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ABILITIES OF STUDENTS TO INTEGRATE E-LEARNING REQUIREMENTS IN THE REAL WORLD

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ABILITIES OF STUDENTS TO INTEGRATE E-LEARNING REQUIREMENTS IN THE REAL WORLD

Abstract_ *Knowledge and skills of e-learning are significant in the digital world and the colleges of education should prepare learners in order to be able to work effectively after graduation. This research sought to answer the main question of whether or not students (candidate) in the College of Education in King Saud University acquire knowledge and skills of e-learning that make them able to integrate e-learning in educational environments?*

The findings revealed there were not significant differences among mean of students abilities to infuse e-learning knowledge and skills based on departments. It identified those students throughout different departments who learned in identical learning methods. The results of quantitative descriptive analysis revealed that there were some students from all departments who said "I do not know" or "strongly disagree" and "disagree" with all statements of the questionnaire. The qualitative findings showed that there were some students who need e-learning training, and suggested more e-learning courses. Consequently, the results were not aligned with NCATE, IRTE, and the Conceptual Framework of the College of Education that emphasized that all students have to acquire knowledge and skills of e-learning throughout their learning and practices in the College of Education. Therefore, the College of Education should provide training programs for students to help them integrate e-learning tools in learning. It is important to encourage faculty members to integrate e-learning skills in all courses activities in order to motivate students to apply it in the real world after graduation .

Keywords: *Candidate, E-learning, NCATE, IRTE*.

I. INTRODUCTION

Utilization of E-learning approach is considered a new practice in the third millennium that supports educational environments. It leads educational institutions to improve their outputs quality, and meet society demands. In fact, students (candidates) should acquire knowledge and skills of e-learning through their study and practice during their undergraduate program. In addition, they should be able to think how to apply them practically in their educational settings in the future.

Twomey, Shamburg, and Zieger [1] asserted that students graduated from colleges of education are a key factor in the diffusion of e-learning implementation in real world settings. They confirmed, "Preparing effective [students] candidates is one of the most important responsibilities of colleges and universities" (p. 1). In fact, E-learning practices are growing rapidly from year to another in the last fifteen years. Therefore, universities and colleges of education recognized its significance, and started to develop strategies that ensure the infusion of e-learning in their educational environments (Wilen - Daugenti, [2]; Woollard, [3]). Bonk [4] mentioned that technology has a positive impact on learning and teaching; it is the bedrock of changing educational environments. Due to the significance of e-learning in the current era, the National Council for the Accreditation of Teacher Education [5] constructed unit standards, called the standards of excellence in teacher preparation, focusing on integrating e-learning tools in learning and teaching to maximize performance of candidates. Moreover, the International Society for Technology in Education [6] mentioned that it had developed technology standards based on teachers needs in the future, so that, they can meet and faces the new change in the digital world.

The Center of Quality Assurance In International Education [7] focuses on teacher-oriented processes for evaluation and quality assurance of institutions, and has International Recognition in Teacher Education (IRTE) with an emphasis on e-learning as part of its conceptual framework. Moreover, QA adopts NCATE unit standards to evaluate international educational institutions because (NCATE) restricted its evaluation to colleges of education in the United State of America. In fact, colleges of education should infuse e-learning technologies to enhance learning, consequently, NCATE [5] asserted that students (candidates) must acquire knowledge and skills of e-learning, and incorporate them in learning, collaboration, allocation of resources, and curriculum activities to enrich scholarship that would allow candidates to participate in the real world applications. Jones [8] said e-learning tools are everywhere and are updated constantly in the 21st century. Consequently, colleges of education have a responsibility to integrate such tools in learning and teaching in order to achieve the optimal learning outcomes.

II. Statement of the Problem

College of Education in King Saud University in Saudi Arabia (2013) announced on its website that it was recognized by The Center of Quality Assurance in International Education (QA) that adopts the National Council for the Accreditation of Teacher Education (NCATE) unit standards, focusing on the excellence in teacher preparation. In fact, one part of unit standards concentrated on incorporating e-learning in learning environments to prepare students (candidates) to create abilities and genuine knowledge that assist them toward integrating e-learning tools into curricula, research and interaction among them so that they can, during their course of study at the College of Education, practice and apply them in the future.

In addition to that, the College of Education has developed the conceptual framework based on the requirements of NCATE. The College of Education [23] states "… professional educators who are graduates of the College of Education at King Saud University should have [ten competencies]"; one of them is that "they use technology and integrate it in their professional practices" (pp. 11-12). Oigara and Wallace [9] reported that:

Schools of Education must continue to collaborate with and provide support to partnership schools through the preparation of teacher candidates…and to ensure that teacher candidates are placed with mentor teachers proficient in the use of technology for instruction with the ultimate goal of improving students learning in our K-12 schools (p. 311).

The quality of educational environments in schools based on candidates' competencies should be improved. They must know what, how, when to integrate e-learning in appropriate ways. This research explored students (candidates)' abilities regarding integrating e-learning after their graduation which is based on alignments between e-learning as a part of NCATE standards, IRTE and the Conceptual Framework of College of Education.

