PERCEPTIONS OF TEACHERS AND ADMINISTRATORS REGARDING THE E-SCHOOL APPLICATIONS

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Abstract

The education area is one of the most important areas of investment made in the management information systems in Turkey. This study aims to determine the opinions of the teachers and school administrators concerning the e-School applications which were applied in Turkey starting with the academic year 2007-2008. The sample of the study is composed of 241 teachers and 22 school administrators who work in 16 schools, which were selected without a sampling method or proportion. The data were collected by means of a survey and a personal information form. T test and paired groups t test were used to analyze the data. According to the findings of the study no meaningful difference is found between the opinions of the teachers and school administrators concerning e-School applications, the provinces in which they work, their duty places, duties and genders. The research found an increase in the level of teachers and school administrators that use computer and internet before and after introducing e-School applications.

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1. Introduction

The ways of reaching information and producing information became different in the changing world. Keeping the step with the change is possible with the education only. Having the information, which is the tool and object of the education, is the most crucial wealth all over the world. In this respect, great investment plans are being made on using the information systems (Yuen, Law and Wong, 2003; Pelgrum, 2001). The school management information systems changed the school management with respect to the leadership, decision-making, workload, human resources management, communication, responsibility and planning aspects (Gurr, 2000; Christopher, 2003; Anderson and Dexter, 2005; Schiller, 2003; Kicklighter, 2004; Seay, 2004; Patterson, 2004; Mannino, 2004; Duncan, 2004).

The Turkish Ministry of National Education, which has 15 million students and 650,000 teachers, implemented useful projects, one of the most important being the e-School project. It is implemented starting with 2005 in accordance with the approval of the Related Ministry Authority. It provides the students with the opportunity to take their records from the internet and the parents to monitor data about their children, such as: the attendance/non-attendance and record grades. In addition, this project helped schools to perform the works and transactions in a faster way. The e-School project started to be implemented in the preschools and primary schools with the academic year of 2007-2008, and all the works and transactions of the preschool and primary school students were performed in the electronic environment. In addition, all the information related to the students (identity, address, parents, grades, points, attendances and non-attendances, reading assignments, weekly course schedule, teachers, behavioral points, announcements and received certificate information, etc.) are actual, functional and instant.

E-School System considerably eliminated the errors of the previous applications by creating standard procedures for all primary schools. These procedures are established for every area, such as course schedules, outlines of the students' records and diplomas. In this manner, a lot of previously experienced problems have been eliminated, the necessary substructure for the Passing System to the Secondary Education is also formed up and the advantages of the electronic environment are started to be experienced. With e-School project, all the registers and standard forms held by the schools, numbering up to 30 forms for each school type, are handled now through the central information system over the Internet, which prevents unnecessary paperwork and waste of other resources. Now, there is no need for each school to purchase various school registration software. Wearisome practices, such as correspondence letters or data entry on a web site in order to retrieve statistical information from schools are no more required. According to the information note of the Ministry of National Education entitled "Application of the e-School System in the Secondary Schools" from November 5, 2008 this service now covers the high schools as well. In addition, on January 25, 2008, the Ministry of National Education launched a

new information system called “Parent Information System”. This system provides the parents with the opportunity to monitor their children with regard to the course grades, attendance information, weekly course programs, certificates received, books readings, behavioral grades and school announcements.

2. E-School Implementation in Turkey

The Turkish Ministry of National Education started a lot of projects based on the use of information technologies in areas, such as training, education and management that will influence the e-transformation of Turkey into an information society. Some of these projects aim to bring to maturity the organization structure which serves as the support for the e-Government and enables the functional and coordinated work of the e-Organization structure. A lot of web-based modules are produced and continue to be produced, which enables Ministry of National Education to carry out in an electronic format a lot of works and transactions between the central authorities and local establishments that are part of the educational system. The goal is to establish the structure which will facilitate the actual e-transformation of all of the works and transactions regarding the students, personnel, movable goods and immovable properties of the ministry and to transfer all the information related to them into the electronic environment. E-School application is school management information software used by the Ministry of National Education starting with the academic year of 2006-2007. It includes works and transactions ranging from school registration to graduation. E-School project collects information about the students that are used for permanent staff determination, free school book distribution, central system examination planning and application in a central database called Ministry of National Education Information System. The student information is taken from Centralized Civil Registry System by using the Turkish ID Number and then recorded in e-School application (MEB, 2008). The main purpose of this study is to determine the opinions of the teachers and school administrators concerning the e-School application system.

