Investigation of Primary School Teacher Candidates' Metacognitive Awareness Level [1]

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Abstract
People are equipped with the ability to learn something new every moment in their educational life and daily life. In the learning process, a great number of processes are applied to get the expected behaviour. Cognitive processes are the main point of our learning process. Cognitive development starts from the birth. Learning occurs by adding new information on the previously learnt information. At this point, metacognitive process includes a person's knowing his own actions, become aware of them, supervise them, think about them, draw conclusions and plan them. These skills also make learning process easier. It is highly important for our education system and students that the teachers have those skills, too. In that sense, primary school teacher candidates' metacognitive awareness level has been analyzed in this study. In the study, scanning method has been used to describe the current situation. Our sample includes the 1st, 2nd, 3rd and 4th grade students who study at two Education Faculty in 2015-2016 academic year in Turkey. 370 teacher candidates participated in this study. As the data collection tool, Metacognition Awareness Inventory which was developed by Schraw and Dennison (1994) and adapted to Turkish by Akın, Abacı and Çetin (2007) has been used. SPSS16 program has been used for data analysis. As a result of the study, it was found that primary teacher candidates have high level of metacognitive awareness and the correlation among parameters has been analyzed with Metacognition Awareness Inventory.
Keywords
metacognition, primary school education, awareness

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Introduction

When we consider the characteristics that our era looks for, a number of abilities, skills and strategies can be mentioned. The individuals who directly absorb information that is provided, do not adapt it according to their needs, cannot use learning strategies as frequently as expected, imitate expected behaviors, do not think or criticize, and do not process information in their brains cannot be our era's expected profile. For this reason, it is highly important that people know how they learn best, have an idea about cognitive processes and actively use learning strategies (Senemoğlu, 2012). Flavell (1976) used the term "metacognition" to mean that a person is aware of his cognitive processes and can control these processes; and since then this term has been used in the field (cit. Tüysüz, 2013). Senemoğlu (2012) defines this term as both learning and understanding, and knowing how to learn. What is more, "above cognition, metacognition, the cognition of cognition" are used in the field (Akın, 2006). However, a question whether metacognition is a different knowing level than regular cognition, or it is a meta-memory characteristic, or just a way of thinking or an instinct has been asked since the term aroused in the field (Akpınar, 2011).

Metacognition, being part of cognitive processes which are important for learner-centered education system, is one of the elements that help individuals learn by themselves (Baltacı and Akpınar, 2011). When a person is aware of the metacognitive processes, he can rotate, plan, observe and evaluate his learning (Memiş and Arıcan, 2013). These abilities help individuals think critically, solve problems, make deductions and think creatively.

"Metacognitive awareness", being necessary for the thinking abilities that are aimed to be gained in our education system, is a crucial term for educational platforms. While a person is learning, it's also important that he uses the abilities of planning, observing and evaluation. A person can define the task or problem, choose the best strategy to complete the task, compile the necessary sources to reach a solution and present information by operating knowledge (Sarpkaya et. al, 2011). If a person cannot use learning strategies and metacognition effectively, there may be problems in the learning process and student may fail (Vural, 2011).

Metacognition can be analyzed under two headings of "knowledge of cognition" and "organization of cognition". Knowledge of cognition is knowing your and other people's cognitive processes, structure of cognition, its functioning, what we/they know and what we/they don't know, etc. Organization of cognition is the ability to use metacognitive knowledge to reach cognitive goals (Demircioğlu, 2008). The use of metacognitive abilities can be analyzed under three periods. The first period includes ages 0-5 when no strategies are used or taught. The second period includes ages 6-9 when strategies are used but not produced. The third period includes ages

10-11 when strategies are understood and appropriate strategy can be automatically chosen and used (Senemoğlu, 2012).

Teachers, who will raise the quality of life in the society by educating individuals, should control their own thinking processes so as to deal with the problems they encounter, find strategies by evaluating these processes, believe in themselves while implementing these strategies, and be patient during these processes (Tunca and Alkın Şahin, 2014). Their metacognitive awareness should be at optimum level to create new methods by designing learning opportunities taking students' learning types into account, to develop new ways so as to solve problems. In addition, they should be aware of the ways in which students learn by taking metacognitive strategies in the school environment into consideration (Akın, 2006).