The main research question was: Do students (candidate) in College of Education in King Saud University acquire knowledge and skills of e-learning that make them able to integrate e-learning in educational environments? Based on this question the research answered the following sub-questions:

A. Research Questions

1. What are (candidates) students' perceptions abilities in integrating knowledge and skills of e-leaning in educational settings؟
2. Are there significant differences in abilities when integrating knowledge and skills of e-learning in educational setting for (candidates) students departments in Islamic studies, Special Education, Art Education, Physical Education, and Psychology Science.

B. Research Goals

1. To know students' perceptions toward knowledge and skills of e-learning.
2. To know the differences of candidates' skills and knowledge of e-learning by departments.

C. Purpose of the Research

The purpose of the research was to know whether or not students (candidates) acquire knowledge and skills of e-learning tools whether they integrate such tools while learning in classroom in the College of Education, and whether they are able to practice them in the real world. Another purpose was alignment with e-leaning principles that have been commented on by the Conceptual Framework for the College of Education based on QA that adopted NCATE principles.

D. Significance of the Research

The importance of the research was to provide solutions to assist the College of Education toward improving the integration of e-learning requirements in the learning environment, which were derived from research results. Also, it tried to inform future research related to colleges of education environments.

E. Limitation of the research

1. The study focused on male students, in the main Campus in Riyadh because the learning environments are different in the male and female campuses.
2. The study was implemented in the second semester 1432/1433(2011/2012).

III. Definitions

A. Terminology Definition

E-learning: is an approach to learning and development: a collection of learning methods using digital technologies, which, distribute and enhance learning [10].

Candidates: NCATE defined "candidates" as "individuals admitted to, or enrolled in, programs for the initial or advanced preparation of teachers, teachers continuing their professional development, or other school professionals. Candidates are distinguished from students in P-12 schools" (p. 85, 2008).

B. Operational Definition

E-learning: It includes learning and teaching strategies in using e-learning tools such as (Blackboard, threads, search engines to enhance learning, develop products).

Candidates: Male students who are enrolled in the College of Education in King Saud University in the second semester 1432/1433 (2011/2012).

E-learning knowledge and skills: are accumulative knowledge that a student (candidate) in College of Education in King Saud University acquires from development of teaching and learning strategies and e-learning tools experience, in addition to the abilities that they have to integrate those strategies and e-learning tools experience in the real world.

Literature Review

Vitality of technology standards:

Twomey, Shamburg and Zieger [1] asserted that in the current century e-learning and its applications is imperative in K-12. Therefore, students in colleges of education are central factor of e-learning diffusion in the future when they practice it in the real world. It is supposed to be high quality outputs of the colleges of education. They confirmed that "preparing effective [students] candidates is one of the most important responsibilities of colleges and universities" (p. 1, 2008).

In fact, colleges of education should infuse e-learning to enhance learning and teaching, consequently, NCATE [5] asserted that students (candidates) must acquire knowledge and skills of e-learning, and incorporate them in learning, collaboration, allocation of resources, and curriculum activities to enrich scholarship that would allow candidates to participate in meeting the needs of societies.

Learning environments need to be improved to comply

with the changes in the external environments to meet the society requirements. E-learning is considered one of the vital elements in the digital age that is obviously recognized by accreditation associations. Therefore, colleges of education should seek quality standards that could make them maintain their aspiration. Twomey, Shamburg and Zieger [1] reported that accreditation endorsement is an attestation to enable universities and colleges to take pride of their achievements. This gives a new room for competitiveness that could be a selling point amongst students when registration. Accordingly, Students (candidates) will learn and develop their e-learning knowledge and skills based on the new graduation requirements that reflect accreditation principles, thus, they can find more opportunities that allow them to apply their experiences.

International Society for Technology in Education [6] mentioned that it developed technology standards, which are based on knowledge and skills of future teachers in order to meet the new digital world. Undeniably, NCATE [5] asserts that e-learning integration is significantly to enhance students (candidate) performance. It pointed out that evaluation of teacher programs in universities and colleges of education is based on specific elements, which include integrating e-learning throughout the entire unit standards. The most significant points that are recommended for colleges of education and effect education setting are as follows:

1. A unit should include information technology resources so that candidates meet required standards in order to support learning.
2. Candidates are able to use data research and use technology to enhance their practices.
3. Candidates expected to meet professional standards for subject matter that will teach and apply technology standards in order to enhance students learning.
4. Candidates use various e-learning tools to enhance learning and research.
5. Candidates use e-learning for interaction with others.
6. Candidates are able to develop e-learning strategies that maintain learning and teaching in the future .

Indeed, universities and colleges of education should make some changes to integrate new e-learning tools into e-learning environments to keep pace with the new digital generation. Tam and Werner [11] said that the continuous changes in e-learning tools are so swift that institutions should identify any kind of change affecting internal learning environments to apply new e-learning tools that meet the demands of new practices worldwide. Wilen - Daugenti [2] asserted that universities in the new era should recognize the imperative development of new learning environments based on changes demand. They argued that universities "…make an impact on their students and schools needs to be aware of current trends" (p. 3). Incorporating e-learning in educational environments should be based on standards, therefore Twomey, Shamburg, and Zieger [1] said that ISTE sought to gather data and feedback about the programs in colleges of education based on candidates point of views, after that it started to analyze such data to outline the results that lead to maintain the quality of candidates and programs. Wilen-Daugenti [2] said to ensure the success of learning environment in colleges of education appropriate e-learning technology must be integrated into curricula to disseminate information and increase interaction. Tam and Werner [11] confirmed, in order to motivate students toward incorporating technology they should determine "…what they can do to minimize student fears in dealing with technology? ... [Also] Most importantly, how can institutions ensure that the standards and knowledge imparted to students do not suffer?" (P. 20).

