

Examination of the Relationship Between Prospective Social Studies Teachers Epistemological Beliefs and Their Attitudes Towards Learning

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Abstract

This study was carried out to determine relationship between prospective teachers (studying at department of social studies teaching)' attitudes towards learning and their scientific epistemological beliefs. The study was conducted with 213 prospective (preservice) social studies teachers who were studying at Faculty of Education of a public university during 2019-2020 Academic year. Mixed method was employed in the study. Attitude scale towards learning and epistemological belief scale were used in obtaining quantitative data; and qualitative ones (data) were collected by interview form. Analysis of quantitative data was carried out by SPSS 22 statistical package program. Content analysis was applied to qualitative data, obtained as a result of the interview with 25 prospective teachers. According to findings, obtained from the study, prospective teachers' attitudes towards learning and epistemological beliefs, are at high level and medium-level, respectively. It was found to be a significant relationship between attitude towards learning and epistemological belief.

Keywords: Social Studies, Epistemological Belief, Attitude Towards Learning, Prospective Teachers.

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INTRODUCTION

Epistemological belief is a subject that pedagogs have begun to study/examine in recent years. Epistemology is derived from the Greek words “episteme (knowledge)” and “logos (reason/understanding/comprehension through reason)” (Buehl & Alexander, 2001); and has a philosophical content. Subject of study of epistemology is knowledge. Epistemology provides to make inference of; meaning of knowledge, its progress of being learned, teaching and producing (Tezci & Uysal, 2004); sources of knowledge; and of how knowledge would be known (Deryakulu, 2004).

Epistemological beliefs provide to learn and construct knowledge (Kaya & Ekici, 2017); with its this aspect, it is influential on life-long learning, as well (Shommer, 1990). Epistemological beliefs contain those; being precise (certain/accurate) or changeable of knowledge; source from which knowledge is obtained; who created (generated) knowledge; and structure of knowledge (simplicity or complexity) (Karhan, 2007). Epistemological beliefs are divided into two parts as developed/improved (matured) and undeveloped/unimproved (unmatured/immature) ones. It revealed that individuals, with improved epistemological beliefs, have high(er) academic achievement; have more effective learning habits; and are more succesful in comprehending knowledge which they have newly encountered (Shommer, 1990). Individuals with the improved epistemological beliefs believe that much knowledge will change; some knowledge have not been discovered, yet, and that too little knowledge have continued without change. Individuals having this belief approach (to) knowledge critically; and they believe accuracy (trueness) of knowledge only when adequate evidence has been submitted. On the other hand, individuals with unimproved epistemological beliefs believe that much knowledge is certain (exact); too little knowledge have not been discovered, yet, and again that too little knowledge have been (being) changed (Schommer, 1994). In studies carried out, it was found there were a relationship between tendencies to the unimproved belief and approaches to superficial learning; those (tendencies) to the improved belief and those (approaches) to deep learning (Aypay, 2011). Hofer (2001) revealed that epistemological beliefs have an impact on strategy usage, processes of cognitive computing, understanding and conceptual change. Epistemological beliefs have an impact on situations of decision-making and making a choice during educational processes (Murat & Erten, 2018), such as teaching methods and techniques, classroom management and on what will be focused during learning process (Koç & Memduhoğlu, 2017).

Individuals’ epistemological beliefs have an effect on their academic achievement (Buehl & Alexander, 2001). Again, it was found to be a relationship between intelligence&ability (talent) and epistemological belief (Schommer-Aikin, 2002). Studies in literature were carried out mostly on determining the relationship of epistemologic belief with variables of academic achievement, gender, department (grade) and class (Bangir & Koç 2011; Erten & Kazu 2015; Aslan 2017; Memduhoğlu & Koç 2017). There are also studies at which relationship between epistemological belief and the revised two-factor study process (Taşkın, 2019) was investigated; and attitude towards scientific studies Kürşad (2015) was examined. Keskin & Aydın (2016), in their study, compared mathematics and social studies teachers’ epistemological beliefs. Other studies on epistemological beliefs belong to Aypay (2011), Demir (2012), Demirel & Çam (2016), Aslan & Aybek (2018), and Unlu & Dökme (2017).

On the other hand, there are also studies at which epistemological beliefs were examined together with elements such as individual’s learning and studying strategies (Deryakulu, 2004), skills to learning and questioning (Elmacı & Yıldız, 2017), skills of problem-solving (Akcan & Sözer, 2007) and skills of critical thinking (Başbay, 2013) etc.

