Volume : 4 | Issue : 12 | December 2015 • ISSN No 2277 - 8179

Research Paper

Assessing the Educational Technology Competencies of Teachers in Improving Their Professional Performance in Secondary Schools of Yemen

Education

KEYWORDS : educational technology competencies, educational technology competencies standard, in-service teachers

Arwa Ahmed Abdo Qasem — Research Scholar in University of Mysore-570006.

Dr.G.Viswanathappa — Associate Professor in Education Regional Institute of Education-NCERT Manasagangothri MYSORE-570 006

ABSTRACT

pedagogical change lays a tremendous responsibility on teachers to be knowledgeable not only about acquiring ICT skills but, more importantly, about understanding methods enable them of efficient professional to lead teaching and enhance student learning. So the aim of this study is to know assessing the educational technology competencies in improving their professional performance. The participants were 30 teachers from the secondary school of Ibb city. The result showed the extent of training needs according to the educational technology competencies and the extent of important the four factors in scale which was given to the teachers, and the result found that teachers female more interested than teachers male to use different types of technology.

INTRODUCTION

Many changes have occurred in teaching in particular by emergence of ICT are being integrated in the teaching-learning process in many learning institutions of the world (Ertmer 2005& Friedman et al. 2009) in education, and these changes are especially important to the program Preparing Tomorrow's Teachers to Use Technology.The teacher plays a critical role in the process of teaching and learning (Chin & Hortin, 1994). Therefore, it behoves the teacher to stay abreast of changing technology in order to integration of instructional technology in teaching. Zhao (2007) conducted a qualitative research to investigate the perspectives and experiences of 17 social studies teachers following technology integration training, the research indicated that teachers held a variety of views towards technology integration, these views influenced their use of technology in the classroom, most teachers were willing to use technology, expressed positive experiences with technology integration training, increased their use of technology in the classroom, and used technology more creatively.

Effective professional development is defined as professional development that produces changes in teachers' instructional practice, which can be linked to improvements in student achievement (Odden et al., 2002) ,that teachers' competencies should be redefined depending on the development of the life of human and education. Richey et al (2001) have defined of the educational technology competencies are "an integrated set of skill, knowledge, and attitudes that enables one to effectively perform the activities of a given occupation or function to the standards expected in employment". Many the studies on competencies of the teachers focus on the teaching role of teachers in the classroom rather than teachers' competencies (Dlodlo & Sithole, 2001). And the researchers observed that, teacher's use of ICT increased but not all teachers benefited from ICT adequately. For this reasons, standards of educational technology use were developed so that teachers could make the best use of these technologies, And study of (A. Guzman & M. Nussbaum,2009) discussed a number of domains that configure in-service teacher training processes in the area of technology integration. The domains include technological, curricular, methodological, evaluative, communicational and personal elements. This study chooses the educational technology competencies which developed by International society for technology in education ISTE and UNISCO, Regarding ICT integration in teaching that helps share information about educational technology and provides new information based on the studies carried out by the scientific society. the Educational Technology competencies Standards Determination Scale under four factors, the titles of the factors were determined to be Technology Operations and Concepts (Factor 1); Pedagogical (Factor 2); Social, Ethical, Legal, and Human Issues (Factor 3); Productivity and Professional Practice (Factor 4) (ISTE, 2009; UNISCO,2004). Although Yemen the government has introduced ICT in the syllabus of teacher trainees and has provided opportunity for the teacher trainees to develop their skill to use computer and internet (Ministry of education ,2008), nonetheless it is still relatively small. therefore; the goal of current study was to determine training needs of professional performance from a teachers point of view. And study the difference in assessing the educational technology competencies among male and female teachers.

METHODOLOGY

Participants

The participants were 30 (16 male, 14 female) teachers from secondary schools of Ibb city, all teachers at both schools had between 5 and 15 years of teaching experience and they have undergone training on use the computer and internet.

