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The Impact of Motivation and Social Interaction on the E-Learning at Arab Open University, Kingdom of Bahrain

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E-learning can be considered as a useful tool for enhancing the quality of the educational process. However, the success of any technology application is dependent on how good it would satisfy the needs of its key stockholders, who compose the constituency of an organization and address their concerns. In the context of e-learning, students are the main stakeholders. Therefore, there is an emergent need to understand the factors that influence the use of e-learning to satisfy the students and improve their learning. The main aim of the current study is to investigate the factors that affect the use of e-learning by the postgraduate students at the Arab Open University. Factors such as motivation and social interaction were selected to be potential factors for using e-learning. Moreover, the effect of e-learning on the students' perceived satisfaction and performance was examined. The study sample is comprised of postgraduate students enrolled in the AOU—the Kingdom of Bahrain branch. One hundred and fifty surveys were distributed both in person and as a web survey. The results provide a great indication about the use of e-learning at the Kingdom of Bahrain. Results on the research model and hypotheses show that motivation is the main factor that has the most significant impact on using e-learning at the AOU, followed by student-student interaction. Student-instructor interaction has shown to have an indirect impact on e-learning via motivation.

Keywords: Arab Open University; E-Learning; Motivation; Student-Student Interaction; Student-Instructor Interaction; Student's Perceived Satisfaction; Students' Performance

Introduction

E-learning presents new channels and approaches for the traditional method of teaching and learning. It is one of the innovative approaches for learning which challenge the traditional style of teaching and change the lecturers' work patterns (Freire, 1994; Singh et al., 2005). E-learning is defined as the use of modern ICT and emergent media such as Internet, satellite broadcast, interactive TV and so on to deliver instruction, information and learning content (Freire, 1994; Selim, 2007). E-learning provides more emergent teaching tools that facilitate more effective teaching methods compared to that of the traditional teaching methods (Volery et al., 2002). With e-learning, instructors' schedules are redefined, as well as their duties and relationships toward students (Young, 2002). Instructors are provided with superior teaching tools and methods, allowing them to test students in real business situations (Singh et al., 2005). In addition they are given the opportunity to distribute up-to-date course content in relatively no time and apply knowledge in contemporary situations (Teare, 2000). Moreover, using such innovative learning tools, instructor can eliminate the students' technical frustrations, enhance their social interaction and encourage their involvement in an online community (Singh et al., 2005).

Although e-learning may increase access flexibility, eliminate geographical barriers and improve convenience and effectiveness of learning, there are still many questions raised by the researchers about the effectiveness of e-learning and to what extent it can be a satisfactory method for teaching. Singh (2005) stated that e-learning should not be considered as an alternative to the traditional teaching method. E-learning suffers from many factors that may affect its preference compared to the traditional face-to-face methods. Among these factors are, the feeling of isolation caused by the lack of social interaction between learners and instructors and between learners and other learners, the students' motivation to use e-learning, their comfort with the new technology in which the technical and academic support is ambiguous, and the students' low self-confidence in their abilities to use the technology. Rovai (2002) indicated that there is higher incidence of withdrawal or incomplete grades among students using e-learning. Many students had some negative feelings and beliefs toward online learning. They believe that technology will degrade higher education and will ruin the special relationships between instructors and students, and between students and other students that create a productive learning community (Rovai et al., 2003). Students also believe that the traditional course delivery and the classroom create an environment that is more responsive to their learning needs which would result in increasing the effectiveness of their learning (Wagner et al., 2008). Moreover, many students feel uncomfortable using online settings, as they are often required to find the answers themselves using available

resources.

The Arab Open University (AOU) is a non-profit institution aiming at offering a large and diverse population of students, an efficient access to higher education and lifelong learning, despite the place and time boundaries and social economic backgrounds. The AOU is following a high quality teaching and learning process, and employing effective media and technologies for education and assessment; in order to provide the most academic support to the students, and to extend and enhance lifelong learning. To ensure a superior learning and knowledge building experience for students, AOU is applying blended learning, which is one of the e-learning categories (Singh, 2003). Thus, AOU allows students to obtain a complete integrated blend of learning resources, in which they have the ability to obtain the learning material package as well as online access to a virtual learning environment that offers most of the features that are available in the real classroom.