Twomey, Shamburg, and Zieger [1] asserted that "For college [of education] and university programs that prepare these candidates, adherence to these standards is proven through accreditation"(p.1). ISTE [6] developed a standard that leads to incorporate technology into teaching, learning and curriculum in order to support students (Candidates) learning. This includes:

1. Facilitating technology – enhancing experiences that address content standards and (Candidates) students' technology standards.
2. Using technology to support learner-centered strategies that address the diverse needs of (Candidates) students.
3. Applying technology to demonstrate (Candidates) students' higher-order thinking skills and creativity.
4. Managing (Candidates) students learning activities in a technology-enhanced environment.
5. Using current research and district/ regional/ state/ national content and technology standards to build lessons and unit of instruction (2010, p. 2).

Universities' roles toward integrating e-learning:

In addition to the universities need to adopt new roles that make candidates integrate e-learning, the Department of Business Innovation & Skills [12] conducted a study that focuses on the roles of universities in the current age in Britain. The study indicated that:

1. E-learning enhances quality of learning through communication tools that provides various feedbacks between teachers and students. This means universities should develop new learning environments that depend on e-learning tools to maintain students' knowledge and skills, which ensure all students ability to perform their jobs after graduation.
2. E-learning tools should be available in institutions and suitable for each course. Information is available for students to help them as to when and how to integrate e-learning tools in activities courses.

Crossick [13] argued that the main responsibility of universities is to ensure that students (candidates) after graduation are ready to perform their jobs that need

optimal knowledge and skills. Therefore, Twomey, Shamburg and Zieger [1] declared that school directorates seek resources of finance to support purchasing e-learning tools, otherwise, if teachers do not have enough skills and knowledge that enable them to integrate e-learning tools in classrooms and follow up the new practices in the field, they will fail to meet the society needs in this era. Further, Baytak & Akbyik [14] conducted a research that focused on infusing technology skills and experiences in students (candidates) in their educational environments. The findings showed that (87%) of the participants can infuse technology into learning and teaching strategies that meet schools' goals. Oliva and Gordon [15] stated that due to utilizing various technology continuously and the necessity to use the new innovation in diverse workplaces it imposed on colleges to teach students how to use diffuse technology outside the educational setting.

In the same vein, Ituma [16] has done a study that focuses on the usage of blackboard by undergraduate student in London University. The responses indicated that the majority of students used blackboard frequently as a main daily activity. The results of the study that focused on the features and functions of Blackboard revealed valuable ideas of the respondents in terms of course content (92%), assignment component (48%), and discussion component (24%). In addition, the result of hypotheses test was not significant as the statistical differences in using Blackboard with the gender as a variable was (P=0.884), age (P=0.847), and location (P=0.731). However, 1% of the respondents did not use it, 2% of the respondents used it every fifteen days, 19% weekly, and 53% daily. Moreover, the participants had positive attitude toward learning management systems; they use it to support learning face to face in classrooms to enhance learning activities. The use of e-learning systems was very high among the students, which indicated that there were no difficulties in integrating e-learning systems. Besides, Alrwaily [22] conducted a study that concentrated on students barriers towards utilizing learning management systems (Blackboard) in the College of Education at King Saud University. The study showed that (79%) do not have enough time to use blackboard, (70%) of participants said faculty members do not care to use Blackboard throughout the course work, and do not encourage students to use it. In addition, (72%) of the participants strongly agreed that the university do not provide appropriate programs that help them to utilize Blackboard. The result of one-way ANOVA test asserted that there were not significant differences among students, focusing on their levels as a variable towards barriers of using Blackboard. In other words, students faced obstacles to implement learning management systems in learning environments. Ituma [16] conducted a study to evaluate students' perceptions toward e-learning integration at a university in London. The study addressed whether or not students were using components of learning management systems (LMS). The results indicated that students have positive viewpoints to support learning face to face in classrooms that enhance active learning among students. Also, Robinson, Lee, and Soutar [18] conducted a study that emphasizes the role of technology inside and outside classrooms throughout the e-resources specified for learners to direct their learning. The research approved that technology integration into higher education can provide fruitful results when universities aligned learning and teaching strategies with technology strategies and content activities. As a result, this created an appropriate climate for demonstrating learning and encouraged learners to use e-resources frequently and take their responsibilities to control their learning. Therefore, there was a direct correlation between increasing e- content and accessing them online. Alsabi [19] conducted a study that focused on e-learning applications in College of Education at King Saud University; the results showed there were significance differences among students in favor of those who have previously studied e-courses. This showed that students who used e-learning in many courses acquire more experiences. Therefore, the college of education should encourage the implantation of e-learning in all courses activities. Additionally, Bates [20] indicated that e-learning can be fruitful when universities increase interaction among important components, which are: interaction between learners and teachers; interaction between learner and learners; and interaction of learners with electronic materials. Holmes and Gardner [21] said "At its best, e-learning offers new opportunities for both the educators and the leaner to enrich their teaching and learning experiences…" (p. 10).

