Examining the relationship between teachers' lifelong learning tendencies and digital literacy levels

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Article Info	Abstract
Keywords: Digital literacy Lifelong learning Teachers Research Article	The purpose of the study is to reveal the relationship between teachers' lifelong learning tendencies and digital literacy levels. Both single and correlational survey designs from the quantitative research models were employed. To determine the study group, convenience case sampling was used by considering the Covid-19 pandemic and a total of 322 teachers on social media participated in the study. The data were collected in the second semester of the 2020-2021 academic year. In the current study, two scales, namely, "Lifelong Learning Scale" and "Digital Literacy Self-efficacy Scale of Teacher Candidates" were used for data collection tools. As a result of the study, it was determined that lifelong learning tendencies of teachers were at a high level. Besides, teachers find themselves sufficient in terms of digital literacy. It was observed that there was a positive and significant relationship between teachers' lifelong learning tendencies and digital literacy levels. Ultimately, it was among the obtained results that teachers' digital literacy levels also predicted their lifelong learning skills.

1. Introduction

The rapid increase in information technologies reveals the technological skill which is one of the skills necessary for the continuity in learning, especially in the future. Educational environments are also affected by the rapid change and development process; hence, students, teachers and learning environments are directed to keep up with the change. The role of teachers is to improve themselves both professionally and personally by following them and guide their students accordingly (Ocak & Karakuş, 2019). A qualified workforce required for the development of societies can only be possible through an education provided by well-educated teachers (Seferoğlu, 2004). Therefore, high digital literacy self-efficacy of teachers is considered important in the preparation of more effective educational environments. Unfortunately, some studies have shown that teachers and teacher candidates do not give enough importance to digital literacy in the process of education (Duggan, 2013; Instefjord & Munthe, 2016). However, it is necessary for teachers in the digital age to teach the ways how to reach the right and accurate information and adopt the philosophy of lifelong learning which enables individuals to learn actively. This philosophy, thus, is important in terms of achieving educational goals (Yaman & Yazar, 2015). Additionally, it is crucial to increase the qualifications of teachers. Teachers who have internalized lifelong learning in the digital age should be able to benefit from information and technologies adequately and organize education programs in a way that raises awareness about digital literacy for students (Óhidy, 2008). Digital literacy includes the

evaluation and application of new information acquired in the digital environments, beyond being in the digital environments and communicating in virtual chat rooms (Morrison & Garcia, 2011).

It is obvious that the perspective of education in the world and Turkey has changed and digital learning has increased. As online learning environments and e-learning contents increase, it is possible to reach the right and accurate information in the digital environment with the digital literacy skills. In relation to digital literacy in Turkey, digital competences are included in the process of the integration of information technologies into the educational environments with the statement by the Ministry of National Education in 2017 (TTKB, 2017). The general Directorate of Lifelong Learning, serving under the Ministry of National Education, has also prepared course programs to train teachers on this subject. In line with the government policy, Turkey's Education Vision 2023 also aims to educate students with the different literacy skills. The change in the educational process, especially with the Covid-19 pandemic, has presented how important it is for teachers and students to adopt the digital literacy skills and philosophy of lifelong learning. Thus, the ability of individuals to maintain their daily lives and lifelong learning skills in the twenty-first century is closely related to the digital literacy skills.

When the literature is reviewed, it is seen that the levels of lifelong learning mainly according to the demographic data of the participants, what level of competence they have for lifelong learning or the relationship between their lifelong learning tendency and professional self-efficacy are examined. As for digital literacy, it is possible to find studies that digital literacy levels of parents, teachers and students are examined (Acar, 2015; Ata & Yıldırım, 2019; Bay, 2021; Fallon, 2020; Göldağ, 2021; Hamutoğlu et al., 2020; McDougall, Readman & Wilkinson, 2018; Öçal, 2017) and platforms enabling teachers to develop their digital literacy skills are tried (Anisimova, 2020). Besides, there are mostly studies examining the relationship between the digital literacy and lifelong learning levels of teacher candidates (Akgün & Akgün, 2020; Bay, 2021; Uyar, 2021; Özoğlu & Kaya, 2021). It is thought that this study which is carried out with the exception of young teacher candidates will be a guide in determining the competences of teachers with high professional seniority.

