



Students and Teachers Attitudes and Satisfaction Toward E-Learning: A Case Study in Egypt

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Abstract: E-learning is an important technological tool that is used by higher educational institutions worldwide to enhance the quality of teaching and learning. However, assessing the attitudes and satisfaction of students and teachers of such a system is becoming increasingly important to its success as it presents a new learning environment for them. The aim of this study, therefore, was to try to determine Egyptian student attitudes and satisfaction and Egyptian teachers' satisfaction and perception of the usefulness of E-learning in the Faculty of Informatics and Computer Science at the British University in Egypt. Data were gathered from two sources: a student questionnaire and a teacher questionnaire. The findings of this study have shown that a) there were no significant differences between male and female students and the different degree years in their attitudes to and use of E-learning; b) the Preparatory Year appear to be less satisfied with the activities and teacher feedback on E-learning in comparison with the other degree years and c) teachers are satisfied with E-learning and regard it as a useful tool as it complements face-to-face teaching and saves them valuable time. The findings of this study will benefit academics and decision-makers involved in developing and implementing E-learning strategies in higher education institutions in the Middle East and North African regions.

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1. Introduction:

Nowadays we are witnessing a shift in the way students in private higher education institutions are being taught and the role of E-learning technology to enhance the student learning experiences (Al-Doub et al., 2008). This shift may largely be due to the arrival of Web 2.0 technology in the twenty-first century which has shifted pedagogy from its traditional approach to teaching into a more dynamic electronic web-based interactive learning environment. Today's generation is digitally literate having grown-up in an increasingly online and socially networked world. They interact with technology via computers, laptops, tablets, and smartphones. They appear to be looking for more fun, creative, interesting and interactive ways in which to be fully engaged in the learning process. Technological tools are powerful in bringing about such change to the students as they have become a medium of teaching and learning without actually being present at university campuses (Oye et al., 2010).

From the available published research findings, positive attitudes have been shown to play an important role in the acceptance of E-learning technology.

According to Workman (2005), when people have positive attitudes towards a particular technology, they will more than likely use it. In a study conducted by Alabdullaziz et al. (2011) on teachers and students in the western United States, the results showed that both teachers and students had positive overall attitudes towards E-learning environments. This finding mirrors that of Bendania (2011), as the results indicated that teachers and students at a university in Saudi Arabia expressed positive attitudes toward E-learning. These findings are comparable with other studies related to student attitudes.

Rhema and Miliszewska (2014) found that all the participating Engineering students at two Libyan universities had positive attitudes towards E-learning, Al-Doub et al. (2008) reported that students studying at two Kuwaiti higher educational institutions were also keen to

use E-learning, while the results of a study conducted by Kar et al. (2014) on University level students from four universities in West Bengal revealed that students had high attitude towards E-learning. Similarly, Adewole-Odeshi (2014) reported that 80% of the undergraduate and postgraduate students at six universities in Southwest Nigeria agreed that they have a generally favourable attitude towards using E-learning tools, while a study conducted by Seyal et al. (2010) on students studying in technical colleges in Brunei highlighted the prevalence of favourable E-learning attitudes among these students.

In addition, research suggests that gender is an important demographic variable that has an effect on the attitudes towards E-learning technology. The findings of a study conducted by Alodail (2016) at a university in Saudi Arabia indicated that there were statistically significant differences between male and female teacher attitudes toward the use of E-learning. The findings showed that females' had more positive attitudes than males. Similarly, the study of Al-Doub et al., (2008) at Kuwait's higher education institutions found that the female students value E-learning more than the male students. In accordance with this finding, Al-Fadhli (2008) conducted a study on undergraduate students at Kuwait University and found a strong significance in female students' attitudes toward E-learning in comparison to males. On the other hand, the findings of research conducted by Naaj et al. (2012) reported that male students, at a university in the UAE, tended to be more satisfied with blended learning than their female counterparts, while Liaw and Huang's study (2011) also showed that male students at a university in China had more positive attitudes towards E-learning.

On the contrary, the results of two studies conducted by Hussein (2011) and Bendania (2011) found no statistically significant differences between the attitudes of male and female students in Saudi universities. Moreover, Kar et al. (2014) found similar results from a study conducted on students at four universities in India. Other studies conducted in Turkey, the UAE and Bahrain reported no statistically significant differences between both genders with respect to their satisfaction and perceptions of blended learning (Askar et al., 2008; Shantakumari and Sajith 2014; Shehab, 2007).

Moreover, research has revealed that the degree year can influence the attitude of the university student towards E-learning. In a study conducted by Ngampornchai and Adams (2016) on undergraduate students in Thailand, the authors found that the acceptance of E-learning is related to the students' degree year. Specifically, the students who are in a senior year tend to be more willing to accept E-learning. Contrary to this finding, the result of a study conducted by Kar et al. (2014) on university students in West Bengal showed that the stream of the study did not influence the attitude of the university students towards E-learning.

Besides this, some authors have reported that age impacts upon satisfaction, attitudes, and acceptance to use E-learning technology. In a study conducted at Higher Education Institutions in Hong Kong, the results showed that in-service teachers in different age groups had statistically significant differences. Teachers of 30 or less had a positive attitude towards E-learning than teachers in other age groups (So & Swatman, 2010). In another study presented by Naaj et al. (2012), it was revealed that student satisfaction was positively related to age. Contrary to these findings, a study conducted in South-West Nigerian universities revealed that there is no significant relationship between age and intention to use an E-learning system (Adewole-Odeshi, 2014). Along similar lines, a study conducted on students studying on a blended learning programme in Turkey reported no statistically significant differences between ages of students with respect to satisfaction (Askar et al., 2008).