Finally, it is observed that the literature asserted the significant of integrating e-learning in educational environments in order to enhance students' knowledge and skills that they need to be affective in the digital world. Consequently, the accreditation organizations such as INCATE and IRTE issued their unit standards including e-learning integration in learning and teaching which is required for colleges of education to be recognized .

IV. Research Methodology and Procedures

Instrument

The research questionnaire was developed by the researcher based on the literature review to collect data for the study. The questionnaire contains varied items including demographic information (student departments), open-ended question, and one dependent variable. It included twenty-three Likert statements that reflected participants e-learning knowledge and skills using a five-point scale (ranged from 1= Strongly Disagree, 2=disagree,3 = I don't Know, 4= Agree, 5 = Strongly Agree).

Validity

In order to attain the questionnaire validity, it was presented to expert faculty members specialized in

instructional technology. They gave their feedback and comments, which were useful in revising and redesigning the questionnaire.

Reliability

After redesigning questionnaire, a pilot study was conducted. The number of participants was twenty. The purpose of reliability was to measure the dependent variable. The value of Cronbach's Alpha for the dependent variable was (0.906) which was acceptable to collect the research data.

Population and Sample

The population was all undergraduate students (candidates) based on statistic report that was given by the Registration Unit in the College of Education for the Second Semester in 1432/1433H (2011/2012) as illustrated in Table 1. In addition, sample of the study was randomly selected. The sample represented about 30% of the population from each department, as illustrated in Table 1.

Table 1
Distribution of population and samples regarding candidates' department (N=447)

Department	Islamic Studies	Special Education	Art Education	Physical Education	Psychology	Total
Number of Candidates	338	545	91	278	235	1487
Sample	102	164	27	83	71	447

A. Data Collection Procedures

After the approval of the research protocol including the questionnaire by the College of Education, and the Vice-Rector for Graduate Studies & Scientific Research in King Saud University, the author had directly distributed the questionnaire among the study sample. A total of (700) questionnaire were distributed, gathered, and checked back for accuracy.

B. Research Design

Several quantitative methods were used to analyze the data and draw the conclusions. These methods included descriptive statistics (percentages), as well as, One-Way ANOVA to test the significant differences in abilities in integrating knowledge and skills of e-learning in educational setting among participants according to their departments (Islamic studies, Special Education, Art Education, Physical Education, and Psychology Science). Finally, a qualitative method was utilized to analyze the open-ended question.

C. Data Analysis

The data was analyzed based on the research methodology to derive results that focus on three parts including: demographic, open-ended questions, and knowledge & skills of e-learning.

A total of (508) correctly answered questionnaire were incorporated in the study analysis resulting in a response rate of (89%) and illustrated in Table 2.

Table 2
Distribution of the completed questionnaires according to participants' department

Department	Islamic Studies	Special Education	Art of Education	Physical Education	Psychology Science	Total
Number of Participants	114	171	41	95	87	508
Participants Percentage of Departments	34%	31%	45%	34%	37%	34%

D. Analysis of the quantitative data

It includes two parts descriptive analysis and hypotheses test. The first part focuses on answering the question that reads: "What are (candidates) students' perceptions towards abilities in integrating knowledge and skills of e-learning in educational setting "؟

The descriptive analysis, crosstab, was used to analyze this question, which represented participants by departments. The results included the percentage of the participants from each department and the total participants whose answer was "I do not know" ad "disagree", "strongly disagree" for each item. All results are listed in Table (3) and Table (4).

Table 3
Percentages of the participants who chose "I don't know" by departments, and the total for each item of the sample

		Departments						
		Psychology Science	Physical Education	Special Education	Islamic Studies	Art Education	Total	Rank
1.	I have the ability to design teaching strategies that support integrating educational software in curricula.	50 29.2%	31 27.4%	35 36.8%	34 29.5%	11 26.8%	161 31.8%	12
2.	I have abilities to design teaching strategies that integrate email and forums that enhance learning processes.	50 29.2%	31 27.2%	30 31.6%	29 33.7%	10 24.4%	150 29.6%	15
3.	I have abilities to apply strategies that support integrating electronic research tools in e-contents.	66 38.6%	35 30.7%	30 31.6%	24 27.9%	11 26.8%	166 32.7%	11
4.	I have abilities to apply teaching strategies that support integrating various technologies in problems solving.	77 45.0%	52 45.6%	44 46.3%	41 48.2%	19 46.3%	233 46.0%	1

