Original Article

Determination of Effect of Computer Knowledge on Job Performance among Male and Female High School Teachers in Gorgan – Iran

[1]**Jalil Toshani**, [2]**Ameneh Sharbatdar**, [3]**Amirali Toshani**
[1]Department of Educational Management- Mazandaran University– Iran
[2]Department of Information System Management – Islamic Azad University – Aliabad – Iran
[3]Department of Information System Management – Islamic Azad University – Gorgan - Iran
Email: Toshanij@yahoo.com

ABSTRACT

As one of the most important contributors of societies' prosperity, teachers have always been in the center of attention for their role in bringing up students in an effective manner. Integration of computer and novel technology into classrooms has recently gained academic interest. The present work aimed at determination of the relationship between teachers' computer knowledge and their job performance. The experiment was performed on 229 male and female high school teachers and data were collected by use of two questionnaires to assess the respondents' computer knowledge and performance of teachers in seven aspects (i.e. ability, recognition, organizational support, motivation, evaluation feedback, validity, and atmosphere). Validity and reliability of the tools were confirmed by considering viewpoints of expert and by measuring Cronbach's Alpha, respectively. The results obtained from the present study indicated that there is a positive and significant relationship between the male high school teachers and their job performance. Furthermore, there is a positive and significant relationship between female high school teachers' computer knowledge and their job performance.
Keywords: computer knowledge, job performance, high school teachers, Gorgan.

INTRODUCTION

All aspects of human life have majorly been affected by technological revolutions. Schools, as important sectors of society, have also been subjected to the revolutions; however, changes in this sector has not conformed to the daily pace of technology [1,2]. Fast-paced growth of computer adoption along with computer-based technologies has had considerable influence on global educational systems and computer knowledge and skills are turning into educational tools in schools and universities. In addition, nations have recognized inevitable role of ICT and computer knowledge in order to improve educational quality [3,4,5,6,7,8]. Teachers are the main contributors of prosperous interactions in educational system. As individual teachers have their own methods in adopting blackboard or any other facilities in teaching, incorporation of technology, particularly computer, in teaching depends on their experience and attitude and may occur in various levels [9]. Adoption of technology, especially computer, in education have extensively reviewed by authors [10,11,12,13,14,15]. In order for a teacher to make use of computer in teaching, he/she need to possess proper qualifications in computer knowledge. UNESCO has defined criteria for teachers in adoption of technology in their profession: teachers must have basic skills of software and hardware, applications, web, communication software, graphic, and managerial applications [16]. It is crystal-clear that teachers' roles in adoption of computer in schools in not negligible at all. Whatever attempt conducted so as to revolutionize education must consider teachers' knowledge, skills, beliefs, and attitudes [17].The most important effects of ICT in education canbe seen in development of teachers' capabilities, changing educational structure, making more abundant and comprehensive educational opportunities, and improving educational styles [18]. Additionally, nowadays as the most

important source of Education Organizations, teachers are unable to perform their important task of teaching without knowledge on technological innovations and revolutions [19]. With regard to what mentioned above, the present work was formulated in order to determine the relationship between teachers' computer knowledge and their job performance. The hypothesis and research model of the study are as follows:

H1: There is a significant correlation between computer knowledge of male high school teachers and their job performance.

H2: There is a significant correlation between computer knowledge of female high school teachers and their job performance.
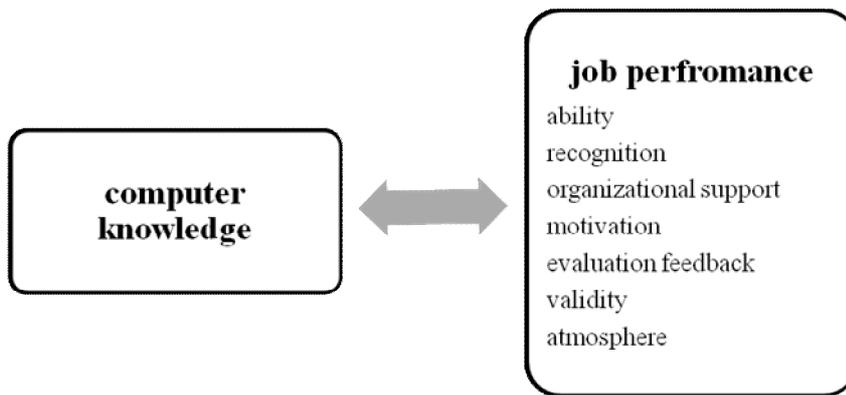

Figure 1: The research model

METHODOLOGY

The present work is an applied work in terms of its purpose and a descriptive-correlational work in terms of research method. Statistical population consisted of all high school teachers of Gorgan City in Iran in the current educational year (770 teachers; 310 males and 460 females). Sample size was decided to be 229 (97 males and 132 females) by Morgan's Table which was randomly selected from the statistical population.

