Training of primary school teachers in the use of information technology

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Abstract

In the research, it is aimed to provide primary school teachers with education about the use of information technology topics. The research was applied in the spring semester of 2021–2022. The study, which was conducted with the participation of 246 primary school teachers, was conducted in a screening model. In the study, 5-week distance education and information technology education were provided to primary school teachers. In order to collect data, a data collection tool developed by the people who created the study was used in the study. Data collected by the data collection tool are presented in the tables and the results of the survey in the comments are added to the obtained results. Considering the research in this field of primary school teachers training in the use of information technology shows that the use in their condition is good and it is seen that the results have been achieved.

Keywords: Primary school students, information technologies, distance education;

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1. Introduction

It is known that the training of managers and teachers, who will play a primary role in the adoption and implementation of new technologies together with information technologies, is as important as equipping educational institutions with technological facilities (Almeida & Castelo, 2018). It is also known that it is not enough just to introduce the elements that will implement the developing technologies to technology (Rahimi & Mouri, 2016). It is also necessary to provide teachers with the skills to organise learning activities using rapidly developing and changing technology and new educational techniques (Fatima Zahra, Mohammed, Khadija, Mohammed, & Abdelouahed , 2016). It is known that it is necessary to have a permanent education in the memory of educators and teachers about the use of technology. In this way, they also require constant technology learning to develop themselves (Li, Garza, Keicher, & Popov, 2019). It is seen that what needs to be paid attention to in technology training comes across as pre-service training and in-service training. Pre-service teachers in the teaching–learning environment, which prepares one for courses on the use of technology in the programmes of the school, along with the universities, are trained in the technologies used in the course of teaching approaches and valued as a model for teacher candidates (Talakua et al., 2022). In addition, schools that train and develop teachers, first of all, must have plans for the use of technology in general and new information technologies in particular. These plans should be based on the availability of financial resources for the acquisition of technologies, cooperation with other relevant institutions on the acquisition and use of technology and training of teaching staff who will use technologies (Karagozlu, 2020). One of the issues that should be emphasised in education is the use of technology in education. The function of computers is increasing every day, and this, on the one hand, affects the learning–teaching processes, and on the other hand, the economic and social functions of education. It is inevitable that developments in technology will affect learning–teaching processes as well as all areas of life. What is expected from today's schools is that they train individuals to be equipped with the skills to access information and use it effectively with technology (Cavus & Munyavi, 2016).

Teachers, school administrators and supervisors who are stakeholders of the environment are key to realising the possible benefits of technology use in schools at a high level. It is among the duties of computer teachers to ensure the effective use of new information and communication technologies in educational settings (Devedzic & Devedzic, 2019). In order for computers to be used as a teaching tool, the qualifications that teachers have in this regard are very important (Szymkowiak, Melović, Dabić, Jeganathan, & Kundi, 2021). Primary school teachers are expected to contribute to the design of information technology environments, visual distance education techniques, educational software design and the production of all kinds of educational materials in the environments in which they work (Aliyarovich & Sayfiddinovich, 2021).

1.1. Related studies

Neophytou and Eteokleous (2022) in the year to give teachers for the work they have done in a more efficient and a better education educational robotics in the classroom are meant to demonstrate a range of factors that affect the decision to use and, as a result, teachers teaching and educational applications for learning purposes over the course cognitive issues that achieves positive results, it is

observed, as they provide educational benefits. It can be said based on the research that information technology provides benefits to the field in this context.

Mateus and Hernández-Breña (2019) in the year of the work they have done in education media education teachers in their knowledge, attitudes, and reasoning of a survey that measures their special design, validation and the application intended, and as a result, the faculty of education and media across different classifications such as those used in their courses during the education by showing interest in him, have got positive results. In this context, it is seen that they benefit the field and students because media technologies are also apart of information technologies.

Romero-Rodriguez, Aznar-Díaz, Hinojo-Lucena, and Gómez-García (2020) in the year of information technology and mobile learning they have done in the research methodology to analyse the degree of implementation of good practices for sociodemographic factors that affect the development of mobile learning and teaching sought to control, and as a result the degree of application of the mobile device of the surveyed population is approximately 73%, and apply it regularly pedagogic innovations educational technology research. It can be seen that they have accepted that mobile devices are suitable and, finally, responded sincerely to information technologies and achieved positive results.

