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## **The Relationship Between Media Literacy Levels and Problem-Solving Skills Of Secondary School Teachers - The Case Of Niğde Province**

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### **Abstract**

The aim of the study is to determine the relationship between secondary school teachers' media literacy levels and problem-solving skills and to examine this relationship in terms of various variables. The study is a quantitative research in correlational design. The population of the study consists of 1903 secondary school teachers working in schools located at the center of Niğde which 51 secondary schools in its center in the 2018-2019 academic year has been totally. The sample group of the study consisted of 210 secondary school teachers working at 8 different secondary schools and are determined by simple random sampling method. The data obtained from the study were collected by using the Media Literacy Skills Scale (MLSS) developed by Erişti and Erdem (2017) and the "Problem Solving Inventory (PSI) developed by Heppner and Peterson (1982). The collected data were analyzed using descriptive statistics, Kruskal-Wallis, Mann-Whitney U test and Spearman rank differences correlation coefficient. As a result of the study, media literacy skill levels and problem-solving skill levels of secondary school teachers were found to be high, and no significant difference was found in problem solving skill levels according to gender and professional field (numerical, verbal) variables. A significant difference was found in favor of men in terms of access to media literacy skills according to gender variable and in favor of numerical field in total and sub-dimensions of media literacy skill levels according to professional field variable. When the professional seniority variable is examined Significant differences were found in problem solving skill levels and media literacy skill levels.

**Keywords:** Media literacy, problem solving skills, elective media literacy course

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## Introduction

Nowadays, the rapid technological developments, the increase of the information needed and the importance, the availability of the desired information makes information and technology valuable for people. An example of this is that we are immediately aware of developments happening on the other side of the world thanks to developing technology. Communities that want to rise and advance have become aware of information and communication technologies and started to work rapidly. In the studies, 21st century skills have emerged as a general concept. Finegol and Notabartolo (2008) describe these skills as creativity, innovation, critical thinking, information literacy, research and inquiry, problem solving, decision-making (...) digital citizenship and media literacy.

Until the end of the 20th century, while the main source of cultural transfer and social continuity was mostly face-to-face communication between individuals, groups and institutions, today the media have started to have a word in their lives by changing the way people live their lives and entertainment. The media has become our culture beyond being an element affecting our culture (Jols & Thoman, 2008). Media; written, visual, auditory or through the use of all our sensory organs in different channels (television, computer, internet) reaching individuals and in this way has become the communication power that directs society. Media has a dizzying effect in guiding society. Because the media does not only cover newspaper news or television programs, depending on today's developing technology, it appears in different ways such as a message on social networking sites, comments on internet news or slogans on clothes (Pekman, 2005). Therefore, media are used for different purposes such as information sharing, entertainment and education (Altun, 2014).

Individuals are exposed to intensive media messages (messages) in our environment, both through printed and technology tools. If these messages are not analyzed and interpreted correctly, the necessary unnecessary information cannot be distinguished and accepted unconsciously. International and national organizations have been realized with the idea of better preparing individuals in the society against this message bombardment and the studies have formed the media literacy movement.

Aufderheide (1993) explained the concept of media literacy through four basic skills (access, analysis, evaluation, transmission). Media literacy is defined as the ability to access, analyze, evaluate and transmit media content of various types and forms (cited in: Erdem, 2018). In this way, the concept of media literacy, one side of the media and the other side of education, was developed. Media literacy is the perception of written or unwritten media messages by the person, criticizing the accuracy of these messages by asking questions, and rejecting the media messages if they are wrong (Şeylan, 2008).

It is important to be a media literate because it is known that media messages are not what they seem and contain different meanings behind them. Media literacy experts evaluate media literacy not as a category but as a continuous and uninterrupted whole (Potter, 1998; cited by Altun, 2014) and

as a lifelong process (Masterman, 2001; cited by Altun, 2014). In particular, Masterman (2001) argued that many children's love and interest in the media began before school age and continued until the end of their lives.

In today's world where the concept of media literacy has gained great importance, steps have been taken in order to gain the skills (comprehension, expression, restructuring, etc.) to individuals to be educated; as a result of this, Radio and Television High Council (RTHC-RTÜK in Turkey) and the Board of Education and Training of National Education Ministry have signed a "Cooperation Protocol on the Establishment of a Media Literacy Course for Educational Institutions" in 2006. Afterward, 2-hours of Elective Media Literacy course took its place in the curriculum in 2007, and 6th, 7th, 8th grade students started to take education if they chose the course.

