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Teachers' Attitudes toward Turkey Education Informatics Network during the Distance Education Period in the Covid-19 Pandemic

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Abstract

In this research, teachers' attitudes toward Turkey Education Informatics Network (EIN) during the distance education period in the Covid-19 Pandemic are examined. The participants of the study, which was carried out in the descriptive survey model, consisting of 789 teachers, most of whom are primary school teachers, who provide distance education in the Covid-19 pandemic. "Educational Informatics Network Attitude Scale" was used as a data collection tool in the study. As a result of the research, it is seen that most of the teachers use EIN and the EIN Live Lesson application, and they access EIN mostly with their personal computers and smartphones. However, teachers stated that they used messaging applications effectively in the distance education process. Besides, when the attitudes of teachers towards EIN were examined according to the levels they worked at, it was seen that secondary school teachers showed a more positive attitude towards EIN than primary and high school teachers, and they found EIN more necessary. When the attitudes of teachers towards EIN were examined according to their branches, it was seen that foreign language teachers showed a more positive attitude towards EIN compared to primary school teachers and teachers in other branches, and found EIN more necessary. It has been observed that young and junior teachers have increased positive attitudes towards EIN and they think EIN is necessary. The results of the research show that teachers use the EIN. However, there was not enough opinion among teachers about the applicability of EIN.

Keywords: Education Informatics Network, EIN, Covid-19, Pandemic, Distance Education

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INTRODUCTION

The use of information technologies in education has become important in many teaching and learning environments. Many countries in the world have allocated large shares from public budgets and made large investments to use information and communication technologies in education effectively and efficiently. Governments have strengthened the computer, interactive whiteboard, and Internet infrastructure of the schools. Many countries such as South Korea, Singapore, Italy, Portugal, Japan, Brazil, Turkey can be mentioned mainly among these countries (Avvisati et al., 2013; Infocomm Media Devolopment Autority, 2006; MONE, 2021-e; Sakowski and Towolli, 2016). States have established web education platforms, besides infrastructure investments, for students and teachers to benefit from information and communication technologies at the highest level. "Edunet", www.edunet.net, in South Korea, "Wikiwijs" www.wikiwijs.nl, in the Netherlands, "Geekie", www.geekie.com.br in Brazil, "The Greek School Network (GSN)" www.sch.gr in Greece, "Open Educational Resources (OER)", www.oercommons.org in the United States of America, " KlasCement ", www.klascement.net in Belgium, "Linkkiapaja", www.linkkiapaja.edu.fi in Finland, and "EIN" www.eba.gov.tr in Turkey can be counted among these (Kapıdere and Çetinkaya, 2017; Kimmo, 2017; MONE, 2021-e; Saklan and Ünal, 2018). Thanks to these educational platforms, teachers can collect a lot of data about students' learning processes. Nowadays, teachers need to process these various data gathered from educational technologies (Schifter et al., 2014; Xhakaj et al., 2016). Teachers can make learning more effective and efficient by evaluating students' learning processes and learning outcomes, in the light of these data (Ez-zaouia et al., 2020; Molenaar & Knoop-van Campen, 2018). In Turkey, positive effects of EIN on students' success, students' learning, student retention, and motivation have been revealed by many studies (Öner, 2017). Besides, educational platforms can support the professional development of teachers in the decision-making process regarding their teaching processes by showing the data they obtain in tables, graphics, and figures (Michaeli et al.2020). During the Covid-19 pandemic process, teachers had to continue their professional development to cope with many new challenges. The distance education process is a discipline in itself. Many teachers are inexperienced in carrying out the learning process only with distance education without face-to-face education. They have had to keep up with new technologies and new applications. Mainly, virtual classroom applications and learning management systems are among these. However, managing the physical, economical, and psychological problems brought by the Covid-19 pandemic has made the teacher's job quite difficult.

Covid-19 (NCov - Novel Coronavirus), which appeared in China in December 2019, soon spread to the world (Chen et al., 2020; Hui et al., 2020). For this reason, a pandemic was declared by the World Health Organization (WHO) in March 2020 (World Health Organization, 2021). As part of the measures to be taken against the epidemic, it has also been recommended by WHO to close the schools temporarily. Considering their own circumstances, countries have implemented physical distancing and work from home measures, and close the schools temporarily to reduce the incidence of new infections and deaths (Anderson et al., 2020; Mahase, 2020). According to Anadolu Agency, the novel coronavirus has hampered education in 184 countries for over 1.5 billion students - 87% of students across the globe. While many countries shut down schools in a bid to counter the outbreak (Kasap, 2020). To reduce the spread of the epidemic, and be able to effectively fight the virus in Turkey, schools at all levels have been closed temporarily by the Ministry of National Education (MONE) as of March 23, 2020 (MONE, 2020-b). In this process, MEB has implemented many applications to manage the distance education process. Turkey has been one of the two countries, along with China, that has implemented the first distance education at the national level during the Covid-19 pandemic period, (Kasap, 2020; MONE, 2020-c). To offer equal opportunities to all students that spread out on wide geography in Turkey, MONE and Turkey Radio and Television Corporation (TRT) has established three new TV channel, called EBA(EIN) TV, with cooperation, to provide distance education in primary school, secondary school, and high school levels. Lecture video for 8914 hours was prepared as a broadcast between 23 March and 27 November 2020 (MONE, 2021-f). Besides, EIN, which is a part of the Movement of Enhancing Opportunities and Improving Technology (FATİH) Project, which was initiated in 2010 and supports formal education, has

