

Students' Engagement and Interaction in Higher Education: Middle Eastern Students' Motivation and Technology

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Abstract: The purpose of the study was to research the problem of student engagement and interaction in classrooms in Middle East Countries: Students are not motivated to interact in their classrooms, depending only on the lectures delivered by instructors in higher education. Students are not exposed to enough practice of speaking on their own and hence the motivation to interact among them in the classroom is almost absent. The variables in addressing the problem were the four aspects presented by Keller (2008) in his motivational theory (*Attention, Relevance, Satisfaction, Confidence*). The focus of the study was to find ways to motivate students to interact with each other and with the learning activities in classrooms thinking of technology as a means to do so. Through this study, the researcher wanted to explore students' perceptions about technology and the relationship of its use to their motivation to interact in their classrooms. The findings supported Keller's motivational theory and its components regarding using technology to motivate students to interact with their instructors, with the learning activities, and with each other. There was a significant correlation between using technology in classrooms and gaining students' attention. There was a significant correlation between using technology and the relevance of the material presented in classrooms and students' real life. There was a significant correlation between using technology and students' confidence in participating in classrooms using technology. There was a significant correlation between using technology and students' satisfaction with the material presented in classrooms. ARCS was significantly correlated with students' learning experiences, students' learning strategies, and computer use in course.

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1. Introduction

Students' Motivation and Interaction in Classrooms

There was a time when the traditional approach of teaching was adopted by most of the teachers and the learner was dependent only on the lecture delivered by the teacher (Abu-Malhim & Abdel-Rahman, 2009; Al-Senaidi, Lin, & Poirot, 2009; Ghosh, 2010). Students were not exposed to enough practice of speaking on their own; hence the interaction among them in the classroom was almost absent. But as the education system changed with time so have the teaching methods (Abdel-Rahman, 2009; Abouchdid & Eid, 2004; Ghosh, 2010). The education system now demands more student interaction rather than just listening to the instructor. Classroom interaction is very essential in today's education system (Al Musawi & Abdelraheem, 2004; Abouchdid & Eid, 2004; Ghosh, 2010; Sadik, 2008; Wiggins & McTighe, 2008). According to Ghosh (2010), classroom interaction is a practice that enhances the development of two very important language skills (speaking and listening) among the learners. This device helps learners to be competent enough to think critically and share their views among their peers. Baldwin (2011), accordingly, sees learning

as a human activity that involves engagement of one sort or another between students and educators. Chapman (2003) offers a possible definition for student engagement, which includes students' cognitive investment in, active participation in, and emotional commitment to their learning.

Abu-Malhim & Abdel-Rahman (2009), Sadik (2008) and Abouchdid & Eid (2004) added the instructors' job is not to dictate to students what they have learned; it needs to be more than instructors talk and students write. Instructors' job has to be sharing knowledge and information, discussion based, and students interacting with activities. These researchers found that most instructors realize that their students' interaction increases when they are positively motivated to interact with each other, with the instructors, and with the learning activities in their classrooms.

In their studies, students indicated that they favor activities that facilitate student-to-student interaction, as well as student-to-instructor interaction (Abouchdid & Eid, 2004; Abu-Malhim & Abdel-Rahman, 2009; Sadik, 2008). How students engage with their studies and what they, institutions, and educators can do to improve student engagement has been well researched since the 1990s (Zepke & Leach,

2010), and approaches to engagement research have varied. Some researchers (Abouchedid & Eid, 2004; Abu-Malhim & Abdel-Rahman, 2009; Killer, 2010; Sadik, 2008; Schuetz, 2008; Zepke & Leach, 2010) focus on student agency and motivation as factors in engagement.

Motivation is based upon the idea that to be motivated means to be moved to do something (Ryan & Deci, 2000). Motivation involves the processes that give behavior its energy and direction (Lee, et al., 2005; Reeve, 1996; Surry & Land, 2000). It refers to the goals people undertake - the goals they see as relevant and valuable to them (Means, Jonassen, & Dwyer, 1997). Motivation, as Keller (2008) points out, refers to the choices people make as to what experiences or goals they will approach or avoid, and the degree of effort they will exert in that respect.

Many researchers agreed that universities and college students in the Middle East countries welcome technology as a method of increasing motivational positive interaction between student-to-student and faculty-to-students. Technology enables student-centered teaching approaches, providing 24 hour a-day accessibility to course material, and provides just-in-time methods to assess and evaluate student engagement and interaction with learning activities in and outside classrooms that make education more flexible, motivated, and immediate (Al Musawi & Abdelraheem, 2004; Abouchedid & Eid, 2004; Keller, 2010; Sadik, 2008; Senadidi, et al., 2009; Tubaishat & Qauasmeh, 2006). Baldwin (2011) suggests that technology-mediated learning in human activity, and whatever the role of technology in our engagement with students, educators' presence are both needed and felt.

Students' Desire and Comfort Level with Using Technology in and out of Classrooms

Technology has become an image of the 21st century in developed and developing countries alike (Al-Senaidi, et al., 2009; Sadik, 2008; Lee, Cheung, & Chen, 2005; Oblinger, 2005; Abouchedid & Eid, 2004). Most Students have been raised in the presence of technology, and often students in their twenties may have more years of experience and interaction with games and computer technology use than with reading (Zinn, W. and J. Zinn, 2009; Oblinger & Oblinger, 2005; Oblinger, 2004). Lashinsky (2005) and Oblinger (2004) added that students use technology in their daily lives and have developed a different set of attitudes and aptitudes having grown up in environments filled with technology.

Jones (2002) and Oblinger (2004) emphasized that technology is part of our social and cultural environment: Children grow up using computers and continue the practice throughout college. Technology is integrated into their daily habits. This provides

advantages in their ability to use information technology, to interact, and to work collaboratively. These students are more comfortable working on a keyboard than writing in a notebook, and they are happier reading from the screen than from papers.

Technology is forcing rapid changes in higher education that cannot be ignored (Al-Senaidi, et al., 2009; Sadik, 2008; Abouchedid & Eid, 2004; Rogers, 2000). These researchers found that college students today clearly expect technology to be an important learning tool in their classrooms (Goffe & Sosin, 2005; Metz, 2003). Sadik (2008) suggests the presence of computer technology is so accepted that students would like to interact with it in their classrooms because it enables professors and students to do new and exciting things (Falvo & Solloway, 2004; Lee, et al., 2005; Selwyn, 2007).

Today Middle East universities and students can easily use technology and navigate the internet and search for resources (Abouchedid & Eid, 2004; Al-Senaidi, et al., 2009; Sadik, 2008). Abouchedid and Eid (2004) found that 24.3 % of college students in Middle East countries have personal computers at home, with some connection to the Internet. Al Musawi and Abdelranheem (2004) reported that many students use email facilities and surf the Web on a daily basis outside classrooms.