Some of the skills that are aimed to be provided to the students are as follows; observation skills, research skills, communication skills, critical thinking skills, (...), social cultural participation skills and problem solving skills (Commission, 2007a). According to Buckingham (2003); it is aimed that young people who are critical consumers and active media consumers both develop their judgment and judicial skills as a result of evaluation and become an original, independent media producer (cited by Altun, 2014).

It is concluded that students are interested in media literacy education, which is still being discussed, that they are actively participating in the course and that they communicate effectively (...) (RTHC and MNE, 2007). If the skills gained by the students (accessing, analyzing, evaluating and producing new media messages) are taken into consideration during the course, it is remarkable that the program complies with the objectives.

These explanations require that media literacy is a lifelong skill starting from an early age, and that the education to be given includes a process from preschool education to adult education. Although the issue is so important, the fact that the media literacy education in our country is only tightened to the second level of primary education, the lack of course hours and the fact that it is an elective course seems to be far from meeting the needs of the media literacy education that should be developed in every moment of life.

For this reason, the biggest task falls to the teachers who raise the individuals and children that make up the society. During the process, the teacher keeps the students' critical thinking skills alive, provides access to the media, analyzes the messages, asks related questions, gives them the ability to question and evaluate, and presents ways of producing new media messages with their own comments (Share and Thomsan, 2007). The aim of the media literacy education is not only to consume children's media content but also to question the cartoons, advertisements, websites and games they follow. At the basis of the education process, it is understood that the media is an active inquiry process by asking questions about what the media means and the developments in the media.

Teachers with qualified media literacy are needed to take the model by guiding students in order to reduce the negative impact of media on students and increase their positive impact (Çelik, 2011). Since the targeted skills are not simply the types of skills to be acquired by the students, qualified teachers with 21st century skills (media literacy, problem solving, critical thinking, etc.) are needed (Kress, 2005; cited in: Fidan, 2013). Considering that students take their teachers as role models and see them as an example in the school environment where the psychomotor, cognitive and sensory development of the students are laid and developed, it has gained importance for teachers to acquire problem solving and critical thinking skills and to be trained as qualified individuals who can acquire these skills for their students (Eryaman & Riedler, 2009; Erdem & Yazıcıoğlu, 2015).

Individuals face various problems while evaluating the messages they are exposed to by their environment and eventually producing a new message. The problem, according to Bingham, is the obstacles to the efforts for the goal to be achieved (cited in Demirtaş and Dönmez, 2008). Difficulties in life, obstacles that hinder the realization of goals and disturbing situations can be expressed as problems. What is important is to solve the problems encountered in an effective, practical and rational way. This requires individuals to have problem solving skills. Öğülmüş (2001) defines problem-solving skills as behaviors and efforts to remove the barriers to reach the goal (cited in Demirtaş and Dönmez, 2008), while Oğuzkan (1993) defines it as a process of thinking and implementation that includes applications such as diagnosing and understanding the problem, creating alternative solution forms, supporting the solution form with evidence.

Problem-solving skills begin with children asking questions at an early age and are developed over time. Having the competence of the problem solving skills of the teachers, which is the basic element of education, can help the students manage the education process successfully and increase the welfare and peace level of the society. For this reason, Allison and Allison, (1993) emphasized that teachers need problem solving skills and special expertise to perform their profession (cited in Ada, Dilekmen, Alver and Seçer, 2010). The benefits of developing problem-solving skills are briefly as follows: increasing individuals' interest in learning and enabling them to use their scientific method steps to ensure their permanent learning. As a result, individuals develop their self-confidence (Ada, Dilekmen, Alver and Seçer, 2010).

Problem solving skills and media literacy are a process that is affected and interoperable. Nowadays, the individuals who make up the society that the media directs are raised by the teachers, it is seen that many studies have been conducted on “The Relationship Between Critical Thinking Skills and Media Literacy Level.” However, the number of research on problem solving skills, which is another objective of the program, was found to be limited. In the selection of universe and sample, 6th, 8th grade students who took the “Elective Media Literacy” course and pre-service teachers in various branches were preferred, and it was seen that the studies conducted with the secondary school teachers

were limited. Therefore, the general purpose of the study is to determine the relationship between secondary school teachers' media literacy levels and problem solving skills.

For this purpose, the following questions were sought.

1- What is the level of media literacy skills of secondary school teachers?

2- What is the level of problem solving skills of secondary school teachers?

3- Do secondary school teachers' media literacy skill levels and problem solving skill levels differ according to "Gender, Professional Field, Professional Seniority, Purpose of Using Media Communication Tools?

