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The Investigation of the Pre-service Social Studies Teachers Perceptions of Self-Efficacy on the Digital Literacy Skills*

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Abstract

The rapid changes in information and communication technologies have an impact on all areas of human life. Especially in this process of digital transformation, it is important for people to have the skills of accessing, analyzing and evaluating information. Digital literacy, which we can mention as a essential skill to be able to adapt to digital life, is now required in human life. Undoubtedly, individuals can gain digital literacy skills through education. At this point, the social studies course, which directly contributes to the socialization of individuals and is an effective course in creating the citizen profile of the society, is also affective in offering the digital literacy skills. This study aimed to investigate the digital literacy self-efficacy skills of the pre-service social studies teachers.

Keywords: Digital literacy, Technology, Social Studies, Self-efficacy

1. Introduction

The globalizing world order offers unlimited change and innovation to human life. Technology, which is the most important part of this order, gradually gets more influential in all areas of our lives and creates a new order that can mentioned as the digital world. We are experiencing one of the most dynamic forms of change and transformation in human life. Digital technologies now shape the attitudes, behaviors and values of individuals throughout their lives. Technology and digital tools have many negative effects as well as positive contributions to human life. At this point, it is important for individuals to be able to access data and information in real and virtual environments correctly for the desired purpose and to use the right methods while accessing them. Many leading countries in science and technology in the world give weight to the digital literacy education and skills at an early age in order to avoid the negative effects of technology and the digital tools. Within the scope of the

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21st century skills, digital literacy is recognized as an important skill that individuals should acquire. Thus, schools play an important role in ensuring a conscious use of technology and the digital tools (Yılmaz, 2019; Aktaş, Tokmak and Kara, 2021).

Equipping individuals with digital literacy knowledge, skills and competencies covers a broad perspective in relation to the personal and social life. Especially the social studies course, which is the pioneer of the citizenship education, is important in preparing individuals for social life and gaining digital competencies. Therefore, the duties and responsibilities of the future social studies teachers grow even more important day by day as they fulfill an important task by being the transmitters of the social studies course. On the other hand, in order to adapt to the changing conditions of the world in the age of information and communication, it is necessary to have many skills such as creative thinking, communicating by using different tools, learning ever-changing technologies, and being analytical in the face of the mass information. Undoubtedly, education is the main factor in the acquisition of these skills. In the education process, especially the social studies course aims to raise efficient citizens according to the requirements of the age. In the age of digital transformation, the social studies teachers should also have some skills as well as digital literacy and the pre-service social studies teachers should receive an education that offers these skills (Karasu Avcı, Faiz and Receptoğlu, 2021; Tokmak, Yılmaz and Şeker, 2022; Öztürk, Yaman and Kara, 2020).

With the rapid changes in the information and communication technologies and the increasing importance of lifelong learning and digital literacy has become one of the issues that have gained momentum as an essential skill. Especially the children and the youngsters, who will be the interactive participants of the information society in the future, need to be trained in digital literacy and gain basic skills. At this point, when they are involved in professional life, the pre-service social studies teachers, who are the pioneers of citizenship education, will assume an important role in gaining digital literacy skills to individuals. In addition to that, the social studies curriculum has been updated and digital literacy skills have been included among the essential skills for individuals. In this context, it is important to test the digital literacy status of the pre-service social studies teachers, who will be the implementers of this curriculum. However, when the related literature is reviewed, it is observed that, although there are studies on the literacy skills of the pre-service teachers (Kocadağ, 2012; Sakallı, 2015; Aslan, 2016; Bakır, 2016; Som-Vural and Kurt, 2018; Yılmaz, 2019), the studies that explore the digital literacy skills of the pre-service social studies teachers are limited in quantity (Ata, 2015; Acun, 2015; Dere and Yavuzay, 2019; Ezer and Aksüt, 2021; Karasu Avcı, Faiz and Receptoğlu, 2021; İlhan, Tokmak and Aktaş, 2021; Öztürk, 2015). Therefore, this study aimed to explore the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills. In line with this aim, answers to the following sub-questions were sought:

1. What is the level of the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills?
2. Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of the gender variable?
3. Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of the age variable?
4. Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of the variable of their mothers' educational status?
5. Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of the variable of their fathers' educational status?
6. Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of whether they use social networks or not?
7. Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of the variable of having a personal computer?

2. Method

2.1 Research Design

This study was conducted with the quantitative research method. Quantitative research is used in exploring the relationship between variables and in a series of hypothesized related structures (Mandacı Şahin, 2014). This research was conducted using a descriptive survey model. The survey model is known as a research approach that aims to design a past or current situation as it is. Descriptive survey is defined as "a survey model that aims to describe an existing situation as it is" (Karasar 2014). In the survey model, it is ensured that the attitudes, the tendencies and the opinions in the universe are quantitatively determined through the studies conducted on a sample group selected from a universe (Bursal, 2014).