Furthermore, perceived usefulness has shown to be important in explaining teachers' and students' satisfaction with E-learning tools. Sørebø and Sørebø (2008) found that the teachers' perceived usefulness seems to be the most important predictor of teachers' satisfaction with E-learning. Similarly, in a study conducted by Teo and Wong (2013) in Singapore, the authors found that perceived usefulness significantly influenced the student teachers' satisfaction with E-learning. Along similar lines, Liaw (2007) performed a study on university students in Taiwan and the results demonstrated that perceived satisfaction and usefulness contributed to the learners' behavioral intention to use the E-learning system. In essence, when students feel satisfied that E-learning is useful for enhancing their skills and learning, they will show positive attitudes toward the technology. To shed more light on this, Sun et al. (2008) conducted a study on students from two public universities in Taiwan and found that learners' perceived usefulness correlated positively with their level of satisfaction. Similarly, a study carried out by Al-Adwan et al. (2013) on university students in Jordan reported that perceived usefulness had significantly influenced the students' intention to use E-learning.

Moreover, the instructor's feedback has also been found to be the most important factor in satisfaction with instruction (Finaly-Neumann, 1994). Likewise, in a study conducted by Martinez-Arguelles et al. (2013), the authors found that 90% of students give great or very great importance to reception of feedback from instructors. In agreement with these findings, the results of a study performed at a university in Pakistan showed that the majority of the students reported that they liked the feedback from their teachers (Ali & Ahmed, 2011). Therefore, teacher feedback is an important factor in playing a role in the overall satisfaction of students toward this technology.

With regard to E-learning experiences, according to Willis (1994), it is not the technology itself, but merely the



instructional implementation of it that determines the effectiveness of E-learning. The results of a study conducted by Alkhalfet et al. (2012) on university students in the Kingdom of Saudi Arabia confirmed that 60% of the participants were either satisfied or very satisfied with their experiences using E-learning systems. In line with this finding, Sharp and Benfield (2005) reported that 36% of students at Oxford Brookes University mentioned that a major strength of their course was giving them access to information (course slides, handouts, and links to other resources). Moreover, Sun et al. (2008) revealed that course content should be carefully presented as it is a critical factor affecting learners' perceived satisfaction. Besides this, Liaw (2007) found a significant correlation between interactive learning activities and perceived satisfaction. Apart from the content, the design of the E-learning platform is crucial to the students' success (Liaw, 2008; Lu & Chiou, 2010). Also, E-learning has been found to decrease the workload of students and save them valuable time (Saleem & Rasheed, 2014). Therefore, the teacher plays a crucial role in the effectiveness and success of E-learning.

1.1. E-learning at the British University in Egypt (BUE):

Since the beginning of the University in 2005/2006, the BUE chose to adopt Moodle as its E-learning platform. This E-learning platform is designed to provide module leaders and students with a personalized and integrated learning environment. Accordingly, the BUE E-learning system allows module leaders to store class materials, module syllabi and handouts in the tables of the system's database schema. Students can post their papers and other assignments on the module web page where the module leader can grade the assignments, record grades and each student can view his or her grades. The BUE E-learning system provides an integrated email tool which allows participants to send announcement email messages to the entire class or to a subset of the entire class. It also provides an interactive learning environment where chat tools allow synchronous communication among class participants and threaded discussion boards allow asynchronous communication among participants. Since 2014 E-learning has been playing an essential role in both teaching and learning processes at the BUE and in supportive independent learning. Moreover, E-learning offers a Contingency Plan in case of unplanned university closure such as those in 2011 and during 2013/2014.

The British University in Egypt consists of nine faculties: Business Administration, Economics and Political Science (BAEPS); Informatics and Computer Science (ICS); Engineering; Communication and Mass Media; Dentistry; Pharmacy, Nursing, Law and Arts and Humanities.

Given the importance of E-learning and its role in education today, it deserves special attention and

investigation. Moreover, since the introduction of E-learning at the British University in Egypt (BUE) in 2005 there have been no studies to show the students' and teachers' perspective towards it. Therefore, this study was intended to add to the existing body of knowledge related to E-learning for Informatics and Computer Science (ICS) and also to better understand student attitudes and satisfaction and the satisfaction of teachers towards the use of this system.

1.2. Research questions:

Regarding students

1. What are the overall attitudes of students toward E-learning technology?
2. Are there any significant differences in attitudes toward E-learning technology for female and male students?
3. Are there any significant differences in attitudes toward E-learning technology between different degree years?
4. What are the relationships between students' perceptions of the usefulness of E-learning technology for independent learning; satisfaction with the presentation of materials, activities and teacher feedback?

Regarding teachers

1. What is the overall satisfaction of teachers toward E-learning technology?
2. What is the relationship between teacher satisfaction and usefulness of E-learning technology?

2. Materials and Methods:

2.1. Study sample:

The participants of this study were 144 undergraduate students studying in the Faculty of ICS at the BUE. The students were from the Preparatory Year, Years 1, 2 and 3. Sixteen teaching staff also participated in the completion of a teacher questionnaire. The teaching staff was from the above-named faculty. Five questionnaires were incomplete and therefore discarded. The participant characteristics of students and teachers are shown in Table 1.

Table 1: *Participant characteristics*

| Students n=144 | | |
|------------------|--------|--------|
| Study Year | Number | (%) |
| Preparatory | 76 | (52.8) |
| Year 1 | 40 | (27.8) |
| Year 2 | 25 | (17.4) |
| Year 3 | 3 | (2.1) |
| Gender | Number | (%) |
| Male | 102 | (70.1) |
| Female | 39 | (27.1) |
| Missing | 3 | (2.1) |
| Teachers n=16 | | |
| Years Employed | Number | (%) |
| Less than a year | 4 | (25) |
| 1 – 2 | 3 | (18.8) |
| 2 – 4 | 6 | (37.5) |
| 4 – 6 | 2 | (12.5) |

| | | |
|----------------|--------|--------|
| 6 or more | 1 | (6.3) |
| Hours of work | Number | (%) |
| Full-time | 15 | (93.8) |
| Part-time | 1 | (6.3) |
| Academic title | Number | (%) |
| Lecturer | 2 | (12.5) |
| Demonstrator | 14 | (87.5) |

*Study Year: Some teachers teach more than one year

Source: Calculated by the researcher based on the survey's data

2.2. Tools for data collection:

Two questionnaires were devised and used in order to obtain data for this study: a questionnaire for students and a questionnaire for teaching staff.