4- Is there a relationship between secondary school teachers' media literacy levels and problem solving skills?

## Method

This study is a quantitative study in correlational design. Correlational research is the study examining the relationship between two or more variables (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz and Demirel, 2018). In this study, the effect of teachers' media literacy level on problem solving skills will be examined and played a decisive role in choosing correlational patterns. In this study, teachers' media literacy levels are analyzed according to independent variables like gender, professional field, seniority.

## Population and Sample

The population of the study consists of 1903 secondary school teachers working in 51 schools located at the center of Niğde which 51 secondary schools has been totally affiliated to the Directorate of National Education in its center in the 2018-2019 academic year. The sample group of the study consists of 210 secondary school teachers who were determined by simple random method. In the simple random sampling method, all units in the universe have independent and equal chances for sampling (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz and Demirel, 2018). Demographic information of the secondary school teachers who participated in the study according to various variables is shown in Table 1.

**Table 1.** Various demographic characteristics of secondary school teachers participating in the study

		<b>f</b>	<b>%</b>
<b>Gender</b>	Female	96	45,7
	Male	114	54,3
<b>Professional Field</b>	Verbal	116	55,2
	Numerical	94	44,8
<b>Professional Seniority</b>	0-5 year(s)	94	44,8
	6-10 years	42	20,0
	11-20 years	36	17,1
	21 years and above	38	18,1

<b>Purpose of Using Media Communication Tools</b>	Education	54	25,7
	Communication	52	24,8
	Entertainment	30	14,3
	Source of news	74	35,2

Seen in Table 1, 46% of 210 secondary school teachers are female, 54% are male, 55% are verbal (Turkish, religious, social studies, guidance teacher, etc.) and 45% are numerical (IT, mathematics, science teacher, etc.). It was seen that 35% of the secondary school teachers used the media (computer, telephone, tv, newspaper, magazine, etc.) for news source, 26% for education, 25% for communication and 14% for entertainment.

### **Data Collection Tools**

In this study, in order to determine the media literacy skill levels, pre-service teachers, the Media Literacy Skills Scale (MLSS) developed by Erişti and Erdem (2017); and also the Problem Solving Inventory (PSI) developed by Heppner and Peterson (1982) and adapted to Turkish by Şahin, Şahin and Heppner (1993) were used to determine the problem solving skills. Confirmatory factor analysis studies were conducted to determine the suitability of the said scales in the selected sample group. The “Problem Solving Inventory” used in the study was applied in 1993, but it is one of the most applied inventory in Turkey and it has high reliability. The validity and reliability of this inventory for elementary students was applied by (Kardaş, Anagün, & Yalçınoglu, 2014).

### **Problem Solving Inventory (PSI)**

In this study, the Problem-Solving Inventory (PSI) developed by Heppner and Peterson (1982) and adapted to Turkish by Şahin, Şahin and Heppner (1993) was used to collect the problem-solving skill levels of the teachers. In general, this scale, which measures the individual's perception of problem-solving skills, is a Likert-type 6-point scale consisting of 35 items, 14 of which are negative. Items 9, 22 and 29 which were considered to have similar items in the scale were excluded from the scoring. It was assumed that 32 items represented adequate problem-solving skills. The total score limit is between 32 and 192. Items 1, 2, 3, 4, 11, 13, 14, 15, 17, 21, 25, 26, 30. and 34. are the reverse coded substances. High scores in total mean not being able to find effective solutions to problems (Şahin, Şahin and Heppner, 1993). The Cronbach alpha internal consistency coefficient obtained by the researchers who developed the inventory for the whole scale was found to be .90. The Cronbach's alpha reliability coefficient was found to be .88 for the whole Turkish scale (Ada, Dilekmen, Alver and Seğer, 2010).

### **Media Literacy Skills Scale (MLSS)**

Media Literacy Skill Scale This is a 5-point Likert-type scale consisting of 45 items collected under four factors (access, analysis, evaluation and transmission) developed by Erişti and Erdem (2017). In this scale, minimum 45 maxima 225 points can be obtained. The reliability of the scale ( $\alpha$  =

0.916) was calculated by internal consistency test. Alpha values above 0.90 are accepted as high reliability level (Özdamar, 2011). Therefore, it can be said that the scale has a high level of reliability for the research. The total score obtained from the shows individual's media literacy level. In addition to that, the scale makes evaluation based on abilities possible.