2.2 Participants

The sample group of the study consisted of 197 volunteer pre-service social studies teachers, 145 of whom were female and 52 of whom were male. They were studying at Sinop University and Gazi University faculties of education in the 2019-2020 academic year. The sample of the study was determined by using convenience sampling, which is one of the purposive sampling methods. Purposive sampling method is a model that is included in the qualitative research tradition. In convenience sampling, which is one of the purposive sampling methods, the researcher determines the sample "by choosing a situation that is not distant and easy to access" (Yıldırım and Şimşek, 2011). In convenience sampling, the researcher can use digital media such as internet, e-mail and telephone. During the data collection period, universities were offering distance education due to the Covid-19 pandemic. Therefore, data were collected online, in online environments.

2.3 Data Collection Tools and Data Analysis

The Digital Literacy Self-Efficacy scale of the Pre-service Teachers prepared by Ocak and Karakuş (2018) and the personal information form developed by the researchers were used as data collection tools.

The Digital Literacy Self-Efficacy scale consists of 35 items and four sub-factors. The factors in the scale are, production, the ability to use resources, the ability to use applications and support. There are no negative items in the scale. The scale items are rated on a 5-point Likert scale as "always", "frequently", "occasionally", "rarely", and "never". In the evaluation of the scale items, codes 1, 2, 3, 4, 5 were used as "never" (1), "rarely" (2), "occasionally" (3), "frequently" (4) and "always" (5). According to the reliability analysis of the scale, the Cronbach Alpha values were .90 for the production factor, .88 for the ability to use resources factor, .86 for the ability to use applications factor, .81 for the support factor and .96 in total. According to the results of the reliability analysis conducted in the research, the Cronbach Alpha values were .83 for the production factor, .84 for the ability to use resources factor, .80 for the ability to use applications factor, .84 for the support factor and .86 in total. The Cronbach Alpha data indicate that, the reliability coefficient of the scale is high.

In the study, the personal information form constitutes the part in which various variables are investigated in analyzing the self-efficacy of the pre-service social studies teachers in the digital literacy skills. Information on the gender, age, parental educational status, social network usage and owning a personal computer of the pre-service teachers were collected through the personal information form.

The following ranges were taken as the basis for the calculation of the arithmetic averages of the answers given by the pre-service social studies teachers to the questions in the digital literacy self-efficacy scale: Never ($1.00 < x \leq 1.80$) Rarely ($1.81 < x \leq 2.60$) Occasionally ($2.61 < x \leq 3.40$) Frequently ($3.41 < x \leq 4.20$) Always ($4.21 < x \leq 5.00$). The Independent Samples t-Test was used to reveal the differentiation of the participants' scores from the "digital literacy self-efficacy of the pre-service teachers" scale according to their gender, age, use of social

network and owning a personal computer. The differentiation according to the parental educational status was revealed by using One-Way ANOVA. The statistical analysis of the data was analyzed by using IBM SPSS 24.0 program and the significance level was assumed as [$p < .05$].

3. Results

This section of the study covers the digital literacy self-efficacy levels of the pre-service social studies teachers and the findings obtained through their responses to the personal information form. The parametric test was used in the study since the sample size was over 30. As the data was normally distributed, the parametric tests were performed as t-test and Oneway- Anova (Genç and Soysal).

3.1. The Findings Related to the First Sub-Problem

This subtitle covers the findings related to the first sub-problem of the study, the question of, "What is the level of the digital literacy self-efficacy of the pre-service social studies teachers?". The findings related to the first sub-problem of the study are presented in Table 1.

Table 1: The findings related to the question, "What is the level of the digital literacy self-efficacy of the pre-service social studies teachers?"

Item No	Item	n	\bar{x}	Level
1	I can prepare assessment studies suitable for the student level in the digital environment.	197	3.29	Occasionally (Medium)
2	I can prepare and offer practices that will help students to reinforce the subject in the digital environment.	197	3.41	Frequently (High)
3	I can prepare digital materials for students with different learning styles.	197	3.32	Occasionally (Medium)
4	I can assess student assignments in digital environment.	197	3.72	Frequently (High)
5	I can use digital resources so that the students can share information faster.	197	3.83	Frequently (High)
6	I can prepare exams by using digital resources (such as kahoot).	197	3.33	Occasionally (Mean)
7	I can prepare videos for educational purposes.	197	3.69	Frequently (High)
8	I can use digital resources to enrich the learning environment.	197	3.93	Frequently (High)
9	I can use digital books during the class (e-book, z-book etc.)	197	3.78	Frequently (High)
10	I can motivate students by uploading an activity I offered in the classroom to sharing sites.	197	3.56	Frequently (High)
11	I can store my lecture digitally so that the students can listen later.	197	3.80	Frequently (High)
12	I can use a smart board.	197	4.34	Always (Very High)
13	I can install educational applications on my mobile phone.	197	4.27	Always (Very High)
14	I can use a tablet.	197	4.39	Always (Very High)
15	I can easily access resources in the digital environment.	197	4.28	Always (Very High)
16	I can set up a group through which I can communicate with the students or their parents (for example, a whatsapp group).	197	4.46	Always (Very High)
17	I can use websites that support education.	197	4.38	Always (Very High)
18	I can use projector in the class.	197	4.31	Always (Very High)
19	I can use digital resources during the class to increase the student motivation.	197	4.25	Always (Very High)
20	I can access various content via cell phones, etc.	197	4.30	Always (Very High)
21	I can find the material I need according to the course content in digital environments	197	4.02	Frequently (High)

