Student Teachers' Gender, Academic Qualification, Educational Experience and International Technology Education Standards

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Abstract

Jordanian higher education institutions are placing great emphasis on educational technology. Nearly one-third of the population is students. Among student teachers who may have different views about the inclusion of international technology education standards in mainstream academic programs. However, gender type, academic qualification, and educational experience of student teachers' estimates of the degree of availability of international technology education standards, in academic programs, in the faculty of educational sciences at the University of Jordan in Amman, Jordan, were studied. A randomized stratified sample consisted of (250) male and female graduate and undergraduate student teachers were selected during the fall of 2014/2015. To achieve the objectives of the study, a questionnaire consisted of (55) items was built. Both validity and reliability were secured for the questionnaire. The results showed no statistically significant differences in student teachers' estimates with regard to their gender on all dimensions, except for the dimension "technology operations and concepts", and in favor of female student teachers. Moreover, no statistically significant differences in student teachers' estimates with regard to their academic qualification on all dimensions, except for dimensions "technology operations and concepts", and "social, ethical, legal, and human issues", and in favor of graduate student teachers. Furthermore, no statistically significant differences in all dimensions of the questionnaire were found due to student teachers' educational experience.

Keywords: International Standards, the degree of availability, Technology education, Student teachers, Jordan.

Introduction and Background of the Stud

Research has revealed that a successful utilize of educational technology depends mainly on the thoughts of teachers and their readiness to embrace innovative technology (Teo, Lee, & Chai, 2007). A constructive manner towards educational technology will increase an intent or resilience to use educational technology in her/his classroom. The importance of teachers' awareness of the efficacy of new technologies is also significant (Ma, Andersson, & Streith, 2005). It is reported that teachers commonly deem in the value of educational technology in the classroom (Plumm, 2008). If a teacher deems in the expediency of educational technology, he/she will be more determent to employ educational technology in the classroom and attain essential expertise. Since student teachers' are an important players to the successful implementation of technology in the educational system, it is valuable to probe student teachers' willingness in attaining educational technology standards, through gaining more insights into how their gender, academic qualification, and their educational experience during their university studies may play a decisive factor in shaping their position toward these standards.

The International Society for Technology in Education (ISTE) stressed the importance of educational technology as a key component in designing high quality educational programs and courses. This may be achieved by providing students with skills to exploit educational technology (International Society for Technology in Education, 2002). To attain this goal, the ISTE developed standards for technology education for students and teachers relating to the following areas as reported by Renzulli, (2005), and Selverston, (2003): technology operations and concepts, planning and designing learning environments and experiences, teaching, learning and the curriculum, assessment and evaluation, productivity and professional practice, social, ethical, legal, and human issues.

These standards enjoy a large degree of flexibility and universal acceptance; they form the basis of the technology education standards in different countries, such as China, Australia, Ireland, Latin America and England. The ISTE updates these countries periodically; since they were first published in 1993, they have been updated in 2000, 2007, and 2008 in line with developments in the field of information and communication (Coklar & Odabasi, 2009).

In response to this, The University of Jordan started developing curricula for its academic programs; among of them are programs in the Faculty of Educational Sciences that have been developed to take into account scientific and technological developments and to help them solve problems and think critically. The idea is for student teachers to focus on conceptual, pedagogical forms of educational technology rather than mastering only hardware and software. In this context, The University of Jordan demanded integrating educational technology into curricula within its academic programs to provide opportunities for students to deal with educational technology, to prepare them to work in a knowledge economy and to reduce their marginalization. Additionally, one of the university's main goals is "improving the effectiveness of faculty members at UJ to strengthen the learning process amongst students, boosting their personal, social, academic and technological abilities" (ju.edu.jo). This initiative harmonizes with the vision of the Ministry of Higher Education and Scientific Research, to accredit and apply quality assurance to all higher education institutions operating in Jordan.

Given the unequal involvement of females in technology education, male perspectives and interests tend to pervade (Sanders, Koch, & Urso, 1997; Welty, 1996). Studying factors such as gender, academic qualification, and educational experience of student teachers represents a constructive advancement in tackling the process concerning technology adoption in developing countries since the integration of technology education standards in higher education institutions is still insipid.

Statement of the Problem and Research Questions

This study aims to inform curriculum developers in technology education at The University of Jordan of the need to realize gender, academic qualification, and educational experience effects if they hope to effectively endorse international technology education standards within academic programs (Belenky, Clinchy, Goldberger, & Tarule, 1986; McIntosh, 1983; Welty, 1996; Zuga, 1999).