5.	I have abilities to apply teaching strategies that support learning digital TV.	81 47.4%	45 40.5%	56 58.9%	36 42.4%	13 31.7%	231 45.9%	2
6.	I have abilities to integrate e-learning tools in content in order to enhance learning and teaching.	34 20%	31 28.4%	22 23.2%	24 28.6%	11 28.2%	122 24.5%	20
7.	I have abilities to choose appropriate e-resources from the Internet that enhance students' learning.	35 20.6%	20 18.3%	18 18.9	20 23.8%	7 17.5%	100 20.1%	22
8.	I have abilities to apply strategies that support using various e-resources to be used with various learners such as blind learners.	53 31.2%	51 45.9%	38 40.4%	33 40.4%	33 41.5%	192 38.3%	6
9.	I have abilities to apply various strategies that are vital for integrating e-learning in teaching problem solving.	47 27.6%	37 33.9%	26 27.4%	24 28.2%	11 29%	145 %29	17
10.	I can use current research result that support integrating emerging technology in educational environment.	65 38.2%	59 53.2%	38 41.8%	36 42.4%	19 46.3%	217 43.6%	4
11.	I can apply policies and procedures that support ethical issues in using instructional technology in educational environment.	47 27.5%	33 29.7%	30 32.3%	27 31.8%	12 29.3%	149 29.7%	16
12.	I obtain knowledge of applying information technology copy-rights.	80 47.1%	54 49.1%	42 45.7%	35 41.7%	13 33.3%	224 45.3%	3
13.	I obtain knowledge and skills of applying research concepts in educational setting from appropriate various electronic resources.	44 25.7%	35 31.8%	29 31.5%	25 29.8%	11 26.8%	144 28.9%	18
14.	I have abilities to develop policies and procedures that support developing human resources in order to attain special needs.	57 33.5%	53 47.3%	39 41.9%	37 44%	19 46.3%	205 41.0%	5
15.	I can use instructional technology to provide special needs requirements.	44 25.9%	47 42%	35 37.2%	32 37.6%	14 34.1%	172 34.3%	8
16.	I have abilities to prepare policies that motivate using secure instructional technology that support using electronic resources.	57 33.3%	35 31.2%	30 31.9%	27 31.8%	11 26.8%	160 31.8%	13
17.	I am able to produce instructional technology products that include various electronic tools such as Microsoft Word, and Excel that support learning processing.	45 26.6%	28 25.2%	26 27.7%	17 20.5%	6 14.6%	122 24.5%	21
18.	I have abilities to develop multimedia product that support learning processing.	27 16%	24 21.6%	18 19.1%	19 22.9%	10 25%	98 19.7%	23
19.	I have knowledge and skills to use learning management systems.	40 23.7%	29 27.6%	34 36.2%	19 23.2%	12 30.8%	134 27.4%	19
20.	I can develop distance training program for students.	63 37.7%	32 30.8%	49 53.3%	27 32.5%	15 37.5%	186 38.3%	7
21.	I have knowledge and experiences to apply Instructional design principles in developing multimedia products.	53 31.5%	39 35.5%	35 37.2%	30 36.1%	12 29.3%	169 34.1%	10
22.	I have knowledge and scientific principles that make me able to evaluate educational software.	57 33.3%	35 31.2%	30 31.9%	27 31.8%	11 26.8%	160 31.8%	14
23.	I have abilities to develop the main principles that support choosing appropriate educational software that enhance educational environment.	58 34.1%	38 34,2%	38 40.4%	24 28.9%	12 30%	170 34.1%	9

In fact, the results indicated that there were participants from each department whose responses "I don't know" with all (23) statements in Table (3). The total percentages of participant responses for each statement ranging from 19.7% to 46%. The ranking statements started from highest sum percentages to lowest sum percentages, starting from 1 to 23.

Therefore, all statements were divided in Table (3) into categories, the first category starts from (40% to 46%) including five items: (4, 5, 10, 12, 14), the percentage for

each item of the sample is as follows (46.0%, 45.9%, 43.6%, 45.3%, 41.0%). The second category starts from (30% to less than 40%) including nine items: (1, 3, 8, 15, 16, 20, 21, 22, 23), the percentage for each item of the sample is as follows (31.8%, 32.7%, 38.3%, 34,3%, 31.8%, 38.3%, 34.1%, 31.8%, 34.1%). In addition, the third category that represents participants responses ratio ranges from (19% to less than 30%) of the sample including nine items: (2, 6, 7, 9, 11, 13, 17, 18, 19), the percentage for each item is as follows (29.6%, 24.5%, 20.1%, 29.0%, 29.7%, 28.9%, 24.5%, 19,17%, 27.4%). Therefore, the participants' ratio was high for those who chose "I do not know" about (23) items that focused on knowledge and skills of e-learning. Indeed, regarding their responses, the participants (candidates) rarely have heard about those twenty three items.

Indeed, this indicated that students (candidates) have not had knowledge and skills that support them to deal with e-learning practices that required infusing new technologies in classroom after graduations. Consequently, the participants (candidates) who chose "I do not know" faced main challenges that prevented integrating technology in educational setting in the future.