### **Data Analysis**

The data collected in the research were transferred to computer and analyzed in the appropriate statistical program (SPSS). Descriptive statistics (frequency, average, etc.), Spearman Correlation Coefficient, Mann-Whitney U, Kruskal-Wallis analysis tests were used in the analysis of the collected data in accordance with the research model and sub-problems.

In order to use the same unit and range in both scales, the ranges used in both scales were converted "high, medium and low". For this purpose, media literacy levels of the teachers participating in the research were divided into 3 groups according to Media Literacy Skills Scale (MLSS); the access level is 11.00-25.00 "low", 25.01-39.00 "medium", 39.01-55.00 "high"; for the analysis level 15.00-35.00 "low", 35.01-55.00 "medium", 55.01-75.00 "high"; for the evaluation level 7.00-17.00 "low", 17.01-26.00 "medium", 26.01-35.00 "high" and finally, the level of transmission was evaluated as 12.00-28.00 "low", 28.01-44.00 "medium" and 44.01-60.00 "high". Similarly, the problem solving skill levels of the teachers participating in the PSI scale were divided into 3 groups, according to the Problem Solving Inventory (PSI); the total score ranges from 32.00-85.00 "high" and 85.01-138.00 to "medium" and 138.01-192.00 "low".

### **Findings**

In this section, as a result of the data obtained from MLSS and PSI scales applied to teachers, findings related to the sub-problems of the research are given.

#### **Findings Related to Media Literacy Skill Levels of Secondary School Teachers**

When the literature was examined, it was found that media literacy generally consists of four sub-themes. First, access to information (message), analyzing the information accessed, evaluating the analyzed information and finally transmitting it through different channels by generating new information (message). Craggs (2002) defines media literacy as an in-depth analysis of media messages, questioning its accuracy, and redefining and transmitting the analyzed information (cited in Kansızoğlu, 2016). The descriptive analysis of the data on the level of media literacy of secondary school teachers, which is the first research question, is presented in Table 2.



**Table 2.** Findings related to media literacy levels of secondary school teachers

		N	%
Access level	Low	16	7,6
	Medium	24	11,4
	High	170	81,0
Analysis level	Low	14	6,7
	Medium	24	11,4
	High	172	81,9
Evaluation level	Low	18	8,6
	Medium	28	13,3
	High	164	78,1
Sending level	Low	16	7,6
	Medium	34	16,2
	High	160	76,2

When Table 2 is examined, it is determined that the media literacy levels of secondary school teachers are high in terms of total and all sub-dimensions. When the sub-dimensions were examined, the highest level of media literacy was “analysis level (81.9%), indicating that secondary school teachers were aware of the media messages they encountered and questioned the accuracy of their sources.

### **Findings Related to Examining Problem Solving Skill Levels of Secondary School Teachers**

Descriptive analysis statistical findings related to the second research question, problem solving skill levels of secondary school teachers are presented in Table 3.

**Table 3.** Findings related to problem solving skill levels of secondary school teachers

		N	%
Problem Solving Skills Level	Low	106	50,5
	Medium	98	46,7
	High	6	2,9

When Table 3 was examined, it was found that the problem solving skill levels of the teachers were high (50.5%) but they were close to the middle level. It can be thought that the secondary school teachers who participated in the research successfully carried out the process of producing solutions when they encounter problems. The rate of teachers who considered problem solving skills as low was found to be only 2.9%.

### **Media Literacy Skill Levels and Problem-Solving Skill Levels of Secondary School Teachers in Terms of Gender Variables**

Mann-Whitney U test was used to determine whether there is a significant difference between secondary school teachers' media literacy skill levels and problem-solving skill levels according to the gender. The findings are presented in Table 4.

**Table 4.** MLSS levels and PSI levels of secondary school teachers according to the gender

		Gender	N	Mean Rank	Sum Rank	of U	p
Problem Solving Skills		Female	96	99,56	9558,00	4902,00	,194
		Male	114	110,50	12597,00		
Access Level		Female	96	90,83	8720,00	4064,00	,001
		Male	114	117,85	13435,00		
Analysis LLevel		Female	96	92,81	8910,00	4254,00	,005
		Male	114	116,18	13245,00		
Evaluation Level		Female	96	97,04	9316,00	4660,00	,062
		Male	114	112,62	12839,00		
Sending Level		Female	96	99,98	9598,00	4942,00	,224
		Male	114	110,15	12557,00		

When Table 4 was examined, no significant difference was found between the problem-solving skill levels of secondary school teachers according to gender variable [ $U=4884$ ,  $p>0.05$ ] and the level of assessment [ $U=4660$ ,  $p>0.05$ ] and transmission level [ $U=4900$ ,  $p>0.05$ ] which are the sub-dimensions of media literacy skills. In this case, it can be said that female and male secondary school teachers have similar characteristics at two lower levels of problem-solving skills and media literacy skills.