The role of teachers is important in terms of educating individuals who adapt to today's world. Considering the need for teachers with lifelong learning and digital literacy skills and students to be trained by these teachers, it is expected that the current study will contribute to the literature and shed light on researchers who want to work on this subject. In addition, the current study is considered important in terms of drawing attention to how necessary it is to acquire the digital literacy skills in the training of teachers who are the pioneers of continuous change. The reason is that digital literacy forms the basis of lifelong learning (Vega, 2011). Besides, as mentioned in the "Turkey Lifelong Learning Strategy Document" including the years 2014 and 2018, the creation of the culture of lifelong learning and awareness in the society, increasing access to lifelong learning, carrying out the necessary guidance and counseling services for teachers, determining the lifelong learning competences of teachers according to their various characteristics are also considered important for future action plans.

Accordingly, the aim of the current study is to examine the relationship between teachers' lifelong learning tendencies and digital literacy levels. For this purpose, answers to the following research questions were investigated:

1. What is the distribution of lifelong learning tendencies of teachers?

2. What are the digital literacy levels of teachers?

3. Is there a significant relationship between teachers' lifelong learning tendencies and digital literacy levels?

4. Are digital literacy levels of teachers a significant predictor of their lifelong learning tendencies?

2. **Literature**

2.1. *Lifelong Learning*

In line with the requirements of the age we live in, it is necessary for individuals to adapt to the changing society and be the pioneer of change. This has enabled the emergence of the concept of 'lifelong learning'. The concept of lifelong learning,which was first introduced in the 1920s, took its place in the agenda of Turkey in the 1970s. In those years, the process of lifelong learning was also put as an important agenda by international organizations such as UNESCO, OECD and the European Union. UNESCO, in the report they prepared for lifelong learning, mentioned that all individuals without any exception have the right to lifelong learning and even lifelong learning is as the cornerstone of the learning society. The EU Commission adopts a recommendation on key competences for lifelong learning and identifies them as citizens for personal fulfillment, a healthy and sustainable lifestyle, employability, active citizenship and social inclusion (European Comission, 2018). In the study conducted by EUROSTAT to determine the participation of Turkey and European Union Countries in lifelong learning between 2013 and 2018, countries such as Sweden, Finland and Denmark take place on the top while, in Turkey, the participation in 2018 is higher than in 2013. It is aimed to increase the participation rate thanks to the measures determined in the Turkey Lifelong Learning Strategy Document and Action Plan (Ministry of National Education [MONE], 2014).

It is possible to find different definitions in the literature about lifelong learning. Lifelong learning is defined as the development and change of competencies in professional or personal fields voluntarily at every stage of our lives (MONE, 2016). Durak and Tekin (2020) have also defined lifelong learning as the knowledge, skills and competencies that individuals may need in various fields from their birth to death. Lifelong learning includes all formal and informal learning. Thus, lifelong learning may take place in all educational institutions and anywhere in the society, regardless of any individual difference and education level. Hence, it can reveal the essence of the individual.

The most main purpose of lifelong learning is "learning to learn". It also aims to facilitate equal and open access to quality of learning opportunities and various learning experiences for individuals of all age groups. Lifelong learning has great importance in preparing young people for new developments (Samancı & Ocakcı, 2017). Lifelong learners are expected to be individuals, who believe in learning and can identify their learning interests and needs and can organize their own learning, and those who are willing to learn and are information literate and are determined to learn (Yazıcı, 2018). The role of teachers is important to educate individuals with the specified characteristics. In order for teachers to take on this role, they need to adopt the philosophy of lifelong learning in their own lives and guide students to become self-learners (Çetin & Çetin, 2017).

2.2. *Digital Literacy*

Digital literacy, one of the most important skills of the twenty-first century, has become a necessity for individuals to increase their quality of life and improve their knowledge skills in parallel with the change and development in technology. Accordingly, digital literacy is the ability to use the appropriate methods by aiming to access to the right information effectually in real and virtual environments. That is, it is to understand, evaluate and analyze information by using existing advanced technology (Carrington & Robinson, 2009; Özcan, 2017). It is possible to find different definitions about digital literacy in the literature. The European Commission defines digital literacy as the ability to identify, understand, express and interpret different ideas by using visual and audio digital materials (European Commission, 2019). Being among the skills that individuals should have in the 21st century according to the Partnership for 21st Century Learning (P21), digital literacy is expressed as knowledge, media and technology skills (Framework for 21st Century Learning, 2019).The indicator of individuals' being digital literate is their adaptation to new or emerging technologies (Ng, 2012). Based on the definitions, digital literacy is defined

as the ability to access new information by using digital tools, use them to solve problems and use these technologies effectively and safely (Pala & Başıbüyük, 2020).