Table 4

Percentages of the participants who chose "disagree", "strongly disagree" by departments, and the total for each item of the sample

		Departments						
		Psychology Science	**Educational Physical**	**Special Education**	**Islamic Studies**	**Art Education**	**Total**	**Rank**
1.	I have the ability to design teaching strategies that support integrating educational software in curricula.	21 12.3%	22 19.5%	15 15.8%	16 18.6%	4 8.8%	78 15.4%	10
2.	I have abilities to design teaching strategies that integrate email and forums that enhance learning processes.	25 14.6%	15 13.2%	14 14.8%	13 15.1%	4 9.7%	71 14.9%	14
3.	I have abilities to apply strategies that support integrating electronic research tools in e-contents.	29 17.0 %	14 12.3%	15 15.8%	9 10.5%	4 9.7%	71 14.0%	17
4.	I have abilities to apply teaching strategies that support integrating various technologies in problems solving.	23 13.4%	15 13.1%	8 8.4%	8 9.5%	4 9.8%	58 11.3%	21
5.	I have abilities to apply teaching strategies that support learning digital TV.	28 16.3%	13 11.7%	12 12.6%	17 20.0%	6 14.7%	76 15.1%	12
6.	I have abilities to integrate e-learning tools in content in order to enhance learning and teaching.	26 15.3%	18 16.6%	12 12.6%	10 11.9%	3 7.7%	69 13.9%	18
7.	I have abilities to choose appropriate e-resources from the Internet that enhance students learning.	20 11.8%	12 11%	10 10.5%	8 9.5%	3 7.5%	53 10.6%	23
8.	I have abilities to apply strategies that support using various e-resources to be used with various learners such as blind learners.	25 20.6%	14 12.6%	13 13.8	18 21.2%	5 12.2%	85 17%	8
9.	I have abilities to apply various strategies that are vital for integrating e-learning in teaching problem solving.	13 13.6%	15 12.7%	11 11.6%	11 13%	1 2.4%	61 12.2%	20
10.	I can use current research result that support integrating emerging technology in educational environment.	35 20.6%	8 7.2%	9 9.9%	14 14.4%	7 17.1%	53 14.6	15
11.	I can apply policies and procedures that support ethical issues in using instructional technology in educational environment.	25 14.6%	15 13.5%	11 11.9%	13 15.4%	2 4.8%	66 13.2%	19
12.	I obtain knowledge of applying information technology copy- rights.	16 13.3%	13 12.6%	17 18.4%	19 12.7%	10 15.6%	85 17.1%	7
13.	I obtain knowledge and skills of applying research concepts in educational setting from appropriate various electronic resources.	28 16.4%	16 14.5%	10 10.9%	16 19.1%	5 12.2%	75 15%	13
14.	I have abilities to develop policies and procedures that support developing human resources in order to attain special needs.	19 17%	21 18.8%	16 17.3%	23 27.4%	6 14.6%	95 19%	4
15.	I can use instructional technology to provide special needs requirements.	12 12.9%	25 12.4%	16 17.1	25 22.9%	6 14.6%	91 18.1%	6
16.	I have abilities to prepare policies that motivate using secure instructional technology that support using electronic resources.	14 14.1%	22 19.7%	10 10.7%	16 18.8%	4 9.7%	76 15.1%	11
17.	I am able to produce instructional technology products that include various electronic tools such as Microsoft Word, and Excel that support learning processing.	27 16%	13 11.7%	12 12.7%	12 14.4%	6 17%	71 14.4%	16
18.	I have abilities to develop multimedia product that support learning processing.	8 9.15%	14 12.6	16 15%	9 10.8%	3 7.5%	56 11.2%	22
19.	I have knowledge and skills to use learning management systems.	27 11.9%	16 15.2%	11 11.7%	10 12.2%	5 12.9%	79 16.1%	9
20.	I can develop distance training program for students.	42 25.2%	20 28.9%	18 19.6%	30 36.1%	6 15%	106 25.9%	1
21.	I have knowledge and experiences to apply Instructional design principles in developing multimedia products.	28 22.6%	20 18.2%	18 19.1%	23 27.7%	9 21.9%	108 21.8%	2
22.	I have knowledge and scientific principles that make me able to evaluate educational software.	31 24.1%	21 19.1	16 17.0%	20 24.1%	5 12.2%	113 20.7%	3

23	I have abilities to develop the main principles that support choosing appropriate educational software that enhance educational environment.	20 34%	16 14.4%	16 17%	20 24.1%	7 17.5%	93 18.6%	5

As well as, the results indicated that there were participants from each department whose responses ranged from “disagree” to “strongly disagree” with all (23) statements in Table (4). The total percentages of participant responses for each statement ranging from 10.6% to 25.9%. The ranking statements started from highest sum percentages to lowest sum percentages, starting from 1 to 23.

Therefore, all statements were divided in Table (4) into categories: the first category representing percentages of participants ranging from (10% to less than 15%) includes ten items: (2, 3, 4, 6, 7, 9, 10, 11, 17, 18), the percentages for those items are (14.9%, 14.0%, 11.3%, 13.9%, 10.6%, 12.2%, 14.6%, 13.2%, 14.4%, 11.2%). The second category representing percentages ranging from (15% to less than 19%) includes items (1, 5, 8, 12, 13, 16, 19, 23); the percentages of these items are (15.4%, 15.1%, 17.0%, 17.1%, 15.0%, 15.1%, 16.1%, 18.6%). The third category representing percentages ranging from (19% to less than 30%) includes items (14, 15, 20, 21, 22); the percentages for those items were as followed (19.0%, 18.1%, 25.9%, 21.8%, 20.7%). The results revealed that there are participants (candidates) who chose "disagree”, “strongly disagree" with all statements in all departments. This means, there are participants who know the meaning of all statements but their knowledge and skills of e-learning are lacking. Indeed, the results of participants (Candidates) represented real obstacles that prevented infusing e-learning practices in school environments, and affected the schools reformative movement in attaining the e-learning requirements of the current era.