It is seen that there is a significant difference in media literacy skills according to gender variable in access level [ $U=4064$ ,  $p<0.05$ ] and analysis level [ $U=4254$ ,  $p<0.05$ ]. When the mean rank scores were examined, it was found that the media literacy skills of male secondary school teachers were higher in the access and analysis levels than the average of female secondary school teachers. In this case, it can be said that male secondary school teachers have more access to media messages and analysis skills.

#### **Media Literacy Skill Levels and Problem-Solving Skill Levels of Secondary School Teachers in Terms of Professional Field Variables**

Mann-Whitney U test was used to determine whether media literacy skill levels and problem-solving skill levels of secondary school teachers, which is the third research question, differed significantly according to professional field variable. The findings are presented in Table 5.

**Table 5.** MLS and PSS levels of secondary school teachers according to their professional fields

		Professional Field	N	Mean Rank	Sum Rank	of U	p
Problem Solving Skills		Verbal	116	108,75	12615,	5075,	,389
		Numerical	94	101,49	9540,		
Access Level		Verbal	116	94,03	10908,	4122,	,002
		Numerical	94	119,65	11247,		
Analysis LLevel		Verbal	116	95,28	11052,	4266	,007
		Numerical	94	118,12	11103,		
Evaluation Level		Verbal	116	94,96	11015,	4229	,005
		Numerical	94	118,51	11140,		
Transmission Level		Verbal	116	97,12	11266,	4480	,026
		Numerical	94	115,84	10889,		

When Table 5 was examined, no significant difference was found between the problem-solving skill levels of secondary school teachers according to the professional field variable [ $U = .389$ ,  $p > 0.05$ ]. However, as a result of the analysis, it was found that there were significant differences in the total and sub-dimensions of secondary school teachers' media literacy skill levels in terms of professional field variable [ $UE = 4122$ ,  $p < 0.05$ ,  $UA = 4266$ ,  $p < 0.05$ ,  $UD = 4229$ ,  $p < 0.05$ ,  $UI = 4480$ ,  $p < 0.05$ ]. In the sub-dimensions of media literacy skill levels, the mean rank scores of secondary school teachers with numerical field branch were higher than the mean rank scores of teachers with verbal field branch. It can be considered as a reason for meaningful differentiation of the information technology teachers in digital field branches following the developments in educational technologies and taking part in elective media literacy course.

### Media Literacy Skill Levels and Problem-Solving Skill Levels of Secondary School Teachers in Terms of Professional Seniority Variables

*Kruskal-Wallis* test was used to determine whether media literacy skill levels and problem-solving skill levels of secondary school teachers, which is the third research question, differed significantly according to professional seniority variable. The findings are presented in Table 6.

**Table 6.** Kruskal-Wallis test results

	Professional Seniority	Sd	$X^2$	p
Problem Solving	0-5 year(s)	3	19,385	,000
	6-10 years			
	11-20 years			
	21 years and above			
Access Level	0-5 year(s)	3	16,435	,001
	6-10 years			
	11-20 years			
	21 years and above			
Analysis Level	0-5 year(s)	3	8,859	,031
	6-10 years			
	11-20 years			
	21 years and above			
Evaluation Level	0-5 year(s)	3	12,636	,005
	6-10 years			
	11-20 years			
	21 years and above			
Transmission Level	0-5 year(s)	3	17,975	,000
	6-10 years			
	11-20 years			
	21 years and above			

When Table 6 is examined, it is found that there is a significant difference between the problem-solving skill levels [ $X^2 = 19,385$ ,  $p < 0.05$ ] and media literacy skill levels of the secondary school teachers according to the professional seniority variable. [ $X^2 = 16,435$ ,  $p < 0.05$ ,  $X^2 = 8,859$ ,  $p < 0.05$ ,  $X^2 = 12,636$ ,  $p < 0.05$ ,  $X^2 = 17,975$ ,  $p < 0.05$ ]. Mann-Whitney U test was used to get an idea about the source of the difference. The results obtained are presented in Table 7.