Individuals who are digital literate should use these skills in the flow of daily life and turn them into a philosophy of life (Öztürk & Budak, 2019) since many jobs are now handled through digital media and software in today's world. When considering the amount of information that gains ever-increasing importance today, called information age, educating digital individuals with a high level of digital literacy becomes important (Kozan, 2018). Digitally literate individuals can cope with the mass of information (Eshet-Alkalai & Soffer, 2012) and know how to obtain information they need from the digital sources and can comment on the validity and reliability of information (Meyers, Ericson & Small, 2013). Hence, both adults and children should be educated with an effective digital literacy to benefit from the advantages of the digital environment and be protected from its harms.

3. Methodology

3.1. Research Model

In the study, both the single and correlational survey designs from the quantitative research models were used to examine the relationship between teachers' lifelong learning tendencies and digital literacy levels. The studies designed with the single survey model are mostly carried out with descriptive statistics and their interpretation, while the existence or degree of the relationship between the variables and changes in the variables together are revealed in the studies designed with the correlational survey model. (Büyüköztürk, et al. 2011; Karasar, 2008). Thus, in the current study, teachers' lifelong learning tendencies and digital literacy levels were determined with the single survey design. The relationship between lifelong learning tendencies and digital literacy levels of teachers was also examined by using the correlational survey design.

3.2. Study Group

The sample of the study was composed of volunteer teachers who are selected among various teacher groups on social media since it is risky to contact teachers face-to-face due to the Covid-19 pandemic and convenience case sampling was used in the study. Thus, the demographic information of 322 teachers in the study group is presented in Table 1.

Table 1.

Descriptive statistics of teachers

Variables	Group	f	%
Gender	Female	143	44,4
	Male	179	55,6
	Total	322	100
Age	21-31 age	44	13,7
	32-42 age	160	49,7
	43-53 age	118	36,6
	Total	322	100
Faculty	Faculty of Education	221	68,6
	Faculty of Science and Literature	79	24,5
	Other	22	6,9
	Total	322	100
Professional Seniority	1-10 Years	79	24,5
	11-20 Years	153	47,5
	21-30 Years	74	23
	31-40 Years	16	5
	Total	322	100
Education Level	Associate Degree	4	1,2
	Bachelor's Degree	223	69,3
	Master's Degree	83	25,8
	Doctoral Degree	12	3,7
	Total	322	100
School Degree	Primary	116	36
	Secondary	111	34,5
	High-school	95	29,5
	Total	322	100

3.3. *Data Collection Tools*

Data were obtained from the study group through practices on social media in the second semester of the 2020-2021 academic year. The Lifelong Learning Tendency Scale and Digital Literacy Self-efficacy Scale of Teacher Candidates were used to collect data in the study.

The Lifelong Learning Tendency Scale was developed with the 17-item and two factors as the willingness to learn and openness to development as a result of the study by Gür Erdoğan and Arsal (2016) in which 1644 students were included. As a result of analysis associated with the reliability of the scale, the Cronbach's alpha internal consistency coefficient was found to be 0.86. Besides, the scale was made up of a five-point Likert format including (5) 'Strongly agree', (4) 'Agree', (3) 'Neither agree nor disagree', (2) 'Disagree' and (1) 'Strongly Disagree'.

It was observed that the Digital Literacy Self-Efficacy Scale of Teacher Candidates (DLS) developed by Ocak and Karakuş (2018) consisted of a 35- item and had a four-factor structure as production, resource use, application use and support. As a result of analysis associated with the reliability of the scale, the Cronbach's alpha internal consistency coefficient was found to be 0.961. In addition, the scale was made up of a five-point Likert format including (5) 'Always', (4) 'Often', (3) 'Sometimes', (2) 'Rarely, and (1) 'Never'.

3.4. *Data Collection and Analysis*

The data of the study were collected by researchers through the application of the scales for volunteer teachers who are selected among various teacher groups on social media in the second semester of the 2020-2021 academic year since it is risky to contact teachers face-to-face due to the Covid-19 pandemic. In line with the answers given by teachers to both scales, the coefficients of kurtosis and skewness were examined whether the obtained data were suitable for the normal distribution or not. It was determined that the values as a result of analysis were found in the range of -/+1 and the data were in accordance with the normal distribution (Büyüköztürk, 2014). Descriptive statistics were used to determine the distribution of teachers' lifelong learning tendency levels and the distribution of teachers' digital literacy levels. Pearson correlation analysis was applied to determine the relationship between teachers' lifelong learning tendencies and digital literacy levels. Multiple linear regression analysis was applied to determine that teachers' digital literacy levels predict their lifelong learning tendencies.