In this study, we addressed relationship between prospective social studies teachers’ epistemological beliefs and their attitudes towards learning. Because, one of methods to evaluate education process is to take into account of individuals’ scientific process of thinking and their attitudes and beliefs towards learning. These attitudes and beliefs should be taken into consideration by institutions which train (raise) teachers while organizing curricula (Öngen, 2003). For this reason,

teachers and prospective teachers' attitudes and beliefs towards knowledge and learning should be known. Understanding of learning process is necessary for knowledge to be used and for new knowledge to be generated. Because, education has gone beyond knowledge transfer (conveying) during knowledge age when we are in; and it has undertaken a function that skill to seek knowledge is gained (brought in) to individual (Kuo, Hwang, & Lee, 2012). Thus, learning to learn has become focal point of education. On the other side, learning process is a complex one. For this reason, individual differences necessitates that different learning methods and strategies should be used during learning process (Riedler& Eryaman, 2016; Sabancı, 2014).

Learning is a process to acquire knowledge, skill, strategy, belief, attitude and behaviour (Schunk, 2009). It means that the individual has become doing (performing) actions, thoughts and affairs (works), which the individual could not do (perform), after various activities (Kara, 2010). Learning occurs not only during education-teaching activities at school, but also out-of-school environments (Pritchard, 2015). Learning environment and belief in applicability of skills and knowledge learned in the real world determine learning motivation (Lumsden, 1994).

Also individual's attitude towards learning is quite important. Positive attitudes which will be developed towards learning make the individual open to learning. Therefore, a positive behaviour towards learning is developed. There is a relationship in a positive way between students' academic achievements and their attitudes towards learning (Ramsden & Entwistle, 1981). Another study that presented this relationship belongs to Erdoğan (2019). Purpose of studies which present relationship between achievement (success) and attitude towards learning is to get (make) curricula be implemented, which will develop individuals' attitudes towards learning (Mullis, Cotter, & Martin, 2020). Positive attitudes towards learning awake a higher desire (request) to participate into learning during the learning process (Marton & Salio, 1997). Individuals with a positive attitude towards learning have also a high interaction with the teaching staff and other students (Shea, Frederickson, Pickett, Pelz, & Swan, 2013). Students with a low academic achievement have a negative attitude towards learning. These students believe that neither school or learning will make a contribution to them to be successful in the future (Candeias, Rebele, & Oliverira, 2010).

In the literature, prospective teachers' attitudes towards learning were examined together with variables of level of grade (class), department and gender (Adıgüzel & Dolmacı 2018). Again, there is a study by Aydın (2016), which presents prospective science teachers' attitudes towards learning. Another study in the literature is the one belonging to Güngör & Yenel, (2020) that exhibits effect of university students (Faculty of Sports Sciences)' attitudes towards learning on prediction of their academic motivations. Also the study by Çelik (2019) draws attention, which presents the relationship between social studies and class (primary school) teachers' thinking styles and their attitudes towards learning.

It is a necessary situation that attitude degree, which individuals have on the relevant object or condition (situation), is measured in that behaviours are presented (Kan & Akbaş, 2005). Attitudes are classified into/as positive, negative and neutral.

METHOD

Main problem of the study is the question "Is there any relationship between prospective social studies teachers' attitudes towards learning and their epistemological beliefs?" Those are sub-problems of the study:

1. What level are prospective Social Studies teachers' attitudes towards learning at?
2. What level are prospective Social Studies teachers' epistemological beliefs at?

3. Do prospective Social Studies teacher' attitudes towards learning and their epistemological beliefs change by class (grade), gender and place of birth?

Answers to those following questions were sought to support these above ones in qualitative part of the study:

1. What are prospective Social Studies teachers' opinions (views) on authority and accuracy (trueness/certainty)?

2. What are prospective Social Studies teachers' opinions on process of knowledge generation?

3. What are prospective Social Studies teachers' opinions on source of knowledge?

4. What are prospective Social Studies teachers' opinions on reasoning?

5. What are prospective Social Studies teachers' opinions on changeability of knowledge?

6. What are prospective Social Studies teachers' attitudes towards teaching?

The study was constructed by the mixed method. The mixed method is a research form that qualitative and quantitative methods are used together to examine the study problem comprehensively and multi-dimensionally (Yıldırım & Şimşek, 2013). Through the mixed problem, researcher can present more strongly answer of the study problem by merging quantitative and qualitative data. This method provides with researchers with power that will satisfy weaknesses of both quantitative and qualitative researches (Creswell, 2017). In quantitative part of the study, relational screening (correlational survey) model was used. Relational screening models are research models that provide to present relationship between two or more variables and degree of this relationship (Karasar, 2014). A case study was used in qualitative part of the study. Case study is a qualitative research method that a case (situation) is thoroughly examined through data collection tools such as observation, interview, document and report etc., and that this case- and cases-dependent themes are described (Creswell, 2007).