2.3. Procedure:

The researcher had permission to carry out this research and for the questionnaires to be administered on the chosen sample, from the Senior Vice-President for Teaching and Learning and the University E-learning Director.

The investigation consisted of two stages. For the initial stage, the questionnaire was administered to students by the administrative staff in the Faculty of ICS during teaching weeks 8 and 9 of Semester Two and during their regular lectures, tutorials and labs. Students who were present on the days the questionnaire was administered took part in the completion of it. To ensure respondent confidentiality, no names or IDs were required. The completed questionnaires were collected by the administrative staff and handed to the researcher. For the second stage, the teacher questionnaire was administered by a teaching assistant to all teaching staff in the Faculty of ICS. Those who were willing to assist completed the questionnaire. The completed questionnaires were collected by the same teaching assistant and handed to the researcher for analysis.

The questionnaire for students was made up of 37 items divided into two sections. Section "A" (3 questions) describes the respondents' characteristics including degree year, faculty, and gender. Section "B" (34 open and closed questions/statements) illustrates the students' attitudes towards E-learning, the perceived usefulness to encourage independent learning, satisfaction with the presentation of material and activities, teacher feedback, what they like and dislike most about this technology, where they access it and how reliable they consider the internet to be, whether social networks should be embedded in Moodle and how E-learning can be improved.

The questionnaire for teachers consisted of 26 items divided into two sections. Section "A" (6 questions) describes the respondents' characteristics including degree year taught, faculty, gender, length of time worked at the University, full or part-time and academic title. Section "B" (20 open and closed questions/statements) illustrates

the teachers' satisfaction, the perceived usefulness of E-learning, what they like and dislike the most about it, where they access it, how reliable the internet connection is and how E-learning can be improved for teachers.

The students were instructed to apply a five-point Likert rating scale to statements 1 to 23 (from 1 'strongly disagree' to 5 'strongly agree') and were asked to apply a rating scale to questions 24 to 28 (from 1 'very dissatisfied' to 5 'very satisfied') to indicate the level to which they have rated their attitudes and satisfaction with E-learning technology. Respondents were also asked to provide further information by answering six open and closed questions.

Similarly, teachers were also asked to apply a five-point Likert rating scale to statements 1 to 10 (from 1 'strongly disagree' to 5 'strongly agree') and a rating scale to questions 11 to 15 (from 1 'very dissatisfied' to 5 'very satisfied') to illustrate the level to which they have rated their satisfaction and perceived usefulness of E-learning technology. Respondents were also asked to provide further information by answering five open and closed questions.

2.4. Data Analysis:

The data obtained from the questionnaires were computer coded and processed with the Statistical Package for the Social Sciences (SPSS) version 16 and several statistical analysis techniques were implemented.

2.4.1. Students:

A set of descriptive statistics were calculated to compare the mean scores regarding the attitudes towards E-learning between males and females as well as the different degree years. A correlational analysis using Pearson Product-Moment Correlations was also conducted to identify the interrelationship between the variables. Moreover, one-way analysis of variance (ANOVA) was performed to identify whether there is a significant difference between males, females and the degree years regarding their views about the usefulness of E-learning, satisfaction with the presentation of material, activities and teacher feedback. Furthermore, responses to each of the three open-ended questions were reviewed to identify any common, recurrent and emerging themes. Tables containing the responses to the three questions were prepared.

2.4.2. Teachers:

A set of descriptive statistics were calculated to compare the mean and standard deviation of the respondents' responses to all the questions/statements related to their overall satisfaction with E-learning and their perception of how usefulness they consider it to be. A correlational analysis using Pearson Product-Moment Correlations was also conducted to identify the interrelationship between the teachers' overall satisfaction

and perceived usefulness of E-learning to examine the relationship between these two variables. Using the same method of data analysis to that of the students, responses to the three open-ended questions were written down. Tables containing the responses to the three questions were prepared.

3. Results:

3.1. Reliability of the student's and teacher's questionnaires:

In order to check the internal reliability for each scale of the questionnaires, a reliability analysis was performed with the use of Cronbach's Alpha. Items which would have reduced the internal consistency of a scale were omitted from the scales before further analytical procedures were carried out. Nunnally (1978) has indicated 0.7 to be an acceptable reliability threshold. As can be seen in Tables 2 and 3 all figures meet acceptable levels of reliability.

Table 2: Reliability of student questionnaire – assessment of Cronbach's Alpha.

| Scale | Number of survey items | Cronbach's Alpha |
|--|------------------------|------------------|
| Attitudes towards E-learning | 10 | 0.78 |
| Usefulness of E-learning | 7 | 0.72 |
| Satisfaction with presentation of material | 4 | 0.78 |
| Satisfaction with activities and feedback | 2 | 0.79 |

Table 3: Reliability of teacher questionnaire – assessment of Cronbach's Alpha.

| Scale | Number of survey items | Cronbach's Alpha |
|------------------------------|------------------------|------------------|
| Satisfaction with E-learning | 4 | 0.72 |
| Usefulness of E-learning | 9 | 0.70 |

3.2. Questionnaire – Students:

3.2.1. Student attitudes toward E-learning by gender:

The descriptive statistics of students' attitudes toward E-learning by gender are shown in Table 4. Although the mean score for males (3.24) shows slightly higher positive attitudes toward this technology in comparison to the females (3.15), according to the ANOVA test, there is no significant difference between them.