4. **Results**

Findings related to the study are presented below in line with the research problems.

4.1. *What is the distribution of lifelong learning tendency levels of teachers?*

According to the distribution of the scores of teachers in the Lifelong Learning Tendency Scale, findings as a result of statistical analysis of the data obtained from the participants are presented in Table 2.

Table 2.

Descriptive Statistics Results of the Scores from Teachers' Lifelong Learning Tendency Scale on the basis of Subscales (n=322)

Scale	Subscales	X	Level	S
Lifelong Learning Tendency	Willingness to learning	4,33	Strongly Agree	0,68
	Openness to development	4,40	Strongly Agree	0,67
	Total	4,35	Strongly Agree	0,65

While the mean scores of teachers participating in the study from the Lifelong Learning Tendency Scale were examined on the basis of subscales, X= 4,33 for the subscale 'Willingness to Learn', X= 4,40 for the subscale 'Openness to development' and when considered the whole of Lifelong Learning Development Scale, the total mean scores of teachers was found to be X= 4,35. According to the interval scores, it was found that teacher answers were 'strongly agree' for the subscale 'Willingness to Learn', 'Openness to development' and for the overall scale. Thus, it can be said that teachers participating in the study indicate that they are willing to learn and open to development throughout their lives and they have an ongoing learning tendency.

4.2. *What are the digital literacy levels of teachers?*

According the distribution of the scores of teachers in the Digital Literacy Self-efficacy Scale, the findings as a result of the statistical analysis of the data obtained from the participants are presented in Table 3.

Table 3.

Descriptive Statistics Results of the Scores from Teachers' Digital Literacy Self-Efficacy Scale on the basis of Subscales (n=322)

Digital Literacy Self-Efficacy Scale	Production	3,57	Often	0,77
	Information Use	4,45	Always	0,57
	Application Use	3,30	Sometimes	1,01
	Support	3,61	Often	0,88
	Total	**3,76**	**Often**	**0,69**

While the mean scores that teachers answered in line with the Digital Literacy Self- Efficacy Scale were examined on the basis of subscales, X= 3,57 for the subscale 'Production', X= 4,45 for the subscale 'Resource Use', X= 3,30 for the subscale 'Application Use' and even X= 3,61 for the subscale 'Support' were found in the study. Besides, based on the overall Digital Literacy Self-efficacy Scale, the mean scores of teachers were found to be X= 3,76. According to the score interval, it was found that teachers answered 'often' for the subscale 'Production and Support', 'always' for the subscale 'Resource Use' and even 'sometimes' for the subscale 'Application Use'. It was found that teachers answered the overall scale with 'often'. Thus, it was determined that teachers found themselves sufficient to use digital sources. Based on the overall scale, it can be said that teachers find themselves sufficient in terms of digital literacy.

4.3. *Is there a significant relationship between teachers' lifelong learning tendencies and digital literacy levels?*

Pearson correlation coefficient was calculated to determine whether there was a relationship between teachers' lifelong learning tendencies and digital literacy self-efficacy levels. The findings as a result of analysis are presented in Table 4.

Table 4.

The Relationship between Teachers' Lifelong Learning Tendencies and Digital Literacy Levels

		LLT	DLL
LLT	Pearson Correlation	1	,173*
	p		,002
	N	322	322
DLL	Pearson Correlation	,173*	1
	p	,002	
	N	322	322

As shown in Table 4, low level (Büyüköztürk, Çokluk ve Köklü, 2015) and positive correlation was significantly found between the scores of lifelong learning tendencies and digital literacy levels of teachers (r =,173, p<.05). Accordingly, it can be said that the more lifelong learning tendencies of teachers increase, the more their digital literacy levels increase. Otherwise, the more lifelong learning tendencies of teachers decrease, the more their digital literacy levels decrease.

4.4. *Are digital literacy levels of teachers a significant predictor of their lifelong learning tendencies?*

Multiple linear regression analysis is presented in Table 5 in order to determine the prediction of digital literacy levels of teachers on their lifelong learning tendency levels.

Table 5.

