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EVALUATION OF DIGITAL CITIZENSHIP LEVELS OF TEACHERS IN THE CONTEXT OF INFORMATION LITERACY AND INTERNET AND COMPUTER USE SELF-EFFICACY

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ABSTRACT

This research was carried out to determine the level of digital citizenship of teachers working in different branches and institutions and to determine the relationship between digital citizenship levels and information literacy and internet-computer use self-efficacy. The sample of the study consists of 161 teachers working in a district of Gaziantep province in 2016-2017 academic years. The Digital Citizenship Scale prepared by Isman and Gungoren (2014), the Information Literacy Scale prepared by Adiguzel (2011) and the Self-Efficacy Perception Scale prepared by Sad and Demir (2015) were used in the scope of the research. As a result of the research, it was found that the digital citizenship level of teachers is at a medium level. While the digital citizenship levels of teachers do not differ according to the educational institution level, they differ according to the age range. It was determined that there was a positive, significant, and middle level relationship between teachers' digital citizenship and information literacy and internet-computer use self-efficacy levels. In terms of digital citizenship level, information literacy explains 44% of the total variance, while internet and computer self-efficacy explain 31% of the variance alone.

Contribution/ Originality: This study is one of very few studies which have investigated teachers' digital citizenship levels in the context of their information literacy and information technologies use self-efficacies, revealing that both variables are important, but revealing that information literacy has a greater impact on digital citizenship.

1. INTRODUCTION

Internet and digital technologies affect and affect human life in every respect. The internet is used in many areas such as accessing information, creating information, and communicating. Especially in recent years, the internet access opportunities of the societies have increased significantly and every individual can access the internet from anywhere. This has facilitated the exchange of information between societies, has enabled people to participate more actively in society and has provided educational opportunities at every moment of life. Today, one of the results of the internet and computers being used in all areas of life has been the concept of digital citizenship.

The digital citizenship term creates a new form of citizenship Alberta (2012). In other words, people who know how to use digital technologies and who are ethical, respectful and responsible in virtual environments are called

digital citizens (Cubukcu & Bayzan, 2013). Digital citizenship is defined as the norms of behavior associated with technology use (Mossberger., 2009). Especially in recent years, with the use of technologies such as internet, computer, smart board in education, it has become necessary for students and teachers to use these technologies (Bowser, Davis, Singleton, & Small, 2017). According to Bailey and Ribble (2007), the concept of digital citizenship is gained from an early age. This situation reveals the need to provide an effective digital citizenship education in schools. Although developing and developing technologies have a positive effect on education, abuse of internet and computer in and out of school is increasing day by day (Kaya & Kaya, 2014). In this case, students should be given the necessary training to use the internet and other technologies more consciously. Ribble. (2008) has defined digital citizenship in nine dimensions. These are digital access, digital commerce, digital communication, digital ethics, digital literacy, digital health, digital law, digital rights and responsibilities and digital security. Ribble.. (2011) briefly explains these dimensions as follows;

1. Digital access is about equal distribution of technology and online resources and means to be a part of the digital society. Teachers should be aware that they can access digital technologies not only in school but everywhere and in different roles, and they must be models for their students.

2. Digital commerce is the dimension related to the electronic purchase and sale of goods and focuses on tools and assurances that assist in any form of purchase or sale in the digital field, banking or trade. In other words, related e-commerce opportunities means being aware of the risks and problems. Teachers use technology tools to guide their students' careers in the trade of the future.

3. Digital communication is electronic information exchange. All users need to know the opportunities they have in order to understand others' messages or to express themselves correctly. Teachers in the digital world should guide their students to make effective use of communication opportunities in this world.

4. Digital ethics means complying with standards of conduct and social codes of conduct in electronic environments and is concerned with the process of thinking about others when using digital devices. Teachers can incorporate these rules into the process as part of classroom rules or academic procedures when applying digital ethics rules.