As a must of constructive learning, students should build and process knowledge in their minds and be active in the learning process. In our education system in which students are active and teachers are guides, primary teachers should be aware of metacognitive strategies and use them (Tüysüz et.al, 2008). Besides being a role model for the students, primary teachers should be able to help their students gain metacognitive thinking abilities.

If we want our students to gain high level cognitive abilities and have enough level of metacognitive awareness, our teachers should also have these skills and abilities. That is why, it is of high importance that primary school teacher candidates, who are important for basic education, should have enough level of metacognitive awareness. Within this frame, the aim of our study is to determine primary school teacher candidates' metacognitive awareness level and to see if there is a meaningful correlation between their awareness level and various parameters.

Method
Research Model
In this study, descriptive analysis has been used to see the current situation. Descriptive studies are generally used to clarify a situation, analyze it according to certain standards and see the prospective relations between situations. In a study like this, main aim is to define and describe a subject thoroughly (Çepni, 2009).

Participants
The population of this study includes the students who study at Istanbul University Hasan Ali Yücel Teacher Training Faculty and Bulent Ecevit University Ereğli Teacher Training Faculty. The sample of the study includes the 1st, 2nd, 3rd and 4th grade students who study at Istanbul University Hasan Ali Yücel Teacher Training Faculty and Bulent Ecevit University Ereğli Teacher Training Faculty in 2015-2016 academic year. There are 370 teacher candidates in the study sample. (see Table 1).

Table 1.
Demographic Features of the Participants

Parameters		N	%
Sex	Female	283	76,5
	Male	87	23,5
University	Istanbul University	180	48,6
	Bulent Ecevit University	190	51,4
Grade	1st Grade	88	23,8
	2nd Grade	86	23,2
	3rd Grade	100	27,0
	4th Grade	96	25,9
High School	Regular High School	125	33,8
	Anatolian High School	137	37,0
	Vocational High School	19	5,1
	Anatolian Teacher Training High School	89	24,1
Income Level	Low	31	8,4
	Medium	324	87,6
	High	15	4,1
Social Media Use	5-10 mins.	54	14,6
	11-30 mins.	121	32,7
	31-60 mins.	91	24,6
	61-120 mins.	52	14,1
	121 mins. - above	37	10,0
	I don't use it.	15	4,1
TOTAL		370	100

Table 1 shows that female teacher candidates are a lot more than male teacher candidates and when the students are analyzed according to their universities; there are 180 teacher candidates at Istanbul University and there are 190 teacher candidates at Bulent Ecevit University. When the grades of the students are analyzed, the population seems to be more or less the same. When the high school types of the teacher candidates are analyzed, the number of Vocational High School graduates is the least of all and the number of Anatolian High School graduates is the most of all. Income level of most of the teacher candidates is medium. There are 15 teacher candidates who do not use social media. There are 54 people who use social media for 5-10 mins. a day, there are 121 people who use social media for 11-30 mins. a day, there are 91 people who use social media for 31-60 mins. a day, there are 52 people who use social media for 61-120 mins. a day, and there are 37 people who use social media for 120+ mins. a day.

Data Collection Instruments

In this study, Metacognitive Awareness Inventory which is made up of 52 items has been used as the data collection tool. This inventory was developed by Schraw and Dennison (1994) and it was adapted to Turkish by Akın, Abacı and Çetin (2007).

Metacognitive Awareness Inventory has 5-likert rating system and the answers are (1) Never, (2) Randomly, (3) Often, (4) Generally, and (5) Always.

The highest point one can get from the inventory is 260 and the lowest point one can get from the inventory is 52. A high point means that the candidate has a high level of metacognitive awareness as the inventory does not have any items with a negative statement. The total point got from the inventory can be divided to the number of items (52) and we can see the participant's metacognitive awareness level. It can be said that the participants who get lower than 2.5 points have low level of metacognitive awareness and the ones who get higher than 2.5 points have high level of metacognitive awareness. There are 8 sub-dimensions in the inventory. These are: Processual Knowledge, Explanatory Knowledge, Situational Knowledge, Planning, Observing, Evaluation, Eliminating Errors, and Managing Knowledge (Akın, Abacı and Çetin, 2007).