The second part of the quantitative analysis is the hypotheses test that tries to answer the second question: Are there significant differences in abilities in integrating knowledge and skills of e-learning in educational setting regarding (candidates) students' majors (Islamic studies, Special Education, Art Education, Physical Education, and Psychology).

The questions focused on the significant differences in abilities in integrating knowledge and skills of e-learning in educational setting toward (candidates) students' majors (Islamic studies, Special Education, Art Education, Physical Education, and Psychology). The answer is based on one-way analysis of variance (ANOVA) test.

Table 5
One-Way Analysis of Variance

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.340	4	.335	.773	.543
Within Groups	217.925	503	.433		
Total	219.266	507			

The results in Table (5) indicated that there were not significant differences among students (candidates) abilities to infuse e-learning knowledge and skills according to departments. (f = 0.773, df =4, P = 0.543).

Analysis of the qualitative data

The second part of data analysis tries to analyze the qualitative data, based on open-ended question, which focused on perceptions of students’ (candidates) abilities to apply e-learning knowledge and skills in the real world. The qualitative approach was used to analyze the question that was given to students (candidates) in order to write about their capabilities in integrating e-learning in educational environments. The results of data analysis included various themes as follows :

Students Training

Participants asserted that infusing learning management systems need training programs to enhance students' knowledge and skills. A student from Department of Special Education said, "students need training programs in order to know how to use learning management systems". Furthermore, a student from Department of Islamic Education said, "College of Education should develop appropriate e-learning programs to enhance students' knowledge and skills".

Increase of E-learning Courses

The E-learning course is imperative to enhance students' application of e-learning in learning environments in the future. A student from Art Education asserted that "College of Education develops courses that assist students to learn about e-learning knowledge and skills." A student from Department of Special Education said, "Students need more e-learning courses." A student from Department of Physical Educational stated that "Student needs an e-learning course that contains two parts e-learning theory and applications".

Improvement of E-learning Tools Usage

Applying e-learning tools in the real world should be practiced by students intensively. Some students from Department of Islamic Education informed that "successful e-learning in education requires students to use it in all assignments." A student from Department of Special Education stated, "Students should use e-learning tools in all course work".

Current Status of E-learning:

Most students whose responses were open-ended question said that their knowledge and skills are very poor. A student from Special Education Department said, "I have not used e-learning tools until this moment." A student from Islamic Education Department reported, "My e-learning knowledge is not good". A student from

Educational Psychology Department informed, "I have limited e-learning knowledge and skills." In addition, a student from Art Education said "My e-learning skills are very poor".

V. FINDINGS

The findings of this research indicated some main points that facilitate decision makers to improve educational environments in order to reach optimal outcomes.

1. The results indicated that there are participants who did not have e-learning knowledge and skills.
2. There are some respondents who chose "strongly disagree" and "disagree" with all questionnaires items.
3. In general, the results pointed out that there are students (candidates) who were not able to deal with e-learning practices.
4. There are (57%) of students (candidates) who are not able to integrate e-learning to support problem solving.
5. The research outcomes show that there are (45.3%) of participants who did not know how to adhere to copyrights through infusing information technology in educational setting.
6. Roughly, (40%) of participants did not know how to use learning management systems, which are essential in distributing learning.
7. There are (38.4%) of participants who are not able to integrate e-learning tools in contents.
8. Based on the qualitative results we can point out that students (candidates) need training programs in College of Education that assist them to infuse learning management systems in teaching and learning, as well as, integrate e-learning in courses activities, and courses of intensive e-learning should be offered .
9. The qualitative analysis indicated that there are some students (candidates) who are not able to deal with e-learning tools.
10. There are some students who are not ready to integrate e-learning in the real world.

VI. Discussion

The purpose of this research was to explore students (candidates) abilities toward applying e-learning knowledge and skills after graduation in educational settings in order to enhance schools environments. Students (candidates)' knowledge and skills of e-learning in College of Education in King Saud University must be aligned with its conceptual framework, principles of e-learning requirements in IRTE that is based on NCATE unit standards.

The first question was derived from the findings for all statements of the questionnaire that designated the percentage of participants who chose "I do not know" ranging from 19.7% to 46.0% as illustrated in Table (4). The table shows statements expressed by those who chose "I do not know". For instance (46%) of the respondents in all departments did not know about the statements that focus on how students are able to integrate e-learning tools in teaching and learning. (45.9%) of participants who did not have abilities to apply teaching strategies that support learning digital TV. In addition, (43.6%) of respondents pointed out that they did not know how to use current research technologies in integrating e-learning tools in educational environments. Moreover, (45.3%) of respondents did not know about applying information technology copyrights.

There were some participants who chose "disagree" or "strongly disagree" with 23 statements. Furthermore, the findings asserted that there are some respondents in each department who chose "disagree" or "strongly disagree" with all statements. The percentages ranged from 10.6% to 25.9% as illustrated in Table (5). For instance25.9% of participant responses was "disagree" and "strongly disagree" with the statement "I can develop distance training program for students". 21.8% of respondents chose "disagree" and "strongly disagree" with the statement "I have knowledge and experiences to apply instructional design principles in developing multimedia products", 17.1% with the statement "I obtain knowledge of applying information technology copy rights." All of those students know the meaning of the statements but they do not have knowledge and skills of e-learning.