22	I can use the compression formats such as Jpeg/Winzip.	197	2.92	Occasionally (Medium)
23	I can convert documents to different formats (for example, from word to pdf)	197	3.47	Frequently (High)
24	I can use Social Bookmarking (The purpose of Social Bookmarking is to store and archive liked content on social media).	197	3.40	Occasionally (Medium)
25	I can upload a video I prepared to the digital environment (TeacherTube, Videoegg, Selfcast)	197	3.40	Occasionally (Medium)
26	I can offer web-based interactive games in the class.	197	3.36	Occasionally (Medium)
27	I can use podcasts during class. (Podcasts usually consist of original audio or video recordings as well as being the recorded broadcasts of a TV or radio program, a lecture, a performance or other event.)	197	3.32	Occasionally (Medium)
28	I can prepare a blog for educational purposes.	197	3.35	Occasionally (Medium)
29	I can use digital maps (Google Maps, Community Walk, ZeeMaps, Wayfaring, MapBuzz).	197	3.85	Frequently (High)
30	I can prepare Poster/Postcard/Collage in digital environment.	197	3.67	Frequently (High)
31	I can offer my students educational games in digital environment.	197	3.81	Frequently (High)
32	I can use digital resources so that the students can keep learning at home.	197	3.86	Frequently (High)
33	I can reach all the students by way of video conference.	197	3.51	Frequently (High)
34	I can help my students to prepare a digital portfolio file so that they can store their work in the digital environment.	197	3.46	Frequently (High)
35	I can inform students about the use of digital resources.	197	3.91	Frequently (High)
Grand Average		197	3.77	Frequently High

As observed from the results of the analysis in Table 1, the item with the lowest mean score ($x = 2.92$) in the digital literacy self-efficacy scale of the pre-service teachers was, "I can use compression formats such as Jpeg/Winzip." (Item 22). The item with the highest mean digital literacy self-efficacy scale score ($x = 4.46$) was, "I can set up a group through which I can communicate with the students or their parents (for example, a whatsapp group)." (Item 16). The digital literacy self-efficacy levels of the pre-service teachers are very high (Always) in 9 items ($4.21 < x \leq 5.00$), high (Frequently) in 17 items ($3.41 < x \leq 4.20$), and medium (Occasionally) in 9 items ($2.61 < x \leq 3.40$). In line with these findings, it is possible to state that, the general digital literacy self-efficacy mean scores of the pre-service social studies teachers are high (Frequently) ($3.41 < x \leq 4.20$), and thus, the digital literacy self-efficacy levels of the pre-service social studies teachers are high.

3.2. The Findings Related to the Second Sub-Problem

This subtitle covers the findings related to the second sub-problem of the study, the question of, "Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of the gender variable?". The results of the analysis of the data obtained are presented in Table 2.

Table 2: The Independent t-test results of the pre-service social studies teachers' self-efficacy perceptions on the digital literacy skills according to the gender variable

Factors	Gender	n	\bar{x}	Ss	Sd	t	p
Production	Female	145	39.74	8.59	195	.226	.821
	Male	52	40.06	8.49			
The ability to use resource	Female	145	43.14	6.30	195	.505	.614
	Male	52	42.62	6.67			
The ability to use application	Female	145	30.10	7.73	195	1.950	.053
	Male	52	32.52	7.46			
Support	Female	145	18.52	4.60	195	.161	.872
	Male	52	18.63	4.26			
Sum	Female	145	130.12	23.27	195	.609	.543
	Male	52	133.32	24.55			

According to the analysis of Table 2, there is no statistical difference between the digital literacy self-efficacy of the pre-service social studies teachers and the gender variable in terms of the total score in the sub-factors of Production ($t(195)= 226$; $p>.05$), the Ability to Use Resources ($t(195)= 505$; $p>.05$), the Ability to Use Applications ($t(195)= 1.950$; $p>.05$), Support ($t(195)= 161$; $p>.05$) and in the overall scale ($t(195)= 609$; $p>.05$). Thus, it is possible to state that, there is not any negative or positive relationship between the participants' digital literacy self-efficacy and the gender variable. In fact, the abilities to produce, to use resources, to use applications and to provide support do not reveal a significant difference according to gender.