Data Analysis

SPSS16 has been used to analyze data in this study and the correlations among the parameters have been discussed with Metacognitive Awareness Inventory. Non-parametric Group T-Test has been used to compare the values of two groups. To compare the values of three or more groups, One-way Analysis of Variance (ANOVA) has been used if parametric test implications are met, Kruskal-Wallis-H Test and Mann Whitney-U Test have been used if they are not available. 0,5 meaningfulness level is taken as criterion to see if the findings are meaningful or not.

Results and Discussion

In this part of the study, findings that are found from the data gathered will be mentioned. Findings will be shown in tables.

Table 2.
X and SS Values of the Sub-dimensions of Primary Teacher Candidates' Metacognition Level and Their Total Points

		N	X	SS	Min.	Max	*Lowest and Highest Points One Can Get from This Inventory*
Sub-dimensions of Metacoginition	Processual Knowledge	370	14,07	2,73	7,00	20,0	4-20
	Explanatory Knowledge	370	29,18	4,91	15,0	40,0	8-40
	Situational Knowledge	370	18,24	3,29	10,0	25,0	5-25
	Planning	370	24,67	4,47	12,0	35,0	7-35
	Observing	370	28,18	5,09	14,0	40,0	8-40

Evaluation	370	21,22	3,87	12,0	30,0	6-30
Eliminating Errors	370	17,83	3,41	6,00	25,0	5-25
Managing Knowledge	370	32,46	5,52	18,0	45,0	9-45
Metacognition Total	370	185,8	29,2	106,	257,	52-260

In Table 2, one can see the sub-dimensions of metacognition and metacognition total points of primary teacher candidates. As a result of this analysis, from the sub-dimensions of Metacognitive Awareness Inventory, it can be seen that the average points are as follows: Processual Knowledge X=14,070, Explanatory Knowledge X=29,183, Situational Knowledge X=18,248, Planning X=24,670, Observing X=28,183, Evaluation X=21,221, Eliminating Errors X=17,837, Managing Knowledge X=32,467 and Metacognition Total X=185,883. In addition, when Metacognition Total points are divided to the item numbers, we get the result of 3,57.

Table 3.
T-test Results of Primary Teacher Candidates' Metacognition Points According to Sex Variable

		Sex	N	X	SS	t Test		
						t	Sd	p
Sub-dimensions of Metacognition	Processual Knowledge	Female	283	14,035	2,78	-,442	368	,659
		Male	87	14,183	2,60			
	Explanatory Knowledge	Female	283	29,349	4,87	1,173	368	,241
		Male	87	28,643	5,01			
	Situational Knowledge	Female	283	18,303	3,31	,580	368	,562
		Male	87	18,069	3,24			
	Planning	Female	283	24,699	4,55	,228	368	,820
		Male	87	24,574	4,20			
	Observing	Female	283	28,162	5,00	-,144	368	,885
		Male	87	28,252	5,41 1			
	Evaluation	Female	283	21,215	3,88	-,054	368	,957
		Male	87	21,241	3,84			
	Eliminating Errors	Female	283	17,947	3,48	1,110	368	,268
		Male	87	17,482	3,17			
	Managing Knowledge	Female	283	32,777	5,53	1,952	368	,049
		Male	87	31,459	5,39			
	Metacognition Total	Female	283	186,49	29,2	,721	368	,471
		Male	87	183,90	29,1			

Table 3 shows the total points of primary teacher candidates' Metacognitive Awareness Inventory; Females X=186,491, Males X=183,908. According to the T-test results, primary teacher candidates' Metacognitive Awareness Inventory total points do not differ according to the sex variable [t(370)= ,721, p>,05]. When the primary teacher candidates' Metacognitive Awareness Inventory points are analyzed, it has been found that only in Managing Knowledge item there is a positive correlation on behalf female candidates [t(370)= 1,952, p<,05].

As a result of this analysis, from the other sub-dimensions of Metacognition, no meaningful difference has been found in these sub-dimensions: Processual Knowledge [t(370)= -,442, p>,05], Explanatory Knowledge [t(370)= 1,173, p>,05], Situational Knowledge [t(370)= ,580, p>,05], Planning [t(370)= -,228, p>,05], Observing [t(370)= -,144, p>,05], Evaluation [t(370)= -,054, p>,05] and Eliminating Errors [t(370)= 1,110, p>,05].