As any educational institute running in an Arabic country, AOU is still unable to satisfy their students specially the postgraduate. Many students at the AOU withdraw after one year or less. E-learning technology can be considered as useful tool for enhancing the quality of teaching and learning process. However, the success of any technology application is dependent on the extent to which it satisfies the needs and addresses the concerns of its key stakeholders, who compose the constituency of an organization (Thompson et al., 2001). In the context of e-learning, students are the main stakeholders. Therefore, there is an emergent need to understand the factors that influence the use of e-learning to satisfy the students and improve their learning. The current study aims at investigating factors that affect the use of e-learning by the postgraduate students at the Arab Open University. Factors such as motivation and social interaction were selected to be potential factors for use of e-learning. Moreover, the effect of e-learning on the students' perceived satisfaction and performance will be examined.

Factors Affecting the Use of E-Learning

The e-learning is not always a successful project (Miller, 2010) and off course not all of them are a failure projects. Hence, to achieve a high success level in adopting e-learning as a new learning approach, factors impacting the e-learning should be identified and maintained. One of the factors that need to be maintained is the students' demography. The age, gender, marital and working statuses have been found to have a significant influence on predicting the students' interest in online education (Alstete et al., 2004; Hong, 2002). Gender, for instance, has been found in previous studies to be a very influential factor in terms of using e-learning (Coldwell et al., 2008). Thus, online courses tend to favor women, as they are generally more motivated, more network oriented, more collaborative, and better at scheduling their time (Coldwell et al., 2008). Moreover, Alstete and Beutell (2004) stated that when it comes to the use of e-learning, the age has been found to be a significant factor. Older students are more likely to engage in e-learning than younger students in terms of using discussion boards and other related tools (Coldwell et al., 2008). Younger students are less self-directed and self-disciplined. A third demographic factor that has been found to affect the use of e-learning is the working status. Cain (2008) indicated that college student employment has been increasing steadily for at least four decades and many full time and part time employees are moving to online learning due to its convenience and flexibility with their work schedule.

Different people would have different approaches to learning. These individual differences are called by psychologists, learning styles (Stash et al., 2010). Learning styles affect the ways that people attach their own meanings to the topic being taught and help them develop schemas for learning (Roi, 2006). It has been found by Price (2004) that learning styles are particularly important in the context of web-based learning. Moreover, Roi (2006) found that students learning styles had affected their grade performance in online learning. Lecturers' attitudes toward the e-learning systems have been found to be affecting the students' attitudes and performance. Hammoud, Love and Brinkman (2008) revealed that instructors of electronic courses are playing a key role in encouraging students to use e-learning systems such as WebCT and use its tools to communicate. The study also found that the instructors' feedback and their observation of the students' progress affect the students' attitude towards e-learning positively. Moreover, researchers have found that high computer self-efficacy level could be an important factor in helping people build technical skills and use computers (Busch, 1995). Other factors that may impact using e-learning include: how comfort is the learner with the technology, the presence of technical support, the ability to communicate and work with peer learners, the complex relationship between cognitive factors and the special nature of human-machine interfaces in learning process (Miller, 2005). In general, the above mentioned factors can be categorized in different ways. Sun, Tasi, Finger, Chen and Yen (2008) for instance, have identified six dimensions for the factors that impacting the use of e-learning which include: the learner, instructor, course, technology, design and environmental factors. Selim (2007) however, identified four categories including the student, information technology, instructor and the university support.

Research Model and Hypotheses

The current research study has a main objective of investigating factors that affect the use of e-learning by the postgraduate students at the AOU. Moreover, the effect of e-learning on the students' perceived satisfaction and performance will be examined. The literature revealed for many factors that may affect the use of e-learning. For the purpose of the current research, factors such as motivation and social interaction were selected.