Tubaishat and Qauasmeh (2006) reported that students have access to technology and they are efficient in the use of it. Usually when students have access to the Internet, there are many free resources they can access from home. According to their study, 85% students from one of the Middle East universities reported that they did not have problems accessing the university web page from home. Students reported that they have their own laptops and can use the Internet from home. Only 5% of the students reported that they had problem in accessing the online sources.

Abouchedid and Eid (2004) reported that off-campus students use electronic mail and have the same quality of communication with faculty members that on-campus students have. It facilitates the communication between students and the instructors and between students themselves.

Decision makers at colleges and universities notice how technology has provided faculty with huge educational resources and learning opportunities (Al-Senaidi, et al., 2009; Hirumi, 2002; Selwyn, 2007; Tubaishat & Qauasmeh, 2006). They would like to take advantage of students' interest in technology to improve their interaction with class activities (Lee, et al., 2005; Oblinger & Oblinger, 2005) with the hope that instructional technology will help students in higher education become motivated to interact with their peers, their instructors, and with learning activities (Keller, 2008).

Students report they would like their classrooms to use technology (things they find exciting to use for interaction) (Oblinger, 2004; Wiggins & McTighe, 2008; Mitsoni, 2006; Sadik, 2008; Abouchedid & Eid, 2004). Since technology is part of our social and cultural environment, students are usually confident when they interact with technology in most aspects of their lives (Abu-malhim & Abdel-Rahman, 2009; Oblinger, 2004; Tubaishat et al., 2006), and students are generally satisfied with the outcomes even if these outcomes are not related to academic achievement (Hirumi, 2002; Keller, 2008).

Given such descriptions, educators can imagine how these students function as learners interacting with technology. For learners who are experiential, social, and multi-taskers, technology may provide a freshness of approach and motivation to their studies (Abu-Malhim & Abdel-Rahman, 2009; Oblinger, 2004; Tubaishat et al., 2006; Sadik, 2008; Abouchedid & Eid, 2004).

Students' Motivation to Interact and Technology Use

Motivation is an important aspect of students' engagement and interaction with a learning activity (Keller, 2008; Rogers, 2000; Schunk & Pajares, 2002). Several studies (Rigby, Deci, Patrick, & Ryan, 1992) have related motivation to interaction with learning activities which showed that the degree of engagement in a learning activity will affect the quality of one's learning. According to Means, et al. (1997) up to 38% of student learning and achievement is due to motivation (p. 5).

Al-Senaidi et al. (2009) and Sadik (2008) pointed out that students in the 21st century have incorporated technology into their daily lives and, because of their high degree of technology use, technology might be seen as an excellent medium for motivating students to interact with learning activities in classrooms. Al Musawi and Abdelraheem (2004) also explained that it seems convenient to use technology in classrooms to motivate students to interact with classrooms activities since students are already using technology on their daily lives.

Abouchedid and Eid (2004) indicated, because students interact with technology in their daily lives, it is important for educators to understand why students expect a change in the interactions between students and educators, activities, and among students themselves. They reported that technology increases positive interaction between student-to-student and faculty-to-students and enables student-centered teaching approaches. Tubaishat and

Qauasmeh (2006) added that because students grew up with technology, technology arouses their interest to interact with new activities that capture their attention all the time.

Sadik (2008) found that using instructional technology increases students' engagement and interaction, organizes their ideas, and allows them to express these ideas. Al Musawi and Abdelraheem (2004) indicated, based on research evidence, that technology can help create an atmosphere that increases students' motivation to interact in classrooms. Adding to this, students feel satisfied when the outcomes to the interaction with the learning activity meet their expectations. These expectations are necessary for students to have positive feelings about their interaction with learning activities in classrooms

Tubaishat and Qauasmeh (2006) presented results of a case study based on surveys conducted in two universities in Middle East countries. Survey results showed that using technology in classrooms improved the motivation and confidence of students, improved their communication skills, encouraged students to interact and collaborate, and increased their motivation to interact with the learning activities presented in the classrooms.

Abouchedid and Eid (2004) indicated that universities and college students in the Middle East countries welcome technology as a method of making education more flexible, motivated, and immediate. They reported that students see technology as the building block that supports the structure of the classrooms activities. They recommended in their study that decision makers do not need to feel afraid that Arab universities and colleges might become *no lecture* institutions if instructors motivated their students to interact with each other, share knowledge, ask questions, discuss concepts with them instead of listening to a lecture-based class almost for 45 minutes without interaction. They suggest that educational institutions need to support technology use in classrooms since instructors and students see technology as a *building block* that supports the structure of the classrooms and does not substitute it.

Theoretical Framework

Keller's Motivational Theory (2008), the ARCS model (*Attention, Relevance, Confidence, and Satisfaction*), represents a model of motivation for interaction that addresses the problem of students in classrooms: Students are not exposed to enough practice of speaking on their own and hence the motivation to interact among them in the classroom is almost absent, depending only on the lecture delivered by instructors in higher education.

Keller's Motivational Theory (Keller, 1987, 2001, 2010, 2008) discusses the importance of preparing the surrounding environment, the instruction and students' readiness for interaction in classrooms in order to increase students' motivation to engage with learning activities. It includes sets of strategies to use

to enhance the motivational appeal of instructions in classrooms.

The ARCS Model

The ARCS model (Keller, 1987, 2001, 2008; 2006) provides a definition of motivation, a motivational design process and recommendations for motivational strategies. It is a method for investigating the motivational appeal of instructional materials. First, there are four conceptual categories (*[A]ttention*, *[R]elevance*, *[C]onfidence*, *[S]atisfaction*) that include many of the specific concepts and variables that characterize human motivation. Second, it includes sets of strategies to enhance the motivational appeal of instruction; process that is called motivational design (Keller, 1987) which can be used effectively in classrooms to motivate students to interact (Keller, 2001, 2008).

(*[A]ttention* strategies arouse and sustain curiosity and interest, *[R]elevance* strategies link students' needs, interests, and motives; *[C]onfidence* strategies help students develop a positive expectation for successful achievement; and *[S]atisfaction* strategies provide intrinsic and extrinsic reinforcement for effort) that have to be met for people to become and remain motivated.