3. Methodology

This study is a descriptive one, aiming to determine the opinions of teachers and school administrators working in primary schools regarding the e-School information software system. The sample is composed of 241 teachers and 22 school administrators working in 16 schools that use the e-School information software system; no method was used to select the respondents. The data were collected through a questionnaire regarding the e-School applications. The related literature was scanned in order to prepare the research instrument. The questionnaire was used in order to find the opinions of the teachers and school administrators concerning the e-School applications. The questionnaire was composed of 13 questions intended to find the province in which the teachers and school administrators who participated in the study work, school name, duty, gender, branch, seniority, whether they have a computer at home, whether they have internet connection at home, whether they have internet connection

at the schools in which they work, frequency of using computer in their lessons, frequency of using internet in their lessons, whether they obtained any computer training previously, and their skills in using computer and internet before and after using the e-School information system software. The 13th question was composed of 9 sub-items. A scale developed with the Likert method was used to determine the teachers and school administrators' opinions regarding the e-School applications. On the scale, the option "I agree completely" was graded with "5 points", the option "I agree partially" was graded with "4 points", the option "I am indecisive" was graded with "3 points", the option "I disagree" was graded with "2 points" and the option "I disagree completely" was graded with "1 point". The highest score that could be taken on the scale was 185 and the lowest score was 37. The scale was composed of 5 sub-dimensions, namely the use of e-School application, the advantages of e-School application, disadvantages of e-School application, the unnecessary works and processes in e-School application, and the missing points related to e-School application. The dimension of use of e-School is composed of 5 items, the dimension of advantages of e-School is composed of 15 items, the dimension of disadvantages of e-School is composed of 8 items, the dimension of unnecessary works and processes in e-School is composed of 4 items and the dimension of missing points relating to e-School is composed of 5 items. The scale is composed of 37 items in total. The questionnaire was applied to the teachers and school administrators working in 16 different primary schools. A total number of 263 questionnaires were filled out and they were examined by using t test in order to identify differences between teachers and school administrators based on the province in which they work, duty place, gender and duty variables. The computer and internet usage skills of the teachers and school administrators before and after using e-School were compared by using the paired groups t test.

4. Findings and comments

The data collected through the questionnaire were examined according to the 5 sub-dimensions presented above: the use of e-School application, the advantages of e-School application, the disadvantages of e-School application, the unnecessary works and processes in e-School application and the missing points relating to e-School application. The data concerning the usage of e-School application are summarized in Table 1.

Table 1: Use of e-School application

Items	Teachers		School Administrators	
	$\overline{X}$	sd	$\overline{X}$	sd
e-School User Guide provides all the necessary information to carry out all transactions.	3.85	.92	3.86	.83
The small fonts make the use of e-School application difficult.	3.07	1.27	3.22	1.30
The 10-minutes connection period is insufficient.	4.11	1.21	4.18	1.18
I have difficulties in using e-School application because I do not know how to use the computer properly.	2.24	2.27	1.32	1.42
Warnings on the screen prompt the users while performing the log-in processes.	4.00	.93	3.86	.94

No difference is found between the opinions of the teachers and the school administrators concerning the use of e-School application. The connection period is limited to 10 minutes by e-school system. The most important problem which appears relating to the use of e-School application is that the 10-minutes connection period is insufficient. The perceived advantages of using the e-School application are presented in the Table 2.

Table 2: Advantages of using the e-School application

Items	Teachers		School Administrators	
	$\overline{X}$	sd	$\overline{X}$	sd
e-School decreases the paper and ink consumption.	4.52	.87	4.59	.79
It is easier to reach the information relating to the students by using the e-School application.	4.40	.82	4.50	.80
Student transportation is easier and takes a shorter time with e-School application.	4.40	.81	4.86	.35
Student registration is easier when using e-School application.	4.42	.77	4.90	.29
It takes a shorter time to enter the student grades into the e-School application.	4.39	.89	4.68	.47
The teachers are no longer required to calculate the grade averages.	4.57	.81	4.77	.61
The e-School provides the teachers with the opportunity to see all the grades at the same time.	4.54	.75	4.59	.66
The e-School makes the process of changing the schedule easier.	4.46	.76	4.72	.45
It is easier to transfer information into all the documents.	4.50	.75	4.72	.55
The students who are not sent to school could be identified easier.	4.27	.91	4.40	.79
Detailed viewing of the grades which are taken at examinations ensures the easier self-evaluation of the school.	4.34	.85	4.45	.80
The calculations are made without errors.	4.46	.81	4.54	.73
e-School saves time in determining the number of students who are not registered into the system.	4.34	.84	4.63	.65
The written documents such as class passing book and grade records were eliminated.	4.48	.87	4.72	.45
Parents have necessary information about their children through Parent Information System and they are not required to come to school in person any more.	4.16	1.08	4.36	.84

Not only teachers but also school administrators stated that e-School had many advantages. The paper and ink consumption decreased. It is easier to reach the

information regarding the students. The students' grades can be entered in a shorter period of time by using the e-School applications. The data show that school administrators are more satisfied that the student registration can be completed in an easier way by means of performing the student transfers in a shorter period of time. Table 3 presents the disadvantages of using the e-School application.