Table 4.

T-test Results of Primary Teacher Candidates' Metacognitive Awareness Inventory Points According to the High School Variable

		University	*N*	*X*	*SS*	*t Test*		
						t	*Sd*	*p*
Sub-dimensions of Metacognition	Processual Knowledge	Istanbul University	283	13,98	2,900	-,556	368	,579
		Bulent Ecevit University	87	14,14	2,583			
	Explanatory Knowledge	Istanbul University	283	29,26	4,987	,294	368	,769
		Bulent Ecevit University	87	29,11	4,850			
	Situational Knowledge	Istanbul University	283	18,35	3,330	,575	368	,566
		Bulent Ecevit University	87	18,15	3,276			
	Planning	Istanbul University	283	24,44	4,379	-,945	368	,345
		Bulent Ecevit University	87	24,88	4,558			
	Observing	Istanbul University	283	28,03	5,264	-,532	368	,595
		Bulent Ecevit University	87	28,32	4,944			
	Evaluation	Istanbul University	283	21,16	3,771	-,292	368	,770

		Bulent Ecevit University	87	21,27	3,973			
	Eliminating Errors	Istanbul University	283	17,74	3,518	-,512	368	,609
		Bulent Ecevit University	87	17,92	3,318			
	Managing Knowledge	Istanbul University	283	32,26	5,648	-,680	368	,497
		Bulent Ecevit University	87	32,65	5,417			
	Metacogniti on Total	Istanbul University	283	185.2	29,61	-,402	368	,688
		Bulent Ecevit University	87	186.4	28,89			

Table 4 shows that when we look at the primary teacher candidates' Metacognitive Awareness Inventory total points, the total point of teacher candidates of Istanbul University is X=185,255, the total point of teacher candidates of Bulent Ecevit University is X=186,478. No meaningful difference has been found in the points of teacher candidates' Metacognitive Awareness Inventory according to their universities [t(370)= -,402, p>,05]. What is more, when the sub-dimensions of metacognition points are analyzed according to the candidates' university, no meaningful difference has been found in these sub-dimensions: Processual Knowledge [t(370)= -,556, p>,05], Explanatory Knowledge [t(370)= ,294, p>,05], Situational Knowledge [t(370)= ,575, p>,05], Planning [t(370)= -,945, p>,05], Observing [t(370)= -,532, p>,05], Evaluation [t(370)= -,292, p>,05], Eliminating Errors [t(370)= -,512, p>,05] and Managing Knowledge [t(370)= -,680, p>,05].

Table 5.
ANOVA Results of Primary Teacher Candidates' Metacognitive Awareness Inventory Points According to Grade Variable

		Grade	N	X	SS	Sd	F	p
Sub-dimensions of Metacognition	Processual Knowledge	1st Grade	88	14,045	2,753	369	,808	,490
		2nd Grade	86	13,976	2,832			
		3rd Grade	100	14,410	2,700			
		4th Grade	96	13,822	2,691			
	Explanatory Knowledge	1st Grade	88	28,727	4,822	369	1,219	,303
		2nd Grade	86	29,081	5,034			
		3rd Grade	100	29,960	4,614			
		4th Grade	96	28,885	5,158			
	Situational Knowledge	1st Grade	88	18,068	3,558	369	,277	,842
		2nd Grade	86	18,186	3,316			

	3rd Grade	100	18,490	3,245			
	4th Grade	96	18,218	3,126			
Planning	1st Grade	88	24,545	4,523	369	,549	,649
	2nd Grade	86	24,325	4,512			
	3rd Grade	100	25,130	4,453			
	4th Grade	96	24,614	4,437			
Observing	1st Grade	88	27,522	5,125	369	1,351	,258
	2nd Grade	86	27,814	5,157			
	3rd Grade	100	28,900	5,205			
	4th Grade	96	28,375	4,871			
Evaluation	1st Grade	88	20,443	3,853	369	2,190	,089
	2nd Grade	86	21,058	3,634			
	3rd Grade	100	21,830	3,990			
	4th Grade	96	21,447	3,898			
Eliminating Errors	1st Grade	88	17,715	3,565	369	,251	,861
	2nd Grade	86	17,965	3,516			
	3rd Grade	100	18,010	3,310			
	4th Grade	96	17,656	3,324			
Managing Knowledge	1st Grade	88	31,772	5,895	369	2,006	,113
	2nd Grade	86	32,616	5,380			
	3rd Grade	100	33,500	5,368			
	4th Grade	96	31,895	5,383			
Metacognition Total	1st Grade	88	182.84	29,846	369	1,117	,342
	2nd Grade	86	185.02	29,018			
	3rd Grade	100	190.23	28,733			
	4th Grade	96	184.91	29,244			