Tools of the study

In this study used the Questionnaire to know the Assessing the educational technology competencies of teachers in improving their professional performance, the value of Cronbach alpha calculated for the whole scale was .865. The value of Cronbach alpha calculated for the evaluation of the reliability of a scale , All items were measured on a 5-point of Likert scale , the data were analysed using SPSS version 17.0

The result of study

To the answer of first question "What is the Assessing the educational technology competencies of teachers in improving their professional performance", the factor analysis, means and standard deviations were used for analysis of teachers' responses, the results were as the following:

- **Factor(1) "Technology Operations and Concepts"** consisted of items related to the knowledge of teachers about any kinds of technology, especially about computers, and related to their effective use of technology, the results indicated the means scores ranged between 3.96 and 4,60 on a 5-point scale (see table 1), this high assessing by teacher might be due to the fact that hardware and software must become familiar to make the teacher more effective and confidence in their teaching . This is in agreement with the findings of Slaouti & Barton (2007) which reported that the teachers perceived ICTs as an important tool to accomplish their professional tasks.

Volume : 4 | Issue : 12 | December 2015 • ISSN No 2277 - 8179

Table(1) Technology Operations and Concepts

S.NO	**items (α=.766)**	N	Mean	SD
1	Identify (α=.766) the functions of computer peripherals	30	4.60	.724
2	Properly connect main components, configure peripherals and install drivers when require.	30	4.27	1.048
3	Configure computer setting of various software and hardware	30	4.37	.999
4	Use storage devices	30	4.23	1.073
5	Organize and manage computer files, folders	30	4.23	1.278
6	Recognize between application of computer and internet	30	4.03	1.033
7	Use online and offline help facilities for update applications	30	4.50	.777
8	Protect the computer from virus.	30	4.33	.959
9	Format text, control margin, layout and table	30	4.13	1.137
10	Print and store data table using a spreadsheet application.	30	4.33	.994
11	Use a presentation package to add text, image,sound, customizing animation and sequence a presentation.	30	4.47	.819
12	Print presentation handouts and store slide.	30	4.50	.900
13	Make effective class presentation using the slide and LCD	30	3.97	.890
14	Crop, scale, color correct and enhance digital images.	30	4.47	.860
15	Play various media files using appropriate media players	30	4.27	1.112
16	change files format using online and offline program	30	4.23	.935
17	Choose best video format for PowerPoint, webpage	30	4.00	.947
18	Configure and use web browsers and help application	30	3.97	.999
19	Send and receive email with attachment, manage email	30	4.33	1.028
20	Effectively use synchronous and asynchronous web based communication tools	30	4.50	.861
21	Download and install relevant applications including freeware shareware and update and support application	30	4.53	.860
22	Search and collect textual and non-textual information from online and offline sources.	30	4.43	.935
23	Store and organize collected information using directories, and drives	30	4.50	.861
24	Share and distribute, publish and print information via web and social communication	30	4.43	.935
25	properly acknowledge information sources online or offline	30	4.30	.915

Factor(2) "Pedagogical" included items related to using technology to support individual learning, methods and strategies for applying technology, the results indicated that means scores ranged between 4.07 and 4.67 (see table 2) , this high assessing by teacher might be due to the fact that schools still use their old traditional methods of teaching and studies of Qatran(2010)& sharaf (2015) identified several barriers perceived by vocational teachers one from barriers was, There are not Expert in technology in schools, several schools could not proper integration of ICT in instruction.