3.3. The Findings Related to the Third Sub-Problem

This subtitle covers the findings related to the third sub-problem of the study, the question of, "Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of the age variable?". Under this subtitle, whether the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills reveal a significant difference in terms of the age variable was investigated. The results of the analysis of the data obtained through the research question are presented in Table 3.

Table 3: The One-way anova results of the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills according to the age variable

Factors	Age	n	\bar{X}	Ss	Sd	t	p
Production	20 years old or younger	74	38.78	8.98	195	1.332	.184
	21 years old or older	123	40.46	8.25			
The Ability to use resources	20 years old or younger	74	42.43	7.01	195	.967	.335
	21 years old or older	123	43.34	5.99			
The Ability to use applications	20 years old or younger	74	30.32	7.87	195	.587	.558
	21 years old or older	123	30.99	7.65			
Support	20 years old or younger	74	18.58	4.68	195	.079	.937
	21 years old or older	123	18.53	4.41			
Sum	20 years old or younger	74	130.12	25.19	195	.921	.358
	21 years old or older	123	133.32	22.57			

According to the analysis of Table 3, there is no statistical difference between the digital literacy self-efficacy of the pre-service social studies teachers and the age variable in terms of the sub-factors of Production [$t(195)= 1.332$. $p>.05$], the Ability to Use Resources [$t(195)= 967$. $p>.05$], the Ability to Use Applications [$t(195)= 587$ $p>.05$], Support [$t(195)= 079$. $p>.05$] and in the overall scale [$t(195)= 921$ $p>.05$]. Based on these findings, it is possible to mention that, there is not any negative or positive relationship between the participants' ability to produce, to use resources, to use applications and to provide support and their being 20 years old or younger and 20 years old or older.

3.4. The Findings Related to the Fourth Sub-Problem

This subtitle covers the findings related to the fourth sub-problem of the study, the question of, "Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of the variable of their mothers' educational status?". The results of the analysis of the data obtained through the research question are presented in Table 4.

Table 4: The One-way anova results of the pre-service social studies teachers' self-efficacy perceptions on the digital literacy skills according to the variable of their mothers' educational status

Factor	Educational Status of their Mothers	n	\bar{X}	Ss	VK	KT	sd	KO	F	p
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Production	1)Not Literate	15	37.00	5.36	Between Groups	667.739	6	111.290		
	2) Primary school	103	39.06	8.84	Within Groups	13646.393	190	71.823	1.549	.164
	3) Secondary School	35	42.09	8.49	Total	14314.132	196			
	4) High school	30	39.20	8.38						
	5)Two-year degree	7	45.00	9.78						
	6)Undergraduate degree	5	42.40	3.36						
	7)Master's degree	2	46.00	12.73						
	8)Total	197	39.83	8.55						
The Ability to Use Resources	1) Not Literate	15	42.27	4.76	Between Groups	248.957	6	41.493		
	2) Primary school	103	42.95	6.07	Within Groups	7751.043	190	40.795	1.017	.415
	3) Secondary School	35	44.14	7.48	Total	8000.000	196			
	4) High school	30	41.77	6.01						
	5)Two-year degree	7	47.00	3.92						
	6)Undergraduate degree	5	41.40	3.13						
	7)Master's degree	2	39.50	14.85						
	8) Total	197	43.00	6.39						
The Ability to Use Applications	1) Not Literate	15	27.80	6.85	Between Groups	730.736	6	121.789		
	2) Primary school	103	29.64	7.90	Within Groups	10947.061	190	57.616	2.114	.054
	3) Secondary School	35	33.77	7.69	Total	11677.797	196			
	4) High school	30	30.93	6.68						
	5)Two-year degree	7	33.43	7.28						
	6)Undergraduate degree	5	34.40	4.88						
	7)Master's degree	2	35.00	14.14						
	8) Total	197	30.74	7.72						
Support	1)Not literate	15	17.27	3.86	Between Groups	225.368	6	37.561		
	2) Primary school	103	18.33	4.66	Within Groups	3747.424	190	19.723	1.904	.082
	3) Secondary School	35	19.86	4.11	Total	3972.792	196			
	4) High school	30	17.50	4.54						
	5)Two-year degree	7	21.71	4.68						
	6)Undergraduate degree	5	18.00	1.41						
	7)Master's degree	2	22.50	3.54						
	8) Total	197	18.55	4.50						
Total	1) Not Literate	15	124.33	16.23	Between Groups	5597.877	6	932.980		
	2) Primary school	103	129.98	23.71	Within Groups	103328.437	190	543.834	1.904	.082
	3) Secondary School	35	139.86	25.05	Total	108926.315	196			
	4) High school	30	129.40	23.06						