Importance of the four aspects. The four aspects presented in Keller's theory (2008) will be highlighted, looking at

students' lack of exposure to enough practice of speaking on their own and hence the motivation to interact among them in the classroom is almost absent in higher education. Students usually will not be able to interact actively in their classrooms if these four aspects are missing (students' attention, relevant material, confidence in success, and satisfaction with the outcomes) (Biggs, 2006; Hirumi, 2002; Keller, 2008, Jaradat, 2013; Zinn, W. and J. Zinn, 2009; Taylor, 2006). Goffe and Sosin (2005) and Oblinger (2004) suggested that students like to interact with computer technology and the Internet media in classrooms which motivate them to interact in classrooms activities (Oblinger, 2005).

Jones (2002) and Keller (2008) added that students' level of interaction with computer and the Internet indicates how much they perceive technology as an important aspect to interact within their daily lives. It also indicates students' fluency with computer use and their readiness to interact with computer technology in their classrooms. Jaradat (2013) also found that students were motivated to interact in their classrooms when technology was used. She approved, based on research evidence, that students would not be able to interact actively in their classrooms if the four aspects of Keller's theory were missing.

In addition, Keller (1987, 2001, 2008) noticed that technology gets students' *attention* in real life, so

why not use it in classrooms. He also reported students see the *relevance* of using technology in their classrooms and have that link with their daily lives. *Confidence* was one of the aspects Keller (1987, 2001, 2008) mentioned in his reporting about students' interaction with technology and how it is easy for them to accomplish things through using technology. He mentioned that students' satisfaction with what is going in classrooms (e.g, instructional technology) leads them to develop continuing motivation to interact and learn.

Purpose of Study

The purpose of the study was to research the problem of student engagement and interaction in classrooms in Middle East Countries: Students are not motivated to interact in their classrooms, depending only on the lectures delivered by instructors in higher education. Students are not exposed to enough practice of speaking on their own and hence the motivation to interact among them in the classroom is almost absent. The variables in addressing the problem were the four aspects presented by Keller (2008) in his motivational theory (*Attention, Relevance, Satisfaction, Confidence*). The focus of the study was to find ways to motivate students to interact with each other and with the learning activities in classrooms thinking of technology as a means to do so. Through this study, the researcher wanted to explore students' perceptions about technology and the relationship of its use to their motivation to interact in their classrooms.

The following hypotheses were tested:

- **Hypothesis one.** Will there be a positive relationship between instructor use of technology and students' *motivation* to interact with each other, with instructors, and with learning activities in classrooms (according to Keller's (2008) motivational theory)?
- **Hypothesis two.** Is there a relationship between students' comfort level with using technology and their desires for instructors to use technology?

Methodology

This study used a quantitative design that addresses relationships between students' perceptions and the use of technology as motivational tools used in their classes in higher education. Quantitative research focuses on hypothesis testing and theory testing (Johnson & Christensen, 2004). The intention of this study is to test hypotheses and see how the four aspects of Keller's motivational theory (2008) (*attention, relevance, satisfaction, and confidence*) relate to students' motivation to interact in their classrooms in higher education. Quantitative design reduces measurements to numbers and usually analyzes the data by using statistical analysis programs (Drew, Hardman, & Hops, 2007; Johnson & Christensen, 2004). The quantitative method is used to discover the relationships and differences between the

variables, which allows for an in depth look at numbers, means, and standard deviations for participants. This research design allows for interpretation of the data gathered in order to show comparisons, contracts, or correlations in the variables (Bogdan & Biklen, 2007; Creswell, 2008). The variables in this study were not manipulated; instead they were investigated as they exist (Belli, 2009).

Participants

The participants in this study consisted of freshman and junior students (600) and the instructors (30) who taught freshman and junior required courses in a governmental institution in a gulf nation.

Students. There were 1041 freshman and junior students enrolled in the selected courses. . Those students were divided into 47 sections; 43 sections were allocated to freshmen (n=934) and 4 sections were allocated to juniors (N=107). The researcher managed to visit 35 sections (freshmen= 33 sections; junior= 2 sections) out of 47 sections since some of the instructors apologized for not having time to complete the material and did not approve the researchers' visit to their classes. There were 798 freshman and 71 junior students in those 35 sections. The return of the students' surveys was 600 (69%) out of 869 students, and 58%return rate of the total 1041 possible students (see Table 1 for the details).

Table 1. Student Demographics

Year in School	N	Gender		Age		Major		
		Male	Female	18-19	20+	Bus.	Eng.	IT
Freshmen	529	300	229	217	312	132	291	106
Junior	71	49	22	9	62	16	45	10

The Participants were 251 female students and 349 male students in all freshman and junior in required courses at the College. There were 529 freshmen and 71 juniors. Their ages ranged between 18 and 25 years (M=19.8). The college provided three majors for its students; Business, Engineering, and Information Technology (IT). 148 were Business students, 336 were Engineering students, and 116 were IT students. All 600 students were full-time students.

Instructors. There were 28 instructors who taught freshmen and 2 instructors who taught junior required courses for a total of 30 instructors. Table two contains a summary of the instructor demographics.

Table 2. Instructor Demographics

Gender	N	Teaching Yrs	N	Computer Proficiency	N
Males	20	1-5	26	Adv. or Exp.	15
Females	10	6-7	3	Average	10
		8+	1	Beg. Or Unfam.	5

Two thirds (20) of the instructors were males and one third (10) were females. Their ages ranged between 25 and 65 years old (M=40.6). The instructors taught in two departments: 19 taught in the English Language Center (ELC) and 11 taught in the Information Technology (IT).

Almost one third (9) of the instructors perceived themselves as experts in computer proficiency, 6 perceived themselves as advanced, 10 of the instructors perceived themselves as average, and only five perceived themselves as either beginners or unfamiliar with using computers. All 30 instructors were lecturers with a full-time load. Of the thirty five sections, 9 instructors taught one section, 10 instructors taught two sections, and 2 instructors taught 3. One junior instructor taught both 2 sections. Some instructors taught 2 sections and others taught 1 section. The remaining 9 instructors the 12 sections

that the researcher did not visit; however they did take the instructor survey.

Instruments

Four instruments were used to collect the data for this study from both students and instructors. These surveys were: Instructional material motivational survey (IMMS), Student technology survey, Student perceived effectiveness of computer technology use survey, Instructor Perceived Effectiveness of Computer Technology Use Survey.

Student surveys. Three surveys were given for the students: Instructional Material Motivational survey (IMMS), Student Technology Survey, and Student Perceived Effectiveness of Computer Technology Use Survey.

Instructional material motivational survey (IMMS). This survey was first developed by Keller in (1993) as a measuring instrument to serve as a data-collection tool to analyze motivational problems

within instructional materials. Then Huang, Diefes-Dux, and Imbrie (2006) used all the original IMMS (Instructional Material Motivational Survey) items in Keller's study (1993) with minor modification to accommodate the items to the setting of their study. The IMMS contains 43 survey items in which the first 7 items represent students' demographics. The remain 36 items corresponding to each component of the ARCS model, in which (a) 12 items measure *attention*, (b) 9 items measure *relevance*, (c) 9 items measure *confidence*, and (d) 6 items measure *satisfaction*.