It can be seen in Table 5 that as a result of the Anova analysis which was done to see if the candidates' Metacognitive Awareness Inventory points differ according to their grades or not, no meaningful difference has been found in these sub-dimensions: Metacognitive Awareness Inventory total point [$t(370)= 1,117$, $p>,05$] and Processual Knowledge [$t(370)= ,808$, $p>,05$], Explanatory Knowledge [$t(370)= 1,219$, $p>,05$], Situational Knowledge [$t(370)= ,277$, $p>,05$], Planning [$t(370)= ,549$, $p>,05$], Observing [$t(370)= 1,351$, $p>,05$], Evaluation [$t(370)= 2,190$, $p>,05$], Eliminating Errors [$t(370)= ,251$, $p>,05$] and Managing Knowledge [$t(370)= 2,006$, $p>,05$].

Table 6.

Kruskal Wallis-H Test Results of Primary Teacher Candidates' Metacognitive Awareness Inventory Points According to High School Variable

		High School	N	Ranking Average	Sd	X^2	p
Sub-dimensions of Metacognition	Processual Knowledge	Regular High School	125	190,51	3	1,040	,792
		Anatolian High School	137	187,09			
		Vocational High School	19	186,18			
		Anatolian Teacher Training High School	89	175,87			
	Explanatory Knowledge	Regular High School	125	195,86	3	2,804	,423
		Anatolian High School	137	182,25			
		Vocational High School	19	198,89			
		Anatolian Teacher Training High School	89	173,10			
	Situational Knowledge	Regular High School	125	190,15	3	,841	,840
		Anatolian High School	137	180,88			
		Vocational High School	19	198,95			
		Anatolian Teacher Training High School	89	183,20			
	Planning	Regular High School	125	187,77	3	2,136	,545
		Anatolian High School	137	190,29			
		Vocational High School	19	199,92			
		Anatolian Teacher Training High School	89	171,85			
	Observing	Regular High School	125	192,12	3	1,176	,759
		Anatolian High School	137	185,74			
		Vocational High School	19	184,26			
		Anatolian Teacher Training High School	89	176,09			
	Evaluation	Regular High School	125	193,14	3	1,944	,584
		Anatolian High School	137	182,31			

	Vocational High School	19	202,47			
	Anatolian Teacher Training High School	89	176,06			
Eliminating Errors	Regular High School	125	190,50	3	,455	,929
	Anatolian High School	137	181,91			
	Vocational High School	19	186,34			
	Anatolian Teacher Training High School	89	183,81			
Managing Knowledge	Regular High School	125	189,55	3	,368	,947
	Anatolian High School	137	183,39			
	Vocational High School	19	190,39			
	Anatolian Teacher Training High School	89	182,01			
Metacognition Total	Regular High School	125	192,75	3	1,308	,727
	Anatolian High School	137	183,86			
	Vocational High School	19	191,89			
	Anatolian Teacher Training High School	89	176,48			

It can be seen in Table 6 that as a result of the Kruskal Wallis-H test which was done to see if the candidates' Metacognitive Awareness Inventory points differ according to their high schools or not, no meaningful difference has been found in these sub-dimensions: Metacognitive Awareness Inventory total point $[t(370)= 1,308, p>,05]$ and Processual Knowledge $[t(370)= 1,040, p>,05]$, Explanatory Knowledge $[t(370)= 2,804, p>,05]$, Situational Knowledge $[t(370)= ,841, p>,05]$, Planning $[t(370)= 2,136, p>,05]$, Observing $[t(370)= 1,176, p>,05]$, Evaluation $[t(370)= 1,944, p>,05]$, Eliminating Errors $[t(370)= ,455, p>,05]$ and Managing Knowledge $[t(370)= ,368, p>,05]$.