5)Two-year degree	7	147.14	23.18
6)Undergraduate degree	5	136.20	8.17
7)Master's degree	2	143.00	45.25
8) Total	197	132.12	23.57

According to the analysis of Table 4, there is not a statistical difference between the digital literacy self-efficacy of the pre-service social studies teachers and their mothers' educational status in the sub-factors of Production [F(1-190)= 1.549. p>.05], the Ability to Use Resources [F(6-190)= 1.017. p>.05], the Ability to Use Application [F(1- 190)= 2.114. p>.05], Support [F(6-190)= 1.904. p>.05] and the overall scale [F(6-190)= 1.716p>.05] in terms of the total score. Therefore, it is possible to conclude that, there is not any significant negative or positive difference between the participants' digital literacy self-efficacy and their mothers' educational status.

3.5. The Findings Related to the Fifth Sub-Problem

This subtitle covers the findings related to the fifth sub-problem of the study, the question of, "Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of the variable of their fathers' educational status?". The results of the analysis of the data obtained through the research question are presented in Table 5.

Table 5: The One-way anova results of the pre-service social studies teachers' self-efficacy perceptions on the digital literacy skills according to the variable of their fathers' educational status

Factor	Educational Status of their Fathers	n	\bar{X}	Ss	VK	KT	sd	KO	F	p
Production	1)Not Literate	3	36.33	8.96	Between Groups	971.567	6	161.928		
	2)Primary school	70	38.03	8.58	Within Groups	13342.565	190	70.224	2.306	.036*
	3)Secondary School	43	41.23	7.17	Total	14314.132	196			
	4)High school	48	38.69	9.10	Cause of the Difference (Scheffe)					
	5)Two-year degree	10	42.90	9.97	7>2					
	6)Undergraduate degree	17	43.47	6.74						
	7)Master's degree	6	46.17	9.26						
	8)Total	197	39.83	8.55						
The Ability to Use Resources	1)Not Literate	3	45.00	6.93	Between Groups	431.346	6	71.891		
	2)Primary school	70	42.59	5.99	Within Groups	7568.654	190	39.835	1.805	.100
	3)Secondary School	43	43.26	6.39	Total	8000.000	196			
	4)High school	48	41.33	7.37						
	5)Two-year degree	10	46.80	3.08						
	6)Undergraduate degree	17	45.35	4.27						
	7)Master's degree	6	45.33	8.24						
	8)Total	197	43.00	6.389						
The Ability to Use	1)Not Literate	3	29.67	2.31	Between Groups	711.831	6	118.638		
	2)Primary school	70	28.87	8.04	Within Groups	10965.966	190	57.716	2.056	.060
	3)Secondary School	43	32.12	7.82	Total	11677.797	196			

	4)High school	48	30.27	7.46					
	5)Two-year degree	10	32.50	5.99					
	6)Undergraduate degree	17	33.24	6.30					
	7)Master's degree	6	37.00	8.45					
	8)Total	197	30.74	7.72					
	1)Not Literate	3	20.00	4.33	Between Groups	224.769	6	37.462	
	2)Primary school	70	17.99	4.65	Within Groups	3748.023	190	19.726	
	3)Secondary School I	43	19.26	4.25	Total	3972.792	196		1.899 .083
	4)High school	48	17.75	4.39					
	5)Two-year degree	10	20.60	3.69					
	6)Undergraduate degree	17	18.41	4.96					
	7)Master's degree	6	22.67	2.58					
	8)Total	197	18.55	4.50					
Support	1)Not Literate	3	131.00	22.52	Between Groups	7419.124	6	1236.521	2.315 .035*
	2)Primary school	70	127.47	22.99	Within Groups	101507.191	190	534.248	
	3)Secondary School	43	135.86	22.59	Total	108926.315	196		
	4)High school	48	128.04	25.33	Cause of the Difference (Scheffe)				
	5)Two-year degree	10	142.80	20.14	7>4-6				
	6)Undergraduate degree	17	140.47	17.01					
	7)Master's degree	6	151.17	26.84					
	8)Total	197	132.12	23.57					
Total	1)Not Literate	3	131.00	22.52	Between Groups	7419.124	6	1236.521	2.315 .035*
	2)Primary school	70	127.47	22.99	Within Groups	101507.191	190	534.248	
	3)Secondary School	43	135.86	22.59	Total	108926.315	196		
	4)High school	48	128.04	25.33	Cause of the Difference (Scheffe)				
	5)Two-year degree	10	142.80	20.14	7>4-6				
	6)Undergraduate degree	17	140.47	17.01					
	7)Master's degree	6	151.17	26.84					
	8)Total	197	132.12	23.57					