The research model is developed as depicted in **Figure 1**. The research model depicted in the figure illustrates that motivation has a direct effect on using e-learning. However, both student-instructor and student-student interaction have a direct and indirect impact via motivation on the use of e-learning. E-learning, on the other hand, has an effect on both students' perceived satisfaction and students' performance.

Research Model and Hypotheses

Interaction Direct and Indirect Impact on Using E-Learning

Interaction can be defined as the interrelationship and exchange between individuals and groups in which they are influencing each other (Wagner, 1994). Interaction focuses on the interpersonal behaviors in a learning community (Rovai et al., 2003). It is the fundamental of the academic teaching as stu-

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dents can actively involved in an intentional process in order to learn (Colaric et al., 2001; Moore et al., 1990; Cao et al., 2008). The interaction is essential for students to formulate their questions, evaluate the responses/answers which will enhance their understanding (Cao et al., 2008). Three types of interaction have been identified to be considered in distance education and online learning (Moore, 1989; Sher, 2009): student-content, student-student and student-instructor interaction. In the e-learning environment the course materials which can include text, audio, videotape, CD-ROM, or computer program are provided online through what actual learning process can be done. Therefore, student-content interaction is essential as it is the way by which students access and interact with the course materials in order to internalize information they come across (Sher, 2009; Murray et al., 2012). Student-instructor interaction can be done on different forms such as delivering and presenting information, providing feedback, and encouraging and guiding students (Sher, 2009; Paechter et al., 2010). Students can also interact with their instructors by asking questions and communicating with them regarding course activities (Sher, 2009; Murray et al., 2012). Student-student interaction on the other hand, is a way in which students are involved in collaborative activities in the present or absence of the instructors (Sher, 2009). They aim at exchanging information and ideas about the course to accomplish different types of course assessments (assignment/project) as well as sharing knowledge (Sher, 2009; Murray et al., 2012). For the purpose of the current research, only the social interaction, which includes student-instructor and student-student, will be investigated.

Interaction has been found to be a critical element for the overall success and effectiveness of distance education and e-learning (Rovai, 2002; Sher, 2009; Neo, 2003). Without interpersonal interaction students will not be able to grasp, acquire, and develop knowledge. E-learning environment is limited by the difficult interaction (Sher, 2009). The transactional distance in such environment makes it difficult for the instructors and students to interact in the same physical and sequential space (Moore, 1989). Many researchers support the idea that the student-instructor and student-student interactions are important elements in the design and successful implementation of online learning courses (Coldwell et al., 2008). Rovai (2002) indicated that students may favor online learning because they experience a sense of online community, enjoy mutual interdependence and sense of trust and interaction among community members. Moreover, Neo (2003) stated that there are many advantages students gain through their use of e-learning, such as teamwork and critical thinking. Peer interaction is an important determinant for an effective learning as student can build many imperative skills via the collaborative e-learning, such as teamwork, collaboration and critical thinking (Neo et al., 2009). Moreover, continuous and recursive interaction between students and instructors is essential for building knowledge and sustaining an effective learning process (Bruner, 1960; Bruner, 1996; Pask, 1975). In fact, many studies conducted on distance education, revealed that interaction is the key to effective distance education (Bernard et al., 2004; Lou et al., 2006; Zhao et al., 2005). Therefore, the following hypotheses have been developed:

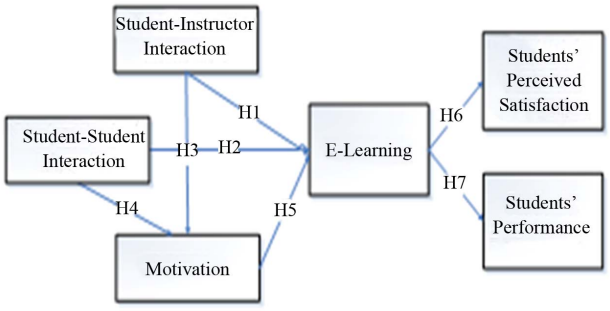

Figure 1.
Research model.

H1: Student-instructor interaction has a positive effect on using e-learning at AOU.