1.2. Purpose of the study

In this study, it was aimed to provide primary school teachers with education about the use of information technology and answers to the following questions were sought for the general purpose of the study:

1.   What is the information technology usage situation of the group of participants participating in the study?

2.   What is the distance learning time of the group of participants participating in the study?

3.   What is the information technology and Internet usage purpose of the group of participants participating in the study?

4.   Is there a significant difference between information technology opinions according the gender variable of the group of participants participating in the study?

5.   What are the information technology opinions of the group of participants participating in the study before and after the study?

2. Method

It is seen that the methods part always has a trace and importance in the research, so it is important that the method is given correctly and meets the problem situation in the operation and course of the research. When the method part of the study is considered, the type and source of the data in the study are organised by including information about the data collection tool and the statistics used in the study.

2.1. Research model

It is seen that the screening model method, which is a quantitative research method, is used in the research. It is known that when this research model is considered, it is used in studies aimed at revealing and clarifying the phenomena, objectives, living beings, ideas, major groups and various

fields. In addition, this method is used to construct a situation and evaluate and define the relationship between events (Uzunboylu et al., 2022).

2.2. Working group/participants

It is seen that the research was carried out in the spring semester of 2021–2022. The data of the research randomly shows that there are 246 voluntary primary school teachers who continue their studies in Kazakhstan. All primary school teachers continue their studies with distance education.

2.2.1. Gender

In this section, the differences of the group of participants included in the study according to their gender are given in Table 1.

Table 1. Distribution of the group of participants participating in the study according to gender

Gender	Male		Female	
	F	%	*F*	%
Variable	129	52.44	117	47.56

From Table 1, it can be seen that the distribution of the group of participants included in the study is according to the gender variable. In this context, it is seen that 52.44% (129 people) are male and 47.56% (117 people) are female participants. In the gender section, the findings reflect the actual gender distribution.

2.2.2. Information technology usage times of the group of participants participating in the study

In this section, the research of elementary school teachers participating in the research was verified according to the time periods of daily use of technology related to information technology technologies related to the problem situation. Detailed information is given in Table 2.

Table 2. Distribution of the group of participants participating in the study regarding the time of use of information technology

Use of information technology	1–2 hours		3–4 hours		5 and above hours	
	F	%	F	%	F	%
Variable	27	10.97	101	41.06	118	47.97

When Table 2 is examined, the information technology usage time of the group of participant for the state of the research problem is given. In this context, it can be seen that 10.97% (27 people) stated 1–2 hours, 41.06% (101 people) stated 3–4 hours and, finally, 47.97% (118 people) stated 5

hours. In this context, it is seen that most of the participants prefer to use information technology for 5 hours and more during the pandemic process within the research.

2.2.3. *Time devoted to distance education by the group of participants participating in the study*

In this section, situations related to the time periods of daily use of the groups of participants participating in the research to devote time to distance learning related to the problem situation of the research during the pandemic were investigated and examined according to the time periods of daily use. Detailed information is given in Table 3.

Table 3. Time devoted to distance education by the group of participants participating in the study

Distance learning time offset	1–2 hours		3–4 hours		5 hours and more	
	F	%	F	%	F	%
Variable	17	6.91	98	39.84	131	53.25

When Table 3 is examined, the time devoted to distance education by the group of participants participating in the study is examined and detailed. In this context, 6.91% (17 people) expressed devoting 1–2 hours, 39.84% (98 people) expressed devoting 3–4 hours and, finally, 53.25% (131 people) expressed devoting 5 hours and more to distance education. In this context, it is seen that most of the participants prefer to devote over 5 hours to distance education.

2.2.4. *Age status*

In this section, the age of the primary school teachers of the study group was examined and detailed information is given in Table 4.

Table 4. Distribution of primary school teachers according to their age

Age	23–25 years		26–28 years		29 years and older	
	F	%	F	%	F	%
Variable	87	35.36	49	19.92	110	44.72

When Table 4 is examined, the distribution of the group of participants participating in the study according to their age is considered. In this context, 35.36% (87 people) were observed to be in the age range of 23–25, while 19.92% (49 people) were in the age range of 26–28 and 44.72% (110 people) were aged 29 and above. In this section, the findings reflect the actual distribution.