Table 4: Students' attitudes towards E-learning by gender

| Gender | N | Mean | Std. Deviation |
|--------|-----|--------|----------------|
| Male | 102 | 3.2373 | .65445 |
| Female | 39 | 3.1487 | .59687 |
| Total | 141 | 3.2128 | .63817 |

*Total 141. There were three missing responses for Gender

Table 5 presents the students' attitudes towards E-learning by degree year. The data show that the Preparatory Year had slightly higher attitudes towards E-learning (3.29) in comparison to Years 1 and 2. However, the results of ANOVA indicate no significant difference in the mean scores between students in the different degree years.

Table 5: Students' attitudes towards E-learning by degree year

| Degree year | N | Mean | Std. Deviation |
|-------------|--------|--------|----------------|
| Year 1 | 40 | 3.1575 | .60886 |
| Year 2 | 25 | 3.0280 | .70977 |
| Year 3 | 3 | 3.5667 | .55076 |
| Prep-Year | 76 | 3.2921 | .62860 |
| Total | 3.2146 | 144 | .64025 |

Due to the low number of year; 3 students who participated in this study (only three students), the interpretation of the results will focus on Prep-Year, Year 1 and Year 2

3.3. Correlational Analysis:

Following the descriptive statistics, a Pearson correlation coefficient was calculated and tested to check the relationship between the variables. In order to interpret the size of the value of the Pearson correlation (r), Cohen (1988) has suggested the following guidelines. See Table 6 below.

Table 6: Determining the strength of the relationship between variables

| | |
|--|--------|
| $r=.10$ to $.29$ or $r=-.10$ to $-.29$ | small |
| $r=.30$ to $.49$ or $r=-.30$ to $-.49$ | medium |
| $r=.50$ to 1.0 or $r=-.50$ to -1.0 | large |

Overall satisfaction and usefulness of E-learning to encourage independent learning

The results of the correlational analysis are shown in Appendix 3. The findings have shown that 23 out of 33 coefficients were statistically significant at the $p < .01$ level while 6 were significant at the $p < .05$ level.

3.3.1. Overall satisfaction with E-learning and satisfaction with presentation of material on E-learning:

The results of the correlations are displayed in Appendix 4. As illustrated, there is a strong linear relationship between the variables. It is also quite remarkable that all the 10 coefficients are significant at the $p < .01$ level.

3.3.2. Overall satisfaction with E-learning and satisfaction with activities and teacher feedback on E-learning:

The findings of the correlations are presented in Appendix 5. As can be seen, all the coefficients have shown a highly significant positive relationship at the $p < .01$ level.

3.4. Satisfaction with E-learning features: The results of ANOVA:

Following the correlation analyses, a one-way analysis of variance (ANOVA) was performed to compare the mean scores of student gender and degree years with the three criterion measures (1. usefulness; 2. satisfaction with the presentation of material; and 3. satisfaction with activities and teacher feedback).

3.4.1. Students' perceptions of usefulness and satisfaction of E-learning by gender:

The results provided in Table 7 show that there are no significant differences when comparing male and female students' mean scores for the three variables. However, there are some differences between the ratings of the variables for both genders. To begin with, both males and females think that E-learning is useful to encourage independent learning. Similarly, they appear to be relatively satisfied with how their teachers present the material on E-learning. However, the results have also shown that both males and females tend to be less satisfied with the activities and teacher feedback using this technology in comparison to the other variables.

Table 7: One-way analysis of variance (ANOVA) comparing male and female students with the usefulness, satisfaction with presentation of material, activities and teacher feedback on E-learning

| Gender | | Usefulness of E-learning to encourage independent learning | Satisfaction with the presentation of material on E-learning | Satisfaction with activities and teacher feedback on E-learning |
|--------|----------------|--|--|---|
| Male | N | 102 | 102 | 102 |
| | Mean | 3.4748 | 3.2819 | 2.8971 |
| | Std. Deviation | .67011 | .82928 | .85982 |
| Female | N | 39 | 39 | 38 |
| | Mean | 3.4908 | 3.3718 | 2.9474 |
| | Std. Deviation | .52005 | .88271 | .96415 |
| Total | N | 141 | 141 | 140 |
| | Mean | 3.4792 | 3.3067 | 2.9107 |
| | Std. Deviation | .63041 | .84217 | .88608 |

*Total Number 141 and 140. There were missing responses to each of the three questions.

3.4.2. Students' perceptions of usefulness and satisfaction of E-learning by degree year:

The scores across each of the different degree years are shown in Table 8. As can be seen, Preparatory Year students appear to be more satisfied with the usefulness of E-learning to encourage independent learning and also with the presentation of material in comparison to the other degree years as shown by the mean scores (3.52 and 3.34 respectively), despite being only slightly higher. Furthermore, the Preparatory Year students appear to be less satisfied with the activities and teacher feedback on E-learning than the other two degree years.

Table 8: One-way analysis of variance (ANOVA) comparing degree years with the usefulness, satisfaction with the presentation of material, activities and teacher feedback on E-learning.

| Degree year | | Usefulness of E-learning to encourage independent learning | Satisfaction with the presentation of material on E-learning | Satisfaction with activities and teacher feedback on E-learning |
|-------------|----------------|--|--|---|
| Year 1 | N | 40 | 40 | 39 |
| | Mean | 3.4429 | 3.1937 | 3.0641 |
| | Std. Deviation | .59282 | .90668 | 1.00773 |
| Year 2 | N | 25 | 25 | 25 |
| | Mean | 3.4800 | 3.3000 | 3.0000 |
| | Std. Deviation | .64137 | .87500 | .95743 |
| Year 3 | N | 3 | 3 | 3 |
| | Mean | 3.4286 | 4.2500 | 2.6667 |
| | Std. Deviation | .75593 | .90139 | .28868 |
| Prep-Year | N | 76 | 76 | 76 |
| | Mean | 3.5207 | 3.3388 | 2.8289 |
| | Std. Deviation | .65640 | .78709 | .81057 |
| Total | N | 144 | 144 | 143 |
| | Mean | 3.4901 | 3.3108 | 2.9196 |
| | Std. Deviation | .63251 | .84366 | .88741 |

* Total Number 143. There was one missing response for the question on Satisfaction with activities and teacher feedback on E-learning.