5. Digital literacy is the process of having the ability to understand and use technology and usage. Digital literate students have the ability to use technology in learning-teaching processes, having the ability to use different technologies correctly, reaching the right information in digital environments, producing and sharing the right information.

6. Digital health deals with physical and psychological health issues in the digital world and expresses comfort in these issues. Despite the many opportunities and entertainment environments offered by technology, it should be known that they will be used in a way to protect health. Teachers need to know how suitable screen time and ergonomic usage conditions are, especially in their classrooms.

7. Digital law states that every action in digital media has a responsibility and is a dimension to establishing rules and policies that address issues related to the online world. As in the real world, it is necessary to create a structure in the online world to prevent damage to users using digital devices. It is important to set rules on issues such as cyberbullying, to guide the guidance units, and to follow and put into practice these processes.

8. Digital rights and responsibilities mean freedoms that everyone has in the digital world. Students should know that they have the freedom to express their opinions online, to participate in activities, but they should also respect the rights and responsibilities of other individuals. In this context, teachers should guide students that they have some opportunities both online and in the real world, but they also have responsibilities towards others.

9. Digital security refers to security measures in digital environments. Students should have the skills to understand, be aware of and prevent possible virus attacks when using their electronic devices at school or at home. Teachers should also raise their awareness in this direction.

The concept of information literacy was first used by Zurkowski (1974); Aldemir (2003). According to Zurkowski (1974) people who are information literate are people who can use information resources in their work. In other words, the skills that the information literate should possess are expressed by Zurkowski (1974) as "These people have the ability to access information from a wide variety of sources and tools in problem solving and decision making". Doyle (1994) expresses these abilities in the form of knowing that correct information is effective in making decisions, knowing that he needs information, accessing information resources, using computers and other technologies, evaluating information, organizing information and using it in problem solving. Information literates have the ability to find, evaluate, use and transfer that information when they need it (Akkoyunlu & Kurbanoglu, 2004). When these statements are considered in the educational environment, teachers who convey information or show ways to access information must be information literate. Their ability to use digital technologies and the internet effectively in accessing information shows that they are proficient in both digital citizenship and information literacy.

Different researches on digital citizenship have been studied. In his study, Kocadag (2012) tried to determine the digital citizenship levels of prospective teachers. As a result of the study in the screening model, it was stated that 33% of the teacher candidates who participated in the research had advanced digital citizenship competencies, while about 1% of them had very low levels of digital citizenship, and it was concluded that the level of digital citizenship was higher in favor of men compared to gender. Kaya and Kaya (2014) shared the conclusion that they perceive digital citizenship as digital technologies facilitating the lives of individuals as a result of their work with prospective teachers studying in the Department of Computer Education. Bakir (2016) made interviews with 11 teacher candidates who were teaching teachers and reached the conclusion that pre-service teachers' perception of digital citizenship is high. In the research, it was investigated for what purposes teacher candidates used the sub-dimensions of digital citizenship. Pre-service teachers, digital literacy reading and writing news on the internet, digital trade shopping online, digital ethics copyrights, digital access to digital content, digital communication e-mail and content sharing, digital health information about health on the internet, digital security virtual cryptography, digital rights and responsibilities have been found to perceive the rights owned on the internet and digital law as a restriction of freedom. When the researches are examined, it is understood that the perception of digital citizenship is a very important and important subject in education. Considering that educational institutions are of great importance in establishing the concept of digital citizenship, these studies become more important.

Information literacy encompasses many competencies from individuals' technology use culture to cognitive processes. On the other hand, computer and internet usage competencies constitute the digital context of digital citizenship. Digital citizenship requires regular and effective internet access and the ability to use technology. The activities that individuals carry out in digital environment are an important factor in terms of comparing their digital citizenship potential (Mossberger.., Tolbert, & Hamilton, 2012). On the other hand, Alberta (2012) states that the digital citizenship levels of today's teachers have an important place in the education process and school culture. In this respect, it was seen as a problem to reveal the digital citizenship competencies of teachers in the context of information literacy and internet and computer literacy.