Data collection was performed by use of two questionnaires. The first tool was an author-made questionnaire with 30 questions to assess the respondents' computer knowledge. The second tool was used to assess performance of teachers in seven aspects (i.e. ability, recognition, organizational support, motivation, evaluation feedback, validity, and atmosphere) with 30 questions. Both tools were scored based upon Likert Scale in 5 ranges (namely Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree). Validity of the tools was confirmed by considering viewpoints of experts. Also, reliability of the toolswas verified by measuring Cronbach's Alpha (0.85 and 0.74, respectively). Descriptive and inferential analyses were performed on data. All analyses were done by use of SPSS Software (Version 21).

RESULTS

Table 1 shows that the significance levels in K-S tests are >0.05. Therefore, it can be said with 95% confidence that the data are normal and consequently, parametric tests are used for data analyses.

Table 1: K-S Test for normality of distribution of scores achieved for variables

Variables		Mean	Standard deviation	K-S Z	Sig.
Computer knowledge		3.15	0.85	1.19	0.086
Performance	Ability	3.3	0.82	1.20	0.367
	Recognition	3.6	0.93	1	0.059
	Organizational support	4.2	1.55	1	0.312
	Motivation	3.8	1.51	1	0.258
	Evaluation feedback	2.5	0.81	1	0.064
	Validity	3	1.09	0.96	0.128
	Atmosphere	3.5	0.88	1.23	0.371

As it is evident in Table 2, Pearson's Coefficient scores between the male respondents' computer knowledge and their performance (ability, recognition, organizational support, motivation, evaluation feedback, validity, and atmosphere) are 0.435, 0.340, 0.373, 0.417, 0.497, 0.537, and 0.561, respectively. With regard to the fact that significance levels were <0.05, it can be concluded that there is a significant correlation between male teachers' computer knowledge and their performance. In other words, the higher the male teachers' computer knowledge, the higher their job performance.

Table 2: The results obtained from Pearson's Correlation Coefficient between male teachers' computer knowledge and their job performance

Performance attributes	Indices	Computer knowledge
Ability	Pearson's Correlation Coefficient	0.435*
	Sig.	0.000
Recognition	Pearson's Correlation Coefficient	0.340*
	Sig.	0.000
Organizational support	Pearson's Correlation Coefficient	0.373*
	Sig.	0.000
Motivation	Pearson's Correlation Coefficient	0.417*
	Sig.	0.000
Evaluation feedback	Pearson's Correlation Coefficient	0.497*
	Sig.	0.000
Validity	Pearson's Correlation Coefficient	0.537*
	Sig.	0.000
Atmosphere	Pearson's Correlation Coefficient	0.561*
	Sig.	0.000

*The correlation is significant.

According to Table 3, Pearson's Coefficient scores between the female respondents' computer knowledge and their performance (ability, recognition, organizational support, motivation, evaluation feedback, validity, and atmosphere) are 0.551, 0.660, 0.493, 0.375, 0.483, 0.462, and 0.518, respectively. Since the significance levels were <0.05, a significant correlation exists between female teachers' computer knowledge and their performance.

Table 3: The results obtained from Pearson's Correlation Coefficient between female teachers' computer knowledge and their job performance

Performance attributes	Indices	Computer knowledge
Ability	Pearson's Correlation Coefficient	0.551*
	Sig.	0.000
Recognition	Pearson's Correlation Coefficient	0.660*
	Sig.	0.000
Organizational support	Pearson's Correlation Coefficient	0.493*
	Sig.	0.000
Motivation	Pearson's Correlation Coefficient	0.375*
	Sig.	0.000
Evaluation feedback	Pearson's Correlation Coefficient	0.483*
	Sig.	0.000
Validity	Pearson's Correlation Coefficient	0.462*
	Sig.	0.000
Atmosphere	Pearson's Correlation Coefficient	0.518*
	Sig.	0.000

*The correlation is significant.

DISCUSSION AND CONCLUSION

The present work aimed at determination of the correlation between male and female teachers' computer knowledge and their job performance. Two hypotheses were presented. The results obtained for the first hypothesis (there is a significant correlation between computer knowledge of male high school teachers and their job performance) indicated that there is a positive and significant relationship between the male high school teachers and their job performance. Furthermore, the findings acquired for the second hypothesis (there is a significant correlation between computer knowledge of female high school teachers and their job performance) showed that there is a positive and significant relationship between female high school teachers' computer knowledge and their job performance. The results achieved by the

present work can be considered valuable for quality of education in Golestan Province because according to previous works, the students whose teachers have a fair level of computer knowledge have a higher learning rate than those whose teacher lack suck knowledge [20]. The results obtained from the present study is in agreement with those obtained from several previous works concluding teachers with a fair level of computer knowledge are more prosperous in educating students with higher levels of scores [21,22]. With regard to what achieved in the present work, it is recommended that teachers should be persuaded to make use of novel technologies, especially those concerned with computers. Also, it is suggested to hold on-duty courses to improve computer knowledge of teachers. This important goal can be realized by investing for provision of modern equipment in schools which will lead to higher performance of teachers and higher efficiency of educational systems.