* Due to the low number of Year 3 students who participated in this study (only three students), the interpretation of the results will focus on Year 1, Year 2 and Prep-Year.

The last consideration of the questionnaire was to elicit some additional information from the students.



Moreover, only 30% or more of students who responded to each question have been included. The six questions and responses are shown below.

What do you like the most about E-learning?

With regard to Q.29 of the student questionnaire, students were asked what they liked the most about E-learning. Of the 144 students, 43% stated that they liked the fact that they can access the module material anywhere and anytime.

What do you dislike the most about E-learning?

In response to Q.30, a total of 31.3% of students stated that they disliked the Internet speed and bandwidth.

Kindly provide some suggestions on how the University could improve E-learning for students

Responses to Q.31 were similar to those of the previous question as 31.3% of the students believe that improvements to the system can be made by increasing the Internet speed.

Do you access E-learning from your home computer, University or both?

In response to Q.32 which enquired where students access E-learning, 78.5% stated that they access it from both their home and University computers.

Do you have a reliable internet connection at home?

The next question concerns the Internet connection from the student's home. As many as 79.2% mentioned that they have a reliable Internet connection.

Do you think it would be helpful for students if social networks are embedded in Moodle?

In response to the last question of the student questionnaire, 54.9% of students, stated that it would be helpful to embed social networks in Moodle.

3.5. Questionnaire – Teachers:

3.5.1. Satisfaction with E-learning:

The mean score for the satisfaction scale (3.52) indicated that the participating teachers' overall responses to the three questions/statement on how satisfied they are with E-learning technology were positive. Table 9 presents the mean and standard deviation.

Table 9: Teacher's satisfaction with E-learning

| | N | Minimum | Maximum | Mean | Std. Deviation |
|--------------------|----|---------|---------|--------|----------------|
| Satisfaction | 16 | 2.25 | 4.50 | 3.5156 | .60875 |
| Valid N (listwise) | 16 | | | | |

3.5.2. Usefulness of E-learning:

Table 10 presents the mean score for the usefulness of E-learning scale (3.39). The data show that that teachers' perceive this technology to be useful for enhancing teaching and learning.

Table 10: Teacher's perception of usefulness with E-learning

| | N | Minimum | Maximum | Mean | Std. Deviation |
|------------------|----|---------|---------|--------|----------------|
| Satisfaction | 16 | 2.78 | 4.11 | 3.3889 | .42164 |
| Valid (listwise) | 16 | | | | |

3.6. Correlation analyses:

3.6.1. E-learning and other factors:

Teacher satisfaction with E-learning was checked against other factors to explore possible relationships. The Pearson Product Moment correlation coefficients were used to measure the relationships between the variables.

As displayed in Appendix 6, the relationships were linear between the teacher's satisfaction with E-learning and two other variables: E-learning motivates teachers to plan and prepare lectures; and satisfaction with the download time of E-learning pages. Moreover, there was a strong positive relationship ($p<0.01$) between these two variables and the teacher's satisfaction with this technology. There was, however, no significant correlation between the variables teacher' satisfaction and giving feedback on E-learning.

As illustrated in Appendix 7, only 2 of the 9 coefficients were statistically significant at the $p<0.01$ level. This demonstrates that there is a strong positive relationship between the teacher's satisfaction toward E-learning and saving time to track and monitor student's progress; and a strong relationship toward E-learning and how it complements face-to-face teaching by saving time to track and monitor student's progress.

Moreover, four coefficients were significant at the $p<.05$ level (see Appendix 7). The results demonstrate that there is a relationship between satisfaction toward E-learning technology and usefulness to enhance teaching. In addition, two correlations emerged with saving teacher's time to track and monitor student's progress. They are: E-learning is a useful tool to enhance teaching and it helps to communicate with students outside of class more effectively. In addition, E-learning is a useful tool to enhance teaching as a significant correlation with helping teachers to be better organized is present.

Along the similar lines to the students, the last consideration of the questionnaire was to elicit some additional information from the teachers. Moreover, 30% or more of teachers who responded to each question have been included. The five questions and responses are shown below.



What do you like the most about E-learning?

Question 16 attempted to elicit what teachers liked the most about E-learning. The results show that 94% stated that E-learning offers a range of options for teachers and students. Specifically, teachers referred to the accessibility of material anywhere and anytime; online submissions and communication with students.

What do you dislike the most about E-learning?

With regard to Q.17, 44% of the teachers mentioned that the speed and bandwidth of the Internet are what they dislike the most about E-learning. This finding is in agreement with that of the students.

Kindly provide some suggestions on how the University could improve E-learning for instructors?

Question 18 of the questionnaire elicits from teachers suggestions on how the University could improve E-learning. The responses correspond to those of the previous question as 44% of the teachers stated that the speed of the Internet and bandwidth should be increased. This finding is also in line with the students' responses to this question.

Do you access E-learning from your home computer, University or both?

The results of Q.19 have shown that 93.8% access E-learning from both the University and their home computers. The findings have shown that a higher percentage of teachers access E-learning on and off campus in comparison to students (78.5%).

Do you have a reliable internet connection at work and home?