**Table 7.** MLS and PSS levels of secondary school teachers according to their professional seniority

	Professional seniority	N	Mean Rank	Sum of Rank	U	p	Difference
Problem Solving Skills Level	11-20 years	36	76,44	2752,00	1298,00	,040	3-1
	21 years and above	38	88,87	3377,00	936,00	,000	4-1
		38	46,97	1785,00	552,00	0,18	4-2
Access Level	0-5 year(s)	94	74,50	7003,00	1034,00	,000	1-4
	6-10 years	42	47,64	2001,00	498,00	,004	2-4
	11-20 years	36	43,28	1558,00	476,00	,024	3-4
Analysis Level	0-5 year(s)	94	72,14	6781,00	1256,00	,008	1-4
	6-10 years	42	46,74	1963,00	536,00	,011	2-4
Evaluation Level	0-5 year(s)	94	73,52	6911,00	1126,00	,001	1-4
	6-10 year	42	46,17	1939,00	560,00	,021	2-4
Transmission Level	0-5 year(s)	94	70,20	6599,00	1250,00	,020	1-3
		94	74,65	7017,00	1020,00	,000	1-4
	6-10 year	42	46,40	1949,00	550,00	,017	2-4

According to the Mann-Whitney U test, it is seen that the problem solving skill levels of the secondary school teachers have a statistically significant difference compared to the ones having 11-20 years of seniority compared to those having 0-5 years of seniority ( $U=1298,00$ ,  $p<0.05$ ) and also there is significant difference those who have 21 years or more professional seniority than those who have 0-5 years ( $U=936,00$ ,  $p<0.05$ ) and 6-10 years' seniority ( $U=552,00$ ,  $p<0.05$ ). When the mean rank scores were examined, it was found that the problem solving skill level increased as the professional seniority increased. It can be said that secondary school teachers working for a long time in their profession solve their problems as a result of their experiences and learning experiences.

A statistically significant difference was found in the sub-dimensions of the media literacy skills of secondary school teachers compared to those who had seniority of 0-5 years and seniority of 6-10 years compared to those who had seniority of 11-20 years, 21 years or more. [ $U_E=1034,00$ ,  $p<0.05$ ,  $U_E=498,00$ ,  $p<0.05$ ,  $U_E=476,00$ ,  $p<0.05$ ,  $U_A=1256,00$ ,  $p<0.05$ ,  $U_A=536,00$ ,  $p<0.05$ ,  $U_D=1126,00$ ,  $p<0.05$ ,  $U_D=560,00$ ,  $p<0.05$ ,  $U_I=1250,00$ ,  $p<0.05$ ,  $U_I=1020,00$ ,  $p<0.05$ ,  $U_I=550,00$ ,  $p<0.05$ ]. When the mean rank scores are examined, it can be said that secondary school teachers who are new to the profession and who have worked for a short time are actively using the media tools in keeping with the technological age.

### Findings on Investigation of Media Literacy Skill Levels and Problem-Solving Skill Levels of Secondary School Teachers in Terms of Use of Media Tools

*Kruskal-Wallis* test was used to determine whether media literacy and problem-solving skill levels of secondary school teachers, which is the third research question, differed significantly according to purpose of using media communication tools variable. The findings are presented in Table 8.

**Table 8.** Kruskal-Wallis test results

	Purpose of using media communication tools	Sd	X <sup>2</sup>	p
Problem Solving	Education	3	32,019	,000
	Communication			
	Entertainment			
	Source of news			
Access Level	Education	3	2,766	,429
	Communication			
	Entertainment			
	Source of news			
Analysis Level	Education	3	5,650	,130
	Communication			
	Entertainment			
	Source of news			
Evaluation Level	Education	3	8,021	,046
	Communication			
	Entertainment			
	Source of news			
Transmission Level	Education	3	7,508	,057
	Communication			
	Entertainment			
	Source of news			

When Table 8 was examined, a significant difference was found between the problem-solving skill [ $X^2=32,019$ ,  $p<0.05$ ] levels of the secondary school teachers and evaluation level [ $X^2=8,021$ ,  $p<0.05$ ] which is the sub-dimension of the media literacy skills. Mann-Whitney U test was used to get an idea about the source of the difference. The results obtained are presented in Table 9.