Hence, this study is a contribution to the debate on gender in educational technology, academic qualification, and educational experience. Vassiliou (2009) believes that "gender differences in education must be taken into account when developing policies and strategies to improve educational outcomes" (p. 3). In a developing country like Jordan, gender inequalities is to a certain extent a result of the prevailing masculine culture that shapes academia. In addition, gender equity must be tackled which refers to "fairness of treatment for women and men, according to their respective needs. This may include equal treatment or treatment that is different but which is considered equivalent in terms of rights, benefits, obligations and opportunities" (UNESCO 2000, p. 5).

As the case of the University of Jordan, co-education is existed for student teachers' with procedures of gender equality. Co-education acknowledges the biological distinction between men and women, but discards the notion of male and female stereotypes, consequently discarding the assumption which favors men over women. Co-education involves educating of girls and boys equally in an environment beyond those gender characters which the general public set for each sex (Crosato, Morandi & Satti, 2005, p. 65). These are indicators to the fact that demographic variables do have presumptions on technology utilize by student teachers. Consequently, the study aimed to answer the following question: Are there any statistically significant differences in the degree of availability of international technology education standards in student teachers' estimates in the faculty of educational sciences attributed to their: gender, academic qualification, and educational experience?

Purpose of the Study

This study aims at enlightening the overall state of student teachers' in terms of education technology standards. In particular, it seeks to identify any differences in student teachers' estimates of the degree of availability of international standards in technology education from student teachers' point of view in the Faculty of Educational Sciences in light of their gender, academic qualification, and educational experience.

Significance of the Study

The following may benefit from the results of this study: Student teachers, academic departments, faculty members, students, supervisors, and computer administrators.

Departments may benefit in guiding their faculty members to seize advantage of modern technology in the delivery of knowledge and information for students, follow-up of faculty members through classroom visits and stand on their understanding of technology in education and the degree of proficiency that they own.

Limitations of the Study

1. The varied programs of study and courses at the faculty of educational sciences are limitations that are not controlled in this particular study, and are considered outside the range of this study.
2. Since the study was limited to student teachers' who graduated from the faculty of educational sciences, it cannot be assumed that its findings apply to community college student teachers', or other academic programs in Jordanian private universities.

Definition of Terms

Operational definition: International Technology Education Standards: Are phrases describe the knowledge, attitudes and basic skills that should be mastered by student teacher in the Faculty of Educational Sciences as a result of employing these standards and its educational performance indicators affiliate in related areas of technology that were developed by the International Society for Technology in Education (ISTE). These standards were measured through getting the responses of student teachers in the Faculty of Educational Sciences on specified items in the questionnaire of the study.

The Concept of Standards

Standards a plural word its singular "standard", which means, "what is measured by the other", or a model of what the examined object should be. It represent views of outcomes of various psychological, social, scientific, and educational dimensions, when being applied, we may discern the true image of the subject being measured, or reach a judgment as to the object that being measured or examined. The standards refer to "those phrases by which to determine the appropriate level of mastery and desired content and skills, performance and learning opportunities and standards for teacher preparation" (Zaiton, 2004, p. 115).

National Educational Technology Standards for Teachers (NETS)

These standards aimed to aid institutions prepare learners to integrate educational technology into their programs (Alkaleel, 2007). These standards have come under six major areas: technology operations and concepts, planning and designing learning environments and experiences, teaching, learning and the curriculum, assessment and evaluation, productivity and professional practice, and social, ethical, legal, and human issues. Every standard includes all of the criteria define performance indicators renderings that all students and teachers should perform regardless of their specialties. The American National Council for Accreditation adopted these standards and asked student teacher preparation institutions to adhere to them as a constituent of their commitment to academic accreditation. The following a list of these standards:

Technology Operations and Concepts:

This standard refers to the importance of teachers' understanding of technology operations and concepts and basic technology literacy skills necessary for teachers to integrate technology productivity tools and other tools in the classroom. Moreover, show continued growth in IT skills, education commensurate with technological developments. To fulfill this standard opportunities must be provided to learners through using technology in their own working projects using multimedia, or desktop publisher ads in classroom work. In addition, using web browsers, word processor, excel desktop publisher, drill and practice, inspiration, simulation software, Web design, and familiarity with the skills of e-mail and databases.

Planning and Designing Learning Environments and Experiences:

This standard refers to teachers possess the knowledge and skills necessary for exploiting educational technology in the planning and designing of educational experiences consistent with the results of educational research related to integrate technology in teaching and learning, and meeting the diverse needs of learners. This requires as (Earle, 2002) indicates of teacher preparation programs, training of student teacher in, with technical skills, and observing the employment of educational technology by faculty members, and giving them enough time to select educational materials that they will use, and evaluating educational outcome in terms of content and goals.

