

NEED OF SCHOOL TECHNOLOGY ADVISER OF PRIMARY AND SECONDARY SCHOOLS IN TURKEY

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ABSTRACT

Integrating ICT into educational activities is one of the major requirements of today's educational settings. In this context, educational institutions have confronted some issues such as technology use, following innovations, constant help and support. Therefore, they need school technology adviser or advisers which provide constant help and support to the staff.

In this study, we discussed opinions of school teachers and administrators related to their need of technological issues. Our research population is primary and secondary public schools. We use cluster sampling. We have determined four schools. 148 primary and secondary public school teachers have responded our survey. We have also examined whether there are significant differences between the opinions of teachers with respect to their sexuality, seniority and institution type. We have used "independent t test" and ANOVA. We have accepted ".05" significance level. In conclusion, we find that 80-95 percent of teachers are in the opinion of they need school technology adviser. In addition, there have not been differences between the opinions of teacher with respect to their sexuality, seniority and institution type.

Keywords: ICT Integration, Key Technology Player, School Technology Adviser.

INTRODUCTION

When the word 'technology' is used together with the 'school', the first thing that comes to one's mind is the use of desktops and technological hardware for instructional purposes which are components of Information and Communication Technologies (ICTs). ICTs include all technologies such as computers and related technologies that are used for accessing, storing and processing information. ICTs carry utmost importance for instructional endeavors since they save time that is spent for writing, facilitate similar clerical duties, and lead users to more creative activities (Leask & Pachler, 1999: 3-6). When the increasing development rate of technology is considered, it is getting harder to follow all up-to-date technologies. In addition, new approaches and recommendations regarding integration of ICTs into instructional activities are developing as fast as new technologies, the changes and developments become alluring, and educators would like to benefit from these new developments.

Integration of ICTs into Teaching-Learning Activities

Technological opportunities of educational institutions are getting better day by day, and these institutions try to integrate technology into their teaching-learning endeavors. Most countries make efforts to reach standardization in terms of educational technology integration. For instance, International Society for Technology in Education (ISTE) in the United States developed National Education Technology Standards (NETS). These standards have three versions that have been developed for teachers, students and administrators. In addition to NETS, within the scope of the project called Preparing Tomorrow's Teachers to Use Technology (PT3) in the USA, teacher candidates' proficiency of using technology for individual and instructional endeavors was aimed to be developed (Rosaen & Bird, 2005: 212; ISTE, 2006). In Turkey, National Ministry of Education (MEB) places considerable emphasis on in-service training (HEDB, 2005), and organizes in-service training courses to enrich teachers' technology use skills. However, these courses generally involve technology literacy, which means that they are insufficient in equipping teachers with necessary skills to use technology for instructional purposes.

Use of ICTs, particularly integration of them into instructional activities, is one of the crucial matters concerning schools. ICTs have been used for more than 20 years in the commercial sector. Since financial rivalry is not encountered in educational settings as much as it is seen in commercial settings, ICTs are less powerful in education world (Stallard & Cocker, 2001: 39-56). Morrison and Lowther (2002; 75) state that it is time for ICTs to realize what they are supposed to do in instructional settings. Researchers claim that most conditions necessary for efficient use of ICTs for instruction are already met. Reasons for such a claim could be summarized as follows;

- a) There is sufficient time to discover advantages and limitations of ICTs.
- b) ICTs are common all over the world in most sectors.
- c) Most educators have positive attitudes towards innovations in instructional ICT use.
- d) New learning approaches aim to lead learners to experience real-like and authentic activities.

In addition to the organizational culture and infrastructure necessary for ICT integration, it is important for the institutions to

have individuals who can lead and encourage teachers to use technology and pioneer the institution in technology use. Many factors which can influence technology integration at the organizational level can be listed. However, in this study, the focus is on technology counseling services because of school technology advisers' (STA) leading role in ICT integration. STA has crucial roles for organizational culture and professional development along with the responsibilities with regard to leading technology integration and use (Lai & Pratt, 2004: 462).

While explaining important factors influencing technology integration into teaching-learning endeavors, Adamy and Heinecke (2005: 235) maintained that the interaction between educators and key technology people (KTP) in the organization has utmost importance. KTPs are individuals who lead the technology use in their organizations. These individuals are informally determined by unique dynamics of the organizations. This reveals that each organization needs people substituting for the role of KPTs. Moreover, information regarding technology use is losing its currency with innovations. Thus, teachers constantly need help and support in terms of following new technologies, getting accustomed to those technologies and using them in their teaching endeavors. This need can only be met by those who provide this help professionally. Any problem that occurs during the ICT integration process might frustrate both teachers and students in terms of using a given technology. Since ICT integration is a serious occupation, the responsibility is undertaken by graduates of computer education and instructional technologies (CEIT) departments in Turkey. This might serve as a solution to meet the need for technology advisers.