**Table 9.** MLS and PSS levels of secondary school teachers according to their media usage purposes

	Media Tools Usage Purposes	N	Mean Rank	Sum Rank	of U	p	Difference
Problem Solving Skill Level	Communication	52	66,38	3452,00	734,00	,000	2-1
		52	47,73	2482,00	456,00	,002	2-3
	Source of News	74	77,69	5749,00	1022,00	,000	4-1
		74	58,23	4309,00	686,00	,002	4-3
Evaluation Level	Education	54	74,72	4035,00	1446,00	,007	1-4

When Table 9 is examined, it is determined that there is a significant difference in the problem-solving skill levels of secondary school teachers using media as a communication ( $U=734,00$ ,  $p<0.05$ ) and news source ( $U=734,00$ ,  $p<0.05$ ). When the mean rank scores were examined, it was determined that secondary school teachers used media tools for communication and news sources rather than education and entertainment. It can be said that the desire to investigate the common source of news in daily life and to solve the problems in communication affects the problem-solving skill level.

It was determined that there is a significant difference between secondary school teachers using the media tools used for educational purposes as a news source ( $U=1446,00$ ,  $p<0.05$ ). When the mean rank scores were examined, it was determined that secondary school teachers used media tools mostly for educational purposes. It can be said that the teachers' ability to follow and evaluate the developments in and out of the field and make them suitable for the level of students affect the level of media literacy.

### **Findings on Investigation of Relationship Between Media Literacy Skill Levels and Problem-Solving Skill Levels of Secondary School Teachers**

Spearman Rank Differential Correlation Coefficient was used to determine (the fourth research question) whether there is any relationship between secondary school teachers' media literacy skill levels and problem-solving skill levels and also relationship level if there is. The findings are presented in Table 10.

**Table 10.** Relationship Between MLS and PSS Levels of Secondary School Teachers

	Problem Solcing Skills Level		
	N	r	p
Access Level	210	-.180	.009
Analysis Level	210	-.168	.015
Evaluation Level	210	-.183	.008
Transmission Level	210	-.162	.019

When Table 10 is examined, it is seen that there is a negatively low level relationship between lower levels of media literacy skills and problem solving skills of secondary school teachers. [ $r=-.180$ ,  $p<0.05$ ,  $r=-.168$ ,  $p<0.05$ ,  $r=-.183$ ,  $p<0.05$ ,  $r=-.162$ ,  $p<0.05$ ]

### **Discussion and Conclusion**

In this research, firstly, the current media literacy skill levels and problem-solving skill levels of secondary school teachers were determined. According to the findings, it was concluded that the media literacy skill levels of secondary school teachers were high in total and sub-dimensions. Similar results were reached in the researches in which media literacy skill levels were determined (Çepni, Palaz and Ablak, 2015; Fidan, 2013; Karaman and Karataş, 2009; Uslu, Yazıcı and Çetin, 2016). The high level of secondary school teachers' media literacy skills in access, analysis, evaluation and transmission sub-dimensions shows that they have 21st century skills, being aware of the messages coming from the environment, questioning, evaluating and interpreting the messages. In this regard, Çelik (2011) stated that media literacy in the 21st century is one of the basic skills needed in the teaching profession. The fact that the developments in educational technologies accelerate and affect all areas of life makes it important for secondary school teachers to have a high level of media literacy skills. Because the effect of teachers' attitudes and behaviors on student development indirectly enables societies to change and develop.

It was concluded that the media literacy skill levels of secondary school teachers differed significantly in favor of male by gender. While this result is not consistent with the studies in which media literacy skills do not show significant differences according to gender variable (Çepni, Palaz ve Ablak, 2015; Erişti ve Erdem, 2018; Ertek, 2013; Fidan, 2013; Sarsar ve Engin, 2015; Som ve Kurt, 2012), it is similar to the results of the research where the media literacy level of men is higher than women (Karaman, 2016; Uslu, Karaman, Karataş ve Özgür, 2014; Yazıcı ve Çetin, 2016). The fact that male secondary school teachers research and follow technological developments in line with their interests can be considered as a reason for their high level of media access and analysis skills.

In this study, it is seen that problem solving skill levels of secondary school teachers do not differ according to gender. According to the results of the study (Bağçeci and Kinay, 2013; Çevik and Özmaden, 2013; Çınar, Hatunoğlu and Hatunoğlu, 2009; Demirtaş and Dönmez, 2008), it was found that male and female teachers were close to each other in terms of problem solving skills. Problem solving skills and gender were found to be independent of each other (Genç & Kalafat, 2007).

As a result of the third research question, it was seen that problem solving skill levels of secondary school teachers did not differ according to the professional field. As a result of the studies, it was stated that problem solving skills were similar in terms of branch teachers (Bağçeci & Kinay, 2013; Demirtaş & Dönmez, 2008). However, Genç and Kalafat (2007) stated that their problem solving skills differ according to various branches as a result of their research.