Teaching, Learning and the Curriculum:

This standard requires learners to employ technology as an integral component of the educational process in implementing the curriculum, facilitating learning experiences in light of the content and technology standards in education. The standard requires teachers to understand ways to utilize the available technology at schools and to apply skills to use software, also requires knowledge of management strategies of learners in the classroom (Brown, 2005).

Assessment and Evaluation:

This standard refers to student teachers' possession of skills in using technology in facilitating the use of a variety of teacher evaluative strategies, using technology in the access, analysis, interpretation, and retrieval of learners' data to improve teaching practices in the light of their data (Renzulli, 2005). This embraces the possession of skills to create and utilize of grade-books, to implement of diverse evaluative tools such as e-portfolios, computer educational games and short quizzes available on the Internet, the development of criteria to evaluate students learning outcomes, and provide skills for immediate feedback to learners to adjust instruction accordingly.

Productivity and Professional Practice:

This standard refers to the teacher's use of ideas, teaching plans, and publications from professional bodies, courses in professional development provided on the Internet, participating in scientific conferences and workshops to achieve sustainable professional development. In addition, the embracing of technological productivity tools, such as a word processor, power point, database, painter to develop the products of teachers, and the use of mailing lists and e-mail services to communicate with colleagues and students and their parents in order to enhance learning.

Social, Ethical, Legal, and Human Issues:

This standard refers to the understanding of student teachers to social, moral and human issues related to integration of technology in schools, their ability to employ these principles while teaching. We should encourage student teachers ethical behavior on the technological frontier. The student teacher is expected to refer to the ethical and legal issues relating to intellectual property rights when using hardware and software, and to explain to the learners the importance of how to cite resources, in order to avoid the occurrence of cases of intellectual plagiarism. The standard refers to the awareness of the teachers' capabilities of technology in dealing with individual differences among learners, and teaching methods appropriate for this purpose (Selverstone, 2003). In addition, the standard refers to provide a robust suite for learners with opportunities to employ technology in a fair and equal manner regardless of social, class, and ethnic differences. The performance indicators and general preparation for student teachers prepared by the (ISTE) identify basic skills that should be owned by student teachers to shape a productive and human future.

New Roles of Teachers and Learners in the Light of International Standards in Technology Education

The roles of teachers who employ International standards in technology education, are appraised in range of roles, including as pointed out by Kotaite and Kherissat (2009), the role of commentator using technical means, where the teacher presents lecture for students or classroom situation aided by the computer, the Internet, and technical means, including audio and visual ones; to enrich and clarify ambiguous points, afterward students are asked to use this technology as sources for research and conducting projects. As well as the role of the teacher, manifested in being a supporter of interaction in the educational process; he assist in tutoring students on the use of technical means and interact with them by encouraging asking questions and inquiring how to utilize the computer, to acquire diverse knowledge and encourage them to communicate with other students and teachers who use e-mail and the Internet.

The teacher fulfills his role by encouraging students to generate knowledge and creativity: where the teacher encourages students to employ technical means on their own and to innovate and create educational programs for learning. These roles of teacher need to allow students a degree of control upon the content to be learned, and ask questions related to general concepts and viewpoints. Shehata (2005) confirms that the learner is the focus of the learning and teaching process and the learner is responsible for actively doing, aided learning through various techniques of educational facilities, programs, strategies, and methods of thinking.

For this to happen, certain principles need to be agreed upon by nearly everyone educated workers in the field of education and psychology and can be achieved through technological techniques, namely: the learner learns by himself through learning by doing and self-learning, learn greater while regulating the learning materials in a way to enhance learning steps directly and individually, master every step of the learning fully before moving to the next step.

Literature Review

A substantial body of literature already exists concerning acceptance and use of educational technology in academia. However, there are limited studies specifically focusing on student teachers awareness with regard to their gender, academic qualification, and educational experience toward international technology education standards as a reliable tool in helping to advance teaching and learning. In a study conducted in Turkey by Sirin and Duman (2013) findings showed that self-efficacy levels of teacher candidates for educational technology standards had no significant difference in terms of gender, which means both male and female teacher candidates utilized educational technology standards at the same high level.