strengthened and developed its infrastructure in a way to serve all distance education to spread it to all teachers and students (MONE, 2021-e). EIN, which was visited over 17 billion times from the beginning date of distance learning in Turkey, March 23, 2020, which has started with the announcement of Covid-19 pandemics, until January 22, 2021, has become the 1st. most visited website in the world in 2020, in the education category. Approximately 12.5 million students and approximately 1 million teachers actively used EIN between 21 September 2020 (beginning of the 1st semester) - 22 January 2021 (end of the 1st semester). Besides, more than 40 million EIN Live Lessons have been used over EIN until January 23, along with other live lessons, and approximately 155 million live lessons have been carried out (MONE, 2021-d).

The EIN website was first opened in 2012 with its test version (Pala et al., 2017). EIN, founded and managed by MONE, is a free and reliable web education platform that is accessible by everyone. EIN, which is designed for the use of all stakeholders in education, especially for teachers and students, can enrich the teaching with various contents, reflect the informatics culture to education, contribute to the lessons with its rich and continuously developing archive, and support education to give a direction by bringing all teachers together at a common point (Sönmez et al., 2020). EIN has more than 1700 lessons taught in schools and over 40,000 rich, reliable, and interactive content, more than 5000 books, and more than 240,000 questions (MONE, 2021-d). In its final form, EIN consists of student, teacher, and parent dimensions to manage the learning process actively and participantly. While the teacher plans and manages the education processes of the students, students can also carry out their learning processes through EIN without being restricted by the process managed by their teachers. Thus, EIN offers a time-independent, location-independent educational experience that can be realized according to the student's learning speed, which is the essence of distance education. Parents can participate through EIN to learn about all these processes and to increase the family's participation in the education of the student. Students on EIN can find the contents for all of their courses, do exercises and exams related to their courses, access reliable sources about the subjects they need about their courses, and store all their work as a portfolio. In EIN, which is a social education platform, teachers and students can interact with each other, each student and teacher can share a message, and discuss, votes from their wall areas (MONE, 2021-d).

With the distance education process that was started suddenly with the closing of the schools all over the world after the announcement of the Covid-19 pandemic, worries about illness, the anxiety for not being able to support the students, becoming unemployed or not being able to receive salary arose for teachers working in private schools. Although the International Labor Organization (ILO) (2020) estimates the education sector as one of the least affected sectors in the pandemic, it is estimated that many people will have psychological disorders such as depression, post-traumatic stress, irritability, anxiety disorder at the end of this process (WEF, 2020). The government in Turkey has banned layoffs in the private sector to address these concerns. It gave partial work allowance to private school teachers who have lost business. There was no restriction on the salaries of teachers working in the public sector (Official Gazette of the Republic of Turkey, 2020). Reimers & Schleicher (2020) asked a total of 330 education workers and stakeholders from 98 countries about their attitudes towards priority intervention areas related to education during this crisis period when schools were closed. 84% of the participants stated that it is very important to ensure the continuity of the learning process of students during this time. Two other options, which were considered quite important by the participants, were providing professional support to teachers (77.9%) and ensuring teachers' well-being (77.6%). Practices such as monitoring and supporting the physical and mental health of teachers under stress and providing education on the psychosocial effects of this crisis need to be implemented (United Nations Educational, Scientific and Cultural Organization [UNICEF], 2020).

PURPOSE

There are a limited number of studies that examine teachers' use of EIN and provide data diversity (Gezer & Durdu, 2020). This study aims to determine the attitude of teachers, who passed distance education as compulsory during the Covidien-19 process, towards EIN, which is actively used in Turkey. Most of the educational institutions of the country are state schools (state school:

54,715, private school: 13,870). 942,936 teachers are working in public schools (MONE, 2020-a). All of these schools are centrally managed by the MONE. During the Covid-19 pandemic process, MONE closed schools and decided to distance education after the announcement of the pandemic worldwide. The backbone of the distance education process is formed by EIN, which was established and served as a support for face-to-face education. In this process, to learn how EIN is perceived by teachers and how it is used, answers to the following questions were sought;

(1) Do teachers' attitudes towards EIN differ significantly according to their gender?

(2) Do teachers' attitudes towards EIN differ significantly according to the levels they serve?

(3) Do teachers' attitudes towards EIN differ significantly according to their graduation degree?