Question 20 inquired as to whether teachers have a reliable internet connection both on and off campus. A total of 68.8% said that they have a reliable internet connection both at work and at home. The results have demonstrated that a higher percentage of students (79.2%) have reliable internet connection in comparison to teachers.

4. Discussion:

This paper presented the findings of a study examining students' and teachers' attitudes and satisfaction toward E-learning technology at the British University in Egypt. Regarding gender impact, the results have shown that students had relatively similar positive attitudes towards E-learning. This finding may simply be due to the fact that ICS students, in general, are tech-savvy and computer literate and therefore, irrespective of their gender, are confident in their knowledge of the use of computers and the internet which as a result is positively associated with their attitudes and satisfaction towards their intention to use E-learning.

This finding is comparable with the results of studies conducted in Saudi Arabia, West Bengal, Turkey, the UAE and Bahrain (Bendania 2011; Hussein, 2011; Kar et al.,

2014; Askar et al., 2008; Shantakumari and Sajith 2014; Shehab, 2007).

Moreover, the results further indicate that students' in the different levels of undergraduate studies equating to Preparatory Year, First Year, and Second Year have similar positive attitudes toward E-learning. This would indicate that the students' year of study is not necessarily a significant factor influencing student attitudes towards this technology. This would also indicate that the progression from one year to the next does not seem to present a challenge to the effective use of E-learning for ICS students. Perhaps this is due to the fact that they are technically minded and therefore understand and accept the role of E-learning in the learning process. This finding is in line with the results of a study conducted by Kar et al. (2014).

Furthermore, the findings of this study have demonstrated that there was a statistically significant correlation with student satisfaction with E-learning and its perceived usefulness to encourage independent learning. Not surprisingly, E-learning students have more control over the learning process. This has several advantages for the students. For example, flexibility to study anywhere, anytime; catch-up on missed lectures; be better organized, work at one's own pace; prepare for upcoming lectures; and revise material for assessments and examinations. This finding supports previous research findings reported in the literature (Liaw 2007; Sun et al., 2008; Al-Adwan et al., 2013).

In addition to usefulness, it was also identified in this research that students are satisfied with the presentation of material on E-learning. Specifically, students are satisfied when the instructions of online assignments and activities are clear; the materials are easily accessible, and also when the interface is user-friendly, colourful and attractive. The findings of this current study are in accordance with the results of Sun et al. (2008) who found that E-learning course quality has a strong positive significant influence on E-learners satisfaction.

Besides this, students are satisfied with activities and teacher feedback on E-learning. This finding shows that activities to support the learning process and teacher feedback are important factors for playing a role in the overall satisfaction of students toward this technology. This result reflects some of the previous findings in the literature, Liaw (2007) and Martinez-Arguelles et al., (2013). However, when comparing the mean scores of the different degree years, it needs to be mentioned that the Preparatory Year students appear to be less satisfied with the activities and teacher feedback than Years 1 and 2. It might be the case that Preparatory Year students may face some challenges in getting used to the E-learning platform, accessing and completing uploaded/online activities and receiving feedback via this technology. Moreover, they may also need more detailed explanation and guidance on how to improve their assignments and performance in

order to increase their GPA. Therefore, more face-to-face feedback may be required as opposed to online feedback.

Finally, teachers are satisfied with E-learning technology and see the value in its usefulness for enhancing teaching and learning. Likewise, the results have shown that E-learning's value has undoubtedly helped teachers to plan and prepare their lectures to complement their face-to-face teaching and by saving time to track and monitor student's progress. The results have also shown that teachers value how useful E-learning can be to enhance teaching; be better organized; and to communicate with students outside the class more effectively. This finding is in agreement with other researchers (Sørebø & Sørebø 2008; Teo & Wong) who found that perceived usefulness significantly influenced teachers' satisfaction with E-learning. However, the results have also revealed that there is no relationship between teachers' satisfaction and giving feedback on E-learning. This may be due to the fact that not all ICS modules can employ effective online feedback techniques. For instance, data programming where there is a need to develop practical skills would be difficult to give feedback through E-learning.

5. Conclusion:

The current study was aimed at finding out the attitudes and satisfaction of students and teachers towards E-learning technology in the Faculty of ICS at the BUE. The results of the quantitative data show the reasons offered by students and teachers for their attitudes, perceived usefulness, and satisfaction toward E-learning technology. Although some factors are beyond the control of the teachers (speed and bandwidth of the Internet) most of the reasons found to have a positive impact on E-learning in this study are influenced to a large extent by the teachers. For example, the presentation of material (colourful, attractive and user-friendly) interesting activities and effective feedback. These factors will have an important influence on the students' perception of how useful they consider this technological tool to be for developing their knowledge and skills and encouraging them to work independently. For teachers, the most prominent findings to emerge from this study are that E-learning is a useful tool as it complements face-to-face teaching and that it saves valuable time.

6. Limitations:

Even though the results of this study provide insights into what constitutes the greatest impact of E-learning for students and teachers at the BUE, some limitations should be considered when interpreting the results. First, the study is limited to students and teachers from one faculty. Besides this, ICS students and teachers are tech-savvy and may be more accepting of E-learning than students and teachers of other disciplines. It would be useful to see if the findings presented in this paper could be confirmed by participants in other faculties, disciplines and

other universities. In addition, paper-based and online questionnaires can yield low response rates.

7. Future study:

This research should be extended to include participants from other faculties at the BUE and other universities in order to compare findings.

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APPENDIX 1

A complete list and number of items for all the scales and reliability coefficients for the student's questionnaire.

Student Attitudes towards E-learning (10 items)

Cronbach Alpha Coefficients =0.78

1. E-learning motivates me to learn my subject.
2. E-learning helps me to save time studying subjects which enables me to find more time to socialize with family and friends.
3. E-learning helps me to understand the subject material well.
4. E-learning develops my knowledge and skills.
5. E-learning is more enjoyable than face-to-face teaching.
6. E-learning is useful.
7. Overall, how satisfied are you with E-learning?
8. Overall, how satisfied are you with the download time for E-learning pages?
9. Overall, how satisfied are you with the online interaction with teachers?
10. Overall, how satisfied are you with the speed of the Internet you are using?