Koohand (2004) examined university students who were enrolled in an undergraduate hybrid program regarding their views towards utilizing of a digital library and found that males had considerably higher positive perceptions than females. Enoch and Soker (2006) studied students' use of web-based instruction at an open university. They found that there had been a constant increase in employing of the Internet for both female and male students. Still, the differences between the males and females were significant. Male students were more apt to use web-based resources as an addition to the printed resources.

Zhang (2005) reported that gender was not a significant factor in terms of college students' interest for distance learning. Davis and Davis (2007) reported that no statistically significant difference was found on overall perception of computer competence due to gender. Thompson and Lynch (2003) found that, men faculty were more confidence in their ability to manage and perform courses of internet procedures more than women faculty. Anduwa-Ogiegbaen and Isah (2005) reported that there were no statistically significant differences between male and female faculty in their internet usage. Gerlich (2005) found that gender did not have a significant function in faculty perceptions of teaching online. Campbell and Varnhagen (2002) believed that some computer applications in education such as self-paced tutorials are not suitable for women who are more relational learners than males. Gender stereotype are not working for the benefit of women either in the use of technology.

An instructor's perception of teaching shapes his or her way of uses technology (Mitchem, Wells, & Wells, 2003; Zhou, Brouwer, Nocente, & Martin, 2005). Research on instructors' pedagogy shows that female instructors' incline to merge curricular and instructional decisions in their students' personal experiences (Elijah, 1996; Lacey, Saleh, & Gorman, 1998; Robin & Harris, 1998). Campbell and Varnhagen (2002) reported that males are more likely to select technology first and then think about its application in teaching, whereas females tend to focus first on their instructional needs (pedagogy) before the technology itself.

Previous studies established that academic qualification is one determinant aspect to predict ICT integration (Pijpers, Bemelmans, Heemstra, & van Montfort, 2001; Zhu & He, 2000; Valletta & MacDonald, 2003; Olatokun, 2009; Alampay, 2006a; The International Telecommunication Union, 2003; Kusumaningtyas & Suwarto, 2015). Olatokun (2009) highlighted that academic qualification had the strongest impact on the use of ICT among educated people. Academic qualification was found to be the leading demographic variables predicting ICT usage among science teachers in Nigeria (Aramide, Ladipo, & Adebayo, 2015). This is in line with the findings reported by Tezci (2010) and UNDP (2011) that emphasized academic qualification as a major determinant of ICT use. Educational qualification was found to be the strongest predictor of ICT use among the demographic variables ahead of ICT use experience and teaching experience.

Finally, few concrete and tangible studies teach and explain how student teacher academic qualification can play an active part in integrating technology education standards into their teaching and learning. Different findings were reported concerning the influence of years of experience of teachers and ICT use by many studies. Such as, Mueller, Wood, Willoughby, Ross, & Specht (2008); Abu-Obaideh, Ab Rahim, Ramlah, & Asimiran, (2012) found no significant relationship between teachings experience of teachers and their exploit of ICT in teaching. While the results of a study conducted by Inan and Lowther (2009) highlighted that years of teaching experiences affect teachers' use of computer technology in a negative way.

In addition, Kalogiannakis (2008); Ertmer (2005); Bebell, Russel, & O'Dwyer, (2004) pointed out throughout their research that teachers' years of experiences influence the teachers' technology use in teaching. Science student teachers with more experience with educational technology had greater intentions to use educational technology, and believed more in its value. Kadijevich and Haapasalo (2008) found that student teachers experience with educational technology is so important that it can help to improve student interest and intention to use educational technology in their classes.

Studies have indicated that pre-service teachers' working with an experienced teacher was an essential measurement of their educational technology training (Brent, Brawner, & Van Dyk, 2002; Doering, Hughes, & Huffman, 2003). Student teachers are more willing to employ educational technology in their teaching. Research findings showed that experienced teachers appear unwilling to integrate educational technology in teaching practices, while student teachers are more self-assured exploiters of educational technology (Galanouli and McNair, 2001; Madden, Ford, Miller, & Levy, 2005; Andersson, 2006). A study conducted by Smarkola (2008) that incorporated 160 student teachers and 158 experienced teachers established that both groups of teachers acknowledged the requirement for supplementary computer-integrated preparation. A Study carried out by Ozdamli, Hursen, & Ozcinar (2009) reports that it is more difficult for experienced teachers to adapt to the use of educational technology in their classroom activities. Therefore, it is very important to incorporate educational technology into science student teachers' training. A review of previous studies in general, unfold the tendency for designing and guiding teacher preparation and evaluation programs and educational technology courses in light of international technology education standards (NETS). Moreover, to identify and seize advantage of modern methods in advancing teacher preparation programs, and to recognize the extent of students' gains from those standards. Among these studies (Sharaf, 2009; Wynter, 2008; Alfiqaawi, 2007; Martin & Dunsworth, 2007; & Hofer, 2003).