2.3. Data collection tools

In this section, it is seen that the data collection tool developed by the people who created the problem situation of the research within the research was used. The data collection tool was simplified by removing unsuitable items from the research after examination by experts in the field of information technology for the participants participating in the research. It is seen that a personal information form called 'Information Technologies' measurement tool is used, which is applied to the participants participating in the study and developed by the researchers. The validity of the scope of the developed measurement tool was examined by four experts with the title of professors, who conduct research on information technologies and distance education, and unnecessary items have been removed from the measurement tool and revisions have been made for simplification.

1.   Personal information form (demographic data): In the personal information form, information such as gender, age, information technology usage and usage environments that devote time to daily distance education are provided.

2.   Information technology data collection Tool: A 5-point Likert-type data collection tool was prepared to obtain information about information technologies and distance education views in order to create some values in the participant groups. The measurement tool consisted of a total of 18 items out of 21 items; 3 items were removed from the measurement tool, thanks to the experts' opinions. The opinions of primary school teachers from two factorial dimensions, such as 'Information Technologies' and 'Distance Education', were obtained from the participants participating in the study. The Cronbach alpha reliability coefficient of the measurement tool as a whole was calculated as 0.92. The measurement tool was rated in the range of 'strongly disagree' (1), 'disagree' (2), 'I'm undecided' (3), 'agree' (4) and 'strongly agree' (5). The measurement tool was also collected from primary school teachers in the form of an online environment.

2.4. Application

The application of the study, by researchers in Kazakhstan, was to 246 volunteers who continue their studies at various schools via Adobe Connect videoconferencing with the help of a primary school teacher who selected a programme aimed to prepare for live events and activities through distance education, information technology, distance education and time use cases. It was prepared with the adobe connect videoconferencing application programme and organised by showing it on Adobe Connect by experts in the field, and when the event part of the work was completed, it was planned to show information technologies, distance education videos and content to elementary school teachers. During the 5-week training, primary school teachers were given live lessons on field courses in the pandemic process, such as 'use of distance education', 'information technologies' etc. Such information was provided to elementary school teachers in the form of distance learning and elementary school teachers were expected to participate in this issue every week. After 5 weeks of training, an online measurement tool and an information form were applied to primary school teachers, and the data are given in tables in the findings section. The Adobe Connect video conference application that uses most schools of education in Section 3 a section through the programme, distributed and each designated a primary school teacher to be limited to no more than 80 weeks is set to be distributed to each activity 35 minutes Total Time 50 minutes in 15-minute question and answer in the training frame that has been processed in the form of online education in elementary school one of the teachers, tablet, phone, computer and microphone Image by using

devices such as were expected to attend training. The measurement tool applied to primary school teachers was collected through an online questionnaire and transferred to the SPSS programme by coding them in the environment of calculation programmes.

2.5. Analysis of the data

In this section, statistical data obtained from primary school teachers were analysed in the Statistics programme using frequency (f), percentage (%), average (M), standard deviation (SD) and *t*-test, with IRAs. The data obtained from the programme are given in tables accompanied by numerical values, findings and comments.

3. Results

In this section, the findings of the participants participating in the research on the use of information technologies and distance education are given, and each finding of the research is presented in numerical values and tables, accompanied by values.

3.1 Information technologies and Internet usage purposes of the group of participants participating in the research

In this section, the computer and Internet usage purposes of the participants participating in the study are investigated and detailed information is given in Table 5.

Table 5. Information technologies and Internet usage goals of the group of participants participating in the study

Variable		F	%
	Preparing an educational environment	132	53.64
Information technologies and Internet usage purpose	Integrated information technologies	96	39.04
	Other	18	7.32
	Total	**246**	**100**

When Table 5 is examined, the information technologies and Internet usage goals of the group of participants participating in the study are investigated according to the problem situation of the study. In this context, 53.64% (132 people) chose to prepare an educational environment, 39.04% (96 people) chose the field of integrated information technologies and. finally, 7.32% (18 people) chose other fields. In this context, it can be said, based on Table 5, that the research uses information technologies

to prepare the educational environment, where most of the segments turn to the problem situation according to the problem situation, is preferred.

3.2 Information technology situations according to the gender variable of the group of participants participating in the study

In this section, a comparison of the meta-qualification status of primary school teachers with the data obtained from the study was made according to the gender variable and detailed information is given in Table 6.