Table(2) pedagogical

S.NO	**items (α=0.757)**	N	Mean	SD
1	Make students use communication tools, resource several of concept.	30	4.30	.988
2	Encourage students to do data analysis, problem solving, decision making and exchange of ideas consideration that student is center of learning	30	4.07	.980
3	Use appropriately slide presentations, videos, audio , and other media	30	4.43	.728
4	Teach students to use various multimedia materials for the reports and class Presentations.	30	4.57	.817
5	Use various synchronous and asynchronous communication tools (email, chat, forum, blogs) to facilitate cooperative learning	30	4.60	.814
6	design of class activities to minimize the effect on students being disadvantaged or left out.	30	4.07	.828
7	Evaluate usage of ICT integration in the teaching-learning process	30	4.30	.837
8	Use electronic means of administering quizzes and examinations	30	4.60	.814
9	Analyze assessment data using spreadsheets and statistical applications	30	4.20	.847
10	Use emails, group sites, blogs, etc. for disseminating information directly to students, colleagues and parents	30	4.30	.837
11	Use emails, group sites, blogs, etc. to collect information and feedback directly from students, colleagues and parents	30	4.60	.814
12	Explore the use of electronic assessment tools like on line testing, submission of projects.	30	4.37	.928
13	help students find their own measurement tools to evaluate their own learning processes.	30	4.60	.814
14	Choose the technology appropriate to the teaching process by evaluating the present technological sources.	30	4.67	.758
15	follow technology-based measurement and evaluation strategies which will help evaluate the performance of students	30	4.20	.887

- **Factor 3 "Social, Ethical, Legal, and Human Issues"** covered items related to health and safety issues caused by computer use and those related to copyright issues, the results indicated that means scores ranged between 4.20 and 4.80 (see table 5), this high assessing by teacher might be due to the fact Part of being prepared for that responsibility requires knowing how technology works, including its alternatives, benefits, risks, and limitations (Akcay,2008)

Table(3) Social, Ethical, Legal, and Human Issues

S.NO	**Items (α=0.795)**	N	Mean	SD
1	understand the legal issues about implications of software licenses and fair use.	30	4.67	.758
2	Understand and explain the important issues related to the copyright of any technological system.	30	4.80	.484
	Detect plagiarism in work	30	4.60	.814
3	properly acknowledge information sources used in own work	30	4.67	.758
4	Advocate the responsible use of various technologies like computer ,cell, phone	30	4.20	.887
5	explain the safety precautions health-related issues to be taken for a safer use of technology	30	4.20	.847
6	Show ressssspect for privacy and cyber etiquette, phone etiquette and similar use of technology	30	4.30	.837
7	Monitor how student use of computer specifically on software , hardware, computer game, and internet avtivites	30	4.67	.758
8	Maintain a clean and orderly learning environment for student	30	4.80	.484

9	Accurately report malfunctions and problem with computers software and hardware	30	4.53	.860
10	Help of minimize the effects of the digital divide by providing access to digital materials.	30	4.53	.860
11	Prepare lessens and activites appropriate to the level of learning and acultreal backgroung of student	30	4.33	.758
12	Adopt of activates using specialized hardware and software for physically disadvantaged students	30	4.30	.952

- **Factor 4 "Productivity and Professional Practice"** includes of items related to teachers use computer technologies, especially the Internet-based technologies, to become better teachers., the results indicated that means scores ranged between 4.10 and 4.73 (see table 6), this high assessing by teacher might be due to the fact use technology resources to engage in ongoing professional and lifelong learning, study of Carreras(2005) pointed on that One of the most significant changes in the new model is the formulation of qualifications based on professional competencies.

Table(4) Productivity and Professional Practice

S.NO	Items (X=0.752)	N	Mean	SD
1	Identify educational sites and portals suitable to their subject area	30	4.10	.845
2	join online communities, subscribe to relevant mailing lists and online journals	30	4.33	.844
3	share ideas with experts and colleagues on an online basis to develop my teaching skills.	30	4.27	.785
4	use software that will increase the quality of instructional applications.	30	4.73	.583
5	Share lesson plans, worksheets, templates and teaching materials	30	4.50	.777
6	Review new and extisting software a for education	30	4.33	.884
7	Recommende useful and credible web site to colleagues	30	4.60	.814
8	Follow online tutorials or online degree program	30	4.40	.855
9	Actively participate in online forums	30	4.33	.758
10	Puplish formal/ unformal research on use the ict in education	30	4.47	.819

To the answer second question" Is there difference in assessing the educational technology competencies among male and female teachers" the research used t-test for means compare between male and female in their responses .from the table 5, it is evident that the obtained "t" value is 0.384 which isn't significant at level 0.05. The result indicated that there is the Ssignificant difference between and female teachers in assessing the educational technology competencies study of Almekhlafi&Almeqdadi(2010) was consistent with this finding which showed that female teachers are more interested to use different types of technology than male teachers.