Lambert, Gong, and Cuper (2008) in a study identify the impact of an educational technology course designed according to the (ISTE NETS-T) on the perception of student teachers' to their level in the use of educational technology and attitudes towards it, and the impact of educational-level and experience on their attitudes towards the exploitation of educational technology. It is worth mentioning that previous studies covered a wide spectrum of subjects. A number of studies focused on evaluating technological courses offered in universities as Sharaf (2009) and Shtat (2006) and Almikhlafi (2010). Others evaluated technological and computer courses in schools as Alfiqaawi (2007) and (Wynter, 2008). In addition, several studies aimed to identify the impact of educational technology courses on promoting technological skills of learners and studying variables such as the learners' attitudes towards technology and previous experience in the use and teaching methods employed in the teaching of educational technology and its impact on the capacity of the learners technological and attitudes towards it (Lambert, Gong & Cuper, 2008 ; Anderson & Maninger, 2007; Martin & Dunsworth, 2007; Kim, Aagard & Nabb, 2005).

Also, results of the studies by (Sharaf, 2009; and Alfiqaawi, 2007) showed that the availability of educational technology standards is acceptable. According to a study by (Betrus, 2000) showed a shift in attention of the education technology courses from focusing on learners skills in hardware and software running to acquiring the skills of integrating them into the educational process, in addition, a study by (Shtat, 2006), presented a proposal in shaping educational technology courses in the light of technology education standards for teachers. Several studies applied descriptive analytical methods in agreement with our current study such as (Sharaf, 2009). Furthermore, our current study came on agreement with the study of (Hofer, 2003) in the use of national technology education standards (NETS) and utilizes them in the preparation of the theoretical framework, construction of the study tool, and in the interpretation of results of the study. Finally, the current study is characterized in its reliance on international technology education standards in building the study tool.

Methodology of the Study

The study relied on descriptive analytical approach, which deals with the reality, and identifies the factors influencing it in terms of the nature and relations between them.

The Study Population

The study population consisted of all student teachers enrolling in academic programs in the Faculty of Educational Sciences at The University of Jordan in Amman, Jordan, during the academic year 2014/2015, according to the statistics department in the admission office at The University of Jordan.

The Study Sample

It was the purpose of the study sample inventory among only student teachers who have graduated from the Faculty of Educational Sciences at the University of Jordan and working in the field of teaching. A purposive randomized stratified sample consisted of 250 male and female student teachers were selected during the first semester of the academic year 2015/2016. To ensure independent variables representation, academic programs with high (female, male enrollment were selected, academic programs require at least one technology education course for its graduate and undergraduate students were selected, student teachers working as teachers were selected ; therefore, the study sample was balanced for sake of statistical analysis.

Instrument of the Study

Survey methodology was employed to collect data due to its accessible and valuable technique to get to the intended population. The researcher-developed the questionnaire by examining previous surveying methods in the literature, and items were written to explain and reveal International technological education standards in a developing country. The questionnaire consists of two sections. The first section included the demographic information about the participants such as gender, academic qualification, and educational experience. The second section consisted of 55 items distributed on six areas.

Validity of the Study

As explained by Smith and Glass (1987), face validity assesses whether items developed looks valid to the examinees who take it. After designing and developing of the questionnaire items in the initial stage which were distributed in six major areas, and to ensure face validity of the study tool, a group of 20 student teachers who study at The University of Jordan were given the instrument to comment on the clarity of items. As another measure of validity, content validity which requires the use of recognized experts to evaluate whether items developed in a scale assess defined content and more rigorous statistical tests than does the assessment of face validity. Therefore, the questionnaire was sent to (10) experts in educational technology, measurement, and curriculum and instruction to judge the degree of appropriateness of items in each area in terms of language formulation and clarity, and fit within the area to be measured. As a result, few items have been adjusted, added and another deleted. The final copy of the questionnaire which was handed to the participants consisted of 55 items.

Reliability

Reliability is achieved through the consistency, stability, and dependability of the results (McMillan, 1997). To ensure reliability of the scale being utilized test and re-test method was performed, where the researcher distributed the tool on (25) student teachers' from outside the study sample, and re-applied the same tool to them after two weeks. Then reliability coefficient was extracted by calculating the Pearson correlation coefficient between the first and second application (0.86), which was acceptable for the purposes of conducting the study.