The survey utilizes a (5-point-likert) scale for the 36 items with statements from 1= not true, 2= slightly true, 3= moderately true, 4= mostly true, and 5= very true. Scores for attention section can range from 12- 60; relevance section can range from 9- 54; confidence section can range from 9- 45; and satisfaction section can range from 6- 30. The survey was used more than once, however there were no reliability and validity results provided.

The researcher sent Dr. Keller email asking about the reliability and validity of ARCS items in his study. The author gave the researcher his approval to use his survey and provided some information about reliability and validity results of that survey items. Keller (2010) reported that the survey was first administered to a class of 45 university undergraduates, and the internal consistency estimates were satisfactorily high. A pretest version was prepared by rewriting items in the future tense and was administered to an undergraduate class of 65 students. The internal consistency estimates were high, but further revisions were made to improve the instrument. The standard version of the survey was then administered to 200 undergraduates and graduate students in the School of Education at a university in the Southeast. The internal consistency estimates, based on Cronbach's alpha, were satisfactory (Attention 0.84, Relevance 0.84, Confidence 0.81, Satisfaction 0.88, Total scale 0.95) (Keller, 2010). Keller (2008) reported construct validity studies by Naime-Diffenbach (1991) and Small and Gluck (1994) that indicated through experimental studies the relationship of instructional materials to the domains of Keller's motivational theory. There have been many studies over the past 20 years that substantiate the relationship between motivation and learning (e.g., Chang & Lehman, 2002; Winiecki, Fenner & Chyung 1999).

Student technology survey. This survey was posted online and any one can access it and participate voluntarily ("Student technology survey," 2001). The survey contains 10 survey questions corresponding to students' experience with computers, in which (a) questions 1-8 measure

students' access and use of computers, (b) question 9 measures how often students use computers regarding software programs or tools, and (c) question 10 measures how much help students need concerning applications that they have used.

The survey utilizes a different (Likert-type) scale for each question. The scales are either Yes-No (Questions 1 and 4), never to almost daily (Questions 2, 7, 8, 9), individually to in pairs (Question 5), or questions regarding students' use of computers (Questions 3 and 6)

The first question can range from 1-2, question two can range from 1-5, question three can range from 0-1, question four can range from 1-2, question five can range from 1-4, question six can range from 0-1, question seven can range from 1- 5, question eight can range from 1-5, question 9 can range from 15- 75, and question 10 can range from 13- 65. The survey was used online many times, however there were no reliability and validity results provided.

Student perceived effectiveness of computer technology use survey. This survey was designed, along with the instructors' survey mentioned before, by Lowerison, Sclater, Schmid and Abrami (2006) to examine what, if any, effect the use of computer technology has on student perceived effectiveness of a course. The researchers indicated that relevant studies (e.g., Shuell & S Farber, 2001) helped create an initial pool of the items in this survey. The final survey consisted of 63 items, in which (a) 7 items measure students' learning experiences in the course, (b) 6 items measure the learning strategies that they used within the class, (c) 9 items measure students' evaluation of the overall effectiveness of the instructional techniques used in the class, (d) 4 items measure students' evaluation of the overall effectiveness of the course in relation to instructors effectiveness, amount learned, increased interest in course content, etc, (e) 12 items measure the manner of technology use, (f) 12 items measure students' perceived effectiveness of computer use, (g) 11 items measure students' personal use of computer technology, and (h) the last item ask about students' comments.

The survey utilizes a (5-point-likert) scale for sections 1-5 and (6-point-likert) Scale for sections 6 and 7. Section one includes statements from 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, and 5= strongly agree. Section two and three include statements from 1=never, 2= seldom, 3=sometimes, 4= often, and 5=very often. Section four includes statements from 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, and 5= strongly agree. Section five includes statements from 1=never, 2= seldom, 3=sometimes, 4= often, and 5=very often. Section six includes statements from 1= not applicable, 2= very

ineffective, 3= ineffective, 4= neutral, 5= effective, 6= very effective. Section Seven includes statements from 1= not applicable, 2= strongly disagree, 3= disagree, 4= neutral, 5= agree, 6= strongly agree.

In the first section, scores can range from 7-35, section two scores can range from 6-30, section three scores can range from 9-45, section four scores can range from 4-20, section five scores can range from 12-60, section six scores can range from 12-72, and section seven scores can range from 11-66.

The authors gave the researcher their approval to use their survey and provided some information about reliability and validity results of their survey items. Lowerison et al. (2006) used their survey again in another study (e.g., Gretchen Lowerison, Tamim, Schmid, Bernard, & Abrami, 2008) that investigated the relationship between computer technology's role and students' perceptions about course effectiveness in two different universities (e.g., one Canadian and one American). To test the validity of the instrument, the two universities conducted separate factor analyses with the data. Considering that large sample sizes adequately met criteria for factor analysis, the items related to the use of computer technology and the learner-centered approach were factor analyzed using varimax rotation with data from both samples. The factor analyses were highly similar, where the rotated factor matrix with the Canadian sample resulted in three factors (accounting for 46.22% of the total variance) with eight values larger than 2.0 (ranging from 2.26 to 8.40). Similarly, the rotated factor matrix for the American sample revealed three factors (accounting for 48.94 % of the total variance) having eight values larger than 2.0 (ranging from 2.46 to 8.35). With both samples, factor loading higher than .40 on each of the three factors were examined, and they revealed a high level of similarity. In both cases, factor 1 included items addressing *computer-use*, factor 2 included items addressing *course-structure*, and factor 3 included items addressing *active-leaning and time-on-task*.

Instructor Survey .Instructors were given the same third survey that students took. This survey was: *Instructor Perceived Effectiveness of Computer Technology Use Survey*.

Data Collection Procedures

Data collection consisted of students' surveys which were given during class time and instructors' survey which was given during work time. The researcher asked the instructors to complete their survey first, and then the students were given the three surveys at the end of the semester.

At the beginning of each class, a constructed speech that presented a brief idea about the study was given to the students by the instructors or the researcher herself. Each student was given a packet

that included the surveys and a consent form. Students were asked to sign the consent form showing that they were voluntarily participating in the study. The consent form gave more details about the study that students read before participating on the study. Students were informed that the survey would take 50 to 60 minutes (one class period). They were also informed that there were no right or wrong answers; we just wanted their opinions. The researcher agreed to stay in some classes to translate difficult words or phrases into Arabic since the surveys were written in English. The researcher also agreed to stay after the class to answer any questions students asked about the survey, and was willing to come back and present the results of the study. Students were asked to return the surveys and the consent form to the packet and the researcher or the instructors collected them.