1.1. Purpose of the Research

The aim of this research is to determine the level of digital citizenship of teachers working at different levels and to reveal the relationship between digital citizenship and information literacy and self-efficacy of the internet and computer use. In this context, answers to the following questions were sought.

1) What are the teachers' digital citizenship, information literacy and internet-computer use self-efficacy levels?
2) Do the digital citizenship levels of teachers differ according to the working school type (kindergarten, primary school, middle school, high school) and age range?

3) Is there a significant relationship between teachers' digital citizenship levels and information literacy?
4) Is there a relationship between teachers' internet and computer usage levels and digital citizenship levels?

1.2. The Importance of Research

Digital citizenship is expressed as an important standard among the Educators expressed by International Society for Technology in Education - (ISTE) (2018). The concept of digital citizenship, expressed for today's teachers, was discussed in detail by Ribble (2011). On the other hand, according to Kocadag (2012), it is thought that the fact that our teachers have the skills required by digital citizenship will also affect the future generations and will ensure the perception of digital citizenship in students. Digital citizenship is a concept that can affect students with its leadership dimension for teachers as individuals who lead education in the classroom. International Society for Technology in Education - (ISTE) (2018) educator (ISTE-E) standards include the importance of digital citizenship in teachers and the importance of information literacy and digital literacy in the indicators that make up this dimension, limited research on digital citizenship levels of teachers, information literacy and internet- level of digital citizenship. The fact that it is considered in the context of computer literacy makes research important.

2. METHOD

In this section, research model, population and sampling, data collection tools and data analysis are given as a titles.

2.1. Research Model

In this research, survey model, which is one of the quantitative research methods, was used. The survey model is a model that aims to describe an existing situation as it is Fraenkel, Wallen, and Hyun (2012). Studies in the survey model are based on the collection, description and presentation of numerical data of any variable (Buyukozturk, Kilic Cakmak, Akgun, Karadeniz, & Demirel, 2014).

2.2. Population and Sampling

The population of the research is composed of different branch teachers working at various levels in a district of Gaziantep province in 2016-2017 academic year. It is aimed to reach nearly 550 teachers (Ministry of National Education – (MNE), 2017) working in the district. Within the scope of the research based on volunteering, a questionnaire was distributed to all schools, 172 teachers were returned, and 161 participants were valid. Of the teachers participating in the research, 83 are men and 78 are women. 44% of the teachers participating in the study are aged 25 and under (n = 71), 16% are between the ages of 26-30 (n = 26) and 39% are over the age of 31 (n = 64). According to working school type, 18 of the teachers work in kindergarten, 37 in primary school, 85 in middle school and 21 in high school.

2.3. Data Collection Tool and Collection of Data

In the research, it was used with a measurement tool consisting of four different parts to collect data. In the first part, personal information was received from teachers. In the second part, the digital citizenship scale, consisting of 33 items in the form of a five-point Likert type and 9 factors, was developed by Isman and Gungoren (2014). Descriptive factor analysis was used to analyze the construct validity of the scale. Kaiser-Mayer-Olkin (KMO) coefficient and Bartlett's Test of Sphericity were used to analyze the data. Cronbach's alpha value for the scale-wide reliability coefficient is expressed as .85, and the reliability coefficient values according to the factors are

between 70 and .90. "Information Literacy Scale" developed by Adiguzel (2011) was used to determine the level of teachers' information literacy. Developed with 250 university students, the scale consists of 29 items and four factors. These factors are; "Defining the need for information" consists of 8 items, "Accessing information", 11 items, "Using information", 5 items and "Ethical and legal regulations in using information" are 5 items. The Cronbach Alpha internal reliability coefficient calculated for the reliability of the scale is .92. Computer and Internet Use Self-Efficacy Perception Scale developed by Sad and Demir (2015) was used as the last measurement tool. During the development of the measurement tool consisting of 2 dimensions and 16 items, exploratory factor analysis was performed with 250 teachers, and confirmatory factor analysis was performed with 328 teachers. As a result of the analysis, the mean variance explanation rates of the items were calculated as 69% for the computer self-efficacy perception factor and 67% for the internet self-efficacy perception factor. Cronbach Alfa and Guttman two-half reliability coefficients regarding the reliability of scale items in terms of internal consistency were calculated as .93 and .90 for Internet use self-efficacy perception factor and .943 and .92 respectively for computer skills self-efficacy perception factor, respectively. It was used with the permission of using all measuring instruments.

