



**Enhancing Quality of Technology-Enhanced Learning
at Jordanian Universities, EQTeL
Delivery of and Reporting on 3 TEL/Elearning Pilots
Report on Pilot Study of the E-Learning Courses
at Jordanian Universities
(Summer 2016)**

Introduction

One of the objectives of the eQTeL project was to improve the quality of higher education institutions in Jordan through assimilating a number of e-learning courses and put them into practice. Also, as part of WP3 - deliverable 3.1, three eLearning courses of varying complexity were developed during the activities of the EQTeL project. The courses were chosen in such a way as to accommodate all levels of the courses organized within the higher education system in Jordan that are usually divided into university, faculty and department requirements. The English skills course was selected from amongst the university requirements in all Jordanian universities, renewable energy from the engineering faculty requirement and communication lab from electrical engineering department requirements.

Objectives

The present study aimed to explore the effectiveness of the e-learning method in teaching two courses in English and Renewable Energy at four partner institutions in Jordan that included YU, PSUT, UoJ, and HU. To achieve the objectives of this study, the following questions will be answered:

1. Were the e-learning courses effective from the perspective of the students?
2. How effective were the instructors teaching the e-learning courses from the perspective of the students in comparison to traditional learning courses?
3. Were there any statistical differences in students' grades in the e-learning courses in comparison with the traditional learning courses?
4. What are students' attitudes toward the English Course?
5. What feedback can be drawn from faculty members, technicians, and students supporting the delivery of the courses?

Methodology of the Study

Sample: The sample of the study consisted of (664) undergraduate students enrolled at four Jordanian universities in the summer semester 2016 that include YU, PSUT, UoJ, and HU. The sample included (542) students in the English course and (122) students in the Renewable Energy course. Also, (358) enrolled in e-learning courses (experimental Groups) and (306) enrolled in traditional learning courses (control groups) as shown in table (1).

Table 1: Distribution of Sample.

University	Group	English	Renewable Energy	Total
YU	Exp. Group	190	28	417
	Cont. Group	199	-	
PSUT	Exp. Group	22	28	72



	Cont. Group	22	-	
UoJ	Exp. Group	-	42	42
	Cont. Group	-	-	
HU	Exp. Group	24	24	133
	Cont. Group	85	-	
Total		542	122	664

Study Instruments

Five tools were used to assess the effectiveness of learning in teaching e-learning courses:

1. Students' Attitudes toward Learning English Questionnaire.
2. E-Learning Course Evaluation Questionnaire.
3. Instructor Evaluation Scales.
4. Student's Grades.
5. Students-Faculty-Technicians Feedback.

Procedures

Due to many difficulties regarding the schedule of the summer semester courses 2016, only the English and Renewable Energy e-learning courses were taught at YU, PSUT, HU and UoJ. Some courses were taught in e-learning method only and without a control sections using traditional method of teaching. For the purpose of making comparisons and drawing conclusions, the study employed similar or previous traditional classes in terms of grades and faculty evaluation.

Results

First: to answer the first question regarding "Were the e-learning courses effective from the perspective of the students?", means from the E-Learning Course Evaluation Questionnaires were calculated based on data collected from various universities as shown in table (2).

Table (2): Means of Students' Evaluation of e-Learning Courses.

Sub-Scales		Courses		
Sub-Scales	Universities	English Means	Renewable Energy Means	
Course Content Evaluation	YU	3.42 68.4%	4.39 87.8%	
	PSUT	2.24 44.8%	1.71 34.2%	
	UoJ	-	2.58 51.6%	
	HU	4.92 98.5%	4.47 89.5%	
	Total	3.53 70.57%	3.29 65.78%	
Instructor Evaluation	YU	3.60 72%	3.93 78.8%	

	PSUT	2.55 51%	1.64 32.8%
	UoJ	-	2.54 50.8%
	HU	4.66 93.2%	4.61 92.3%
	Total	3.60 72.07%	3.18 63.68
Technology Use Evaluation	YU	3.42 68.4%	4.18 83.6%
	PSUT	2.46 49.2%	1.67 33.4%
	UoJ	-	2.51 50.2%
	HU	4.76 95.2%	4.22 84.5%
	Total	3.55 70.93%	4.19 62.93%
Technical Support Evaluation	YU	3.41 68.2%	3.39 67.8%
	PSUT	2.77 55.4%	2.02 40.4%
	UoJ	-	2.56 51.2%
	HU	3.92 78.4%	4.02 80.4%
	Total	3.37 67.33%	3.00 80%
Total Evaluation	YU	3.46 69.25%	3.97 79.45%
	PSUT	2.51 50.10%	1.76 35.20%
	UoJ	-	2.55 50.95%
	HU	4.56 91.30%	4.33 86.60%
	Total	3.51 70.25%	3.15 63.05%

The results in table 2 revealed moderate levels of evaluation of the e-learning courses in general, mean of the English course across all universities was (70.25%) and the Renewable Energy course was (63.05%). However, when examining the means across both courses in all four universities its worth noticing the present of a big gape in such means which suggest a need to review the evaluating questionnaires and the procedures in collecting such data.

Second: To answer the second question regarding “How effective were the instructors teaching the e-learning courses from the perspective of the students in comparison to traditional learning courses?”, means of students’ evaluation of their instructors are shown as in table (3).