State of CEIT Graduates

Graduates of CEIT departments in Turkey work as teachers to offer Information Technologies Courses. When the course contents of 'Information Technology in Education I' and 'Information Technology in Education II' are examined, it could be suggested that these courses can be sufficient to equip CEIT students with relevant skills regarding ICT integration (AÜ, 2005; MEB, 2006). Besides, ICT courses can be offered by graduates of other departments as well, since all graduates of education faculties in Turkey are equipped with necessary skills to offer computer courses during the required courses they take such as 'Fundamentals of Information Technology' and 'Use of Technology' (AÜ, 2005). CEIT graduates are not given proper responsibilities which allow them to reflect what they have learnt about ICTs during their undergraduate studies. When the need for KTPs in organizations is examined along with the qualifications of CEIT graduates, it could be suggested that a mechanism to employ CEIT graduates as technology advisers in educational institutions is crucial.

Because of above mentioned reasons, in addition to their roles as computer instructors, CEIT graduates should serve as leaders in technology integration. Besides they should be benefited as advisors to students, teachers and administrators whenever the help is needed, so that efficient use of educational technology is realized and problems regarding technology use are solved easily in educational institutions.

Purpose of the Study

This study aims to investigate opinions of K-12 teachers and administrators regarding their need for technology counseling services. While evaluating data to realize this aim, following research questions will be scrutinized:

1. What are the opinions of K-12 teachers and administrators regarding their need for technology counseling services?
2. Do teachers' opinions regarding technology counseling services differ with regard to;
 - a. Educational institution they work at?
 - b. Gender?
 - c. Seniority?

METHOD

Sample and Population

The reference population of the current study consisted of state K-12 schools in Eskisehir city center. Cluster sampling was realized in order determine different groups of state schools in city center and four schools were randomly selected from those clusters. A total of 148 school employees participated in the study.

Research Model

The study, which was conducted to determine teachers' opinions regarding their need of technology advisers, carried the characteristics of both a descriptive and correlational research model. A descriptive approach was followed to analyze the data.

voluntary teachers and students while realizing technological endeavors.	1	0,7	1	0,7	5	3,4	61	41,2	80	54,1	0	0,0	4,47
7. Technology adviser should follow up-to-date technologies and inform school employees and teachers through seminars.	2	1,4	0	0,0	4	2,7	44	29,7	97	65,5	1	0,7	4,59
Opinions regarding technological counseling services and technology advisers	I completely disagree		I disagree		Neutral		I agree		I completely agree		Missing		\bar{X}
	F	%	F	%	F	%	F	%	F	%	F	%	
8. Technology adviser should organize student seminars regularly so that students can use technology efficiently.	2	1,4	0	0,0	5	3,4	55	37,2	86	58,1	0	0,0	4,50
9. Technology adviser should provide technological counseling and advisory services to students.	1	0,7	2	1,4	6	4,1	49	33,1	90	60,8	0	0,0	4,52
10. Technology adviser should contribute to the process of generating organization's technological infrastructure (creating and updating organizations' website, doing stuff related to Internet connection).	2	1,4	1	0,7	2	1,4	40	27,0	103	69,6	0	0,0	4,62
11. Technology adviser should guide teachers in integrating technology into teaching and learning endeavors.	2	1,4	2	1,4	10	6,8	44	29,7	90	60,8	0	0,0	4,47
12. Technology adviser should offer computer courses along with his counseling duties.	9	6,1	15	10,1	23	15,5	40	27,0	61	41,2	0	0,0	3,87
13. Technology adviser should help students with technology-related psychological aspects such as technology frustration, technology anxiety, and technology addiction	3	2,0	2	1,4	10	6,8	61	41,2	72	48,6	0	0,0	4,33
14. Technology adviser should help employees of the organization with technology-related psychological aspects such as technology frustration, technology anxiety and technology addiction.	2	1,4	3	2,0	8	5,4	58	39,2	77	52,0	0	0,0	4,38

When Table 1 was examined, it was observed that most participants completely agreed with 13 of the items given in the 14-item questionnaire. However, 68 % of participants agreed with the 12th item (i.e. Technology adviser should offer computer courses along with his counseling duties). 16 % was neutral and 16 % completely disagreed with the item. Findings revealed that participants agreed with all other items at a proportion of 80 % to 95 %. When means were examined and above averages were considered, all items met the condition of " $4.2 \leq \bar{X}_i < 5.00$ " except for the 12th item. This suggests that participants completely accepted 13 of the items in the questionnaire. The average of the 12th item ($\bar{X}_{12} = 3.87$), was at the interval of " $3.4 \leq \bar{X}_i < 4.2$ ", which meant that participants agreed with this item.

Findings regarding the second research question

Do teachers' opinions regarding technology counseling services differ with regard to

- Educational institution they work at?
- Gender?
- Seniority?