According to the analysis of Table 5, there is a statistical difference between the digital literacy self-efficacy of the pre-service social studies teachers and the variable of their fathers' educational status, in terms of the Production sub-factor [$F(6-190) = 2.306$ $p < .05$] and the total score [$F(6-190) = 2.315$ $p < .05$]. It was also concluded that, there is no statistically significant difference related to the sub-factors of the Ability to Use Resources [$F(6-190) = 1.805$ $p > .05$], the Ability to Use Applications [$F(6-190) = 2.056$ $p > .05$] and Support [$F(6-190) = 1.899$ $p > .05$]. Thus, it was concluded that, the pre-service social studies teachers whose fathers had a master's degree had higher total scores than the ones whose fathers were primary school or high school graduates or had an undergraduate degree. Therefore, it is possible to conclude that, the higher the level of their father's education, the higher the level of their digital literacy is.

3.6. The Findings Related to the Sixth Sub-Problem

This subtitle covers the findings related to the fifth sub-problem of the study, the question of, "Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of whether they use social networks or not?". The results of the analysis of the data obtained through the research question are presented in Table 6.

Table 6: The Independent t-test results of the pre-service social studies teachers' self-efficacy perceptions on the digital literacy skills according to the variable of whether they use social networks or not

Factors	The Use of Social Networks						
	n	\bar{x}	Ss	sd	t	p	
Production	Yes	191	40.10	8.52	195	2.607	.010*
	No	6	31.00	3.16			
Ability to use resources	Yes	191	43.23	6.28	195	2.840	.005*

	No	6	35.83	6.08			
Ability to use applications	Yes	191	30.97	7.70	195	2.417	.017*
	No	6	23.33	3.88			
Support	Yes	191	18.64	23.34	195	1.599	.112
	No	6	15.67	14.86			
Total	Yes	191	132.94	4.50	195	2.822	.005*
	No	6	105.83	3.72			

*p<.05

According to the analysis of Table 6, it is concluded that, there is a difference between the digital literacy self-efficacy of the pre-service social studies teachers and their use of social networks, in terms of the sub-factors of Production ($t(195)= 2.607$; $p<.05$), the Ability to Use Resources ($t(195)= 2.840$; $p<.05$), the Ability to Use Applications ($t(195)= 2.417$; $p<.05$) and the total score ($t(195)= 2.822$; $p<.05$), in favor of the pre-service social studies teachers who answered yes to the question about their use of social networks. In the sub-factor of Support ($t(195)= 2.417$; $p>.05$), there is no statistically significant difference between the digital literacy self-efficacy of the pre-service social studies teachers and whether they use the social networks. In this context, it is observed that, the pre-service teachers who use social networks tend to consider their digital literacy self-efficacy to be more efficient than the ones who do not use social networks, in terms of being able to produce, use resources and applications.

3.7. The Findings Related to the Seventh Sub-Problem

The last subtitle of the research covers the findings related to the question of, "Do the pre-service social studies teachers' perceptions of self-efficacy on the digital literacy skills differ in terms of the variable of having a personal computer?". The results of the analysis of the data obtained through the research question are presented in Table 7.

Table 7: The Independent t-test results of the pre-service social studies teachers' self-efficacy perceptions on the digital literacy skills according to the variable of having a personal computer

Factors	Having a Personal Computer	N	\bar{x}	Ss	sd	t	p
Production	Yes	111	40.97	7.95	195	2.157	.032*
	No	86	38.35	9.09			
Ability to use resources	Yes	111	43.94	5.79	195	2.366	.019*
	No	86	41.79	6.93			
Ability to use applications	Yes	111	31.85	7.66	195	2.309	.022*
	No	86	29.31	7.60			
Support	Yes	111	19.32	4.46	195	2.762	.006*
	No	86	17.56	4.38			
Total	Yes	111	136.07	22.35	195	2.719	.007*
	No	86	127.01	24.26			

According to the analysis of Table 7, it can be concluded that, there is a significant difference between the pre-service social studies teachers' digital literacy self-efficacy and their having a personal computer, in terms of the sub-factors of Production ($t(195)= 2.157$; $p<.05$), the Ability to Use Resources ($t(195)= 2.366$; $p<.05$), the Ability to Use Applications ($t(195)= 2.309$; $p<.05$), Support ($t(195)= 2.762$; $p<.05$) and the total score ($t(195)= 2.719$; $p<.05$). Based on the findings, it is possible to state that, the pre-service social studies teachers who have personal computers have higher levels of digital literacy.