Table 7.

Kruskal Wallis-H Test Results of Primary Teacher Candidates' Metacognitive Awareness Inventory Points According to Income Level Variable

		Income	N	Ranking Average	Sd	X^2	p
Sub-dimensions of Metacognition	Processual Knowledge	Low	31	142,11	2	5,928	,052
		Medium	324	188,79			
		High	15	204,03			
	Explanatory Knowledge	Low	31	142,24	2	5,803	,055
		Medium	324	190,08			
		High	15	176,03			
	Situational Knowledge	Low	31	152,21	2	4,932	,085
		Medium	324	190,13			
		High	15	154,30			
	Planning	Low	31	147,23	2	4,542	,103
		Medium	324	189,54			
		High	15	177,37			
	Observing	Low	31	136,85	2	7,425	,024
		Medium	324	190,74			
		High	15	172,93			
	Evaluation	Low	31	150,50	2	3,840	,147
		Medium	324	189,25			
		High	15	176,87			
	Eliminating Errors	Low	31	131,56	2	11,111	,004
		Medium	324	192,38			
		High	15	148,47			
	Managing Knowledge	Low	31	150,89	2	4,200	,122
		Medium	324	189,67			
		High	15	167,00			
	Metacognition Total	Low	31	136,05	2	7,697	,021
		Medium	324	190,87			
		High	15	171,67			

It can be seen in Table 7 that as a result of the Kruskal Wallis-H test which was done to see if the candidates' Metacognitive Awareness Inventory points differ according to their income level or not, no meaningful difference has been found in these sub-dimensions: Processual Knowledge [X2= 5,928, p>,05], Explanatory Knowledge [X2= 5,803, p>,05], Situational Knowledge [X2= 4,932, p>,05], Planning [X2= 4,542, p>,05], Evaluation [X2= 3,840, p>,05], Managing Knowledge [X2= 4,200, p>,05].

In addition, a meaningful correlation has been found between Observing [X2= 7,425, p<,05], Eliminating Errors [X2= 11,111, p<,05] and metacognition total point [X2= 7,697, p<,05]. To see where the difference stems from, additional comparison techniques have been used. For this reason, Mann Whitney-U Analysis,

one of the non-parametric techniques used to compare two parameters, has been used and the results can be seen in tables 8, 9 and 10.

Table 8.

Mann Whitney-U Analysis Results of Observing Dimension According to Income Level of Primary Teacher Candidates

	High School	N	S.O	S. T.	U	Z	P
Observing	Low	31	129,87	4026,00	3,530	-2,739	,006
	Medium	324	182,60	59164,00			
	Low	31	22,98	712,50	216,500	-,376	,707
	High	15	24,57	368,50			
	Medium	324	170,63	55284,50	2,226	-,552	,581
	High	15	156,37	2345,50			

As can be seen in Table 8, Mann Whitney-U analysis has been done to see why there is a meaningful difference between primary school teacher candidates' Observing sub-dimension and Income Level parameter. As a result of the analysis, it has been found that there is a positive correlation between the primary teacher candidates' Observing sub-dimension and their income level on behalf of the candidates who have medium income level ($Z= -2,739$; $p<,05$).

Table 9.

Mann Whitney-U Analysis Results of Eliminating Errors Dimension According to Income Level of Primary Teacher Candidates

	High School	N	S.O	S. T.	U	Z	P
Eliminating Errors	Low	31	125,02	3875,50	3379,50	-3,021	,003
	Medium	324	183,07	59314,50			
	Low	31	22,55	699,00	203,000	-,696	,487
	High	15	25,47	382,00			
	Medium	324	171,81	55665,00	1845,00	-1,583	,113
	High	15	131,00	1965,00			

As can be seen in Table 9, Mann Whitney-U analysis has been done to see why there is a meaningful difference between primary school teacher candidates' Eliminating Errors sub-dimension and Income Level parameter. As a result of the analysis, it has been found that there is a positive correlation between the primary teacher candidates' Eliminating Errors sub-dimension and their income level on behalf of the candidates who have medium income level ($Z= -3,021$; $p<,05$).