Results of the Study

Results for the research question: Are there any statistically significant differences in the degree of availability of international technological education standards in student teachers' estimates in the Faculty of Educational Sciences attributed to their: gender, academic qualification, and educational experience?

Gender

To determine any statistically significant differences between the mean scores of student teachers' estimates to the degree of availability of international standards, means, and standard deviations of student's estimates with regard to their gender (male, female), were calculated for all the dimensions in the questionnaire. In addition, an independent samples t-test was performed to test the significance of any difference between the means. The results were as shown in Table1.

Table 1: Means, standard deviations, and results of t-test with regard to student teachers' gender

Dimensions	Gender	Number	Mean	St. D	t	Sig.
Technology Operations and Concepts	male	149	3.81	.57	4.74	.031
	female	101	3.95	.41		
Planning and Designing Learning Environments and Experiences	male	149	3.88	.59	2.88	.142
	female	101	4.01	.42		
Teaching, Learning and the Curriculum	male	149	4.02	.52	2.92	.125
	female	101	3.98	.39		
Assessment and Evaluation	male	149	3.84	.78	.363	.561
	female	101	3.73	.62		
Productivity and Professional Practice	male	149	3.91	.68	.069	.774
	female	101	3.88	.63		
Social, Ethical, Legal, and Human Issues	male	149	3.92	.46	4.52	.061
	female	101	3.93	.34		

Results of t-test showed no statistically significant differences between the mean scores of students with regard to their gender on all the dimensions of the questionnaire at the level of ($\alpha = 0.05$), except for the dimension "technology operations and concepts" were the value of calculated t were (4.74) and this is statistically significant (at $p = 0.05$), (0.31), and in favor of female students with a mean (3.95).

Academic qualification:

To determine any statistically significant differences between the mean scores of student's estimates to the degree of availability of international standards, means, and standard deviations of student's estimates with regard to their academic qualification were calculated for all the dimensions in the questionnaire. In addition, an independent samples t-test was performed to test the significance of any difference between the means. The results were as shown in Table2.

Table 2: Means, standard deviations, and results of t-test with regard to student's academic qualification

Dimensions	Academic qualification	Number	Mean	St. D	t	Sig.
Technology Operations and Concepts	BA	151	3.88	.60	4.925	.029
	Graduate	99	4.03	.41		
Planning and Designing Learning Environments and Experiences	BA	151	3.96	.59	2.243	.137
	Graduate	99	3.97	.42		
Teaching, Learning and the Curriculum	BA	151	3.82	.53	2.756	.100
	Graduate	99	3.98	.39		
Assessment and Evaluation	BA	151	3.65	.67	.337	.563
	Graduate	99	3.73	.62		
Productivity and Professional Practice	BA	151	3.63	.68	.078	.781
	Graduate	99	3.86	.62		
Social, Ethical, Legal, and Human Issues	BA	151	3.81	.46	4.670	.033
	Graduate	99	3.93	.33		

Results of t-test showed no statistically significant differences between the mean estimates of students with regard to academic qualification on all the dimensions of the questionnaire at the level of ($\alpha = 0.05$), except for the dimensions "technology operations and concepts" and the dimension "social, ethical, legal, and human issues" were the values of calculated t were (4.92), (4.67), and these were statistically significant (at $p = 0.05$), (0.29), (0.33), and in favor of graduate students with means of (4.03), (3.93).

Educational experience:

To determine any statistically significant differences between the mean scores of student teachers' estimates to the degree of availability of international standards, means, and standard deviations of student teachers' estimates with regard to their educational experience were calculated for all the dimensions in the questionnaire. The results were as shown in Table3.

Table 3: Means, standard deviations with regard to student teachers' educational experience

Dimensions Educational experience	Less than 5 years		6 to 10 years		More than 10 years	
	Means	St. D	Means	St. D	Means	St. D
Technology Operations and Concepts	3.95	0.53	3.90	0.57	3.92	0.58
Planning and Designing Learning Environments and Experiences	3.97	0.47	3.95	0.61	3.96	0.58
Teaching, Learning and the Curriculum	3.91	0.43	3.91	0.53	3.66	0.53
Assessment and Evaluation	3.81	0.63	3.63	0.64	3.46	0.68
Productivity and Professional Practice	3.78	0.63	3.67	0.59	3.57	0.88
Social, Ethical, Legal, and Human Issues	3.90	0.42	3.84	0.42	3.75	0.44

Means scores in table (3) show differences in student teachers' estimates of the degree of availability of international standards with regard to their educational experience in the above dimensions, and to determine any statistically significant differences between the mean estimates of students with regard to their educational experience, a one-way analysis of variance (ANOVA), was performed. The results were as shown in the table (4).

