Advisor: Dr. Monica W. Tracey

Major: Instructional Technology

Degree: Doctor of Philosophy

In Saudi Arabia, the single-sex learning environment is the only choice for students due to social and religious concerns. Recently, online education is a growing field in Saudi Arabia. However, there is a paucity of research examining coeducational online cooperative learning that allows virtual interaction between male and female learners. The purpose of the study was to investigate the attitude, belief, and preference of Saudi students regarding working in a coeducation online cooperative learning environment. The participants of the study were 707 students from the Saudi students in the USA. An electronic questionnaire was developed by the researcher for the purpose in this study.

The study concluded that Saudi students from both genders showed a generally positive attitude toward learning in a coeducational online cooperative learning environment. The study also revealed that the participants believe that coeducational online cooperative learning will be possible, appropriate, and effective if applied in Saudi Arabia. Marital status was found to significantly affect student attitude toward coeducational online cooperative learning, while region was found to play a significant

role on student belief toward applying coeducational online cooperative learning in Saudi Arabia. Saudi students also showed a high positive preference for the use of text-only chat, email, forums, and blogs with both sexes when studying in a coeducational online cooperative learning environment in Saudi Arabia. However, they showed a greater positive preference toward using voice chat and video-conference with the same sex only. Finally, the study provided a number of suggestions regarding the general application and design of online cooperative learning in Saudi Arabia.

AUTOBIOGRAPHICAL STATEMENT

Name: Salim Mubarak Alanazy

Education	Wayne State University Instructional Technology Doctoral of Philosophy, 2011
	University of Central Missouri Educational Technology Master of Science in Education, 2006
Work Experience	Aljouf University, Skaka, Saudi Arabia Department of Instructional Technology Lecturer, 2006-present
	Aljouf Teachers' College, Skaka, Saudi Arabia Department of Instructional Technology Teaching Assistant, 2000-2006
	Northern Borders School District, Saudi Arabia Elementary Science Teacher, 1998 – 2000
Related Experience	University of Central Missouri Instruction and Information Technology Center E-learning Instructional Designer, January/2006 – May/2006 (Internship)
Community Engagement Activities	Aljouf Teachers' College Committee of Student Support Chair**,** 2001-2003
	Saudi Student Association Wayne State University Founder /President**,** 2008-2009
Professional Organizations Membership	Association for Educational Communications and Technology (AECT) American Society for Training and Devolvement (ASTD) International Association for K-12 Online Learning (iNACOL)