Table 3: Disadvantages of using the e-School application

Items	Teachers		School Administrators	
	$\overline{X}$	sd	$\overline{X}$	sd
Entering information about students takes a longer time.	3.33	1.29	3.22	1.12
Student information can not be entered completely and correctly.	3.15	1.26	3.04	1.04
Information entered incompletely or incorrectly in e-School application causes problems.	3.57	1.16	3.31	1.08
It is difficult for somebody to print information from the grade record without the appropriate printer.	3.45	1.15	3.45	1.33
It takes a lot of time to enter the non-attendances into the system.	3.53	1.18	3.36	1.36
It causes time losses because deletion of examination or project dates and update processes could be performed only by the authorized person from the organization.	3.88	1.11	3.36	1.29
The work of the teacher is difficult because the save button in some processes is activated from the manager module.	4.01	1.07	3.09	1.47
The 15-day period between the date of examination and the date of entering the examination grades is not sufficient.	3.78	1.33	2.90	1.47

The teachers stated that performing the examination/project dates deletion and updating processes only by the authorized person of the organization is a waste of time; activating the save button only from the administrative module in some processes makes the work of teachers difficult; the 15-day period of time between the date of examination and the date of entering the examination grades is not sufficient. This time period needs to be longer. It could be said that these three factors make the use of e-School application difficult for teachers. The opinions of the teachers and school administrators concerning the unnecessary works and processes in the e-School application are stated in the Table 4.

Table 4: Unnecessary works and processes in the e-School application

Items	Teachers		School Administrators	
	$\overline{X}$	sd	$\overline{X}$	sd
Entering some unnecessary information related to the parents into the system	3.58	1.18	3.27	1.07
Requesting detailed information related to the books read by the students	3.97	1.15	3.54	1.18
Entering the dates for all the project assignments	3.97	1.04	3.54	1.10
Requiring security codes in a lot of processes	3.94	1.13	3.81	1.09

The point which attracts attention here is that the teachers scored at a higher level than the school administrators for the items which would take their times. Entering the information related to the parents into the system, requiring detailed information

related to the books read by the students and entering the dates for the project assignments could be listed among them. The teachers and school administrators stated that requiring security codes in a lot of processes is totally unnecessary. The opinions of the teachers and school administrators regarding the missing points in e-School application are presented in Table 5.

Table 5: Missing points in e-School application

Items	Teachers		School Administrators	
	$\overline{X}$	sd	$\overline{X}$	sd
Insufficient information of the teachers, school administrators and parents about the e-School application and its use	4.26	.98	4.04	.95
The work load required at the end of the semester hinders the process.	4.44	.86	3.86	1.20
It is necessary to add the course distribution module.	3.81	.94	4.04	.89
Absence of the student contract report from e-School application	3.68	1.02	3.59	1.18
Impossibility to get a copy of the diploma record from the application	3.74	.95	4.40	.79

The most important missing points relating to e-School application appear to be the insufficient information concerning the system, absence of the course distribution module, absence of the student contract report and impossibility to get a copy of the diploma record from the application.

Table 6: Average values of the opinions of the participants concerning the e-School application according to their position

Position	n	$\overline{X}$	p
Teacher	241	4.09	p>.393
School administrator	22	3.96	

Table 6 shows there is no significant difference between the opinions of the participants concerning the e-School application (p=.393). The average of the opinions of the teachers concerning the e-School applications is 4.09 and the average of the opinions of the school administrators concerning the e-School applications is 3.96. This finding indicates that the teachers have more positive opinions in comparison with the school administrators concerning the e-School System.

5. Conclusion

A meaningful difference at the level of $p<.05$ is not found between the opinions of the participants concerning the e-School application according to the provinces in which they work and their duty places. The survey average of the opinions of the teachers and school administrators who work in the center and the teachers and school administrators who work in the rural areas is found to be 3.98. A meaningful difference at the level of $p<.05$ is not found between the opinions of the participants concerning the e-School applications according to their duties. The arithmetic mean of the opinions of the teachers is found as 4.09 and that of the school administrators is found as 3.96. Starting out of this finding, it could be said that the teachers have more

positive opinions than the school administrators concerning the e-School application. It can be concluded that the teachers scored higher with regard to the following items (meaning that they agree more with the following aspects):

- Student transportation is easier and it takes a shorter time with e-School.
- Student registration is easier with e-School.
- Performing the examination/project dates deletion and updating processes only by the authorized person of the organization is a waste of time.
- Activating the save button in some processes makes the works of the teachers difficult.
- The 15-day period of time between the date of examination and the date of entering the examination grades is not sufficient.
- The workload from the end of the semester hinders the processes.
- It is necessary to give people the possibility to print a copy of the diploma record from the system.