Table 10.

Mann Whitney-U Analysis Results of Total Metacognition Level According to Income Level of Primary Teacher Candidates

	High School	N	S.O	S. T.	U	Z	P
	Low	31	129,44	4012,50	3516,50	-2,758	,006
	Medium	324	182,65	59177,50			
Total Level of Metacognition	Low	31	22,61	701,00	205,000	-,644	,519
	High	15	25,33	380,00			
	Medium	324	170,73	55315,00	2195,00	-,633	,527
	High	15	154,33	2315,00			

As can be seen in Table 10, Mann Whitney-U analysis has been done to see why there is a meaningful difference between primary school teacher candidates' Total Metacognition Level dimension and Income Level parameter. As a result of the analysis, it has been found that there is a positive correlation between the primary teacher candidates' Total Metacognition Level dimension and their income level on behalf of the candidates who have medium income level (Z= -2,758; p<,05).

Table 11.

Kruskal Wallis-H Test Results of Primary Teacher Candidates' Metacognitive Awareness Inventory Points According to Social Media Use Variable

		Social Media Use	N	Ranking Average	Sd	X^2	p
Sub-dimensions of Metacognition	Processual Knowledge	5-10 mins.	54	198,32	5	3,249	,662
		11-30 mins.	121	179,04			
		31-60 mins.	91	194,24			
		61-120 mins.	52	175,44			
		121 mins. – above	37	190,80			
		I don't use it.	15	160,27			
	Explanatory Knowledge	5-10 mins.	54	204,17	5	2,694	,747
		11-30 mins.	121	179,60			
		31-60 mins.	91	188,59			
		61-120 mins.	52	185,40			
		121 mins. – above	37	176,59			
		I don't use it.	15	169,43			
	Situational Knowledge	5-10 mins.	54	202,98	5	4,044	,543
		11-30 mins.	121	173,38			
		31-60 mins.	91	195,64			
		61-120 mins.	52	180,42			
		121 mins. – above	37	180,93			
		I don't use it.	15	187,70			
	Planning	5-10 mins.	54	191,72	5	4,312	,505

	11-30 mins.	121	178,62			
	31-60 mins.	91	201,72			
	61-120 mins.	52	179,73			
	121 mins. – above	37	179,68			
	I don't use it.	15	154,60			
Observing	5-10 mins.	54	204,06			
	11-30 mins.	121	171,62			
	31-60 mins.	91	204,27			
	61-120 mins.	52	172,13	5	8,186	,146
	121 mins. – above	37	186,85			
	I don't use it.	15	159,77			
Evaluation	5-10 mins.	54	198,06			
	11-30 mins.	121	181,45			
	31-60 mins.	91	196,10			
	61-120 mins.	52	171,32	5	3,652	,600
	121 mins. – above	37	184,92			
	I don't use it.	15	159,27			
Eliminating Errors	5-10 mins.	54	196,22			
	11-30 mins.	121	173,91			
	31-60 mins.	91	200,14			
	61-120 mins.	52	182,02	5	3,946	,557
	121 mins. – above	37	178,31			
	I don't use it.	15	181,37			
Managing Knowledge	5-10 mins.	54	198,05			
	11-30 mins.	121	169,98			
	31-60 mins.	91	205,41			
	61-120 mins.	52	181,45	5	7,823	,166
	121 mins. – above	37	187,27			
	I don't use it.	15	154,37			
Metacognition Total	5-10 mins.	54	199,34			
	11-30 mins.	121	173,79			
	31-60 mins.	91	202,15			
	61-120 mins.	52	178,66	5	5,730	,333
	121 mins. – above	37	183,07			
	I don't use it.	15	158,77			

It can be seen in Table 11 that as a result of the Kruskal Wallis-H test which was done to see if the candidates' Metacognitive Awareness Inventory points differ according to their social media use or not , no meaningful difference has been found in these sub-dimensions: Metacognitive Awareness Inventory total point [$t(370)= 5,730$, $p>,05$] and Processual Knowledge [$t(370)= 3,249$, $p>,05$], Explanatory

Knowledge [t(370)= 2,694, p>,05], Situational Knowledge [t(370)= 4,044, p>,05], Planning [t(370)= 4,312, p>,05], Observing [t(370)= 8,186, p>,05], Evaluation [t(370)= 3,652, p>,05], Eliminating Errors [t(370)= 3,946, p>,05] and Managing Knowledge [t(370)= 7,823, p>,05].