Table 4: Results of analysis of variance (One-Way ANOVA) with regard to student teachers' educational experience

Dimensions	**Source of Variance**	**Sum of Squares**	**Df**	**Mean Square**	**F**	**P**
Technology Operations and Concepts	Between groups	0.081	2	0.005	0.39	0.72
	Within groups	46.84	247	0.107		
	Total	46.79	249			
Planning and Designing Learning Environments and Experiences	Between groups	.073	2	.036	.183	.89
	Within groups	48.910	247	.198		
	Total	48.983	249			
Teaching, Learning and the Curriculum	Between groups	.008	2	.004	.062	.94
	Within groups	15.928	247	.064		
	Total	15.936	249			
Assessment and Evaluation	Between groups	.006	2	.003	.031	.97
	Within groups	26.024	247	.105		
	Total	26.031	249			
Productivity and Professional Practice	Between groups	.022	2	.011	.037	.96
	Within groups	73.176	247	.296		
	Total	73.197	249			
Social, Ethical, Legal, and Human Issues	Between groups	.039	2	.019	.031	.96
	Within groups	154.400	247	.625		
	Total	154.439	249	.036		

The results in table (4) showed that there were no statistical significant differences in all dimensions of the questionnaire due to student teachers' educational experience. Where results indicated no statistically significant differences for the dimension "technology operations and concepts" due to students' educational experience, where $p = (0.72)$, (at $p < 0.05$). Also, the results indicated that there were no statistical significant differences for the dimensions "planning and designing learning environments and experiences" due to students' educational experience, where $p = (0.89)$, (at $p < 0.05$), and the dimension "teaching, learning and the curriculum", where $p = (0.94)$, (at $p < 0.05$). In addition, the results showed that there were no statistical significant differences for the dimensions "assessment and evaluation", where $p = (0.97)$, (at $p < 0.05$) due to student's educational experience, and the dimension "productivity and professional Practice", where $p = (0.96)$, (at $p < 0.05$), and the dimension "social, ethical, legal, and human issues" where $p = (0.96)$, (at $p < 0.05$).

Discussion of Results

The following section will demonstrate the ways in which the current findings both affirm and refute prior research.

Gender: The results showed no statistical significant differences in student teachers' estimates due to their gender in all the dimensions of the study except for the dimension "technology operations and concepts". According to this finding, it can be inferred that the gender of student teachers' did not differ with their estimates of the availability of educational technology standards and both males and females benefited of technology at the same level. The reason for this is due to the belief of all male and female teachers of the importance of international standards and its availability in their academic programs in the Faculty of Educational Sciences because of their importance to the life outcomes of the educational process.

Therefore, the researcher believes that many of the transactions and government services at the moment are electronically through the Internet and even Jordan is on its way toward becoming electronic management in all institutions, service, productivity, and this in turn leads to the availability of the adequacy of dealing with networks and the Internet by students where available they have the appropriate amount of culture and education which will enable them to access the digital world and unrevealed its secrets through Internet connection through the lines of Jordanians Telecom Companies regular and super DSL lines and other liable service providers. The status of females in Jordan is gaining momentum in technology where women are the ministers of telecommunication and information technology, industry and commerce, transportation, cultural affairs, social development.

It can be for training courses developed for teachers in the Ministry of Education, a clear impact in the absence of statistically significant differences to the degree of the availability of international standards due to gender. These results are similar to those found by (Alsharif-Mohammad, 2012; Alsharif-Nof, 2012; Elmas, 2013) which both emphasized no differences in estimates due to gender for integrating technology into curriculum. While Mathews and Guarino (2000), indicated that teachers' gender had an effect on teachers' computer use. In addition, Bani Domi (2010) found statistical significant differences in the degree of using the instructional technology competencies due to gender, in favor of females' teachers.

On the other hand, the emergence of statistical significant differences in gender and in favor of female students for the dimension "technology operations and concepts" may be attributed to female great interest and tendency toward courses in academic programs and its applications which in return gave them experience and ability to estimate. In addition, the existence of these differences may be attributed to their participating in training courses which were fruitful in improving their teaching skills and exposing them to new trends and efforts to integrate technological concepts and operations. This is consistent with what Caleb (2000), points out that a female is more inclined toward communication and interpersonal interaction. This has essential inferences for gender-balanced issue selection in technology education. Shroyer, Backe, & Powell (1995) point toward social technologies may be more alluring to girls than the learning of industrial technologies.