It was observed that the four sub-dimensions of the media literacy skill levels of secondary school teachers differ significantly according to the professional field. There are significant differences in other studies conducted in the literature and it is concluded that these differences are in favor of CEIT and social studies (Erişti and Erdem, 2018; Karaman, Karataş and Özgür, 2014; Yılmaz and Özkan, 2013). The fact that there is a significant difference in the field of information technology teaching in the numerical field showed that the research result is consistent with other research results. Media literacy is directly related to information technology courses and course teachers in terms of content and application. As a result of the studies conducted in the literature, it was revealed that the professional fields and branches differ significantly in the level of media literacy skills. For this reason, it is an important step for students to succeed in elective media literacy courses in secondary schools with high level media literacy skills.

As a result of this research, it was found that problem solving skill levels of secondary school teachers differ significantly according to professional seniority variable. In the literature (Bağçeci and Kinay, 2013; Demirtaş and Dönmez, 2008), their research has reached a similar result; Çınar, Hatunoğlu and Hatunoğlu (2009) concluded that there was no significant difference in problem solving skill levels according to professional seniority. As a result of this research conducted with secondary school teachers, it has been concluded that as the professional seniority of teachers

increases, their problem solving skills levels increase. The fact that teachers are inexperienced in the processes related to school, students and parents participation at the beginning of the profession and insufficient to meet the needs of them lowers the problem solving skill level of the teacher. However, it has been concluded that the problem solving skill levels of the secondary school teachers who have worked as a teacher for many years, gained knowledge and experience and reached a solution by taking lessons from their past experiences in the face of any problem encountered. Differing from the results obtained from the literature, Demirtaş and Dönmez (2002) stated that new teachers may be acting boldly by grasping the problem solving process. Today, it can be considered that young teachers adapt to changing conditions faster and they are practical in solving problems.

As a result of the research, it has been found that the media literacy levels of secondary school teachers differ significantly in favor of those with low professional seniority in all sub-dimensions. The fact that technological developments gain momentum and increase in importance compared to the previous years and that they are actively involved in the education and training process have helped the teachers to benefit from technology and gain the skills of analyzing, evaluating and reproducing by accessing the media. Ertek (2013) concluded that teachers' media literacy skill levels differ according to their professional seniority.

In this study, it is concluded that secondary school teachers use media tools for communication and news sources according to their problem solving skill levels. In everyday life, people often face problems and want to reach the most appropriate solution quickly. In order to find solutions to the problems encountered, the problems experienced in our country and in the world, similar events occurred are investigated from various news sources and contact is made to benefit from the experiences of people who face similar problems. For this reason, the purposes of media use differ in problem solving skills.

As a result of the research, it was determined that secondary school teachers used media tools for educational purposes at the level of media literacy evaluation. Factors such as the rapid development of educational technologies, the FATİH project in the education system, the active use of the EBA, the content of Z-books, and various websites with rich educational content have encouraged teachers to use the media for educational purposes, and they are useful for self-development in their own field or outside the field. Karaman (2016) stated that those who use media for reading news have a high level of media literacy.

When the relationship between secondary school teachers' media literacy levels and problem solving skills is examined, a low level negative relationship has emerged. The presence of this relationship, albeit at a low level, revealed that it is important to have problem solving skills in media literacy education. Problem-solving skills enable the inquiry which is the basis of the process of media literacy education in the process of analyzing, evaluating and creating independent, original messages



of individuals from various media tools and accessing real information from the right source. In this case, media literate teachers with problem solving skills uses media tools and messages consciously, actively interrogates and criticizes messages. Therefore, the importance of the two phenomena for society and educators educating the society cannot be denied.

### Suggestions

In the age of technology, media literacy course should be compulsory in primary, secondary and secondary education, since children are exposed to media messages from an early age and course teachers should be selected from the appropriate branch and adequately equipped teachers. This application will help reduce the negative impact of the media.

In order to educate qualified media literate students with problem solving skills, qualified teachers with these characteristics should be trained first. Therefore, practical courses should be given in universities in order to gain 21st century skills. On the other hand, in-service trainings related to media literacy and problem solving skills should be given to the teachers who have started their profession. Parents who play an important role in student development should also be informed about ML and PSS through various activities. Because media literacy is an ongoing process outside the school.

Since media literacy and media education materials, books, etc. are limited in our country, studies should be carried out to improve these materials. Since the participants of this study are secondary school teachers, studies investigating the relationship between media literacy and problem solving skill levels with different samples and various variables can be conducted. The study is limited to Nigde. The results can be generalized by applying to other regions.

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