H2: Student-student interaction has a positive effect on using e-learning at AOU.

The interaction (student-student or student-instructor) can be considered as "the heart of the learning experience" in both the traditional and online learning environment (Wanstreet, 2006). It is the key to motivating students to learn, maintain and enhance their interest in the subject, as well as providing emotional support, which are all critical for building knowledge and enhancing the student performance (Cao et al., 2008; Moore, 1989; Sher, 2009; Paechter et al., 2010). The instructor presence and interaction with students has shown to be positively related to student learning and motivation (Baker, 2010). When students have a strong relationship with their instructors they will believe more in their instructors and more motivated to be involved in the learning process (Llias et al., 2012). On the other hand, there are few researches that revealed on the significant effect of the student-student interaction on motivation. However, with this type of interaction, students benefit in many ways such as working in small groups to construct understanding, socio-emotional support, and learning within an interconnected environment (Paechter et al., 2010) which may motivate the students to do better in the e-learning environment. Therefore, the following hypotheses have been developed:

H3: Student-instructor interaction has a positive effect on the student motivation to use e-learning at AOU.

H4: Student-student interaction has a positive effect on the student motivation to use e-learning at AOU.

Motivation Direct Impact on Using E-Learning

Motivation is defined by Certo et al. (2006) as "the inner state that causes an individual to behave in a way that ensures the accomplishment of some goals". Motivation to perform a behavior can be divided into two main types: intrinsic and extrinsic motivation (Cain, 2008; Young, 2005; Hennessey et al., 2005). Extrinsic motivation is the drive of behaviors to achieve valued outcomes that are distinct from the activity itself such as external rewards, benefits, punishments, or obligations (Hennessey et al., 2005; Deci et al., 1985). Intrinsic motivation is the satisfaction gained from performing the behavior (Hennessey et al., 2005). Literature in educational psychology asserts that student motivation is a significant factor in e-learning (Cain, 2008). Both intrinsic and extrinsic motivations can be conceptualized and measured as influential indicators for students' satisfaction, enjoyment and excitement (Young, 2005). Students are having different wants, needs, and beliefs regarding the amount of

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effort they spend in completing a degree program. For instance, students may select the e-learning because they need to be at home during a particular class time or they may be unable to attend college except by an online learning method. With this flexible format of learning, self-motivation seems to be mandatory (Cain, 2008). Cain (2008) found that the main cause of the incompletion of an e-learning program is poor student motivation. A high motivation level is necessary for students to be successful in e-learning (Cain, 2008; Ergul, 2004). In other words, students who are motivated will perceive greater success and satisfaction than those who are not (Zurita et al., 2007). Therefore, the following hypothesis has been developed:

H5: Motivation has a positive effect using e-learning at AOU.

Students' Perceived Satisfaction

Satisfaction is widely accepted as a desirable outcome of any product or service experience (Siritongthaworn et al., 2006). In e-learning, satisfaction is an important indicator of success. Many studies indicated that user satisfaction is the key predecessor to predict success of a particular technology (Delone et al., 2003), or to predict a users' behavior of using such technology (Bhattacherjee, 2001). When students use e-learning, they tend to experience a new learning environment through many activities, such as the engagement in discussion board postings or online group assignments or exercises (Glass et al., 2008), which enhances their proactive thinking and learning. This engagement can increase the students' satisfaction with using e-learning (Glass et al., 2008). Therefore, the following hypothesis has been developed:

H6: The e-learning has a positive effect on the students' perceived satisfaction at AOU.

Students' Performance

Students' performance can be measured with the presence of a number of indicators including successful completion of or withdrawing a course, improved grades and building knowledge and skills (Coldwell et al., 2008). For the purpose of this study, performance is defined by the level of learning, level of understanding, built skills, and expected grades. It has been shown in previous studies that students enrolled on e-learning courses perform better than those enrolled in traditional schemes (Singh et al., 2005; Coldwell et al., 2008). Intel Corporation (2009) conducted a study on the positive impact of e-learning, and more than 80 percent of teachers surveyed said that students were more engaged and more actively involved in their learning and produced higher quality work. This supports the results of the study by Alstete and Beutell (2004), which indicated that the active participation and involvement of students using e-learning is positively and significantly related to overall course performance for MBA students.