Academic qualification: The results indicated no statistically significant differences in student teachers' estimates of the degree of the availability of international technological education standards due to their academic qualification on all the dimensions of the study except for the dimensions "technology operations and concepts" and the dimension "Social, Ethical, Legal, and Human Issues", were statistically significant and in favor of graduate students. This is consistent with modern trends in technology education, where the use of individual competitive projects is prevailing in undergraduate courses, while graduate courses are shifting toward more group collaborative projects. This is may be attributed to the researcher belief that most of students are having similar conditions in cultural, academic, and technological tools experiences which contributed in bridging the gabs in their estimates regardless of their academic qualification. While existence of statistically significant differences in the above mentioned dimensions and in favor of graduates, may be attributed to the fact that undergraduates have not been educated about related issues (Uysal, 2006).

Also, this differentiation may be attributed to the way graduates perceive their selves as holders of graduate degree which push them to welcome the tendencies and initiatives geared toward effective integration of international standards in appositive manner in order to enhance their education and knowledge. In addition, this is may be attributed to the fact that graduate students may had the chance to be part in training courses and educational sessions in their schools and universities which contributed in raising their theoretical and practical knowledge. This is in line with the finding of a study by Kadijevich and Haapasalo (2008) indicated that the application types (theoretical or applied) of the courses on educational technologies are all an essential and distinctive factor, may yield this demarcation.

In general, Theses results are similar to those found by (Lambert, Gong, & Cuper, 2008), and similar to Alsharif-Mohammad (2012), and Alsharif-Nof (2012) results which both revealed no differences in estimates due to academic qualification for integrating educational technology.

Educational experience: The results showed that there were no statistically significant differences in all dimensions of the questionnaire due to student teachers' educational experience. This result of the study can be taken as an important progress in terms of making the integration of education technology as a life-long learning. Therefore, digital gaps among experienced teachers and student teachers are no more exist. This may be attributed to the similarity of educational experiences in general for students in the city of Amman.

The similarity of patterns of thinking and working conditions, and the similarity in local environments where they grew up may resulted in a lack of statistical significant differences between student teachers' estimates of the degree of availability of international standards in the Faculty of Educational Sciences. Also, the researcher believes that enrollment in similar teacher training courses resulted in close qualification rates which may contributed in the lack of differences in students estimates, where these training courses helped students on developing their expertise and provide them with new and advance trends in utilizing technology in education.
In addition, students activity, creativity, and desire to exert more effort to use and employ technology due to their awareness of its importance in achieving the objectives of the teaching process as well as the awareness that excluding of technology in teaching leads to insularity in the minds of students. The researcher believes that the great motivation of students regardless of their expertise is a distinctive factor in the absence of differences in their estimates especially since the reward system for teachers play a role in reducing the impact of experience in making a difference in their estimates about employment barriers of technology.

These results are similar to those found by Alsharif-Nof (2012) which showed no differences in estimates due to educational experience for integrating technology into science curriculum. While (Mathews & Guarino, 2000; Inan & Lowther, 2010; & Bani Domi, 2010) indicated that years of teaching experience had an effect on teachers' Technology use. In addition (Bebell, Russell, & O'Dwyer, 2004; Ertmer 2005; Ross, Hogaboam-Gray & Hannay, 1999; Shiue 2007) reported that, the more experienced teachers tended to utilize technology regularly.

Recommendations

Based on the findings of this study, the researcher recommended emphasizing the importance of the availability of international technology education standards in all areas, with a focus on the dimensions marked with significant differences between male and female student teachers such as "Technology operations and concepts", and significant differences between graduate and undergraduate student teachers on dimensions such as "Technology operations and concepts" and "Social, ethical, legal, and human issues". Additional research will be required to better understand these differences.

Conclusion

In conclusion, it could be argued that diverse projects, often targeting female education disparities, have widely altered gender prototypes in education over the last 20 years in Jordan. It is obvious that gender roles had changed over time. With regard to the role of academic qualification in the use of international technology education standards, it appears to us that the university's practices and environment are similar for both undergraduate and graduate students. As for the educational experience and its role in the use of international technology education standards, we must distinguish between the educational experience of student teacher involving the use of educational technology and educational experience that does not include the use of educational technology. Additionally, there is a good deal of efforts to be done to integrate international technology education standards and apply curriculum designed into academic programs to edify to such standards. To effectively prepare our student teachers, future agenda of tackling obstacles that may hinder the integration of these standards must be researched and highlighted; to wisely incorporate these standards. This piece of research may shed light on the kind of expected support needed by education policy makers.

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