Table 6. Information technology situations according to the gender variable of the group of participants participating in the study

	Gender	N	M	SD	Df	t	p
Information technology statuses	Male	129	4.61	0.18	246	−420	0.392
	Female	117	4.56	0.21			

When Table 6 was examined, the information technology situations of the group participating in the study were examined according to the gender variable and it was found that there was no significant difference according to the gender criterion [(Df246) = −420, $p < 0.05$]. When the information technology situations of the group of participants participating in the study were examined, it was observed that male primary school teachers had an average score of $M = 4.61$, while female primary school teachers had an average score of $M = 4.56$. In this context, it can be said that there is no difference between the information technology scores of male primary school teachers and female teachers in this study, and that the findings of the study are also high.

3.3 Information technology education opinions of primary school teachers before and after the study

Table 7. Meta-competence and technology education opinions of primary school teachers before and after the study (pre-test – final test)

No	Variable	Preliminary testing-1		Final test-2				
		M	SD	M	SD	df	t	p
1	I can create new ideas with information technology education	3.67	0.91	4.48	0.55	246	−4.845	0.000
2	I produce ideas with information technologies and increase my interest in the field of education.	3.53	0.81	4.46	0.63	246	−5.485	0.000
3	Combining my courses with information technology education makes my students and me happy	3.71	0.81	4.43	0.59	246	−3.889	0.000
4	I understand information technology education better through distance education	3.72	0.82	4.41	0.63	246	−4.392	0.000

5	Thanks to the information technology training, I will work harder to explain the course more successfully	3.60	1.00	4.34	0.61	246	−4.005	0.000
6	I have seen that there is an opportunity to teach opportunities to learn Information Technology concepts	3.50	0.87	4.46	0.63	246	−5.669	0.000
7	I can express my ideas very easily with the help of technology in information technology education	3.70	0.85	4.41	0.63	246	−4.292	0.000
8	I watch information technology and distance learning videos over and over again	3.67	0.91	4.46	0.69	246	−3.821	0.000
9	I would like to use information technology training classes in different courses	3.85	0.69	4.41	0.60	246	−3.710	0.000
10	I can connect to information technology and distance education from any smart device	3.75	0.83	4.39	0.73	246	−3.648	0.000
11	Information technologies and remote learning give me the opportunity to do it again	3.67	0.79	4.32	0.74	246	−3.593	0.001
12	Information Technology education The education I receive in the classrooms allows me to improve myself	3.70	0.92	4.41	0.66	246	−4.028	0.000
13	I have gained a difference in my old habits towards the field with Information Technology education	3.50	0.81	4.41	0.59	246	−5.787	0.000
14	I take more responsibility for being more successful in information technology education classes	3.77	1.02	4.60	0.54	246	−4.597	0.000
15	Using information technology education with a distance learning method allows me to better understand the lesson	3.79	0.76	4.43	0.63	246	−4.249	0.000
16	I believe that a positive bond has been formed between my students and me thanks to this technology education I have received Dec	3.47	0.93	4.53	0.55	246	−6.248	0.000
17	With technology education, I can easily get used to every idea	3.72	0.80	4.41	0.59	246	−4.260	0.000
18	It's fun to study in the classes I've attended with technology education.	3.60	0.95	4.56	0.50	246	−5.685	0.000
	Overall average	3.63	0.85	4.42	0.65	362	−4.611	0.000

As shown in Table 7, opinions about information technology by the group surveyed with pre-test and post-test are determined according to the test scores showing high risk; a significant difference was observed ($p < 0.005$). Although a significant value was found in all statements, according to the results of the post-test, one of the most obvious statements of the primary school teachers participating in the study was 'My old habits have changed with Information Technology education' in the preliminary test, with an evaluation score of $M = 3.50$ and final test score of $M = 4.41$. In addition, in the second preliminary test, one of the most obvious statements of primary school teachers was 'I believe that a positive bond has been formed between me and my students, thanks to this technology education I have received', with an evaluation score of $M = 3.47$ and a final test score of $M = 4.53$. In addition, it is seen that the average score of the preliminary test is $M = 3.53$ and the average score of

the final test is M = 4.46 for the statement 'My interest in producing ideas and training with information technologies increases'.