4. Discussion

As a result of the rapid changes in science and technology, the skills that individuals need to acquire have also changed and gain importance (Yontar, 2019; Kara, 2022). Digital technologies have a large share in this process of change (Sezgin and Karabacak, 2019). This change, which is effective in the field of education, has increased

the importance of digital literacy skills in the teaching process. As a matter of fact, the Social Studies course, which is one of the most effective courses in providing digital literacy skills to students, aims to provide digital literacy skills among basic skills. Therefore, this study aimed to conduct research on the digital literacy self-efficacy skills of the pre-service social studies teachers. As a result of the research, it was concluded that, the digital literacy self-efficacy skills of the pre-service social studies teachers were generally at a high level. Additionally, the digital literacy self-efficacy skills of the pre-service social studies teachers were analyzed in terms of gender, age, parental educational status, social network usage and personal computer ownership variables. The findings were compared with the findings of the other studies in the literature and several suggestions were presented.

When the digital literacy self-efficacy of the pre-service social studies teachers was analyzed in terms of gender variable, it was concluded that, there was no statistically significant difference related to the sub-factors of Production, the Ability to Use Resources, the Ability to Use Applications, Support and the overall scale. In the study conducted by Ocak and Karakuş (2019), it was concluded that, while the digital literacy self-efficacy of the pre-service teachers did not differ in terms of gender variable in the overall scale and the sub-factors, it was statistically different only in terms of the sub-factor of the ability to use applications. In the research conducted by Ata (2015) and Özerbaş and Kuralbayeva (2018), it was concluded that, the digital literacy levels of the pre-service teachers in different branches, including the pre-service social studies teachers, differed in favor of the male pre-service teachers compared to the females. According to the findings of the research conducted by Yontar (2019), it was concluded that, the digital literacy levels of the pre-service classroom and social studies teachers differed in favor of the male pre-service teachers when analyzed in terms of gender variable. In the research conducted by Acun (2015) and Polat (2018), it was concluded that, the digital literacy levels of the pre-service social studies teachers do not differ in terms of gender variable. In the study conducted by Yaman (2019), it was found that the digital literacy levels of the pre-service social studies teachers did not differ in terms of gender variable. According to the findings of the study conducted by Özoğlu (2019), the digital literacy levels of pre-service teachers differ in favor of the male pre-service teachers in terms of gender variable. In the findings of the study conducted by Boyacı (2019), the digital literacy levels of the pre-service teachers differ in favor of the female pre-service teachers. According to the findings of the study conducted by Arslan (2019), the digital literacy levels of teachers in the study, which also included social studies teachers, did not differ in terms of gender variable. When compared, it is observed that, the findings of the study do not overlap with the findings of other studies in the literature, which may be due to the different sample groups in the studies. The opportunities offered by the digital world to humanity are developing rapidly and it is possible to use these opportunities in every field and this might be why the digital literacy self-efficacy of the pre-service social studies teachers does not differ according to the gender variable.

When the digital literacy self-efficacy of the pre-service social studies teachers was analyzed in terms of the age variable, it was concluded that, there was no statistically significant difference in the overall scale and the sub-factors. In the study conducted by Yontar (2019), the digital literacy levels of the pre-service classroom and social studies teachers did not reveal a significant difference in terms of the age variable. In the research conducted by Yaman (2019), it was concluded that, the ages of the pre-service social studies teachers did not affect their digital literacy levels. In the research conducted by Boyacı (2019), it was concluded that, the digital literacy levels of the female pre-service teachers between the ages of 21-27 were higher than the digital literacy levels of the ones who were between the ages of 18-20. It was observed that, the findings of the research generally overlap with the other findings in the literature. Therefore, it can be concluded that, the ages of the pre-service social studies teachers do not affect their digital literacy self-efficacy, which may be because of the fact that the ages of the pre-service teachers are close to each other and that they are the part of a generation which is good at using digital tools.

When the digital literacy self-efficacy of the pre-service social studies teachers was analyzed in terms of the variable of their mother's educational status, it was concluded that, statistically, the mother's educational status did not affect the digital literacy self-efficacy. The findings of the research conducted by Ocak and Karakuş (2018), in which the digital literacy skills of the pre-service teachers were investigated, indicated that, the educational status of their mothers did not affect the digital literacy skills of the pre-service teachers. In the

research conducted by Yaman (2019), it was concluded that, the digital literacy levels of the pre-service teachers whose mothers were secondary and high school graduates were higher than those whose mothers were primary school graduates. According to the findings of the study conducted by Polat (2018), the digital literacy levels of the pre-service social studies teachers differed in terms of the educational status of their mothers as the digital literacy levels of the pre-service teachers whose mothers had a high school or a higher degree were higher compared to the ones whose mothers were illiterate and primary school graduates. According to the findings of the research, it is possible to state that, the educational status of their mothers does not affect the digital literacy self-efficacy of the pre-service social studies teachers. Therefore, it can be concluded that, the educational status of their mothers does not affect the digital literacy self-efficacy of the pre-service social studies teachers.