In general, no meaningful difference was found between the opinions of the participants regarding the e-School application based on their gender. The arithmetic mean of the opinions of the female teachers and school administrators is 4.09 and that of the male teachers and school administrators is 3.94. However, it was observed that the female teachers and school administrators scored higher with regard to the following items:

- Warnings on the screen prompt the users while performing the log-in processes.
- Student information could not be entered completely and correctly.
- It causes time loss because examination/project dates deletion and update processes could be performed only by the authorized person in the organization.
- A 15-day period between the date of examination and the date of entering the examination grades is not sufficient.
- It is necessary to inform more the teachers, school administrators and parents regarding the e-School application and its use.
- The workload from the ends of the semester hinders the processes.

A meaningful difference was found for the level of using the computer and internet by the participants before and after using the e-School application ($p<.05$). It was identified that the participants to this study increased their level of using the computer and internet after they used e-School application. The rate of those who do not know the basic components of the computer system decreased from 4.9% to 1.9%; the rate of those that do not have the basic skills in the computer literacy decreased from 4.9% to 1.1%; the rate of those who do not use the computer for measurement and assessment decreased from 8.4% to 5.3%; the rate of those who do not know how to use computer for research purposes decreased from 4.9% to 0.8%; the rate of those who do not know any word processing program decreased from 4.6% to 0.4%; the rate of those who do not know any presentation program decreased from 9.9% to 6.8%; the rate of those who do not know using Excel program decreased from 9.9% to

6.8%; the rate of those who do not know using internet decreased from 3% to 0.8%; the rate of those who do not know downloading documents relating to course from internet decreased from 3.4% to 1.1%. It is seen that e-School system made positive contributions to the computer and internet usage skills of the teachers and school administrators in general.

The following suggestions could be developed in accordance with the above-summarized results.

a) *Recommendations for the Turkish Ministry of National Education*

There is no doubt that the most important problem to be encountered in the implementation of e-School application is the absence of internet connection. Though quite rarely, there are villages which do not have any internet connection in Turkey. Because these are the villages which are difficult to be reached in general, the teachers and school administrators who work there could not enter the necessary information into the e-School system and could not perform the necessary processes in time. It is necessary to solve the internet connection problem in the villages for carrying out the processes relating to e-School system in a proper and timely manner. The Turkish Ministry of Transportation has the main responsibility to solve the problem by connecting the rural areas with satellite internet connection.

Those teachers and school administrators who do not know how to use computer and internet have difficulties in using e-School application as well. Because of this reason, it should be ensured that the teachers and school administrators have computer training. It has been detected that teachers and school administrators were not trained before being required to use the e-School program. In service training programs related to computer and internet use must be delivered to teachers and school administrators.

Most of the teachers and school administrators stated that the 10-minute connection period limited by the system is insufficient. The connection period should be extended. Activating the "save" button only from the administrative module in some processes makes the works of the teachers difficult. The "save" button should be always active for performing all of the processes desired at any time by the teachers.

Most of the teachers and school administrators stated that the detailed information related to the parents that required to be entered into the system takes a long period of time particularly for the numerous classes. More general information related to the parents should be entered into the system. In addition, the unnecessary information required to be entered into the system, such as the type and the number of pages of the books assigned as required readings for students, should be removed from the system.

Most of the teachers and school administrators find requiring the security codes in a lot of processes as being unnecessary. Security code application should be cancelled with the exception of the confidential information. In addition, failure in opening and closing the internet pages could encountered frequently at the end of the semesters due to the intense use. Such problems should be eliminated.

The school administrators are having difficulties when performing course distribution at the beginning of the academic years. This process is tiresome and time-consuming.

Most of the school administrators think that the course distribution module should be added into the system for the 6th, 7th and 8th classes in particular.

There should be a student contract report in the e-School system that establishes behavior expectations. It needs to introduce into the e-School system the possibility to print copies of the diploma record from the system.

b) *Recommendations for teachers and school administrators*

A lot of parents come to school in order to find about the grades of their children. This situation is a negative one not only for the teachers whose lessons are interrupted frequently, but also for the parents who leave their businesses and come to the school frequently. It is necessary to inform better the parents about the availability of the Parent Information System through which they could find about the grades, behavior grades and the reading assignments of their children.

In some cases student information (such as age, gender, etc.) is not entered, or they are entered incompletely or incorrectly causing the occurrence of some problems during time. Because of this reason, the student information should be entered completely and correctly. After teachers enter the examination and project dates, in case of any mistake, the mistakes could be corrected only by the school administrators. This situation not only causes problems for the teachers, but it also causes troubles for school administrators working in large schools. The teachers should be enabled to make these corrections from their own modules.

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