(4) Do teachers' attitudes towards EIN differ significantly according to their branches?

(5) Do teachers' attitudes towards EIN differ significantly according to their places of work?

(6) Is there a relationship between the teachers' attitudes towards EIN and their ages?

(7) Is there a relationship between teachers' attitudes towards EIN and their seniority?

METHOD

Research Model

The research was carried out in the descriptive survey model because it defined the teachers' opinions in the study group as they were. Descriptive surveys are studies that are conducted on large groups, in which the opinions and attitudes of the individuals in the group about a phenomenon and an event are taken, and the facts and events are tried to be described (Karakaya, 2012). This research method is used to describe the structure of objects, societies, organizations as well as the mechanism of events (Cohen et al., 2007). The event, individual, or object that are subject to research is tried to be defined in its conditions and as it is. No effort is made to change or influence them in any way (Karasar, 2012). Generally, in survey studies, researchers are concerned with how the views and characteristics are distributed in terms of individuals in the sample rather than the reasons (Fraenkel & Wallen, 2006). In this direction, the attitudes of teachers participating in the study towards EIN were analyzed according to the gender, age, seniority, level, education level, branch, and place of duty variables.

Study group

The study group of the research consists of 789 teachers. All of the participants work in public schools, most of them work in Ankara (n=553 70%), 236 (30%), and in 51 different provinces, who work in primary schools (n=368 47%), secondary schools (n=316 40%) and high schools (n=105 13%), and most of them are primary school teachers (n=321 41%). The research was conducted in the second semester of the 2019-2020 academic year. The study group was determined with a convenience sampling method, by taking the time and appropriate conditions into account. Participants' personal information was not taken and their participation in the study was confirmed with a consent form. Also, a code is provided for those who want to leave the research later.

Data collection tools

In the research, the "Education Informatics Network Attitude Scale" developed by Uğurlu & Gürsoy (2018) was used as a data collection tool. The scale consists of 30 items and includes 2 factors (necessity of EIN and applicability of EIN). The Cronbach Alpha internal consistency coefficient of

the scale was calculated as .950. The internal consistency of the factors; The requirement of EIN is .961, and the applicability of EIN is .712. These results show that the scale is valid and reliable for evaluating teachers' attitudes towards EIN. In the evaluation of the scale items, 5-point Likert type options were used.

Data collection process and data analysis

The data in the study were collected from teachers who are working at primary, secondary, and high school levels, and who provide distance education due to the Covid-19 pandemic, at the end of the second semester of the 2019-2020 academic year. The scale, which was used as a data collection tool in the data collection process, was transformed into a digital form and was applied as web-based by sending it to the e-mail addresses or mobile phones of the teachers in the study group. The data obtained were analyzed using the SPSS 26 statistical package program. Normal distribution values were examined to decide which test type to use in the analysis of the data. It was observed that the data showed normal distribution, and the skewness and kurtosis values were between +1 and -1 (Hair et al. 2013) (Skewness: -.295; Kurtosis: .257; Min:54; Max:138). For this reason, parametric tests were used in the data analysis process in the research. Data were analyzed by using descriptive statistics (percentage, frequency, arithmetic mean, standard deviation), independent samples t-test, and one-way analysis of variance (ANOVA). Tukey test was used to determine between which groups have the statistically significant difference and significance was calculated based on $p < .05$. Besides, Pearson Correlation analysis was conducted to reveal the relationship between age with attitude and seniority with attitude. Although there are different classifications in the literature to explain the relationship level, it is generally interpreted as there are (.00-.30) weak, (.31-.49) medium, (.50-.69) strong, (.70-.100) very strong relationships. (Tavşancıl, 2006).

Research ethics

The permission for the use of the scale, which was used as a data collection tool in the research, was obtained from Uğurlu & Gürsoy (2018) via e-mail. Besides, the ethical approval of the study was obtained from Ankara Yıldırım Beyazıt University Rectorate Ethics Committee Coordinator on 19.06.2020 with an 84892257-604.01.02-E.18221 numbered letter. Participants of the study, who read and approved the pre-approval form, were included in the study. Participants' personal information has not been collected. A code is provided for participants who want to quit the research later on. Ethical responsibilities were fulfilled in the research and a study group was formed based on volunteerism.