Results of Multiple Linear Regression Analysis on the Teachers' Digital Literacy Levels as the Predictor of Teachers' Lifelong Learning Tendencies

	Variable	B	SE $_B$	β	t	p	Bivariate r	Partial r
LLT	Invariable	3.429	0.291		11,783	,000		
	Production	0.041	0.074	0.048	,553	,581	,153	,031
	Resource Use	0.126	0.084	0.112	1,500	,135	,182	,084
	Application Use	-0.101	0.063	-0.155	-1,596	,111	,111	-,089
	Support	0.152	0.078	0.205	1,958	,051	,191	,109
	R= 0.223, R^2= 0.050, F$_{(4,317)}$= 4.155, p= 0.003							

$p<0.05$

When examined the bivariate and partial correlation between the predictive variables of the study as production, resource use, application use and support and lifelong learning tendency (LLT), low level and positive correlation was significantly found between the LLT score and production. However, the relationship between these two variables was found to be r =0.031 when other independent variables were controlled. Similarly, it was found that there was a low positive linear (r = 0.182) and significant relationship between resource use and the LLT score. However, when the other independent variables were controlled, the relationship between these two variables was found to be r = 0.084. Besides, a low and positive relationship was significantly found between application use and the LLT score; however, the relationship between these two variables was found to be negative and even r = -0.089 when other independent variables were controlled. Between support and the LLT score, a low and positive relationship was significantly found. However, the relationship between these two variables was found to be r = 0.109 when other independent variables were controlled.

Between the scores of teachers obtained from factors which are production, resource use, application use and support and the LLT score presented a low and positive relationship (R= 0.223, R^2= 0.050, p<0.05). Accordingly, these variables explained 5% of the total variance of teachers' LLT scores. While production was found to be the most important variable according to the standardized regression coefficient (β), the application use had an adverse effect on the LLT score. According to the results of the t-test examined for the significance of the regression coefficients, it was found that these variables were not significant in terms of predicting the LLT score. The regression equation (mathematical model) for the prediction of LLT was presented below:

LLT= 3.429+ 0.041.Production+ 0.126.Resource-0.101.Application+0.152.Support

5. Discussion

The purpose of the study is to examine the relationship between teachers' lifelong learning tendencies and digital literacy levels. As a result of the study, teachers' lifelong learning tendencies were at a high level. The similar results are also parallel with the studies in the literature (Akçay, 2021; Aydın & İflazoğlu Saban, 2021; Boyacı, 2019; Ellez et al., 2021; Erdamar, 2017; İzci & Özden, 2021; Kanmaz, 2021; Recepoğlu, 2021; Yaman & Yazar, 2015). For instance, Erdamar et al. (2017) emphasizing the lifelong learning tendencies of high school teachers have examined that teachers are willing, persistent and curious to learn and they can also organize the learning process and they have high learning tendencies. Boyacı (2019) highlights in the study examining the lifelong learning tendencies of teacher candidates that they have a high level of lifelong learning tendencies and develop a positive perspective on lifelong learning. Ellez et al. (2021) have indicated in another study that teachers have a good level of lifelong learning tendencies and they also show an open approach to learning and self-improvement, especially the highest average is found in the motivation dimension. Accordingly, in line with the results of the study, it can be said that the teachers participating in the study are willing to learn and open to development throughout their lives and have a tendency to ongoing learning.

Another result of the current study was that teachers generally found themselves sufficient in terms of digital literacy. While there are many studies in the literature examining the digital literacy levels of teacher candidates, there are a very limited number of studies examining teachers' digital literacy levels. Similarly, digital literacy levels of teacher candidates (Akgün & Akgün, 2020; Bay, 2021; Bayrakcı & Narmanlıoğlu, 2021; Göldağ, 2021; Kara, 2021; Uyar, 2021) and digital literacy levels of teachers (Aksoy, et al. 2021; Arslan, 2019).) were found to be high. With the penetration of technology into all areas of life, and in particular educational institutions, the necessity for students to use technology effectively and consciously and be educated as individuals with digital literacy skills has made it necessary to reorganize learning environments. It is very important that teachers who educate future generations and play an active role in acquiring these skills to individuals are digitally literate individuals (Akkoyunlu & Yılmaz Soylu, 2010; Kuru, 2019).