Conclusion

In the study it has been seen that primary teacher candidates have high (metacognitive awareness inventory total points=185,883) level of metacognitive awareness. In addition, when metacognition total point was divided to the number of items, 3.57 point was found. One can infer an individual's metacognitive awareness level by dividing the inventory points to the number of items. It can be said that the participants who get lower than 2.5 points have low level of metacognitive awareness and the ones who get higher than 2.5 points have high level of metacognitive awareness (Akın, Abacı and Çetin, 2007). According to these results, it can be said that the primary teacher candidates have high level of awareness in terms of skills like Planning, Observing, Eliminating Errors, Management and Evaluation and thanks to these abilities, they can organize learning process accordingly. The results overlap with the results of Baykara (2011), Kışkır (2011), Dilci and Kaya (2012), Bakioğlu et. al. (2015) studies.

No meaningful difference was found between primary teacher candidates' sex and their metacognitive awareness level both in total points and sub-dimensions. So it was seen that sex is variable has nothing to do with metacognitive awareness. This result overlaps with the results of Baykara (2011), Sarpkaya et. al. (2011), Kışkır (2011), Dilci and Kaya (2012), Deniz et. al. (2014), Bakioğlu et. al. (2015) studies. Besides this, different results than the results of this study can also be found in the literature. Kaçar and Sarıçam (2015), Memiş and Arıcan (2013), Tüysüz (2013), Göçer (2014), Tunca and Alkın Şahin (2014) found that females' metacognitive points were much higher than males' points.

No meaningful difference was found between primary teacher candidates' universities and their metacognitive awareness level both in total points and sub-dimensions. This might be because of the similarity of the two universities' syllabus and strategies, and that they have similar student profiles. However, in the studies of Tunca and Alkın Şahin (2014), and Bakioğlu et. al. (2015), there was a meaningful difference between the universities they compared.

No meaningful difference was found between primary teacher candidates' grades and their metacognitive awareness level both in total points and sub-dimensions. Kışkır (2011), Baykara (2011), Tunca and Alkın Şahin (2014), Deniz et. al. (2014), Kaçar and Sarıçam (2015) also found the same results in their studies. However, in their studies, Gürşimşek, Çetingöz, Yoleri (2009) found that there was a meaningful difference between 2nd and 4th grade students on behalf of 4th grades in terms of

the parameters of "Explanatory Knowledge" and "Processual Knowledge". Tüysüz et. al. (2008) also found that metacognitive awareness level of teacher candidates increases in parallel with their grade. 2nd, 3rd and 4th grade students got higher points when compared to the 1st graders.

No meaningful difference was found between primary teacher candidates' high schools and their metacognitive awareness level both in total points and sub-dimensions. The studies done by Sarpkaya et. al. (2011), Kaçar and Sarıçam (2015) also support our findings. Dilci and Kaya (2012) found that there was no meaningful difference between primary teacher candidates' graduate programs and their metacognitive awareness level. As a result of these findings, we can say that graduate school does not determine the level of metacognitive awareness.

There has been found a meaningful correlation between the candidates' income level and Observing and Eliminating Errors, along with metacognitive awareness total points. For the Observing sub-dimension, teacher candidates who have medium income level think that they have higher awareness level than the ones who have low income level. For the Eliminating Errors sub-dimension, teacher candidates who have medium income level think that they have higher awareness level than the ones who have low income level. Primary teacher candidates who have medium income level believe that they have higher metacognitive awareness level than the ones who have low income level. No meaningful result was found for the other sub-dimensions. Sarpkaya et. al. (2011) did not find a meaningful correlation between income level and cognitive awareness level, either.

No meaningful difference was found between primary teacher candidates' use of social media and their metacognitive awareness level both in total points and sub-dimensions. But it is an interesting result that we found a meaningful correlation between the candidates who never use social media (158,77) and the ones who use it 2 hours+ on behalf of the latter with a point difference of 25.

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