Usefulness of E-learning to encourage independent learning (7 items)

Cronbach Alpha Coefficients =0.72

1. E-learning encourages me to study more from home.
2. E-learning helps me to become an independent learner.
3. E-learning helps me to catch up on missed lectures.
4. E-learning helps me to be better organized.
5. E-learning helps me to work at my own pace.
6. E-learning helps me to prepare for upcoming lectures.
7. E-learning helps me to revise the subject material for final exams.

Satisfaction with presentation of material on E-learning (4 items)

Cronbach Alpha Coefficients =0.78

1. Overall, E-learning instructions were clear.
2. Overall, E-learning pages were user-friendly.
3. Overall, E-learning materials were colourful and attractive.
4. Overall, E-learning materials were easily accessible.

Satisfaction with E-learning activities and teacher feedback (2 items)

Cronbach Alpha Coefficients =0.79

1. Overall, E-learning activities were interesting.
2. Overall, how satisfied are you with teacher feedback on E-learning?



APPENDIX 2

A complete list and number of items for all the scales and reliability coefficients for the teacher's questionnaire.

Satisfaction with E-learning (4 items)

Cronbach Alpha Coefficients =0.72

1. E-learning motivates me to plan and prepare my lectures.
2. How satisfied are you with E-learning?
3. How satisfied are you with the download time for the E-learning pages?
4. How satisfied are you giving feedback on E-learning?

Usefulness of E-learning (9 items)

Cronbach Alpha Coefficients =0.70

1. E-learning activities help reinforce my lectures.
2. E-learning is a useful electronic tool to enhance my teaching.
3. E-learning helps me to communicate with students outside of class more effectively.
4. E-learning helps me to save time preparing my lectures which enables me to find more time to socialize with family and friends.
5. E-learning helps me to get engaged with the subject I teach.
6. E-learning helps me to be better organized.
7. E-learning helps me to tailor learning to individual student's needs.
8. E-learning compliments face-to-face teaching.
9. E-learning saves me time tracking and monitoring students' progress.



APPENDIX 3

Pearson product-moment correlations between measures of overall satisfaction of E-learning with the usefulness of E-learning to encourage independent learning for the whole student sample.

| | Overall, how satisfied are you with E-learning? | E-Learning encourages me to study from home | E-learning helps me to become an independent learner | E-learning helps me to catch up on missed lectures | E-learning helps me to be better organized | E-learning helps me to work at my own pace | E-learning helps me to prepare for upcoming lectures | E-learning helps me to revise the subject material for final exams |
|--|---|---|--|--|--|--|--|--|
| Overall, how satisfied are you with E-learning? | Pearson Correlation Sig. (2-tailed) N | 1 .000 144 | .406** .006 144 | .229** .000 144 | .346** .000 144 | .333** .000 144 | .278** .001 144 | .221** .008 144 |
| E-Learning encourages me to study from home | Pearson Correlation Sig. (2-tailed) N | .406** .000 144 | 1 .000 144 | .465** .000 144 | .242** .004 144 | .378** .000 144 | .244** .003 144 | .182* .029 144 |
| E-learning helps me to become an independent learner | Pearson Correlation Sig. (2-tailed) N | .229** .006 144 | .465** .000 144 | 1 .000 144 | .342** .000 144 | .343** .000 144 | .346** .000 144 | .158 .058 144 |
| E-learning helps me to catch up on missed lectures | Pearson Correlation Sig. (2-tailed) N | .346** .000 144 | .242** .004 144 | .342** .000 144 | 1 .005 144 | .231** .005 144 | .346** .000 144 | .204* .014 144 |
| E-learning helps me to be better organised | Pearson Correlation Sig. (2-tailed) N | .333** .000 144 | .378** .000 144 | .343** .000 144 | .231** .005 144 | 1 .000 144 | .375** .000 144 | .252** .002 144 |
| E-learning helps me to work at my own pace | Pearson Correlation Sig. (2-tailed) N | .278** .001 144 | .244** .003 144 | .346** .000 144 | .346** .000 144 | .375** .000 144 | 1 .010 144 | .215** .010 144 |
| E-learning helps me to prepare for upcoming lectures | Pearson Correlation Sig. (2-tailed) N | .221** .008 144 | .182* .029 144 | .158 .058 144 | .204* .014 144 | .252** .002 144 | .215** .010 144 | 1 .219 144 |
| E-learning helps me to revise the subject material for final exams | Pearson Correlation Sig. (2-tailed) N | .431** .000 144 | .283** .001 144 | .194* .020 144 | .312** .000 144 | .403** .000 144 | .266** .001 144 | .103 .219 144 |

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

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

**APPENDIX 4**

Pearson product-moment correlations between measures of overall satisfaction of E-learning and satisfaction with the presentation of material on E-learning for the whole student sample.