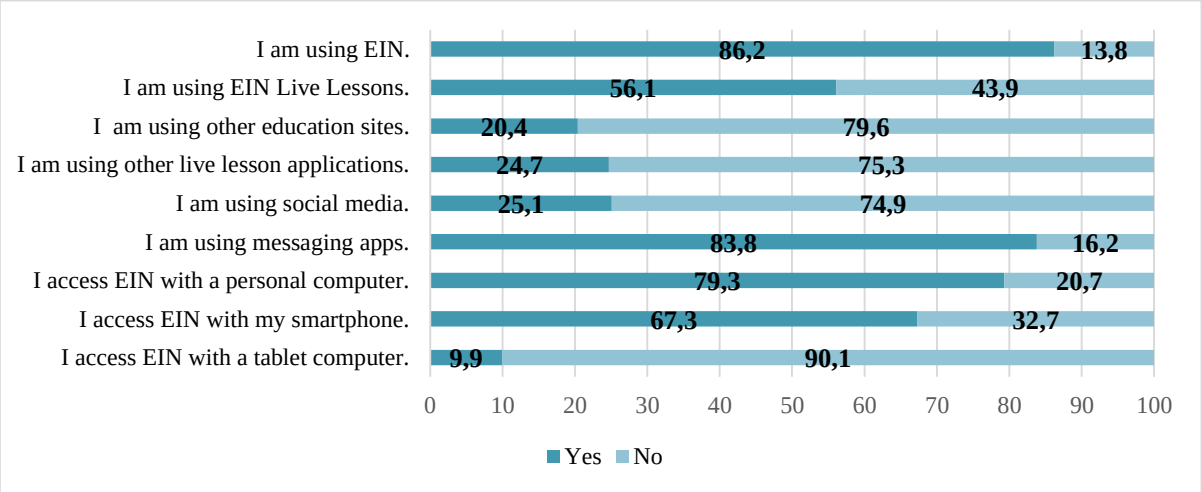
RESULTS

Descriptive statistics on the use of distance education tools by the teachers participating in the study during the Covid-19 pandemic are presented in Table 1.

Table 1. Teachers' use of distance education tools during the Covid-19 pandemic

		F	%
I am using EIN.	Yes	680	86,2
	No	109	13,8
I am using EIN Live Lesson.	Yes	443	56,1
	No	346	43,9
I use other educational sites.	Yes	161	20,4
	No	628	79,6
I use other live lesson apps.	Yes	195	24,7
	No	594	75,3
I use social media.	Yes	198	25,1
	No	591	74,9

I use messaging apps.		Yes	661	83,8
		No	128	16,2
My tool for accessing EIN is	Personal Computer	Yes	626	79,3
		No	163	20,7
	Smartphone	Yes	531	67,3
		No	258	32,7
	Tablet PC	Yes	78	9,9
		No	711	90,1



Graph 1. Percentage of teachers' use of distance education tools in the Covid-19 pandemic

When Table 1 and Graph 1 is examined, it is seen that the majority of teachers used EIN (86.2%) and EIN Live Lesson (56.1%) in the distance education process during the Covid-19 pandemic. On the other hand, it is seen that a small number of teachers use other educational sites (20.4%), other live lesson applications (24.7%), and social media applications (25.1%). It is seen that many teachers (83.8%) use messaging applications. It is observed that teachers mostly use their personal computers (79.3%) and smartphones (67.3%) to access EIN, and it is observed that a small number of teachers (9.9%) use tablet computers.

The sub-factor and general averages and standard deviation values of the answers given by the pre-service teachers participating in the study, to the education informatics network attitude scale are shown in Table 2.

Table 2. Findings on scale sub-factors and general averages

	N	Min	Max	$\bar{X}$	Sd
F1- The necessity of EIN	789	2,23	4,26	3,68	0,917
F2- Applicability of EIN	789	2,21	4,13	3,05	0,974
Total	789	2,21	4,26	3,51	0,932

As seen in Table 2, the averages of the sub-factors of the scale vary between 3.05 and 3.68. It is seen that the arithmetic means of the EIN requirement factor of the scale is $\bar{x}$=3.68 and the answers given to the items are at the "I agree to" level. In this case, it is understood that EIN is considered necessary by teachers. Among the sub-factors of the research, the lowest average value is in the feasibility factor of EIN ($\bar{x}$=3.05). Teachers did not find EIN applicable. The general average of the scale was found as $\bar{x}$=3.51 and it was understood that the answers given to the items were at the level of agreement. Teachers showed a positive attitude towards EIN.

It is seen that 549 (69.6%) of the teachers participating in the study are female and 240 (30.4%) are male. Whether there is a significant difference between the attitudes of the teachers who participated in the study towards EIN according to the gender variable is presented in Table 3.

Table 3. T-test results of teachers' attitudes towards EIN, according to gender

	Gender	N	X̄	S	Sd	t	p
F1- The necessity of EIN	Female	549	24,31	2,48	787	,905	,366
	Male	240	24,48	2,55			
	Total	789					
F2- Applicability of EIN	Female	549	81,33	13,47	787	1,546	,123
	Male	240	79,73	13,24			
	Total	789					
Total	Female	549	105,63	13,72	787	1,346	,179
	Male	240	104,21	13,59			
	Total	789					

p<.05

When Table 3 is examined, there is no significant difference according to gender for both general teachers' attitudes towards EIN (p= .179, p <.05), the necessity of EIN sub-factor (p= .366, p <.05), and the applicability of EIN sub-factor (p= .123, p <.05). When the arithmetic means of the teachers' answers are examined, it is seen that the general averages of men ($\bar{x}$ = 104.21) and women ($\bar{x}$=105.63) are close to each other.

368 (46.6%) of the teachers participating in the study are working at the primary school level, 316 (40.1%) at the secondary school level, and 105 (13.3%) at the high school level. Whether there is a significant difference between the attitudes of the teachers participating in the study towards EIN, according to the levels they work at is presented in Table 4.

Table 4. Variance analysis results of teachers' attitudes towards EIN according to levels

		Sum of squares	Sd.	Mean of squares	F	Sig. p	Significant Difference (Tukey)
F1- The necessity of EIN	Between Groups	2.848	2	1424,222	8,059	,000*	Primary School and Secondary school Secondary School and High School
	Within Groups	138.903	786	176,722			
	Total	141.751	788				
F2- Applicability of EIN	Between Groups	0,365	2	,182	,029	,971	-
	Within Groups	4.923	786	6,264			
	Total	4.923	788				
Total	Between Groups	2.899	2	1449,796	7,872	,000*	Primary School and Secondary School Secondary School and High School
	Within Groups	144.756	786	184,169			
	Total	147.656	788				

*p<.05

Descriptive statistics of Table 4

	Levels	N	X̄	S
F1- The necessity of EIN	Primary School	368	79,22	13,73
	Secondary School	316	83,16	12,76
	High School	105	79,54	13,33
F2- Applicability of EIN	Primary School	368	24,34	2,38
	Secondary School	316	24,38	2,63
	High School	105	24,38	2,54
Total	Primary School	368	103,55	13,78
	Secondary School	316	107,54	13,32
	High School	105	103,92	13,59

According to Table 4, it is seen that there is a significant difference between the teachers' attitudes towards EIN according to the levels they work at (p = .000, p <.05). According to the results of the Tukey test conducted to determine between which groups this difference exists, it was determined that there is a significant difference between primary school and secondary school, and secondary school and high school. When the arithmetic means of the teachers' answers are examined, it is understood that in both comparisons, this difference is in favor of secondary school (primary school $\bar{x}$=103.55; secondary school $\bar{x}$=107.54; high school $\bar{x}$=103.92). When the attitudes of teachers for the sub-factors of the scale are examined, it is seen that there is a significant difference according to the levels in the sub-factor of the necessity of EIN (p= .000, p <.05), and there is no significant difference according to the levels in the applicability sub-factor of EIN. According to the results of the Tukey test conducted to determine which groups the difference in the sub-factor of EIN requirement sub-factor, it was determined that there is a significant difference between primary and secondary school, and secondary school and high school. When the arithmetic means of the teachers' answers are examined, it is understood that in both comparisons, this difference is in favor of secondary school (primary school $\bar{x}$=79.22; secondary school $\bar{x}$=83.16; high school $\bar{x}$=79.54).

21 (2.7%) of the teachers participating in the study have an associate degree, 663 (84%) have undergraduate, and 105 (13.3%) have a master's degree. Whether there is a significant difference between the attitudes of the teachers who participated in the study towards EIN according to their graduation degree is presented in Table 5.

Table 5. Variance analysis results of teachers 'attitudes towards EIN according to teachers' graduation degree

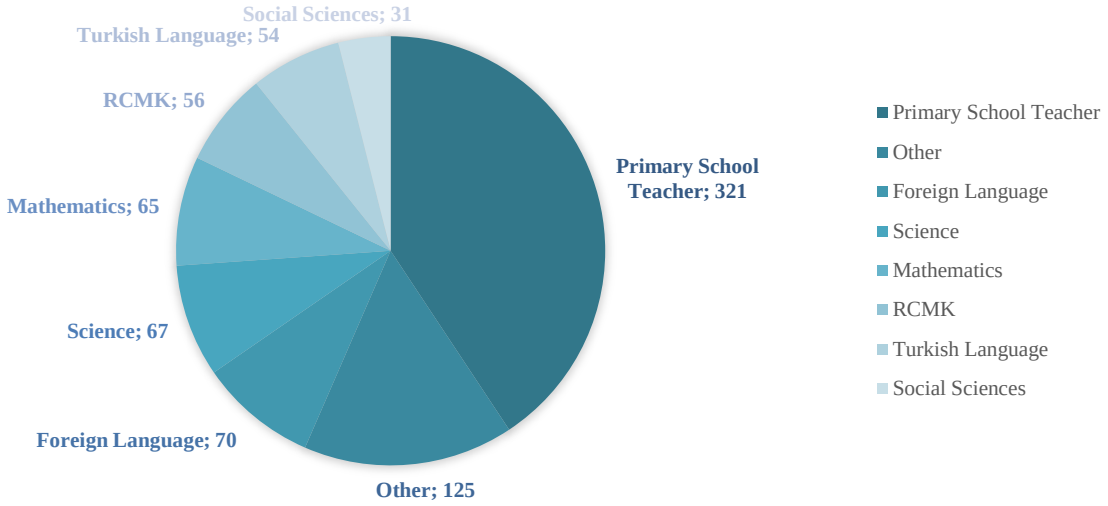
		Sum of Squares	Sd.	Means of Squares	F	Sig. p	Significant Difference (Tukey)
F1- The necessity of EIN	Between Groups	98,153	2	49,076	,272	,762	-
	Within Groups	141.653	786	180,221			
	Total	141.751	788				
F2- Applicability of EIN	Between Groups	0,661	2	,330	,053	,949	-
	Within Groups	4.923	786	6,264			
	Total	4.923	788				
Total	Between Groups	94,084	2	47,042	,251	,778	-
	Within Groups	147.562	786	187,738			
	Total	147.656	788				

p<.05

Descriptive statistics of Table 5

	Graduation	N	$\bar{X}$	S
F1- The necessity of EIN	Associate Degree	21	82,95	9,86
	Undergraduate	663	80,80	13,57
	Master's Degree	105	80,66	13,07
F2- Applicability of EIN	Associate	21	24,29	1,79
	Undergraduate	663	24,37	2,53
	Master's Degree	105	24,30	2,48
Total	Associate	21	107,24	10,42
	Undergraduate	663	105,18	13,86
	Master's Degree	105	104,95	13,24

When Table 5 is examined, there are no significant difference in teachers' attitudes towards EIN in both general (p= .778, p <.05), in the necessity of ESA sub-factor (p= .762, p <.05) and in the applicability sub-factor of EIN (p= .949, p <.05) according to their graduation degree. When the arithmetic means of the teachers' answers are examined, it is seen that the averages of an associate degree ($\bar{x}$=107.24), undergraduate degree ($\bar{x}$=105.18), and graduate degree ($\bar{x}$=104.95) are close to each other.



Graph 2. Distribution of teachers participating in the study according to their branches

When Graph 2 is examined, it is seen that most of the teachers who participated in the study were primary school teachers (40.7%), then (8.9%) foreign language teachers, (8.5%) science, (8.2%) mathematics, (7.1%) religious culture and moral knowledge (RCMK), (6.8%) Turkish language, and (3.9%) social sciences. Besides, teachers from 22 (15.8%) different branches participated in the study. Whether there is a significant difference between the attitudes of the teachers participating in the study towards EIN according to their branches is presented in Table 6.

Table 6. Variance analysis results of teachers' attitudes towards EIN according to branches

		Sum of Squares	Sd.	Means of Squares	F	Sig. p	Significant Difference (Tukey)
F1- The necessity of EIN	Between Groups	4.309	7	615,582	3,498	,001*	Primary School Teacher-Foreign Language
	Within Groups	137.442	781	175,983			Foreign Language-Other
	Total	141.751	788				
F2- Applicability of EIN	Between Groups	23	7	3,347	,533	,809	-
	Within Groups	4.900	781	6,274			
	Total	4.923	788				
Total	Between Groups	4.377	7	625,356	3,409	,001*	Primary School Teacher-Foreign Language
	Within Groups	143.278	781	183,456			Foreign Language-Other
	Total	147.656	788				

*p<.05

Descriptive statistics of Table 6

	Branches	N	X̄	S
F1- The necessity of EIN	Primary School Teacher	321	78,91	13,71
	Mathematics	65	83,32	13,05
	Turkish Language	54	81,30	12,78
	Science	67	83,43	13,07
	Social Studies	31	82,65	9,38
	Foreign Language	70	85,99	10,84
	RCMK	56	81,39	13,54
	Other	125	79,34	14,38

F2- Applicability of EIN	Primary School Teacher	321	24,33	2,37
	Mathematics	65	24,51	2,56
	Turkish Language	54	24,54	2,62
	Science	67	24,57	2,66
	Social Studies	31	23,74	2,18
	Foreign Language	70	24,36	2,41
	RCMK	56	24,09	2,82
	Other	125	24,46	2,66
Total	Primary School Teacher	321	103,24	13,75
	Mathematics	65	107,83	13,49
	Turkish Language	54	105,83	13,81
	Science	67	108,00	12,94
	Social Studies	31	106,39	9,77
	Foreign Language	70	110,34	11,64
	RCMK	56	105,48	14,53
	Other	125	103,79	14,52

According to Table 6, it is seen that there is a significant difference between teachers' attitudes towards EIN according to their branches (p= .001, p <.05). According to the results of the Tukey test conducted to determine between which groups this difference exists, it was determined that there is a significant difference between the primary school teacher and the foreign language, foreign language, and other branches. When the arithmetic means of the answers of the teachers are examined, it is understood that in both comparisons, this difference is in favor of foreign language (primary school teacher $\bar{x}$=103.24; foreign language $\bar{x}$=110.34; other branches $\bar{x}$=103.79). When the attitudes of teachers for the sub-factors of the scale are examined; It is seen that there is a significant difference according to the branches in the necessity of EIN sub-factor (p= .001, p <.05), and there is no significant difference according to the branches in the applicability of EIN sub-factor. According to the results of the Tukey test conducted to determine which groups the difference in the EIN necessity sub-factor is, it was determined that there is a significant difference between the primary school teacher and the foreign language, and foreign language and other branches. When the arithmetic means of the answers of the teachers are examined, it is understood that this difference is in favor of foreign language (primary school teacher $\bar{x}$=78.91; foreign language $\bar{x}$=85.99; other branches $\bar{x}$=79.34) in both comparisons.

471 (59.7%) of the teachers participating in the study work in the city center, 271 (34.3%) in the district center, 47 (6%) in the village/town. Whether there is a significant difference between the attitudes of the teachers who participated in the study towards EIN according to their place of work is presented in Table 7.

Table 7: Variance analysis results of teachers 'attitudes towards EIN according to teachers' workplaces

		Sum of Squares	Sd.	Means of Squares	F	Sig. p	Significant Difference (Tukey)
F1- The necessity of EIN	Between Groups	180,948	2	90,474	,018	,983	-
	Within Groups	141.571	786	180,116			
	Total	141.752	788				
F2- Applicability of EIN	Between Groups	0,220	2	,110	,502	,605	-
	Within Groups	4.923	786	6,264			
	Total	4.924	788				
General	Between Groups	179	2	89,627	,478	,620	-
	Within Groups	147.477	786	187,630			
	Total	147.656	788				

p<.05

Descriptive statistics of Table 7

	Workplaces	N	X̄	S
F1- The necessity of EIN	City Center	471	80,79	13,43
	District Center	271	81,23	13,34
	Village/Town	47	79,13	13,75
F2- Applicability of EIN	City Center	471	24,37	2,60
	District Center	271	24,34	2,34
	Village/Town	47	24,34	2,39
General	City Center	471	105,16	13,72
	District Center	271	105,57	13,43
	Village/Town	47	103,47	14,93

When Table 7 is examined, there is no significant difference in teachers' attitudes towards EIN according to the place of work in both general (p= .620, p <.05), in the necessity of ESA sub-factor (p= .983, p <.05), and in the applicability sub-factor of EIN (p= .605, p <.05). When the arithmetic averages of the teachers' answers are examined, it is seen that the averages of the city center ($\bar{x}$=105.16), district center ($\bar{x}$=105.57), and village/town ($\bar{x}$=103.47) are close to each other.

Whether there is a significant relationship between the attitudes of the teachers participating in the study towards EIN and the age and seniority is presented in Table 8.

Table 8: Pearson correlation analysis results of teachers' attitudes towards EIN according to age and seniority

		Age	Seniority
F1- The necessity of EIN	r	-,106**	-,116**
	p	,003	,001
	N	789	789
F2- Applicability of EIN	Pearson Correlation	-,023	-,018
	Sig. (2-tailed)	,520	,613
	N	789	789
General	Pearson Correlation	-,108**	-,117**
	Sig. (2-tailed)	,002	,001
	N	789	789

** Correlation is significant at the 0.01 level (2-tailed).

When Table 8 is examined, the relation between the ages of teachers (X̄= 41, SD=7.69), seniority of teachers (X̄= 16, SD=7.75), the necessity of EIN (X̄= 80.84, SD=13.41) and the applicability of EIN (X̄= 24.35, SD=2.49) scores has seemed. A low level, negative and significant relation between age and general scores variables (r (787) = -.108, p <.05), a low level, negative and significant relation between age and the necessity of EIN variables (r (787)) = -.106, p <.05), a low level, negative and significant relation between seniority and general scores variables (r (787) = -.117, p <.05), a low level, negative and significant relation between seniority and necessity of EIN variables (r (787) = -.116, p <.05) was found.

DISCUSSION

Based on the findings, the results obtained in this study, which the attitudes of the teachers, who passed distance education in Turkey due to Covid-19 pandemic, toward EIN were interpreted by comparing them with the results of other studies in the literature. In this direction, the results obtained in the research are given below.

As a result of the research, most of the teachers use EIN. According to the general scores of the scale, teachers showed a positive attitude towards EIN. According to researches, it is seen that teachers use EIN and EIN Live Lesson effectively during the Covid-19 process. However, teachers stated that their approach toward EIN is positive and they see EIN as applicable (Çakmak & Taşkıran, 2017; Çiftçi & Aydın, 2020; Demir & Özdaş, 2020; Ünal & Buliniz, 2020; Varışroğlu, 2019). On the

other hand, as a result of the research conducted by Alabay (2015), it has been stated that EIN is not used sufficiently by the teachers in the lesson process. This result may be because EIN was used as a support for face-to-face education at the time of the research.

Teachers frequently use the EIN Live Lesson application and messaging applications together with EIN during the Covid-19 pandemic process. According to researches, it is of great importance for teachers to conduct live lessons during the Covid-19 pandemic process and to use messaging applications to keep communication with students and parents tight (Bayburtlu, 2020; Demir & Özdaş, 2020; Duban & Şen, 2020, Sönmez et al., 2020). It is observed that teachers mostly access EIN via personal computers and smartphones. It can be said that a few teachers use EIN with the tablet. Today, the capacities of smartphones are as much as tablets, but they are advantageous than tablets in terms of portability. This situation may have affected teachers' preferences for access to EIN via a tablet. In long-term studies, the screen size of personal computers, keyboard use, and long battery life may be the main reasons for teachers to use personal computers.

When the attitudes of teachers towards EIN are examined according to their levels they work at, it can be said that secondary school teachers have a more positive attitude towards EIN than primary and high school teachers and they find EIN more necessary. According to this finding, it can be thought that primary school teachers cannot use EIN properly and adequately because their students are in the young age group and students have difficulty in using the technology. It can be thought that high school teachers cannot use EIN sufficiently because their students are mostly in adolescence and students cannot provide self-control during this period. However, secondary school teachers' students can mostly use basic technologies by age group and they are open to the teacher guidance. Therefore, it can be said that secondary school teachers find EIN more necessary than primary and high school teachers.

When the attitudes of teachers towards EIN are examined according to their branches, it can be said that foreign language teachers have a more positive attitude towards EIN compared to primary school teachers and teachers in other branches and find EIN more necessary. According to the researches, it has been observed that the majority of social studies teachers benefit from EIN in their lessons. According to the results of the research conducted by Alabay (2015), significant differences were found in teachers' level of EIN usage depending on the branch variable.

It can be said that as the age and the seniority of teachers decrease, their positive attitude towards EIN increases, and they think that EIN is necessary. According to this result, it can be stated that old and senior teachers are experienced and knowledgeable, young and new teachers need EIN more because they do not have sufficient experience and knowledge and they have a more positive attitude in return. On the other hand, it is stated in some studies that teachers with higher professional seniority use EIN more (Türker & Dündar, 2020). Besides, in some studies, no significant difference was found between teachers' EIN usage levels according to age and professional experience (Alabay, 2015; Varışoğlu, 2019).

When the general scores of the scale are examined; Teachers' attitudes towards EIN do not show a significant difference according to their gender, graduation degree, and place of work. The research conducted by Varışoğlu (2019) and Düzgün & Sulak (2020) supports this finding in terms of gender and graduation degree. The results of the research conducted by Alabay (2015) support these results in terms of both genders, education level, and place of work. Contrary to our research, Sönmez et al. (2020) stated in their study that primary school teachers' attitudes towards EIN contents differ according to their place of work. While the teachers working in the province and district found EIN content appropriate for their level, the teachers in the village remained undecided. On the other hand, all teachers have stated that EIN alone is not enough.

CONCLUSION

The rapid transition to distance education during the Covid-19 pandemic naturally brought many problems. Lack of adequate infrastructure, scarcity of expert personnel in the field, lack of content, and most importantly, lack of sufficient readiness of students and teachers (Türker & Dündar, 2020; TEDMEM, 2020) can be mentioned among these problems. These problems also affect the perception of distance education. The most important issue regarding distance education is teachers' preparedness and students' attitude. If teachers are not prepared and students do not see technology as useful, they will not be open to distance education.

The results of the research show that teachers in Turkey use and need the EIN in the distance education process during the Covid-19 pandemic. However, there was not enough opinion about the applicability of EIN among teachers. In many studies, most of the teachers stated that the content in EIN was insufficient, so it should be increased and there was a lack of infrastructure (Alabay, 2015; Demir & Kale, 2020; Demir & Özdaş, 2020; Gömleksiz & Deniz, 2019; Kana & Aydın, 2017; Ünal & Bulunuz, 2020; Yeşilyurt & Dündar, 2020). This situation may affect teachers' attitudes about the applicability of EIN. Increasing the content of EIN by diversifying it and improving its infrastructure may cause teachers' attitudes towards the applicability of EIN to change. In the research conducted by Bakioğlu & Çevik (2020), it was concluded that teachers felt inadequate in the Covid-19 pandemic distance education process, but they had the opportunity to improve themselves. When the 2023 Education Vision of MEB is examined, it is seen that the technological infrastructure in schools and the e-content to be used in lessons will be increased (2023 Education Vision, 2018). In line with this goal, it becomes important to make arrangements for the applicability of EIN.

Parents can contribute to the development of children by providing more materials for the school and focusing on educational activities. It is important, how much parents can support students in teaching basic skills such as reading and writing, especially at the primary school level. This problem appears more clearly for the children of families living in rural areas who are disadvantaged in various issues (TEDMEM, 2020). The use of EIN in the Covid-19 pandemic not only provides rich content to teachers and students in rural areas but also gives this opportunity to all teachers and students who cannot leave their homes. In this respect, the value of EIN increases one more time during the pandemic process.

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