To answer the second research question, participants' total points regarding their opinions in each item were calculated and used as a continuous dependent variable. Type of institution was an independent variable with two levels (i.e. i) Primary school, and ii) Secondary school). Gender was an independent variable with two levels as well. Thus, in order to compare

teachers' opinions with regard to the institution type and gender, independent-samples t-tests were conducted. Since seniority had five levels, a one-way between-groups ANOVA was conducted to determine whether teachers' opinions varied with regard to seniority.

Table 2: Independent-samples t-test conducted on questionnaire scores with the independent variable of institution type

Institution	N	\bar{X}	St. Dev.	df	t	Sig.
Primary	82	62.34	8.14	144	-1.16	0.245
Secondary	64	63.75	5.90			

As Table 2 suggests, teachers' opinions regarding technological counseling services did not differ with regard to the type of institution at a probability value of .05. More specifically, teachers working at primary and secondary schools had similar opinions regarding technological counseling service. As indicated in Table 1, teachers agreed with the items of the questionnaire at a proportion of 80 % to 95 %. That means, both primary and secondary school teachers indicated that they needed technology advisers.

Table 3: Independent-samples t-test conducted on questionnaire scores with the independent variable of gender

Gender	N	\bar{X}	St. Dev.	df	t	Sig.
Male	67	62.66	8.42	144	-0.463	0.644
Female	79	63.22	6.13			

As indicated in Table 3, teachers' opinions regarding technological counseling services did not differ with regard to gender at a probability value of .05. In other words, male and female teachers had similar opinions regarding technological counseling services. Both males and females believed that they needed technology advisers at their institutions.

In order to compare teachers with different years' of seniority in terms of their opinions regarding technology counseling services, a one-way between-groups ANOVA was conducted. Table 4 illustrates the frequency distribution of teachers with regard to their seniority along with their means and standard deviations regarding their opinions on the need of technology adviser.

Table 4: Frequency distribution of teachers with respect to seniority, mean scores of technology adviser needs and standard deviations

Seniority	N	\bar{X}	St. Dev.
0 to 5 years	15	60.53	6.84
6 to 10 years	54	64.30	4.94
11 to 15 years	26	61.73	7.71
16 to 20 years	21	63.28	4.93
21 years and more	28	62.61	11.15

The summary table of ANOVA conducted according to data in Table 4 is provided below:

Table 5: Summary of ANOVA conducted on total scores with the variable of seniority

Source	Sum of Squares	df	Mean Square	F	Sig.
Between-groups	229.75	4	57.44	1.09	0.361
Within-Groups	7279.07	139	52.37		
Total	7508.82				

The F value of 1.09 calculated through ANOVA did not reach significance at a probability value of .05. Thus, there was no need for further multiple comparisons. According to this finding, teachers did not differ from each other on their need of technology adviser in terms of their seniority. That is, when teachers' years of experience were taken into account, it could be suggested that all teachers needed technology advisers regardless of their seniority.

CONCLUSION AND SUGGESTIONS

In this study, primary and secondary school teachers' opinions regarding their need of technology advisers were investigated.

Findings were analyzed through SPSS 10.0 for Windows. According to results, administrators and teachers agree that:

- Having an officially employed technology adviser at their institution to ask for assistance in case they need support will be helpful for their institutions' technological infrastructure.
- Having a technology adviser at their institution will help realizing teaching-learning endeavors efficiently.
- Technology adviser should help employees with their problems and projects regarding computer software programs and hardware.
- Technology adviser should receive support from voluntary teachers and students with regard to realizing technological endeavors, and organize teachers and students to realize those endeavors.
- Technology adviser should organize teacher and student seminars regularly so that they can use technology efficiently.
- Technology adviser should provide technological counseling and advisory services to students.
- Technology adviser should contribute to the process of generating organization's technological infrastructure.
- Technology adviser should guide teachers in integrating technology into teaching and learning endeavors.
- Technology adviser should help students and employees of the organization with technology-related psychological aspects such as technology frustration, technology anxiety and technology addiction.

16.2 % of teachers and administrators did not agree with the idea that technology advisers should offer courses along with their advising duties while 15.5 % of them were neutral about this. According to the results of t-tests and one-way ANOVA, teachers' opinions regarding their need of technology adviser services did not differ with regard to their gender, institution type and seniority at a probability value of .05. More specifically, teachers believed that they needed technological counseling services regardless of their gender, institution type and seniority.

In order to meet the technology adviser needs of educational organizations, innovations in structuring of organizations might be needed. Higher Education Council (YÖK) and National Ministry of Education (MEB) can carry out necessary undertakings. That is, modification in the curriculum of CEIT departments at the faculties of education could be done through offering courses to improve graduates' counseling skills such as 'Technology Management' and 'Innovations in Computer Hardware and Software Programs' at the technical level; and 'Entrepreneurship' and 'Communication' at the social skills level. A new organizational structure at K-12 institutions can also be built so that CEIT graduates could be employed in those organizations as technology advisors. Such a restructuring can add a new perspective to the mission statement of the department as well; however, these undertakings will probably decrease the amount of educational ICT integration problems encountered in educational institutions.

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