| | | Overall, how satisfied are you with E-learning? | Overall E-learning instructions were clear | Overall, E-learning pages were user-friendly | Overall, E-learning pages were colourful and attractive | Overall, E-learning materials were easily accessible |
|---|---------------------|---|--|--|---|--|
| Overall, how satisfied are you with E-learning? | Pearson Correlation | 1 | .407** | .424** | .372** | .357** |
| | Sig. (2-tailed) | | .000 | .000 | .000 | .000 |
| | N | 144 | 144 | 144 | 144 | 144 |
| Overall E-learning instructions were clear | Pearson Correlation | .407** | 1 | .574** | .379** | .382** |
| | Sig. (2-tailed) | .000 | | .000 | .000 | .000 |
| | N | 144 | 144 | 144 | 144 | 144 |
| Overall, E-learning pages were user-friendly | Pearson Correlation | .424** | .574** | 1 | .511** | .564** |
| | Sig. (2-tailed) | .000 | .000 | | .000 | .000 |
| | N | 144 | 144 | 144 | 144 | 144 |
| Overall, E-learning pages were colourful and attractive | Pearson Correlation | .372** | .379** | .511** | 1 | .487** |
| | Sig. (2-tailed) | .000 | .000 | .000 | | .000 |
| | N | 144 | 144 | 144 | 144 | 144 |
| Overall, E-learning materials were easily accessible | Pearson Correlation | .357** | .382** | .564** | .487** | 1 |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | |
| | N | 144 | 144 | 144 | 144 | 144 |

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



APPENDIX 5

Pearson product-moment correlations between measures of overall satisfaction of E-learning and satisfaction with activities and teacher feedback on E-learning for the whole student sample.

| | | Overall, how satisfied are you with E-learning? | Overall, E-learning activities were interesting | Overall, how satisfied are you with teacher feedback on E-learning? |
|---|---------------------|---|---|---|
| Overall, how satisfied are you with E-learning? | Pearson Correlation | 1 | .468** | .407** |
| | Sig. (2-tailed) | | .000 | .000 |
| | N | 144 | 142 | 143 |
| Overall, E-learning activities were interesting | Pearson Correlation | .468** | 1 | .353** |
| | Sig. (2-tailed) | .000 | | .000 |
| | N | 142 | 142 | 142 |
| Overall, how satisfied are you with teacher feedback on E-learning? | Pearson Correlation | .407** | .353** | 1 |
| | Sig. (2-tailed) | .000 | .000 | |
| | N | 143 | 142 | 143 |

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

APPENDIX 6

Pearson product-moment correlations between measures of overall satisfaction of E-learning with their motivation to plan and prepare lectures, satisfaction with the download time and for giving feedback for whole teacher sample.

| | | How satisfied are you with E-learning? | E-learning motivates me to plan and prepare my lectures | How satisfied are you with the download time for the E-learning pages? | How satisfied are you giving feedback on E-learning? |
|--|---------------------|--|---|--|--|
| How satisfied are you with E-learning? | Pearson Correlation | 1 | .325 | .455 | .327 |
| | Sig. (2-tailed) | | .220 | .077 | .217 |
| | N | 16 | 16 | 16 | 16 |
| E-learning motivates me to plan and prepare my lectures | Pearson Correlation | .325 | 1 | .661** | .454 |
| | Sig. (2-tailed) | .220 | | .005 | .077 |
| | N | 16 | 16 | 16 | 16 |
| How satisfied are you with the download time for the E-learning pages? | Pearson Correlation | .455 | .661** | 1 | .203 |
| | Sig. (2-tailed) | .077 | .005 | | .452 |
| | N | 16 | 16 | 16 | 16 |
| How satisfied are you giving feedback on E-learning? | Pearson Correlation | .327 | .454 | .203 | 1 |
| | Sig. (2-tailed) | .217 | .077 | .452 | |
| | N | 16 | 16 | 16 | 16 |

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



APPENDIX 7

Pearson product-moment correlations between measures of overall satisfaction of E-learning with the usefulness of E-learning for the whole teacher sample.

| | How satisfied are you with E-learning? | E-learning activities help reinforce my lectures | E-learning is a useful electronic tool to enhance my teaching | E-learning helps me to communicate with students outside of class more effectively | E-learning helps me to get save time preparing my lectures | E-learning helps me to engage with the subject I teach | E-learning helps me to be better organized | E-learning helps me to tailor learning to individual students' needs | E-learning complements face-to-face teaching | E-learning saves me time tracking and monitoring student's progress |
|--|--|--|---|--|--|--|--|--|--|---|
| How satisfied are you with E-learning? | Pearson Correlation 1 Sig. (2-tailed) | .162 .550 | .603* .013 | .344 .192 | .215 .424 | .327 .217 | .365 .164 | .124 .647 | .596* .015 | .700** .003 |
| E-learning activities help reinforce my lectures | N | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| E-learning is a useful electronic tool to enhance my teaching | Pearson Correlation Sig. (2-tailed) | .162 .550 | 1 .487 | .187 .487 | -.093 .733 | -.058 .832 | .132 .626 | .000 1.000 | .100 .712 | .361 .169 |
| E-learning helps me to communicate with students outside of class more effectively | N | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| E-learning helps me to save time preparing my lectures... | Pearson Correlation Sig. (2-tailed) | .344 .192 | -.093 .733 | .271 .310 | 1 .310 | .418 .107 | .000 1.000 | .251 .348 | .440 .088 | .359 .173 |
| E-learning helps me to get engaged with the subject I teach | N | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| E-learning helps me to be better organised | Pearson Correlation Sig. (2-tailed) | .365 .164 | .000 1.000 | .508* .045 | .251 .348 | .000 1.000 | .224 .405 | 1 .253 | .226 .499 | .197 .746 |



| | N | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
|--|---------------------|-------|------|------|------|-------|-------|-------|------|------|--------|
| E-learning helps me to tailor learning to individual students' needs | Pearson Correlation | .124 | .100 | .374 | .440 | .044 | -.304 | .226 | 1 | .462 | .345 |
| | Sig. (2-tailed) | .647 | .712 | .154 | .088 | .870 | .253 | .399 | | .071 | .191 |
| | N | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| E-learning compliment s face-to-face teaching | Pearson Correlation | .596* | .361 | .415 | .359 | -.240 | -.183 | .000 | .462 | 1 | .682** |
| | Sig. (2-tailed) | .015 | .169 | .110 | .173 | .370 | .499 | 1.000 | .071 | | .004 |
| | N | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |