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Research Article

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Investigation of e-learning readiness levels of primary school students studying in rural

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ABSTRACT

This study was conducted to determine the e-learning readiness of fourth grade primary school students in villages and towns. The research was designed in descriptive survey model from quantitative research methods. The study group of the research consisted of 165 students, 85 of whom were male and 80 of whom were female. Of these students, 149 live in the village and 16 in the town. The "E-Learning Readiness Scale", which was adapted into Turkish by Bircan et al. (2022), was used as a data collection tool in the study. The research data were analyzed using descriptive statistics, independent groups t-test and one-way ANOVA. As a result of the research, it was found that the e-learning readiness of fourth grade primary school students studying in rural areas differed significantly in favor of girls in terms of gender variable; it differed significantly in favor of computer ownership and internet connection in terms of having a computer and internet connection at home; it did not differ significantly in terms of having a tablet.

Introduction

E-learning is a learning method that emerged as a result of rapid developments in information and communication technologies (Aslan, 2006). In e-learning, learning is achieved by using information and communication technologies such as the internet and computers in educational processes (Contreras & Hilles 2015). In other words, in e-learning, learning content and materials are presented electronically (Yılmaz et al., 2019). E-learning; The concepts of electronic learning, online learning, computer-based learning or learning using digital devices are also defined (Clark & Mayer, 2016). E-learning aims to enable individuals to receive education at any place or time by using information-communication technologies (Şahin & Yurdugül, 2022). In order to use e-learning effectively, it is important that students have the necessary knowledge about technology and use it well (Nwagwu, 2020).

E-learning has many benefits. For example, thanks to e-learning, students and teachers can easily fulfill their duties and responsibilities in the learning process. In addition, e-learning facilitates interaction and communication between teachers and students by increasing flexibility in the educational process (Najib & Rebhi, 2006). In addition, the costs of education-training processes

are also reduced with e-learning (Chinyio & Morton, 2006; Guragain, 2016). With e-learning, individuals can plan their own learning processes and improve their self-regulation skills (Uyar & Karakuyu, 2020). E-learning environments also offer learners the opportunity to access resources whenever they want and revise them frequently. Thanks to these learning platforms, instructors can share lessons containing theoretical knowledge digitally instead of explaining them repeatedly and save time (Coşkun et al., 2018). E-learning also provides equal opportunity in education by offering individuals the opportunity to learn anywhere and at any time (Biçer & Korucu, 2020).

E-learning has been becoming widespread since the beginning of this century (Handel et al., 2020) and interest in this learning model is increasing day by day (Yurdugul & Demir, 2017). Especially with the Covid-19 epidemic affecting the whole world, e-learning has become a necessity (Dhawan, 2020). All over the world during this pandemic period, e-learning has become an alternative way of continuing learning activities (Kabir et al., 2021; Roy et al., 2021). With the spread of the Covid19 epidemic in Turkey, with the decision taken by the Ministry of National Education [MEB] on March 12, 2020, education was suspended for two weeks in all schools across the country, and education continued remotely after this break (MEB, 2020). This situation has caused the concept of e-learning to gain importance and come to the fore in our country as well as in the world.

One of the most important factors in the successful implementation of the e-learning process is e-learning readiness (Rasouli et al., 2016). E-learning readiness is one of the most important factors on the effectiveness and efficiency of the e-learning process (Yakar & Yıldırım-Yakar, 2021). One of the most important factors affecting student performance in the e-learning process is e-learning readiness (Kabir et al., 2021). In addition, students must be ready for e-learning in order to benefit from the advantages of e-learning (Yurdugul & Alsancak- Sırakaya, 2013). Readiness by Senemoğlu (2009); It is defined as the prerequisite knowledge and skills that individuals must have during the education process. E-learning readiness refers to being mentally, physically, and materially ready for the e-learning process (Oubalahcen et al., 2023). In other words , readiness for e-learning can be defined as the individual's ability to use both new learning environments and technologies (Hashim and Tasir, 2014; Al- araibi et al., 2019). In addition, e-learning readiness also means having the necessary technological equipment (Demir, 2015). The fact that participants do not have the necessary tools in the e-learning process also negatively affects the quality of the learning process (Yurdakul, 2019). Many studies emphasize that the main reason for failure in the e-learning process is unpreparedness to implement e-learning (Coşkun et al., 2018; Widyanti et al., 2020).

When studies on e-learning readiness are examined, (Ünlü & Kalkan, 2023), which examines the readiness of secondary school students for e-learning; examining university students' readiness for e-learning (Sarıtaş & Barutçu, 2020; Uyar & Karakuyu, 2020; Adnan & Yaman, 2017); examining teachers' readiness for e-learning (Demir, 2015; Üstün et al., 2020); examining the readiness of teacher candidates for e-learning (Çakır & Horzum, 2015; Yurdugül & Demir, 2017; Kabataş, 2019; Yakar & Yıldırım-Yakar, 2021); It is seen that there are studies examining academicians' readiness for e-learning (Coşkun et al., 2018). However, no research examining the e-learning readiness of primary school students could be found (Bircan et al., 2022). Additionally, Adams et al. (2022) emphasize that there are very few studies on students' e-learning readiness. Drysdale et al. (2013) state that it is important to determine students' e-learning readiness in order for e-learning processes to be successful. As a matter of fact, many studies state that it is important to determine readiness for e-learning in order to increase the efficiency of the e-learning process (Hung et al., 2010; Moftakhari , 2013; Yurdugül & Alsancak- Sırakaya , 2013;

Yurdugül & Demir, 2017; Yılmaz et al., 2019) Therefore, the relevant research is important in terms of measuring the readiness of rural primary school students for e-learning. In this regard, the research attempted to reveal both students' readiness for e-learning and their possession of digital tools and the internet.

Method

Design of the research

Readiness levels of primary school students studying in rural areas, a survey desing was preferred among the quantitative research methods. In this desing, it is possible to identify and analyze the current situation and generalize to the universe through the sample group. (Büyüköztürk et al., 2012).

Study group

The study group of the research consists of 165 students studying in villages and towns of two different provinces, one in the Black Sea Region and the other in the Central Anatolia Region. Information about these students is presented in Table 1.

Table 1 Data of the study group

Gender	N	Place of residence	N
Girl	80	Village	149
Male	85	Town	16
Total	165		165

When Table 1 is examined, 80 of the participants are female and 85 are male students. At the same time, 149 of these students live in the village and 16 in the town.

Data collection tools

Personal information form and e-learning readiness scale were used as data collection tools in the research. Information about these scales is presented below.

Personal information form

This is the form developed by the researchers to determine the demographic information of the primary school students in the study group. The form includes data on whether students have computers, tablets, and internet connection at home.

E-learning readiness scale (ELRS)

The e-learning readiness scale (ERS) developed by Alem et al. (2016) and its Turkish adaptation by Bircan et al. (2022) was used in the study. During the adaptation process of the scale, data were collected from 498 fourth grade primary school students and the reliability coefficient of the scale was a=. It was calculated as 829. Scale it consists of five factors: self-efficacy, perceived usefulness, self-learning, motivation, and financial sufficiency. The reliability coefficient of the scale for the application group is a=. It is calculated as 881.

Analysis of Data

Descriptive statistics given in the Table were used to decide whether parametric or nonparametric tests would be used in the analysis given in the research.

Table 2 Descriptive statistics of the scales

Scale	Subdimensions	Skewness	Kurtosis
E-Learning Readiness Scale	Self-efficacy (SQ)	-0.321	-0.591

	Perceived usefulness (EC)	-one	1,371
	Self-learning	-0.212	-0.134
	Motivation	-0.567	0.131
	Financial capability	-0.072	-0.611
	Total	-0.209	0.049

When Table 2 is examined, it is seen that the skewness and kurtosis coefficient values obtained from the ERS are in the range of -1, +1. For this reason, it can be stated that the data obtained from the scale shows normal distribution. For this reason, independent groups t-test and one-way analysis of variance were used in the study.

Results

Data on the availability of computers, tablets, smartphones, and home internet connections for fourth-grade primary school students studying in rural areas are presented in Figure 1.

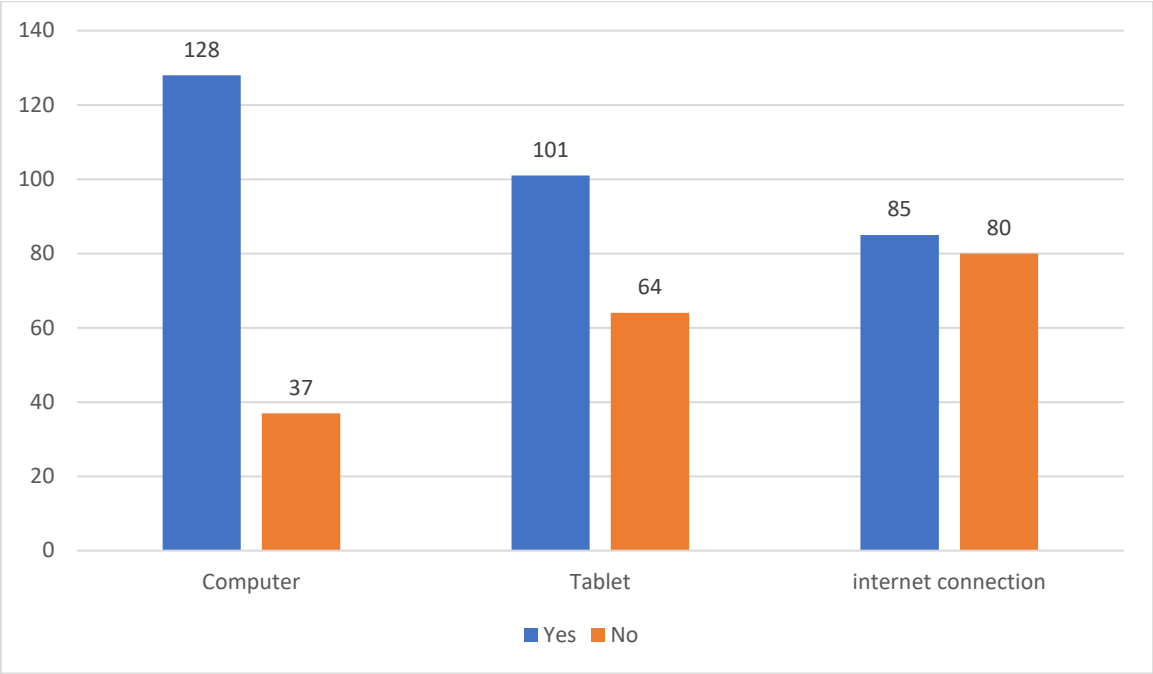

Figure 1 Availability of computers, tablets, smartphones, and home internet connections

When Figure 1 is examined, it is seen that 128 of the students have computers and 101 have tablets. It is also seen that 85 of these students have internet connection at home.

Readiness of fourth grade primary school students studying in rural areas are presented in Table 3.

Table 3 Readiness levels of fourth grade primary school students studying in rural areas

	N	X	sd
VOTE	165	3.26	1.0
WHITE	165	3.8	0.78
S-L	165	3.68	0.69
M	165	3.52	0.86
FC	165	3.08	0.85
Total	165	3.47	0.61

Table 3 is examined; it is seen that the students' readiness levels for e-learning are close to the agree level. In addition, when the scores obtained from the scale are examined on the basis of sub-dimensions, it is seen that the highest score is taken from the perceived usefulness dimension and the lowest score is from the financial sufficiency dimension.

Data regarding the examination of e-learning readiness of fourth-grade primary school students studying in rural areas according to gender variable are presented in Table 4.

Table 4 Readiness of fourth grade primary school students studying in rural areas according to gender variable

	Gender	N	X	S	sd.	t	p
E-Learning Readiness Scale	Girl	80	3.57	.62	163	-2,070	.04
	Male	85	3.37	.59			

E-learning readiness levels of fourth grade primary school students studying in rural areas show a significant difference in favor of female students in terms of gender variable ($p < .05$).

Readiness of fourth-grade primary school students studying in rural areas according to the variable of whether they own a computer or not are presented in Table 5.

Table 5 Readiness of fourth-grade primary school students studying in rural areas according to the variable of having a computer or not

	Owning a computer	N	X	S	sd.	t	p
E-Learning Readiness Scale	Yes	37	3.68	.55	163	-2,461	.01
	No	128	3.40	.62			

Readiness levels of fourth grade primary school students studying in rural areas show a significant difference in favor of students who own computers in terms of the variable of owning a computer ($p < .05$).

Readiness of fourth-grade primary school students studying in rural areas according to the variable of whether they own a tablet or not are presented in Table 6.

Table 6 Readiness of fourth-grade primary school students studying in rural areas according to the variable of having a tablet or not

	Owning a tablet	N	X	S	sd.	t	p
E-Learning Readiness Scale	Yes	64	3.57	.50	163	-1.796	.07
	No	101	3.40	.67			

Readiness levels of fourth-grade primary school students studying in rural areas do not differ significantly in terms of the variable of owning a tablet ($p>.05$).