The instructors were asked to participate in the study and were given a good explanation about it. They were informed that the survey would take 20 minutes to 30 minutes (during their work time at the college). All instructors were asked to take the survey at the same time. At the beginning, a constructed speech that presented a brief idea about the study was given to the instructors. The researcher asked the instructors who spoke Arabic to translate difficult words for their students while they were taking the surveys. Other instructors who did not speak Arabic were asked to approve the researcher visits to their classes to translate and explain any difficult words or phrases from the surveys.

Each instructor was given a packet that included the survey and the consent form. Instructors were asked to sign the consent form showing that they were voluntarily participating in the study. The consent form gave more details about the study that instructors read before participating on the study. They were also informed that there were no right or wrong answers; we just wanted their opinions. I agreed to stay after they finished answering the questions they asked about the survey, and was willing to come back and present the results of the study. Instructors were asked to return the survey and the consent form to the packet and the researcher collected them.

Results

These results were utilized to determine the relationship of instructional technology with students' motivation and interaction in higher education.

Descriptive Statistics

Before presenting the correlational analyses, the means and standard deviations are presented for each of the variables that were correlated- The four

domains of motivation: attention, relevance, confidence, and satisfaction as well as the total ARCS. The researcher also presented the instructional variables of instructional techniques, instructor use of computer, and perceived effective use of technology from both the student's and instructor's perspective.

Last, student learning experiences, student learning strategies, student personal use of computer, student frequency use of computer, and the amount of help a student needs with the computer are provided in Table 3.

Table 3. Means, Standard Deviations, and Numbers for the Domains and Total ARCS, Student Learning Experiences, Student Learning Strategies, Student Use of Computer, and Perception of Instructor Use of Computers by Students and by Instructors

	N	Attention M (sd)	Relevance M (sd)	Confidence M (sd)	Satisfaction M (sd)	ARCS M (sd)
Students	600	40.21 (5.2)	30.48 (4.4)	28.73 (4.7)	20.69 (4.1)	120.11 (4.1)
		Student Learning Experiences	Student Learning Strategies	Personal Use of Computer	Frequency Use of Computer	Student Need Help with Computer
Students	600	23.67 (3.9)	19.54 (3.3)	44.66 (8.4)	42.08 (7.2)	31.99 (8.6)
		Instructional Techniques	Instructor Use of Comp	Perceived Effective Use of Technology		
Students	600	29.42 (4.6)	37.55 (6.2)	46.9 (8.1)		
Instructors	30	31.8 (5.1)	35.2 (12.9)	47.67 (16.7)		

Zero Order Correlation Table

In this study, zero order correlations were created to answer research questions and respond to the two hypotheses. For that, Person r correlations were used in this study because they enabled the researcher to describe the relationships between the variables used in the surveys.

Hypothesis One

To answer hypothesis one: "Will there be a positive relationship between instructors' use of technology and students' *motivation* to interact with each other, with instructors, and with learning activities in classrooms, this hypothesis was analyzed. Two sections of Perceived Effectiveness Survey were used to define students' interaction with

each other, with instructors, and with the activities. The first was labeled *students' learning experiences* and it included 7 items; the second was labeled *students' learning strategies* and it included 6 items. The researcher included *instructor computer use* in course section that includes 12 items from this survey since the hypothesis addressed the relationship between instructors' use of technology and students' *motivation* in classrooms.

Table 4 introduces zero order correlations of total ARCS (*Attention, relevance, Confidence, and Satisfaction*), *students' learning experiences*, *students' learning strategies*, and *instructor computer use* in course.

Table 4. Zero Order Correlations of ARCS, Students' Learning Experiences, Students' Learning Strategies, and Instructor Computer Use in Course, (N= 600)

	ARCS r (p)	Student Learn. Exp. r (p)	Student. Learn. Strat. r (p)	Instr Comp Use Course r (p)
ARCS	1			
Student Learn Exp.	.506** (<.001)	1		
Student Learn Strat	.455** (<.001)	.491** (<.001)	1	
Instr Comp Use Course	.397** (<.001)	.383** (<.001)	.424** (<.001)	1

** Correlation is significant at the 0.01 level (2-tailed).

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

Table 4 presents the analysis of hypothesis one, and it indicates the correlations of ARCS, students' learning experiences, students' learning strategies, and their computer use in course. Table 5 shows that *ARCS* has significant correlations with: Students' learning experiences ($r=.506, p<.001$), students' learning strategies ($r=.455, p<.001$), and computer use in course ($r=.397, p<.001$). *Students' learning experiences* section has significant correlations with: Students' learning strategies ($r=.491, p<.001$), and computer use in course ($r=.424, p<.001$). *Students' learning strategies* section has significant correlations with computer use in course ($r=.424, p<.001$).

Hypothesis Two

To answer hypothesis two: "Is there a relationship between students' comfort level with using technology and their desires for instructors to use technology," this hypothesis was analyzed. The sections which were analyzed to answer hypothesis two were taken from two surveys: Students

Technology Survey and Student Perceived Effectiveness of Computer Technology Use Survey. *Frequency computer use* section includes 13 items and students' *need for help using computer* section includes 11 items. These two sections were taken from Students Technology Survey. The remaining sections were taken from Student Perceived Effectiveness of Computer Technology Use Survey. These sections were: *Students' personal computer use* section which includes 11 items, and *perceived effectiveness* section includes 12 items. Because the hypothesis addresses the desire for instructor use of technology, the instructional techniques section which includes 9 items, and instructor computer use in course section that includes 12 items were included once again.

Table 5 introduces zero order correlations of perceived effectiveness, students' personal computer use, frequency computer use, students' need for help using computer, instructional techniques, and computer use in course.

Table 5. Zero Order Correlations of Student Perceived Effectiveness, Student Personal Computer Use, Student Frequency Use of Computer, and Students' Need of Help Using Computer, with Instructional Techniques and Instructor Computer Use in Course (N = 600).

	Perceived Effective r (p)	Personal. Comp. Use r (p)	Frequency Use Comp r (p)	StudNeed Help Com r (p)	Instructor Techniques r (p)	Instructor Computer Use r (p)
Perceived Effectiveness	1					
Personal Comp Use	.329** ($<.001$)	1				
Frequency Use Comp	.109** (.008)	.211** ($<.001$)	1			
Stud Need Help Comp	.076 (.062)	.059 (.150)	.306** ($<.001$)	1		
Instructor Techniques	.354** ($<.001$)	.353** ($<.001$)	.028 (.492)	-.037 (.362)	1	
Instructor Comp Use	.376** ($<.001$)	.330** ($<.001$)	.090 (.028)	.111** (.006)	.464** ($<.001$)	1

** Correlation is significant at the 0.01 level (2-tailed).

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

Table 5 presents the analysis to hypothesis two and it indicates the correlations of total perceived effectiveness, total students' personal computer use, total students' frequency use of computer, total students' need for help using computer, total instructional techniques, and total computer use in course. As presented in the table, *instructional techniques* has significant correlations with: Perceived effectiveness ($r=.354, p.<.001$), students' personal computer use ($r=.353, p.<.001$), and computer use in course ($r=.464, p<.001$). *Computer use in course* has significant correlations with: Perceived effectiveness ($r=.375, p<.001$), students' personal computer use ($r=.330, p<.001$), students' frequency use of computer

($r=.090, p.<.028$), students' need for help using computer ($r=.111, p.<.006$), and with instructional techniques ($r=.464, p<.001$).

Ancillary Analysis

Because there may have been a difference between the students' perspective of their instructors' use of technology, and how their instructors perceived their own use of technology, the researcher measured the instructors in all the courses in which students participated. The instructors were given a similar instrument to the Perceived Effectiveness of Computer Technology Use. Three areas were addressed: Instructional techniques, instructor computer use, and perceived effective use of computer. In the Instructor

Perceived Effectiveness of Computer Technology Use Survey, there were 9 items for instructional techniques, 12 items for computer use in course, and 12 items for perceived effectiveness of computer use.

Ttests. Independent sample t-tests were conducted to see if there were any significant differences between students' perspectives regarding using technology in their classrooms by their instructors and instructors' shared information regarding their use of technology in classrooms on those three areas: Instructional techniques, instructor computer use in course, and perceived effectiveness of computer use. A t-test was run for each of these three variables, comparing the instructor's perceptions to those of the students. Following are the results: Computer use in course, ($t(df=29) = .99, p > .05$); and perceived effectiveness of computer use ($t(df=29) = -.265, p > .05$). There were no significant differences between students' perspectives and instructors' perceptions in terms of computer use and perceived effectiveness of computer use in the course. However, there was a significant difference between students and instructors on instructional techniques ($t(df=628) = -2.78, p < .006$).

Correlational analysis. Finding a significant difference between students and instructors on instructional techniques, the researcher conducted a correlational analysis of total ARCS (Attention, Relevance, Confidence, and Satisfaction) with the instructional techniques used by students' respective instructor in the classrooms. *Instructional techniques* has a significant correlation with ARCS ($r = .012, p = .050$), indicating a positive relationship between instructors' use of technology and students motivation. This finding supports the hypothesis of the research in which technology can be used as a means to motivate students to interact with each other and with the learning activities in their classrooms.

Discussion

The focus of the study was to find ways in which technology can be used as a means to motivate students to interact with each other and with the learning activities in classrooms in higher education. It concentrated on moving from passive learning depending only on the lecture delivered by the teacher to active learning where education system now demands more of student interaction rather than just listening to the instructors. The researcher addressed the problem with the four aspects presented by Keller (2008) in his motivational theory (Attention, Relevance, Satisfaction, and Confidence). Throughout this study, the researcher wanted to explore students' perceptions about technology and the way it can be used to increase their motivation to interact in their classrooms. Keller's motivational theory and the four components were analyzed throughout looking at students' perspectives presented in the surveys.

Keller's (2008) primary assumption in his motivational theory is based on the interaction between instructional materials and students. With its components, this theory discusses the importance of preparing the surrounding environment, the instruction, and students' readiness for interaction in classrooms. According to Keller's (2008) dimensions (ARCS), he stated that, in order for students to be motivated to interact with learning activities, students must be curious about the material presented in classrooms, the material must be relevant to their real world, students must have the confidence that they will be able to succeed, and students must be satisfied with their learning experiences.

The traditional knowledge delivery system for higher education in the Arab world remains the same which is indoctrination and instructor-based (Abouchedid & Eid, 2004; Abu-Melhim, 2009; Al Musawi & Abdelraheem, 2004; Al-Senaidi, et al., 2009; Sadik, 2008). Instructors introduce a topic by lecturing on general concepts, and then introduce the whole idea of the topic. Students take notes and write down word for word without understanding the *why*. The instructor's job is to transmit his/her knowledge to students and lecturing is the natural method for doing so. The students' role is to (a) absorb the knowledge they are introduced to and (b) be tested on the notes written down from their instructors. *Hypothesis one* dealt with the ARCS Model being effectively used in classrooms to motivate students to interact. According to Keller's Motivational Theory (2008), these four categories included many of the specific concepts and variables that characterize human motivation which enhance and motivate students to interact with classroom activities. According to this hypothesis, the researcher addressed the total of ARCS (*Attention, relevance, Confidence, and Satisfaction*), students' learning experiences, students' learning strategies, and computer use in course.

Results showed that ARCS has significant correlations with students' learning experiences, students' learning strategies, and computer use in course. According to students' responses to the surveys related to ARCS (*Attention, Relevance, Confidence, & Satisfaction*) and students' learning experiences, students reported that they had effective interaction with other students, with their instructors, and with the activities presented in their classrooms. Students felt they were in control of their learning and they took advantage of the opportunities and recourses presented in their classes. Abu-Malhim and Abdel-Rahman (2009) reported students' interaction increases when they are positively motivated to interact with each other, with the instructors, and with the learning activities in their classrooms. For example, students' interaction with the activities can

be influenced by their attitudes toward the target goals they establish to gain from these classes. In their study, students indicated that they favor activities that facilitate student-to-student interaction as well as student-to- instructor interaction.

They reported the instructors' job is not to dictate to students what they have learned; it needs to be more than instructors talk and students write. It must be the instructors sharing knowledge and information, discussion based, and students interacting with activities. Students reported they were motivated to take notes in classrooms and compare and contrast these notes to what they already knew. Students read their notes forming new ideas related to their knowledge and the new material presented in their classrooms. Students added they were accessing their college website and class folders throughout using their own laptops or the computers provided by the college. Students used emails to receive and send assignments to their instructors which facilitated their communication. Also students used presentation applications such as PowerPoint and LCD projector to present, share, and develop knowledge in their classrooms.

Sadik (2008) indicated in his study that instructors can use instructional technology as tools to engage their students more and increase their interaction with the learning activities they provided. He added that instructional technology encourages students to construct their knowledge and ideas to present them and share them. This helps students interact effectively with each other, with instructors, and with the learning activities in the classrooms. He also found that using instructional technology increases students' engagement and interaction, organizes their ideas, and allows them to express these ideas.