2.4. Data Analysis

In the transfer of the data to the computer environment, the digital citizenship and information literacy scales consisting of five-point Likert items were scored as "1-Strongly Disagree", "2-Disagree", "3-Undecided", "4-Agree", "5-Completely Agree". In the scoring of computer and internet use self-efficacy items consisting of ten-point Likert items, a scoring was given as 1 - I'm absolutely sure I can't do it" and "10-I'm absolutely sure I can do it". Since there are adverse items in the scoring of items in the digital citizenship scale, reverse scoring was made in order to facilitate the interpretation. In order to interpret teachers' opinions about digital citizenship level, information literacy and computer-internet usage self-efficacy (maximum available value - minimum available value) / evaluation interval (low, medium and high- 3) formula, following evaluation conditions were determined Table 1.

Table-1. Criteria for teachers to evaluate digital citizenship, information literacy and computer and internet use self-efficacy.

Digital citizenship and information literacy assessment range (5-point likert)	Computer and internet use self-efficacy assessment range (10-point likert)	Evaluation Criteria
1,00 – 2,33	1,00 – 4,00	Low Level
2,34 – 3,66	4,01 – 7,00	Middle Level
3,67 – 5,00	7,01 – 10,00	High Level

Descriptive statistics arithmetic mean and standard deviation were used to determine teachers' digital citizenship levels, information literacy levels, computer and internet usage self-efficacy overall and their sub-dimensions. In order to determine the level of digital citizenship according to the age level and working school type, the parametricity test was carried out, the difference between the groups was determined with the Kruskal Wallis H test, which is the non-parametric test, and the difference between the groups was determined with the Mann Whitney U test comparison between groups was examined. Finally, the Pearson Moments Product correlation value was used to determine the relationship between teachers' digital citizenship levels, information literacy and computer-internet usage self-efficacy.

SPSS 22.0 (Statistical Package for the Social Sciences) package program was used in the analysis of all data, and the level of significance was taken as .05.

3. FINDINGS AND COMMENTS

Findings regarding the digital citizenship, information literacy and computer-internet literacy levels of teachers are given as a title.

3.1. Digital Citizenship, Information Literacy and Computer and Internet Use Self-Efficacy Levels of Teachers

The data of 161 teachers who participated in the research to determine the digital citizenship levels of the teachers were analyzed and the results obtained are given Table 2.

Table-2. Descriptive statistics for teachers' digital citizenship level scores (n=161).

Factors	$\overline{X}$	Sd	Level
Digital Literacy	3,60	,748	Middle
Digital Law	4,43	,649	High
Digital Rights and Responsibilities	4,06	,674	High
Digital Communication	3,79	,817	High
Digital Security	3,52	,808	Middle
Digital Commerce	3,70	1,029	High
Digital Access	3,85	,736	High
Digital Ethics	3,75	,597	High
Digital Health	3,00	,906	Middle
Digital Citizenship General	**3,60**	**,748**	**Middle**

When Table 2 is examined, it is seen that the digital citizenship level of teachers is at middle level ($\overline{X}$= 3.60). Similarly, when examined in terms of factors, digital law ($\overline{X}$=4.43), digital rights and responsibilities ($\overline{X}$=4.06) digital access ($\overline{X}$= 3.85), digital communication ($\overline{X}$=3.79), digital ethics ($\overline{X}$= 3.75) and digital commerce ($\overline{X}$= 3.70), it can be seen that they have a high level of digital citizenship competencies. On the other hand, it can be stated that they have a middle level of digital citizenship competence in terms of digital literacy ($\overline{X}$=3.60), digital security ($\overline{X}$= 3.52) and digital health ($\overline{X}$=3.00). Within the scope of the research, the relationship between teachers and the idea that information literacy may have an impact on digital citizenship levels was investigated, and their responses to the relevant measurement tools were firstly analyzed to determine information literacy Table 3.