When the digital literacy self-efficacy of the pre-service social studies teachers is analyzed in terms of the variable of the educational status of their fathers, it was observed that, the higher the father's educational status, the higher the level of the pre-service social studies teachers' digital literacy was. In the study conducted by Ocak and Karakuş (2019), when the digital literacy self-efficacy skills of the pre-service teachers were analyzed in terms of different variables, it was concluded that, the educational status of the father did not affect the digital literacy self-efficacy skills. In the study conducted by Yaman (2019), when the digital literacy levels of the pre-service social studies teachers were analyzed in terms of the variable of the educational status of the father, it was concluded that, the pre-service social studies teachers whose fathers had secondary school and undergraduate degrees had higher levels of digital literacy compared to the ones whose fathers were primary school graduates. According to the findings of the research conducted by Polat (2018), when the digital literacy levels of the pre-service social studies teachers were analyzed in terms of the variable of their father's educational status, it was concluded that, those, whose fathers had a high school or higher degree had a higher level of digital literacy compared to the ones, whose fathers were illiterate. It was observed that, the findings of the research overlapped with the other findings in the literature. In every field of our lives, the higher our level of education gets, the more opportunities we have to gain knowledge and experience in various fields, which also might be the reason why the digital literacy self-efficacy of the pre-service social studies teachers differs according to the variable of their fathers' educational status.

When the digital literacy self-efficacy of the pre-service social studies teachers was analyzed in terms of the variable of the use of social networks, it was concluded that, the pre-service teachers who use social networks had higher levels of digital literacy self-efficacy. In the study conducted by Yaman (2019), it was concluded that, the digital literacy levels of the pre-service social studies teachers who use social networks were higher. In this sense, these findings overlap with the findings of the related research. According to the study conducted by Polat (2018), the pre-service social studies teachers' habits of using of social media accounts did not affect their digital literacy levels. In the study conducted by Çakmak and Aslan (2018), it was discovered that, the digital citizenship behaviors of the pre-service teachers who used social networks were at a higher level compared to the ones who did not use social networks. The findings of this study overlap with the findings of the other studies in the literature. Today, using social networking is a part of the digital world and the areas is used keep expanding. The pre-service social studies teachers require to have certain skills to be able to use the social networks, which increases their interactions with digital environments and may positively affect their digital self-efficacy.

When the digital literacy self-efficacy of the pre-service social studies teachers was analyzed in terms of the variable of having a personal computer, it was concluded that, the pre-service social studies teachers who had a personal computer had higher levels of digital literacy self-efficacy. According to the research conducted by Ocak and Karakuş (2019), the digital literacy levels of the pre-service teachers who had personal computers were at a higher level. In the study conducted by Yaman (2019), it was again concluded that, the digital literacy levels of the pre-service social studies teachers who had personal computers were higher. According to the research conducted by Arslan (2019) and Dere and Yavuzay (2019), the digital literacy levels of the teachers who had personal computers was higher. In the research conducted by Çakmak and Aslan (2018), which investigated the digital citizenship behaviors of the pre-service social studies teachers, it was concluded that, the digital citizenship skills of the pre-service social studies teachers who had personal computers were at a higher level. In general, the findings of the research overlap with the findings of the other studies. Owning a personal

computer enables one to use a digital tool adequately and to learn and benefit from the digital interaction environments. Therefore, having a personal computer positively affects the pre-service social studies teachers' skills and competencies in this area. It is possible to mention that, the pre-service social studies teachers who have a personal computer have a high level of digital literacy self-efficacy. Based on these results, the following suggestions are offered:

- In today's world, it is essential to have digital literacy skills for the individuals who frequently use the internet and digital tools. Thus, the pre-service social studies teachers can be encouraged to use the internet and digital tools more frequently and consciously.
- Many universities and institutions are known to provide trainings on digital literacy. However, digital literacy courses have not been included as compulsory courses in the faculties of education yet. It is especially important for the future generations that, the pre-service social studies teachers, who are the pioneers of citizenship education, are equipped with the skills to understand and interpret the digital world. Therefore, it may be suggested that, digital literacy courses should be included as compulsory courses in the education offered for social studies teachers, both theoretically and in practice.
- Messaging takes the first place in individuals' purposes of using the internet. Messaging is generally performed through sharing on the social media. It may be suggested to plan courses, seminars, training platforms and digital literacy platforms on social media for the pre-service social studies teachers, in order to consciously open them to the digital world through the internet.
- It can be suggested to plan a course content for the pre-service social studies teachers to gain and develop digital competence self-efficacies (digital identity creation, effective digital use, digital network and information security, digital communication and behavior management, digital empathy and relationship management, digital footprint management, digital rights and digital literacy).

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