Although positive results in each item of the survey are noted, the opinions of elementary school teachers for 'I can connect to information technology and distance education from any smart device' had an average score of M = 3.75 and a last test score of M = 4.39, which shows that some elementary school teachers and their students through information technology have an obvious bond. In addition, among the opinions of primary school teachers, it is seen that 'I can express my ideas very decently in information technology education with the help of technology' had an average score preliminary test of M = 3.70 and an average final test score of M = 4.41. In addition, in the opinions of primary school teachers, it is seen that 'I take more responsibility for being more successful in information technology education classes' had a pre-test scores of M = 3.77 and an average final test score of M = 4.60. Finally, it is seen in Table 7 that the pre-test average of primary school teachers is M = 3.63 and the final test average is M = 4.42. This shows that information technology education and ideas of primary school teachers have developed in a positive way.

4. Discussion

Aliyarovich and Sayfiddinovich (2021) in the year of didactic game of technologies in the educational process in the work they have done in the form of lessons intended to provide information to the teachers about the use of information technology. As a result of the teachers' use of technology, students learn to increase the success of game activities. When this value is combined with the results of the research, it is seen that the concepts of information technologies arouse curiosity in the primary school teachers participating in the research by creating a whole meaning. They are looking forward to combining it in their lessons, so that positive values are achieved. In this context, it can be said that technology provides benefits by preserving the meaning of the whole in the lessons for educational courses.

Ergashev, Ergasheva, and Samatova (2021) in the year of the work they have done in today's information age, the geometry of teachers ' use of information and Communication Technologies is intended to increase efficiency and to improve the quality of education, and as a result to solve math problems in Microsoft Office programmes, and playing the role of the teacher is required to have knowledge of Computer Science and information technology they have achieved. When the values are combined with the results of the research, it is seen that the use of information technologies creates results that make sense for elementary school teachers. In this context, the results that Adobe Connect application benefits them together with distance education. It is known that these two positive values take information technologies one step forward and prepares elementary school teachers and other teachers for education certainly.

El-Hamamsy et al. (2021) in the year of the work they have done in the school curriculum to integrate computer science into their research and is becoming a worldwide preoccupation expressed that meant to put this in context, and as a result this technology as a primary school teacher 350 positively evaluated information technologies have reached positive conclusions they represent. In this context, the values when combined with the results of the research study investigated primary school teachers for their intended use of the technologiesthe bill, and as a result they achieved the educational environment used to prepare these two values ensures the integrity of the research as the backbone of meaning.

While it is seen that this method used in the research provides meaning to primary school teachers, it is expected that a generation that has grown up with the concept of information technology and understands where it should be used in order to benefit the future. Just as no value can prevent the fact that students are better prepared, this study is designed to better prepare elementary school teachers by thinking about students. In this context, it can be said that this technology provides meaning to and benefits the people participating in the research.

5. Conclusion

A total of 246 primary school teachers participated in the research and it is concluded that the values according to the sampling are said to be ideal, while it is important to research the status of this problem to reach more people, another value of the research is that the information technology usage times information related to the problem state of the research has been investigated, and as a result, it has been concluded that they allocate a maximum of 5 hours and more during the day to use information technologies. Information technology education research related to another value within the time they use on a daily basis showed that they devoted 5 hours to remote training and distance education. In this context, during the pandemic, most of the participants preferred using over 5 hours of daily use of information technology.

Another result of the research is that the information technology and Internet usage goals of the group of participants participating in the study were investigated according to the problem situation of the study, and as a result, it was concluded that the education they received was most often used to prepare an educational environment. It is also obvious that the information technologies they have received have been used, and it seems that it is an inevitable value to reconcile these technologies with education. In the research, another positive result of the regarding the information technology situations of the group of participants participating in the study have been examined according to the gender variable and it is seen that there is no significant difference according to the gender criterion. It has also been concluded that the values of gender variables are high. In this context, it is seen that they have been reached as a result of adopting and using information technologies. When the final results of the study are discussed about information technology of the group of participants who participated in the survey, the pre-test and post-test scores on the last test were high, and reached the conclusion that no significant difference is seen. Also, between the results of the research stated that they won against my old habits differ in the field of information technology education, technology education, and in addition to this, thanks to a positive bond with my students, thinking of ideas that raised their interest in the field of education with information technology and information technology education information technology and distance education from any smart device so that you can connect very easily with the help of technology that are able to express my ideas in such patients, it is seen that positive is reached in.

Information technologies can touch education conceptually and future generations will see their impact among the expectations that this work is expected to be carried out in other places and at different times.

Finally, it is recommended that this study be conducted in another geographical area. As a result of the research, it has been concluded that the values of school–family cooperation technology are high in promoting inclusive education of primary school students.

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