Table-3. Descriptive statistics about information literacy and its sub-dimensions (n=161)

Sub Dimensions	$\overline{X}$	Sd	Level
Defining Information Requirement	4,00	,578	High
Accessing Information	4,00	,603	High
Using Information	4,01	,615	High
Ethical and Legal Regulations in Using Information	4,14	,577	High
Information Literacy General	**4,03**	**,551**	**High**

When Table 3 is analyzed, it is seen that the teachers who participated in the research had a high level of information literacy ($\overline{X}$=4.03). When the results obtained from the information literacy scale are analyzed in terms of sub-factors, Defining Information Requirement ($\overline{X}$=4.00), Accessing Information ($\overline{X}$=4.00), Using Information ($\overline{X}$= 4.01) and Ethical and Legal Regulations in Using Information ($\overline{X}$= 4.14) It is also seen that they have a high level of information literacy competencies. With the thought that digital citizenship may require technical knowledge and skills, the computer and internet usage self-efficacy of the teachers were also investigated and the findings obtained are given in the table below Table 4.

Table-1. Computer and internet use self-efficacy levels of teachers (n=161)

Sub Dimensions	$\overline{X}$	Sd	Level
Computer Use Self-Efficacy	8,46	1,828	High
Internet Use Self-Efficacy	8,26	1,756	High
Computer and Internet Usage Self-Efficacy Overall	8,36	1,705	High

According to the results of the research, it is seen that the computer use self-efficacy of teachers is high ($\overline{X}$= 8.46). The fact that teachers' computer use self-efficacy scores are quite high shows that they trust them in this regard. Similarly, according to Table 3, it is seen that teachers' Internet Use Self-efficacy levels ($\overline{X}$=8.26) are high. This shows that teachers trust themselves in using the internet and they have many skills in the virtual environment.

3.2. Digital Citizenship Levels According to the School Type and Age Range of Teachers

Within the scope of the research, it has been investigated whether the level of digital citizenship has been differentiated according to the types of schools and age range that teachers work, and the results of the analysis are given in Table 5.

Table-5. Digital citizenship levels of teachers based on the working school type and age ranges

		n	Mean rank	df	χ^2	p	Difference
Working school Type	Kindergarten	18	84,08	3	,657	,883	-
	Primary school	37	76,96				
	Middle School	85	80,74				
	High school	21	86,55				-
Age range	A-25 and younger	71	90,61	2	6,941	,031*	A-B
	B-26-30 years old	26	63,87				
	C-31 and older	64	77,30				

Note: * p<.05.

The results of the Kruskal Wallis test conducted to determine the difference of digital citizenship levels according to the type of institutions they work in are given in Table 5. The results of the analysis show that the digital citizenship levels of teachers do not differ according to the level of education they work [$\chi^2_{(3)}$=.657, p>.05]. This finding shows that digital citizenship levels do not differ according to the level of education that teachers work, and that teachers in each institution have an equal level of digital citizenship.

When the findings regarding the difference of digital citizenship level according to the age of the teachers are examined, it can be seen in Table 5 that there is a difference according to the age groups. Kruskal Wallis test results reveal that teachers' general digital citizenship levels differ according to age group [$\chi^2_{(2)}$=6.941, p<.05]. According to the results of the Mann Witney U test conducted to determine the difference between the groups, there is a difference between the groups under the age of 25 and between the ages of 26-30.

3.3. The Relationship between Teachers' Digital Citizenship Levels and Information Literacy

The relationship between teachers' digital citizenship levels and information literacy has been analyzed and the results obtained are given in Table 6.