REFERENCES

1. Hamidi, F., Damavandi, M.E., Dehnavi, E. (2012) The relationship between cultural intelligence and computer knowledge and their class management approach, Journal of ICT in Educational Sciences, 3(1): 5-26.
2. Soleymani, A. (2004). Evaluation of role of teachers in adoption of ICT in education and presenting useful recommendations. Tarbiat-Moallem University.
3. Kozma, R. & Anderson R. E. (2002). Qualitative case studies of innovative pedagogical practices using. Journal of Computer Assisted Learning, 18, 387–394.
4. Pelgrum, W. (2001). Obstacles to the integration of ICT in education: Results from a worldwide educational assessment. Computers & Education, 37, 163–178.
5. Mohammadi, M., Anarinejad, A. (2011). The effect of the teachers' knowledge of computer software, frequency of software use and computer attitude on their perceived self-confidence for use of ICT in teaching, Journal of Curriculum Studies (J.C.S.), Vol.6 (21): 101-122.
6. Hennessy, S., Ruthven, K. &Brindley, S. (2005). Teacher perspectives on integrating ICT into subject teaching: commitment, constraints, caution, and change. Journal of Curriculum Studies, 37(2), 155–192.
7. Goodison, T. (2003). Integrating ICT in the classroom: a case study of two contrasting lessons. British Journal of Educational Technology, 34 (5), 549–566.
8. Kangro, A. &Kangro, I. (2004). Integration of ICT in Teacher Education and Different School Subjects in Latvia. Educational Media International, 41(1), 31–37.
9. Yildirim, S. (2000). Effects of an educational computing course on pre-service and in service teachers: A discussion and analysis of attitudes and use. Journal of Research on Computing in Education, 3(1), 46-52.
10. Akpan, J. P., & Andre, T. (2000). Using a computer simulation before dissection to help students learn anatomy. Journal of Coputers in Mathematics and Science Teaching, 19(3), 297-313.
11. Barron, A. E., Hogarty, K. Y., Kromrey, J. D. &Lenkway, P. (1999). An examination of the relationships between student conduct and the number of computers per student in Florida schools. Journal of Research on Computing in Education, 32(1), 98-107.
12. Loveless, A., & Ellis, V. (2001). ICT, pedagogy and the curriculum. London and New York: RoutledgeFalmer.
13. Block, H. D., Ostam, R., Otter, M. E. &Overment, M. (2002). Computer assisted instruction in support of beginning reading instruction: A review. Review of Educational Research, 73(1), 101-130.
14. Waxman, H. C., &Michko, G. M. (2003). A meta-analysis of the effectiveness of teaching and learning with technology on student outcomes. Retrieved from http://treeves.coe.uga.edu.
15. Sharifi, A., Mohammad-Davoodi, A.H., Eslamyeh, F. (2012). The relationship between usage of ICT and performance of teachers in education. Journal of ICT in Educational Sciences: 2(4), 145-167.
16. Sharifi, A. (2011) Key competencies of teachers in 21st Century. Retrieved from www.sharifinamin.blogfa.com.
17. Cuban, L. (2000). So much high-tech money invested, so little use and change in practice: How come? Paper presented for the Council of Chief State School Officers' Annual Technology Leadership Conference, Washington, DC.
18. Mehr-Mohammadi, M. (2004). Recognition of definition of educational revolution in ICT era. Curricula in ICT Era, Tehran: Ayeej Publications.
19. Bakhtyari, M., Ahmadi, Ghola-Reza (2007). Effectiveness of on-duty educational programs for ICT on high school teachers in Isfahan City. Journal of Knowledge and Research in Educational Sciences, 13: 123-134.
20. Olatokun, Wole Michael (2007). Availability, accessibility and use of ICT's by Nigerian women academics. Malaysian Journal of Library & Information Science, 12(2), 13-33.
21. Sharifi, A., Imani, M. N., &Eslamieh, F. (2012). Investigation the role of information & communication technologies in student's collaborative learning. 2nd World Conference on Educational Technology Researches Near East University. Nicosia – North Cyprus.
22. Imani, M.T., Sharifi, A., Vafamanesh, F. (2011) Determination of the relationship between IT usage and efficiency of staff in Islamic Azad University of Qazvin – Iran, Iranian Journal of Development and Revolution Management, 7(3): 49-58.