Readiness of fourth-grade primary school students studying in rural areas according to the variable of having an internet connection at home are presented in Table 7.

Table 7 Examining the e-learning readiness of fourth-grade primary school students studying in rural areas according to the variable of having an internet connection at home

	Internet connection	N	X	S	sd.	t	p
E-Learning Readiness Scale	Yes	80	3.59	.58	163	-2,542	.01
	No	85	3.35	.62			

Readiness levels of fourth grade primary school students studying in rural areas show a significant difference in favor of those who have internet connection at home in terms of the variable of having internet connection at home (p>.05).

Discussion and conclusion

Readiness levels of students studying in rural areas were examined through various variables. It was determined that the e-learning readiness levels of students studying in rural areas were close to the agree level. This may be because students have access to digital environments and can use them comfortably. There are other studies that support this research result, as well as studies that do not support it. In their research on secondary school students, Şener and Güler (2022) concluded that the students were ready for e-learning during the emergency distance education process. In their research, Abdelaliem and Elzohairy (2023) examined students' readiness and attitudes towards e-learning environments. As a result of the research, they concluded that students were ready for e-learning environments. Likewise, Yılmaz (2017) examined students' readiness for e-learning in flipped learning environments. According to the results of the research, it was revealed that students were ready for e-learning in emergency distance education. However, Sevim et al. (2023) found in their research that students' e-learning readiness was at a medium level.

It was concluded that the e-learning readiness levels of students studying in rural areas showed a significant difference in favor of female students according to the gender variable. This may be because female students use digital environments more educationally. Other studies have shown that this result is supported. In his research, Haznedar (2012) examined students' attitudes towards e-learning and concluded that female students' attitudes towards e-learning were significantly different from male students. Dehghan et al. (2022) examined students' e-learning readiness during the Covid 19 pandemic in their study. According to the results of the research, they concluded that female students' e-learning readiness was higher than male students. There are also studies that do not support this conclusion. In his research, Kabataş (2019) concluded that there is no significant difference between students' readiness for e-learning in terms of gender variable.

Readiness levels of students studying in rural areas showed a significant difference in favor of those who had a computer, depending on whether they had a computer or not. This may be because students have increased their technology proficiency while using technology. There are studies that support this research result. In his research, Kabataş (2019) examined students' readiness for e-learning. According to the results of the research, it was concluded that the readiness of students who have computers differs significantly from those of students who do not have computers. In their study, Bircan and Zabun (2021) compared the readiness of classroom teacher candidates for online learning according to whether they had a computer or not and found a significant difference in favor of teacher candidates who had a computer.

Readiness levels of students studying in rural areas did not differ significantly depending on whether they had a tablet or not. There are other studies that support this result in terms of digital technology ownership. In their research, Yakar and Yıldırım-Yakar (2021) concluded that there was no significant difference in terms of learning readiness between students having or not having a smartphone. However, in their research, Yılmaz et al. (2019) found that the e-learning readiness of students with computers and smartphones differed significantly compared to students without computers and smartphones. In their study, Coospasmi et al. (2017) concluded

that students' e-learning readiness differed significantly when they used digital materials such as tablets.

Readiness levels of rural students showed a significant difference in favor of those who had an internet connection, depending on whether they had an internet connection at home or not. This may be because students access educational digital environments via the internet. It has been determined that there are other research results that support this conclusion. Demir (2015) concluded in his research that students who have an internet connection at home have a significantly higher readiness for e-learning than students who do not have internet at home. However, Kabataş (2019) revealed in his research that students' e-learning readiness did not differ significantly depending on whether they had internet access or not. Dehghan et al. (2022) found that students' internet access affects their e-learning readiness. As a result of the research, e-learning readiness of students with technology and internet access was found to be high.

Readiness levels of students studying in rural areas are close to the agree level; female students' readiness for e-learning is higher than male students; It has been determined that readiness for e-learning varies significantly positively depending on whether students have a computer or internet at home, and that readiness for e-learning does not differ significantly depending on whether students have a tablet or not. As a result of these results, the following recommendations can be made:

- Readiness of students studying in rural areas and students with different demographic characteristics can be compared.
- Readiness for e-learning is low, activities can be carried out to increase male students' readiness for e-learning.
- The effects of different technologies on students' e-learning readiness can be examined.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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