Table(5) t-test result comparing male and female

Sex	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Male	16	4.225	.321	-02.064	28	0.043
female	14	4.427	.185			

Conclusion

In general, teachers broadly agree that Importance of educational technology competencies . There is growing interest how to use education technologies during their teaching, a range of initiatives have been launched to develop in-service teacher training processes that will strengthen this integration. In the present study, it focused on domains and competencies linked to teacher training propositions for technology integration, that may contribute how do training programs meet the needs of a teachers for strengthen integration between technology and instruction. And training needs must be well-designed to increase teachers' familiarity with a wider range of ICT applications. Teachers' should also be given the opportunity and encouraged to reflect on, and make decisions about their own ICT development needs on ongoing basis. The present study will be also useful to draw attention of educational technology standards for teachers, which do not exist in Yemen at this time.

REFERENCE

A. Guzman & M. Nussbaum (2009).Teaching competencies for technology integration in the classroom, Journal of Computer Assisted Learning, 25, 453–469jcal_322 453..469 Akcay,B (2008).The Relationship Between Technology And Ethics; From Society To Schools, Turkish Online Journal Of Distance Education-Tojde October, Issn 1302-6488 Volume: 9 Number: 4 Article 9 Almekhlafi, A. G., & Almeqdadi, F. A. (2010). Teachers' Perceptions of Technology Integration in the United Arab Emirates School Classrooms. Educational Technology & Society, 13 (1), 165–175. Chin, S., & Hortin, J.A. (1994). Teachers' perceptions of instructional technology and staff development. Journal of Educational Technology Systems, 22(2), 83-98. Carreras Barnés, J. (2005). El concepto de competencia y el diseño de planes de estudio a partir de perfiles competenciales. Dos cuestiones que hay que aclarar en el marco de las EEES. In El Debate sobre las competencias a la enseñanza universitaria (pp. 8-25). Barcelona: ICE UB. Dlodlo, N., & Sithole, N. (2001). The internet as a tool for a revolution in education in Africa: A dream or reality. World Conference on Educational Multimedia, Hypermedia and Telecommunications(1), 425-430, retrieved November 14. Ertmer, P. (2005). 'Teacher pedagogical beliefs: The final frontier in our quest for technology integration?', Educational Technology Research and Development vol. 53, no. 4, pp. 25-39. International Society for Technology in Education. (2009). About ISTE. Retrieved 10 April, 2009, from http://www.iste.org/AM/Template. cfm?Section=About_ISTE Friedman, A., et al. 2009, 'National educational technology standards and technology beliefs and practices of social studies faculty: Results from a seven-year longitudinal study', Ministry of Education and scientific research: higher education in Yemen Report 2007. Odden, A., Archibald, S., Fermanich, M., and Gallagher, H.A. (2002). A Cost Framework for Professional Development. Journal of Educational Finance, 28 (1), 51-74. Qatran,Y.(2010). E-learning websites , reality and challenges in Universities of Yemen ,conference of the Applications of information and communication technology in education and training, suaod king university 12-14 April 2010 Richey, R. C., Fields, D. C., and Foxon, M. (2001). Instructional Design Competencies: The Standards, 3rd ed. Syracuse, NY: ERIC Clearinghouse. Slaouti, D., & Barton, A. (2007). Opportunities for practice and development: newly qualified teachers and the use of information and communication technologies in teaching foreign languages in English secondary school contexts. Journal of In-service Education, vol. 33, no. 4, p. 19. Sharaf ,Ali. (2015).The future of e-learning and tools in higher education, International Journal of Advances in Computer Science and Technology , Volume 4, No.1 UNESCO(2004): the development of guidelines on teacher training in ICT integration and standards for competency in ICT,27-29 september Beijing china, UNESCO, Bangkok Zhao, Y. (2007). Social studies teachers' perspectives of technology integration. Journal of Technology and Teacher Education, 15 (3), 311-333.