Table-2. Relationship between digital citizenship level and information literacy and factors

	Defining Information Requirement	Accessing Information	Using Information	Ethical and Legal Regulations in Using Information	Information Literacy General
Digital Citizenship General	,617**	,696**	,556**	,488**	,666**

Note: **p<0.01.

When Table 6 is examined, it is seen that there is a positive, significant and middle level relationship between the digital citizenship levels of the teachers participating in the research and information literacy (r = 0.666, p <0.01). According to these values, it can be said that as the literacy levels of teachers increase, their digital citizenship levels increase. In addition, the determination coefficient, the variance value, is calculated as r^2=0.44. Accordingly, 44% of teachers' digital citizenship levels are caused by information literacy levels. Among the sub-factors of information literacy and digital citizenship levels of teachers participating in the research, "Defining information needs" (r=0.617, p<0.01), "Accessing information" (r=0.696, p <0.01), "Using information" (r=0.556, p<0.01) and "Ethical and legal regulations in using information" (r=0,488, p<0.01), it is seen that there is a positive, significant and medium level relationship between all sub-dimensions. It can be said that as the scores obtained from all sub-factors increase, the digital citizenship levels of teachers will increase.

3.4. The Relationship between Teachers' Digital Citizenship Levels and Computer-Internet Usage Self-Efficacy

Finally, the relationship between teachers' digital citizenship levels and computer-internet usage self-efficacy was analyzed, and the results are given in Table 7.

Table-7. Relationship between digital citizenship and computer and internet usage self-efficacy levels.

	Computer Usage Self-Efficacy	Internet Usage Self-Efficacy 1	Computer and Internet Usage Self-Efficacy General
Digital Citizenship General	,510**	,552**	,558**

Note: **p<0.01.

When Table 7 is examined, it is seen that there is a significant, positive and middle level relationship between internet and computer use self-efficacy and digital citizenship levels of teachers participating in the study (r=0.558, p <0.01). R2 = 0.31 as the amount of variance explained by the variables. In other words, 31% of the digital citizenship levels of teachers arise from computer and internet usage self-efficacy. This means that as the internet and computer usage levels of teachers increase, their level of digital citizenship will increase.

Similarly, teachers' digital citizenship level is positive between the computer use self-efficacy factor (r=0.510, p <0.01) and the internet use self-efficacy factor (r=0.552, p <0.01), which are the factors of the internet and computer use self-efficacy scale. It is observed that there is a directional, meaningful and medium level relationship. According to these findings, it can be said that increasing the levels of computer use and internet use of teachers will increase their digital citizenship levels.

4. RESULTS AND DISCUSSION

In the research, the digital citizenship levels of the teachers were found at a middle level. Gormez (2017); Kocadag (2012) and Yang and Chen (2010) achieved similar results in their research, stated that teachers' digital citizenship level is middle level in general, and they also suggested that teachers should be given training to increase their digital citizenship level. When analyzed in terms of the sub-dimensions of digital citizenship, teachers have high levels of digital law, digital rights and responsibilities, digital access, digital communication, digital ethics and digital commerce, and medium level of digital citizenship in digital literacy, digital security and digital health.