Al Musawi and Abdelraheem (2004) indicated also, based on research evidence, that technology can help create an atmosphere that increases students' motivation to interact in classrooms. Senaidi, et al. (2009) reported that one of the public universities in the Middle East began a project to implement using blackboard and they reported that faculty and students at that university seemed to favor using Blackboard as new technology in their classrooms because it increases students' opportunities to interact with each other, with the instructors, and with what is going on in classrooms. This indicates that motivation is important for students' engagement and interaction with learning activities in classrooms that supported their learning experiences using technology. Students' level of interaction with computers also substantiated how much they perceived technology as an important aspect of their learning strategies and readiness to interact with computer technology in their classrooms.

Abouchedid and Eid (2004) reported that universities and college students in the Middle East countries welcome technology as a method of making education more flexible, motivated, and immediate. They reported that students see technology as the building block that supports their learning experiences with the structure of the classrooms activities. Al Musawi and Abdelraheem (2004) indicated also, based on research evidence, that technology helped create an atmosphere that increased students' motivation to interact in their classrooms. And Tubaishat and Qauasmeh (2006) reported that using technology in classrooms improved the motivation and confidence of the students, improved their communication skills, encouraged students to interact and collaborate, and increased their motivation to interact with the learning activities presented in the classrooms.

Hypothesis two dealt with students' comfort level with using technology and their desires for instructors to use technology in their classrooms. Once again, there were significant correlations with all three areas and instructor use of technology. Accordingly, the researcher looked at frequency computer use section, students' need for help using computer section, students' personal computer use section, and perceived effectiveness section.

Students reported that they used their laptops or computers to search the internet, communicate with each other and with their instructors. They also reported that they use computers to do their homework, create presentations and play games. Students added that they wanted to learn how to use technology proficiently to develop knowledge of the basic concepts related to the subject they were studying. Students perceived that the course had been a good course and their instructors were effective instructors since they learned what they really expected to learn. They reported their interest in the course had increased and they learned a lot because of implementing technology in their courses. Based on their responses, students showed interest and comfort feelings for using technology by their instructors. This supported the idea of using technology to provide strategies to make instruction more appealing. It makes students eager and willing to sit, interact and participate to learn, and this is how we keep students interested in classrooms activities.

Tubaishat and Qauasmeh (2006) reported that technology increases positive interaction between student-to-student and faculty-to-students and enables student-centered teaching approaches which the students indicated they needed. Many researchers from the Middle East (Abu-Malhim& Abdel-Rahman, 2009; Al- Senaidi, et al., 2009; Sadik, 2008) added that students preferred instructors using technology more actively and productively in classrooms

activities and assignments. When used effectively, technology can open doors to learning, which is then enhanced by students' experiences with technology.

Sadik (2008) indicated also in his study that students reported using instructional technology encourages them to construct their knowledge and ideas to present them and share them. This helps students interact effectively with each others, with instructors, and with the learning activities in the classrooms. He also found that using instructional technology increases students' engagement and interaction, organizes their ideas, and allows them to express these ideas.

Today Middle East universities and college students can easily use technology and navigate the internet and search for resources (Abouchedid & Eid, 2004; Al-Senaidi, et al., 2009; Sadik, 2008). Abouchedid and Eid (2004) found that 24.3 % of college students in Middle East countries have personal computers at home, with some connection to the Internet. Al Musawi and Abdelraheem (2004) reported that many students use email facilities and surf the Web on a daily basis outside classrooms. Tubaishat and Qauasmeh (2006) reported also that students have access to technology and they are efficient in the use of it. According to their study, 85% students from one of the Middle East universities reported that they did not have problems accessing the university web page from home. Students reported that they have their own laptops and can use the Internet from home.

Implications

Before conducting the study, the researcher thought if the instructors at universities and colleges were convinced that using instructional technology and Internet media might result in higher interaction between students and the learning activities, two benefits would come from this study. First, students could be more motivated and not bored while in the university classroom. Second, using instructional technology could also motivate students to interact with the learning activities, with instructors and with each other. Thus, the motivational theory presented by Keller (1987, 2001, 2006, 2008) could help support how to increase students' motivation by using technology as a means to interact in classrooms.

The purpose of this study was to determine if there was a relationship between the use of technology and motivating students in higher education in the Middle East to interact with each other in classrooms, with the instructors, and with the learning activities. The researcher's findings and those of other related studies substantiate that technology can be used to ameliorate students' problems in higher education, in which students are bored, silent, depending on the instructor, and the importance of technology in their

daily lives (Abouchedid & Eid, 2004; Al Musawi & Abdelraheem, 2004; Al-Senaidi, Lin, & Poirot, 2009; Sadik, 2008; Tubaishat, El-Qawasmeh, & Bhatti, 2006).

Researchers in the Middle East (Abouchedid & Eid, 2004; Al Musawi & Abdelraheem, 2004; Al-Senaidi, Lin, & Poirot, 2009; Sadik, 2008; Tubaishat, El-Qawasmeh, & Bhatti, 2006) found that technology sustains students' curiosity, it is relevant to their actual world; students feel confidence using it; and students feel are satisfied using technology in classrooms as in their daily lives. Instructors in the public college in the gulf nation also saw that technology can be one of the means that offers opportunities to integrate motivational support strategies to students' interaction with learning activities in novel ways. They reported that students very often had effective interactions with their instructors, with each other, and with the activities presented in classrooms. Instructors noticed students took advantages of the learning opportunities and resources presented through technology. They started to think critically and actively participated in their classrooms.

Decision makers at the college noticed how technology has provided faculty with huge educational resources and learning opportunities and how students would like to interact with it in their classrooms because it enables them and their instructors to do new and exciting things. For that decision makers have been trying to blend instructional technology into students' classrooms to meet their academic needs for the past 20 years at the college

The researcher found that instructors at the college would like to take advantage of students' interest in technology to improve their interaction with class activities hoping that instructional technology will increase students' motivation to interact with each other, with the instructors themselves, and with the learning activities in their classrooms.

Abouchedid and Eid (2004) found that a higher percentage of students tend to enroll in courses that were student-centered lectures that encouraged them to interact with each other, with instructors, and with learning activities in classrooms. Sadik (2008) added that students in student-based classes explain concepts they read at home and share their understanding of the topic with others; this helps them overcome their boredom in classrooms and highly interact with each other, with the instructors, and with the learning activities.

Instructors at the college reported that students' interaction increased when they are positively motivated to interact with each other, with the instructors, and with the learning activities in their classrooms. And as Abu-Malhim and Abdel-Rahman (2009) presented in their study, students indicated that

they favor activities that facilitate student-to-student interaction as well as student-to-instructor interaction. They reported the instructors' job is sharing knowledge and information, discussion based, and students interacting with activities.