Table (3): Means of Students' Evaluations of their Instructors*

University	Group	English Course	T-Value P	Renewable Energy Course	T-Value P
YU	Exp. Group	4.49 89.8%	.34	4.16 83.2%	2.11
	Cont. Group	4.47 89.4%	Ns.	4.01 80.2% (ins. M)	Sig.
PSUT	Exp. Group	4.62 92.4%	2.66	4.19 83.8%	.90 Ns.
	Same instructor	4.43 88.68	Sig.	4.29 85.86	
UoJ	Exp. Group	-	-	3.26 65.2%	1.10
	Same Instructor	-	-	3.35 67%	Ns.
HU	Exp. Group	-	-	-	-
Average Experimental Groups		4.55 91.1%	.64	3.87 77.4%	.063
Average Control Groups		4.45 89%	Ns.	3.88 77.67	Ns.

* no data was collected in these universities

Table 3 showed that students' evaluations of instructors teaching the E-learning English and renewable energy courses did not differ significantly from evaluating instructors teaching the same traditional courses or relevant courses.

Third: To answer the third question regarding "Were there any statistical differences in students' grades in the e-learning courses in comparison with the traditional learning courses?", means of students' grades for the e-learning and traditional learning are calculated as in table 4.

Table (4): Means Scores for Courses Grades.

University	English Course			Renewable Energy Course		
	E-learning Means	Traditional Means*	T-Value P	E-learning Means	Traditional Means*	T-Value P
YU	51.6%	50.1%	1.01 ns.	73.5%	66.59	2.89 Sig.
PSUT	70.29%	76.95%	1.22 Ns.	74.72%	69.5%	2.15 Sig.
UoJ	-	-	-	73.63%	57.04%	3.56 Sig.
HU	64.90%	56.14%	3.87 Sig.	87.5%	54.47%	5.56 Sig.
Total	62.26%	61.06%	0.22 Ns.	77.34%	61.9%	3.47 Sig.

* Grades of Similar courses for some control groups.



Results of table 4 showed that e-learning grades did not differ significantly from traditional learning grades in the English courses. Also, e-learning grades were significantly better than traditional learning grades in renewable Energy or similar courses.

Fourth: To answer the fourth question regarding “What are students’ attitudes toward the English Course?”, means of students’ attitudes toward the English course for both the e-learning method and the traditional method are calculated as in table (5).

Table (5): Means of Students’ Attitudes toward the English Course Based on Method of Learning.

University	Method of Learning	Means	T. Value & P
YU	Experimental (e-learning)	3.59 71.8%	1.21 Ns.
	Control (Traditional)		
PSUT	Experimental (e-learning)	-	-
	Control (Traditional)	-	-
HU	Experimental (e-learning)	3.89 77.8%	-
	Control (Traditional)		
Total	Experimental (e-learning)	3.74 74.8%	2.01 sig.
	Control (Traditional)		
		3.46 69.2%	

Results of table 5 showed that students attitudes score toward the English course in the e-learning groups (experimental groups) were significantly better than students attitudes score in the traditional learning method (control groups).

Fifth: To answer the fifth question concerning “What feedback can be drawn from faculty members, technicians, and students, feedback was received and analyzed as follows:

Faculty Members:

- 1.All faculty members expressed their satisfaction with the experience especially in terms of the quality of online education in general.
- 2.Most faculty members that taught e-learning courses for the first time expressed some difficulties at the beginning.
- 3.Some Faculty members expressed their concern about the seriousness of the students following up with course activities.
- 4.Most faculty members stated that they faced the same challenges in teaching both face to face and online courses.
- 5.Most faculty members emphasized the need of orientations to both faculty members and students at the beginning of the semester.



6. Some faculty members expressed the need to have some direct contact time with students.

Students: Based on remarks made by many students in the courses evaluation, the following remarks can be made:

1. The majority of students liked both courses. Words like “comfortable, easy, convenient, excellent, fun, self-reliance, Self-assessments, amazing, more communication with professor, flexibility, great, good experience, adequate and saves time were used often.
2. Small minority of students expressed dislike or discomfort and used words such as hard to follow, hard course, I am confused, omit certain materials, some material is not clear or need details, need more face to face contact with professor and need more discussions.
3. Few students expressed difficulties with the system such as it was slow or it went down sometimes.
4. A lot of concern about quizzes in term of too many quizzes or not enough time to prepare.
5. Students from 7 different e-learning classes responded to the item “I would recommend this course to my friends” with 65% in favor.

Technicians

1. More instructions in Arabic for the English course.
2. The texts are sometimes rigid-incomprehensible and needs action or sounds-voices.
3. More videos to explain materials or applications.
4. Developing a questions bank to each course.

Summary of the Results

Questions	The English Course		The Renewable Energy Course	
	Experimental Groups (E-Learning)	Control Groups (Traditional Learning)	Experimental Groups (E-Learning)	Control Groups (Traditional Learning)
Q1: Evaluation of E-Learning Courses	70.25%	-	63.05%	-
Q2: Instructors' Evaluation	86.66%	87.6%	77.67%	77.67%
Q3: Students' Grades	62.26%	61.06%	77.34%	61.9%
Q4: Students attitudes Toward the English course	74.8%	69.2%	-	-



1. Students' evaluated the E-Learning courses in terms of content, design, use of technology, and technical assistant as moderate with an average of (70.25%) for the English course and (63.05%) for the renewable energy course.
2. Students in both the e-learning method and the traditional method evaluated their instructors positively in both courses. There were no statistical differences in instructors' evaluations between the e-learning method and the traditional method in both courses.
3. There were no statistical differences between students' grades in the e-learning experimental method and the traditional control method in the English course. However, there were statistical differences in grades of the Renewable energy course in favor of the e-learning method.
4. Students' attitudes toward learning English were better in the E-Learning classes compared to traditional method in learning.
5. General positive experiences and feedback by faculty members and students.