Therefore, the following hypothesis has been developed:

H7: The e-learning has a positive effect on the students' performance at AOU.

Research Methodology

The study sample is comprised of postgraduate students enrolled in the AOU the Kingdom of Bahrain branch. The AOU offers two Master programs one in the Information Systems and the other in the Business administration. Two hundred surveys were distributed both in person and as a web survey. Only one hundred and fifty completed questionnaires were returned, 70 of them were completed using the web survey. The survey instrument provides a response rate of 75% which is considered as very high rate bearing in mind the difficulty in getting the permission to conduct the survey in the university. In addition, many students refused to answer the questionnaire either because they were very busy or they were not interested.

The survey instruments for this study was developed using validated items from the prior researches. As such, scales for measuring motivation, student-students interaction and student-instructor interaction were developed by adopting items from the measurements of (Cain, 2008; Sher, 2009; O'malley et al., 1999). The measurement for students' performance and students' perceived satisfaction was developed by adopting items from (O'Malley et al., 1999; Lee et al., 2009; Lee et al., 2008). Scales of using e-learning was developed by the authors for the purpose of the current research. Most of the items were measured on a five-point Likert-scale anchored at both extremes to 1 (strongly disagree) and 5 (strongly agree). The midpoint (3) represents the state of unsure or "neutral".

Data Collection and Research Variables

Demographics

Demographic characteristics of the overall participants are presented in **Tables 1-5**. Most of the postgraduate students that participated in the current research are male (63.30%), are from Kingdom of Saudi Arabia (51.3%) or Kingdom of Bahrain (35.3%) and are mature (age between 25 and 40) (84%) as shown in **Tables 1** and **2**. Moreover, most of the participants are married (71%) and are working (89%) (**Tables 3** and **4**). The majority of the worked participants are married (66%) and from Kingdom of Saudi Arabia (57%) as shown in **Table 3** and **Table 4**. On the other hand, the results show that most of the participants are studying business administration (80%) as shown in **Table 5**.

Table 1.
Selected characteristic of the sample (nationality and gender).

Gender	Nationality				Total
	Bahraini	Saudi	Kuwaiti	Other	
Male	12.70%	42.70%	0.70%	7.30%	63.30%
Female	22.70%	8.70%	0.00%	5.30%	36.70%
Total	35.30%	51.30%	0.70%	12.70%	100%

Table 2.
Selected characteristic of the sample (age).

Age	%
Less than 25	7.50%
Between 25 and 30	42.70%
Between 30 and 35	25.30%
Between 35 and 40	16.00%
More than 40	8.70%
Total	100%

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Table 3.
Selected characteristic of the sample (working status and country of residence).

Having a job (are you working?)						Total (%)
		Country of residence (%)				
Having a job (working?)		Bahrain	Saudi Arabia	Kuwait	Other	
	Yes	37.30	51.30	0.70	0	89.3
	No	4.00	6.0	0.0	0.70	10.7
Total		41.30	57.3	0.7	0.70	100.0

Table 4.
Selected characteristic of the sample (marital and working status).

	Having a job (are you working?)		Total
Marital Status		Yes	No	
	Single	23.30%	5.30%	28.70%
	Married	66.00%	5.30%	71.30%
Total		89.30%	10.70%	100.00%

Table 5.
Selected characteristic of the sample (field of study).

Field of study	%
Information technology	20.00%
Business administration	80.00%

Model Measurements Assessment

The strength of the measurement model is determined by its reliability and validity. Cronbach' alpha was used to assess the reliability value of each dimension as demonstrated in **Table 6**. All the reliability values are higher than 0.7.

Moreover, to assess the convergent validity confirmatory factor analysis with Varimax rotation was conducted to assess the underlying structure for the items of each research construct. The loading of each factor should be greater than or equal to 0.5 which has been achieved. Results are shown in **Tables 7** and **8**.

Hypotheses Testing

To test the research model regression analyses were conducted. The first regression analysis was performed to test the relationships between student-student interaction, student-instructor interaction and motivation in a way to examine the indirect impact of social interaction on the e-learning as shown in **Table 9**.

The results show that student-student interaction ($\beta = 0.187$, $t = 2.166$), and student-instructor interaction ($\beta = 0.376$, $t = 4.353$) have a positive effect on motivation. The results indicate that student-instructor interaction has more impact on the motivation than that of student-student interaction. Thus the 26% of the variance on the motivation is caused mostly by students-instructor interaction as shown in **Table 10**.

The second regression analysis was conducted to test the direct impact of the student-student interaction and student-instructor interaction on the using e-learning. In addition it will examine the relationship between motivation and using e-learning as shown in **Table 9**. The results demonstrated that both student-student interaction and motivation have a significant effect on using e-learning ($\beta = 0.140$, $t = 2.837$) and ($\beta = 0.815$, $t = 17.578$) respectively. The results however, indicate that student-instructor interaction has no direct effect on using e-learning ($\beta = -0.009$, $t = -0.170$). The results whereas moreover, reveal that 77% of the variance in using e-learning is caused mostly by motivation.

The other regression analyses were conducted to test the impact of using e-learning on both students' perceived satisfaction and students' performance. The results are shown **Table 9**. The results demonstrated that the e-learning has a significant impact on both students' perceived satisfaction ($\beta = 0.486$, $t = 6.768$) and students' performance ($\beta = 0.383$, $t = 5.039$). The model

Table 6.
Results for reliability analysis.

Construct	Cronbach's alpha
E-learning	0.854
Student-instructor interaction	0.759
Student-student interaction	0.786
Motivation	0.833
Perceived satisfaction	0.892
Performance	0.906

Table 7.
Results for factor analysis.

Factor	Items	Loading of each factor
Motivation	M_1	0.649
	M_3	0.829
	M_4	0.831
	M_5	0.783
	M_6	0.797
Perceived Satisfaction	S_1	0.701
	S_2	0.675
	S_3	0.690
	S_4	0.851
	S_5	0.892
	S_6	0.824
	S_7	0.851
Performance	P_1	0.815
	P_2	0.873
	P_3	0.776
	P_4	0.884
	P_5	0.840
	P_6	0.770

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Table 8.
Results for factor analysis (continue).

Factor	Items	Loading of each factor
E-learning	EL_1	0.828
	EL_2	0.625
	EL_3	0.761
	EL_4	0.807
	EL_5	0.746
	EL_6	0.811
Student-instructor interaction	SII_1	0.681
	SII_5	0.765
	SII_6	0.810
	SII_8	0.789
Student-student interaction	SS_2	0.788
	SS_3	0.818
	SS_4	0.907

Table 9.
Model testing results.

	Hypothesis	β	t	Status
H1	Student-instructor interaction → use of e-learning	0.009	−0.170	Rejected
H2	Student-student interaction → use of e-learning	0.140	2.837	Accepted
H3	Student-instructor interaction → motivation	0.376	4.353	Accepted
H4	Student-student interaction → motivation	0.187	2.165	Accepted
H5	Motivation → e-learning	0.815	17.578	Accepted
H6	Use of e-learning → students' perceived satisfaction	0.486	6.768	Accepted
H7	Use of e-Learning → students' performance	0.383	5.039	Accepted

Table 10.
Explanation of variance.

Factor	R^2
Motivation	0.247
Use of e-learning	0.672
Students' perceived satisfaction	0.231
Students' performance	0.141

moreover, explained low variance of students' perceived satisfaction and students' performance. Thus, e-learning caused only 23% of the variance in students' perceived satisfaction and 14% of the variance in the students' performance as demonstrated in **Table 10**.

Discussion and Conclusion

The current research was conducted to achieve two main objectives. The first objective was to investigate the factors affecting the use of e-learning by the postgraduate students at the AOU. The second main objective was to examine the impact of using e-learning on the students' perceived satisfaction and performance. The research findings revealed that most of the hypotheses investigated were strongly supported, except for that related to the direct effect of student-instructor interaction on using e-learning.

The findings of the current research provide a great indication about the using of e-learning at the AOU. The results revealed that 37% of the participants were females. The results indicate that the percentage of women using e-learning is acceptable peering in mind their duties as wives and mothers in addition to their employment commitments. The results confirm that the e-learning is attracting women especially in the context of the Arab countries. Women in such countries try to involve in a virtual learning environment whenever they find it difficult to enroll in a traditional and physical learning environment. Moreover, the results revealed that around 84% of the total respondents were in the age range of 25 and 40 years, in which the students are more mature and self-directed. Older students are more likely to engage in e-learning than younger students because younger students are still dependent and need to be directed and advised by the others such as their instructors (Coldwell et al., 2008). In addition, the results show that around 71% of the respondents are married, and almost 90% of them are working. This is supporting the opinion of Mrs. Dana Lori's—an examination administrator at AOU—on the enrolled students at AOU. Mrs. Dana demonstrates that most of the postgraduate students favor the e-learning method provided by AOU because they are married and working. They find this learning system a good opportunity to save their time, providing them with the required learning resources, and allowing them to attend online sessions. Thus, they can have an enough space to finish their desired degree while taking care of their homes, children, and work duties. In addition, Mrs. Dana states that students are favoring the e-learning method provided by AOU because most of them are Saudis and are not living in Bahrain which has been supported by the findings of the current research. The results indicate that almost half of the respondents (51.0%) are Saudis, and 57.3% are not living in Bahrain. Finally, the results revealed that almost 80% of the respondents were registered in the Business Administration, and that 44% of them were in the second year of their study. Information systems sometimes are found to be a more complicate and difficult subject to be studied in a distance learning system without the support of the physical learning environment.

Results on the research model and hypotheses show that the motivation is the main factor that has the most significant impact on using e-learning at the AOU, followed by student-student interaction. Motivation is predicted to be an effectual factor for using e-learning (Cain, 2008; Ergul, 2004; Smith, 2010). A high level of motivation is necessary for students to be successful in e-learning environment (Ergul, 2004). Motivation is "the internal force that drives an individual to move toward the goal after perceiving a plan" (Lee et al., 2010). If the students are motivated they will be encouraged to be effectively involved in the learning process and gain the expected success.

Regarding the direct and indirect impact of the social interaction on using e-learning, the results demonstrate that student-student interaction shows significant direct and indirect impact via the motivation on using e-learning. The results moreover,

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indicate that student-instructor interaction has no direct effect on using e-learning. However, via its impact on the motivation, student-instructor interaction can indirectly impact the using of e-learning. These findings confirm the importance of the face-to-face interaction and the social communication for students' involvement in a learning process as a part of the Arab culture.

The findings finally demonstrate that using e-learning by students at AOU has a positive and significant effect on both students' perceived satisfaction and students' performance. E-learning was found to have a positive impact on students' performance as it can increase the student engagement and motivation (Coldwell et al., 2008). Moreover, when students engage in an e-learning program, they are looking for building learning experiences and knowledge (Siritongthaworn et al., 2006) through accessing online resources and gaining new technical skills (Cain, 2008), which increase their satisfaction (Glass et al., 2008).

E-learning has become an integral part of higher education in which universities can no longer ignore this new learning environment. Therefore, in order to improve persistence in e-learning programs, as well as increase the e-learners satisfaction and performance, educational institutes need to address the factors that may impact the using of e-learning. Educational institutions thus, need to support and motivate students when making the adjustment to learning through such different learning environment. Students' motivation needs to be enhanced by encouraging the social interaction both between student-student and student-instructor interaction and facilitating the learning within social and community based environment. Moreover, a learning strategy needs to be developed with a goal of increasing students' retention by providing an effective academic and technical support and promoting a sense of social community. Teachers' presence needs also to be enhanced. The positive behaviors are important in delivering successful e-learning, increased student satisfaction and improved performance.

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