According to the instructors' responses to the survey, instructors reported that using computers in classrooms made it easier to collaborate with students and get their attention sustained all the time. They agreed with Keller's motivational theory (ARCS) (2008), that students' motivation is promoted when their curiosity and attention are aroused when they feel the activities in classrooms require them to learn new knowledge in order to accomplish these activities (Blumenfeld, Kempner, & Krajcik, 2006; Keller, 2008; Ryan & Deci, 2000). The instructors at the college indicated also that their teaching experiences were facilitated using computers which helped keeping students' attention to interact with classroom learning activities in order to gain new knowledge and skills.

Instructors at the college agreed with Yazzie-Mintz (2007) and Mitsoni (2006) who suggested that instructors will not be able to attract students' attention to interact with classroom activities, if students feel the activities are not related to the material presented in class or to their interest. Instructors reported that using computer technology was necessary for them to do a good job relating the material presented in classes to students' personal goals and real lives. College Instructors indicated that when students perceive knowledge in classrooms related to their personal goals and actual lives, this will increase the opportunities to increase their interaction with learning activities (Keller, 2008).

The instructors noticed that computers helped them to teach the material in a meaningful way. When their students feel that they can succeed in learning a task, their motivation to interact and learn is promoted. It has variables related to the feelings that students can personally control the task and can succeed, which then motivates them to have a continuous interaction with classrooms activities. They added as student confidence in achieving their goals in classrooms increases, this would have a positive influence on their engagement and interaction (Blumenfeld, et al., 2006; Rogers, 2000; Schunk & Pajares, 2002; Surry & Land, 2000).

Instructors at the college indicated that the use of computers improved the quality of their works. They noticed that students were satisfied with their outcomes to the learning tasks which motivated them to interact with the learning activities provided by the instructors using technology. Many researchers (Fusani, 1994; Hirumi, 2002; Huitt, 2007; Keller, 2008) indicated this principle is necessary for students to have positive feelings about their interaction with

learning experiences and to develop continuing motivation to interact with learning activities. Keller (2008) added students will have intrinsic feelings of satisfaction when they have opportunities to apply what they have learned to their personal experience.

In this study, the researcher noticed that college students are heavy users of the Internet. Students' social life at the college has been changed by the Internet; the Internet has promoted their education. According to this information, technology can be used to motivate students to interact in their classrooms and seek learning.

Universities and college students in the Middle East countries and, specifically, students in that public college welcome technology as a method of making education more flexible, motivated, and immediate. This study investigated the use of technology in classrooms and how did it affect students' motivation to interact with each other, with their instructors and with the learning activities. First, Students could be more motivated and not bored to come to the university. Second, using instructional technology could also motivate students to interact with the learning activities, with instructors, and with each other.

Students in the college saw technology as the building block that supported the structure of their classrooms activities. They believed that technology gives them opportunities to build positive experiences with success while interacting with technology. This feeling of accomplishments attributed to their abilities and efforts using technology increased their motivation to interact with classrooms activities (Oblinger, 2005; Keller, 2008).

The researcher found that students in public college felt that they can succeed in learning a task when interacting with technology. Their motivation to interact with classroom activities was increased because it was related to their beliefs that they can personally control the task and can succeed as they interact with technology outside their classrooms. This motivated them to have a continuous interaction with classrooms activities.

As the researcher has noted, technology can be one of the means that offers opportunities to integrate motivational support strategies to students' interaction with learning activities in novel ways. According to Keller's (2008) Motivational Theory with its components (*Attention, Relevance, Confidence, and satisfaction*), technology sustains students' curiosity, it is relevant to their actual world, students feel confidence using it, and students feel are satisfied using technology in classrooms as in their daily lives.

Students reported that using technology in their classrooms will make that connection between their real world (using technology) and their artificial

classrooms if their instructors used technology. They reported that technology made the material more interesting, appealing, and motivating to be discovered and learned. Technology helped students to connect their personal knowledge to the material presented in classes because they already knew most of it because of the implementation of technology.

Students also reported that they were attracted to the style of the class and the way the instructors presented the material and that gave them the impression that the material was worth knowing. For that students were happy completing this course and wanted to learn more about it and that gave them a motivation to interact with their instructors to know more.

Again Keller's (2008) Motivational Theory with its components (*Attention, Relevance, Confidence, and satisfaction*), substantiated that technology sustains students' curiosity, it is relevant to their actual world, students feel confidence using it, and students feel are satisfied using technology in classrooms as in their daily lives which helped students overcome their boredom and lack of motivation to interact in their classrooms .

The researcher can generalize her findings in this current study not only in this public college in the gulf nation, but also in Middle East countries, since the systems of education are similar in these countries. Students would not be able to interact actively in their classrooms if there is nothing to capture their attention and sustain it, if the material presented in classes is not related to their real world, if they lack the confidence in their success, and they do not have that satisfaction with the outcomes. Technology can help instructors in general and the researcher in particular to overcome many of these problems in an interesting way to motivated students to overcome their boredom and increase their motivation to interact with the learning activities in their classrooms, with each other, and with their instructors.

Conclusion

The purpose of this study was to research elements that are related to students' lack of motivation to interact in their classrooms depending only on the lecture delivered by instructors in higher education. The variables in addressing the problem were the four aspects presented by Keller (2008) in his motivational theory (*Attention, Relevance, Satisfaction, Confidence*). The focus of the study was to find ways to motivate students to interact with each other and with the learning activities in classrooms thinking of technology as a means to do so. Through this study, the researcher wanted to explore students' perceptions about technology and the relationship of its use to their motivation to interact in their

classrooms. Two hypotheses resulted from Keller's (2008) motivational theory with its components (ARCS), the literature review, and the research questions.

The researcher supported her assumption of using technology as a means to motivate students in the Middle East countries to interact in their classrooms through presented related material from researchers' conducted studies and from her own findings from analyzing her surveys took by students from a governmental college in the gulf nation. She found that students welcome the technology to be used in their classrooms the same way they use it outside. Technology seems to motivate students to interact with each other, with the instructors, and with the class activities in higher education in the Middle East. The researcher can generalize her findings to countries in the Middle East knowing that their Educational systems are similar to each other.

The researcher believed in the motivational concepts not only in learning and teaching but also in accomplishing things, which increase humans' confidence and satisfaction in what they are engaged themselves in. Keller's (2008) motivational theory indicated that learners need something that arouses their curiosity and sustains it. They need to know what is the relationship between what they are learning and the use of it in their lives. Learners need to feel confidence in their abilities to accomplish things, and they need to feel satisfied about themselves and what they are engaged with in order to sustain continued active engagement and interaction.

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