Similar to the result of the research, Arcagok (2020) stated that teachers have different levels of competencies in terms of digital citizenship sub-dimensions. This difference may be due to individuals' perception of internet risk and their experience of using internet. Cubukcu and Bayzan (2013) emphasize the perceived internet risks and internet usage experience on digital citizenship perception. In this regard, the difference in the perceptions of individuals about the use of the internet may have caused different levels of digital citizenship in the sub-dimensions. In addition, e-government applications, which have become widespread in recent years, may have increased the digital citizenship competencies of digital citizenship such as rights and responsibilities, law, and communication. On the other hand, Bardakci, Akyüz, Samsa-Yetik, and Keser (2014) state that sociocultural characteristics are also important in acquiring digital citizenship skills. In this respect, it can be said that the events occurring in the living environments of teachers may have affected their awareness and therefore there are differences in terms of sub-dimensions. The working school type of teachers does not affect their level of digital citizenship. It can be said that teachers working at different levels have equal digital citizenship. In their research, Bakir (2016); Kocadag (2012) and Sakalli (2015) stated that the pre-service teachers digital citizenship levels were higher than the teachers in other branches, while Gormez (2017) concluded that teachers' perception of digital citizenship did not differ according to the branch variable. Lindsey (2015) states that opportunities offered to teachers may affect their digital citizenship levels. The fact that the research was conducted in a small district, the opportunities provided on the use of technology and the educational opportunities provided, may have prevented the difference from appearing according to the level of education they work at.

The age range was an important factor affecting the digital citizenship levels of teachers. Teachers in the age group of 25 and under have a higher level of digital citizenship than teachers in the age group of 26-30. This can be explained by the professional seniority year and technology use competencies. Ribble, Bailey, and Ross (2004) state that new teachers can be at a higher level than others. Similarly, according to Turkish Statistical Institute (TSI) Households, using Information Technologies in Households, individuals between the ages of 16-24, are in the first place with 68% in terms of computer usage and 87% in terms of internet usage (Turkish Stastical Institute - (TSI), 2018). In this regard, individuals aged 25 and under have more internet and computer access. This situation supports the high level of digital citizenship in the context of digital access of individuals under the age of 25.

It has been observed that teachers' information literacy levels have a high level of literacy in terms of general and factors (defining information requirement, accessing information, using information, ethical and legal regulations in using information). Similarly, computer and internet usage self-efficacy of teachers was found at a high level. Sorgo, Bartol, Dolničar, and Boh Podgornik (2017) state that individuals with information literacy can identify information sources, use computers and the Internet to access information, and develop different strategies for problem solving. High levels of information literacy of individuals with a profession that requires skills such as access to information, finding the source of information and problem solving can be considered natural. On the other hand, Keengwe and Onchwari (2019) state that in educational environments that are enriched with digital technologies, teachers' information literacy and technology use competencies should be high level. In this respect, it can be said that teachers' information and computer-internet literacy is both a professional requirement and a result of widespread ICT investments. It was found that there was middle, positive and meaningful relationship between teachers' information literacy levels, computer and internet usage self-efficacy and digital citizenship level. In other words, as the information literacy of teachers and self-efficacy of computer and internet usage increases, their digital citizenship levels also increase. In terms of the variance rates they have announced, it has been determined that information literacy (44%) has a predictive level over digital citizenship level than computer and internet literacy (31%). Citizenship is included in the international ISTE-E standards and when the indicators that compose this headline are examined, it can be seen that there are important competencies that require both information literacy and digital literacy (International Society for Technology in Education - (ISTE), 2018). Correia (2002) emphasized the importance of information literacy on the concept of patriotism, and predicted that information literacy would

lead to important changes in the concept of patriotism along with concepts such as computer, media and digital literacy in those years when digitalization was just beginning to become widespread. As a matter of fact, Choi (2016) emphasized that citizenship has gained a new form as digital citizenship in digital environments that dominate all areas of our lives, and that qualifications such as information literacy and use of digital technology are important in this day, which citizenship is known as the internet age. Similarly, Mossberger. (2008) emphasizes that the concepts of technological literacy and information literacy are important for digital citizenship in the information age. In this respect, the importance of the relationship between information literacy and computer and internet usage self-efficacy can be expressed.

In the light of the findings obtained as a result of the research, it may be suggested that teachers should be given training that can guide digital citizenship in their educational processes, especially considering the indicators in ISTE standards. It can be suggested to conduct research on students to determine the level of digital citizenship levels of teachers 'reflection on students' guidance. As a result of the research, a significant relationship was found between information literacy and computer-internet literacy. It may also be recommended to train teachers to acquire these skills and to increase their digital citizenship levels.

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