Another result of the study revealed that there was a positive and significant relationship between teachers' lifelong learning tendencies and digital literacy levels, even if at a low level. Accordingly, the more lifelong learning tendencies of teachers increase, their digital literacy levels increase, or the more lifelong learning tendencies of teachers decrease, their digital literacy levels decrease. It is possible to find similar research results in the literature. Emphasizing the lifelong tendencies of teacher candidates and their digital literacy levels, Boyacı (2019) underlines that a linear, positive and moderate relationship between teacher candidates' lifelong learning tendencies and digital literacy levels. Thus, the more lifelong learning tendencies of teacher candidates increase, the more their digital literacy levels increase. Özoğlu and Kaya (2021), in their study examining the relationship between lifelong tendencies and digital literacy levels of Generation Z teacher candidates, have also determined that the lifelong learning tendencies and digital literacy levels of teacher candidates were at a 'high' level. Öteles (2020) has also found in the study about teacher candidates that the lifelong learning tendencies of teacher candidates was high and their digital literacy skills were also at a medium level. Accordingly, it was observed that the results of the study were parallel with the literature. It can be said that teachers who adopt lifelong learning give importance to using digital tools and materials. With the increase in the digital literacy levels of teachers, reaching up-to-date information in every period and field of life and using it actively will accelerate. Thus, teachers will be able to contribute to the education of individuals who can adapt to the age.

As a result of the study, there was generally a positive and low relationship between lifelong learning (LLT) and predictive variables of the study as production, resource use, application use and support. Accordingly, it can be said that teachers' digital literacy levels can predict their lifelong learning skills, even if at a low level. It is also possible to find similar studies in the literature. Demir and Doğanay (2019) have examined whether metacognition, self-regulation and social intelligence predict teacher candidates' lifelong learning skills and these skills predict their lifelong learning skills in a meaningful way. Aiming to determine teachers' lifelong learning tendencies at the level of various variables, Yıldız et al. (2020) have determined that demographic information, occupational variables and burnout are significant predictors of the lifelong learning tendency. Besides, they have also concluded that age, professional seniority and burnout level are predictive of teachers' lifelong learning tendencies when taking the variables separately. According to Taylan (2020), the twenty-first century expects individuals to have lifelong learning competence as well as having skills such as problem-solving, collaborative work, using digital platforms. In order for individuals to be equipped with twenty-first century skills, educators and the school system should be organized by these skills. It is possible to prepare for the twenty-first century with an education system in which educational technologies are used effectively, information technologies are integrated, and the responsibility of learning can be under the control of the learner. To make this system to be successful, it is vital that educators, namely teachers, know educational technologies, develop digital literacy skills and be competent enough to integrate these skills into courses by using these skills effectively (Kurbanoğlu, 2010; Taylan, 2020).

6. Conclusion and Recommendations

As a result of the study, it was determined that teachers had a high level of lifelong learning tendency and teachers generally find themselves sufficient in terms of digital literacy. Thus, it can be thought that teachers are willing to learn and open to development throughout their lives and have a tendency to ongoing learning. Besides, it was revealed that there was a positive and significant relationship between teachers' lifelong learning tendencies and their digital literacy levels. Teachers who give importance to digital literacy and lifelong learning are expected to keep up with the times, follow the current developments and information in their field, interpret information and use it actively. Likewise, it is possible for teachers to contribute to the education of individuals who can adapt to the age. Lastly, it is seen that teachers' digital literacy levels can predict their lifelong learning skills. Teachers who can actively use educational technologies and digital platforms are expected to have lifelong learning skills.

Some suggestions can be made in line with the research results. In this context, it can be suggested that the pre-and post-service education program, course contents and teaching-learning processes can be reorganized in a way that they will positively change the digital literacy and lifelong learning competences of teachers in order to bring the lifelong learning competences of teachers to a better level. Besides, various academic and personal development activities, courses and seminars can be planned that will contribute to the development of teachers' competences including lifelong learning and digital literacy skills. Different data collection tools can be used to measure teachers' lifelong learning and digital literacy levels on various samples with different methods and variables. Even, lifelong learning and digital literacy levels of students can be determined and comparisons can be made with the level of teachers in the context of these concepts.

7. Limitations

The current study has some limitations. The main limitation of the study is that the research findings are formed in line with the personal opinions and preferences of teachers who are the sample. Another limitation of the study is that the research findings were obtained from a single sample. In future studies, a new dimension can be added to the research with both qualitative and quantitative studies by adding different variables and scales that will reveal the cognitive and behavioral factors that are thought to be effective on teachers' lifelong learning efficacy perceptions and digital literacy levels.

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