Besides, the qualitative results confirmed that there were students in all departments who do not have basic e-learning skills that enable them to practice and develop new e-learning skills and knowledge. The participants need training programs to use learning management system, which is an indicator that they need to create their poor skills, so that they can enhance their learning and acquire new and advanced e-learning knowledge and skills, which enable them in turn to apply them in educational environments. Furthermore, there are participants who said that the programs plans in all departments in the College of Education need to augment them by adding new e-learning courses and integrating e-learning tools through other courses activities in order to enhance learning and acquiring e-learning skills and knowledge. Indeed the qualitative results revealed evidences that confirmed the results derived from the quantitative analysis. The findings are not consistent with NCATE [5] that requests students (candidates) in colleges of education to be able to integrate technology in teaching and learning, as well as having abilities to use e-research resources to enhance learning. In addition, the results are not aligned with the Conceptual Framework of the College of Education in King Saud University [23] that asserted that all students must attain ten proficiencies, one of them is integrating technology in real practices in order to acquire e-learning knowledge and skills that enable them to enhance teaching after graduation. However, the findings are inconsistent with the research conducted by Ituma [16] that found out that there are positive attitude toward utilizing learning management systems. As well

as, the results are not compatible with what Bates [20] said that e-learning can be fruitful when universities increase interaction among important components, which are: interaction between learners and teachers; interaction between learner and learners. In fact, Alrwail [22] conducted a study that concentrated on students barriers towards utilizing learning management systems (Blackboard) in the College of Education in King Saud University and found that most students are not using learning management systems (Blackboard) in learning, which is consistent with the results of this research. The research results indicated that the participants cannot develop technology strategies related with learning and teaching strategies. This was not in line with the research conducted by Baytak & Akbyik [14] who mentioned that (87%) of the participants are able to develop technology strategies aligned with learning and teaching strategies.

The answer of the second question based on the results of one-way analysis of variance (ANOVA) test which is (f= 0.773, df=4, P= 0.543) indicated that there were not significant differences among students (candidates) abilities to infuse e-learning knowledge and skills based on departments. In fact, it identified students (candidates) throughout departments who learned through identical learning methods. Furthermore, students used the equivalent e-learning tools in classrooms. Moreover, the qualitative finding emphasized that most students (candidates) used common e-learning tools, such as: PowerPoint. They rarely used e-learning tools intensively or integrated learning management systems. The results were incompatible with the study that was conducted by Robinson, Lee, and Soutar [18] who approved that technology integration into higher education can provide fruitful results when universities align learning and teaching strategies with technology strategies and content activities. Likewise, the result was not compliant with what Tam and Werner [11] said that continuous changes in e-learning tools are so swift, thus, institutions must identify any kind of change affecting internal learning environments to apply new e-learning tools that meet the demands of new practices worldwide. The result of this study was compatible with the finding of Alrwaily [17] that pointed out the students were facing obstacles to implement learning management systems in learning environments and prevent them to acquire part of knowledge and skills of e-learning. The result did not align with College of Education conceptual framework, NCATE, and IRTE that asserted on application of e-learning principles in learning environments.

VII. Recommendations

The College of Education should assert in infusing e-learning tools in all departments in order to enhance and create new e-learning practices through various course activities, based on these recommendation:

1. Offering intensive e-learning courses in order to maintain their knowledge and skills.
2. The result indicated that students should keep up with e-learning standards and learn how to infuse them in educational settings.
3. It is vital to develop training programs for students to help them integrate innovations and practices in real classrooms to prepare them for the future in order to meet the society needs.
4. Integrating instructional design principles through e-learning development courses.
5. Developing learning strategies on how to use and integrate digital resources in various disciplines.
6. Providing hands on activities to enhance knowledge and skills choose educational software for diverse curriculum.
7. Applying information technology copyrights as a part of e-learning courses.
8. Encouraging students (candidates) to follow up emerging technology and integrating them in various contents.
9. The College of Education should become more prepared to understand the importance of integrating the digital technology as part of society knowledge.

VIII. Conclusion

This research focused on students' (candidates) capability of e-learning knowledge and skills toward integrating them in the educational environments after graduation in the real world. In fact, the research used a questionnaire that included various items to discover the abilities of students in integrating e-learning through their learning and practices in the College of Education in King Saud University, which enabled them to enhance and create their needs of e-learning Knowledge and skills. Indeed, the results revealed that there are some students (candidates) who did not obtain e-learning knowledge and skills, which were not aligned with the Conceptual Framework of the College of Education, IRTE and NCATE e-learning principles. One-Way Analysis of Variance test indicated that there were not significant differences among students (candidates) abilities to infuse e-learning knowledge and skills according to departments. This means, it identified those students (candidates) throughout departments who learned in identical learning methods. The qualitative findings indicated that students need training on how to use learning management systems in educational setting. Indeed, the College of Education should provide appropriate educational environment that enables students to acquire e-learning knowledge and skills in order to prepare them for the digital society.

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