Study Group

The study group consists of 213 prospective teachers in total, who are studying at department of Social Studies Teaching of Education Faculty in a public university during 2019-2020 academic year. As a result of statistical evaluation, there was no significant relationship between grade (class)&geographical region (place of birth) and attitude towards learning&epistemological beliefs. For this reason, these statisticals were not put into the study. When considering place of birth as rural-urban, a significant relationship appeared in both two scales. Descriptive statistical results belonging to prospective social studies teachers were given in Table 1. Qualitative part of the study was carried out with 25 prospective social studies teachers.

Table 1. Place of Birth Information of Study Group

		Place of Birthday						Total	
		Eastern Anatolia Region	Southeastern Anatolia Region	Blacksea Region	Central (Inner) Anatolia Region	Mediterranean Region	Aegean Region		Marmara Region
Rural	Number	20	14	5	4	4	25	8	80
	%	25,00	17,50	6,25	5,00	5,00	31,25	10,00	100
Urban	Number	24	16	9	17	9	39	19	133
	%	18,05	12,03	6,77	12,78	6,77	29,32	14,29	100
Total	Number	44	30	14	21	13	64	27	213
	%	20,66	14,08	6,57	9,86	6,10	30,05	12,68	100

Data Collection Tools

In this study, we applied two scales, one is Attitude Scale Towards Learning and other is Epistemological Belief Scale, and one interview form.

Attitude Scale Towards Learning

Attitude Scale Towards Learning, developed by Çetin & Çetin (2019), was used to determine prospective teachers' attitude towards learning. This scale was constituted by Likert type 5-point rating/scoring system. 9 of items consist of negative judgement (attitude) and 25 of items contain positive judgement. It was determined that the scale consisted of three factors indicating variance ratio of 53.161% in total. These factors were named as Struggle (Effort) to Learn, Avoidance of (Escaping from) Learning and Caring about (Attaching importance to) Learning. Cronbach's alpha coefficients of internal consistency, calculated for whole of the scale and for its sub-factors, are 0.94 for the scale-wide, .92 for 1st sub-factor, .86 for 2nd sub-factor, and .84 for 3rd sub-factor, respectively. In this study, Cronbach's alpha coefficient of attitude scale towards learning was found as .934. Reliabilities of scale items vary between .931 and .936. Reliability coefficients of sub-dimensions of the scale were found as .938, .922 and .896, respectively. For point (score) averages, score interval of 1 - 1.80 was considered as very low; 1.81 – 2.60 as low; 2.61 – 3.40 as medium; 3.41 – 4.20 as high; and 4.20 – 5.00 as very high.

Epistemological Belief Scale

This scale was constituted by Likert type 5-point rating/scoring system of Scientific Epistemological Beliefs, developed by Elder in 1996, and adapted by Acat, Tüken and Karadağ **Geçersiz kaynak belirtildi.** into Turkish. 15 of items consist negative judgement and 10 of items contain positive judgement. However, only two items (item 3 and item 7) were in inversely coded. Because, other 13 negative judgements take place in sub-dimensions which contain negative meaning.

In analysis, performed for the scale, it was determined that the scale consisted of five factors indicating variance ratio of 53.34% in total. These factors are named as Authority and Accuracy (Certainty/Trueness), Process of Knowledge Generation, Source of Knowledge, Reasoning and Changeability of Knowledge. According to reliability analysis performed, Cronbach's Alpha reliability coefficients were calculated between .86 and .57; and that of whole scale was determined as .82. In this study, Cronbach's Alpha reliability coefficient was calculated between .80 and .580 for each sub-dimension of the scale; and it was found as .812 whole of the scale. In the scale applied, those with score of 1.0-2.5 were determined as traditional; with 2.5-3.5 as mixed (medium-level); and with 3.5-5.0 as constructivist. Prospective teachers' conventional beliefs were expressed as

undeveloped/unimproved (traditional); and their constructivist beliefs as developed/improved (modern). All items under sub-dimensions of Authority&Accuracy and Source of Knowledge consist negative judgement and here low score averages indicate traditionality of their scientific epistemological beliefs.

Interview Form

In qualitative reseach dimension, semi-structured interview form was drawn up. Semi-structured interview contains both clear (explicit) and open-ended questions as a mixed of the structured interview type and the unstructured one (Merriam, 2009). We benefitted from the literature while preparing questions

Analysis of Data

In analyzing data, SPSS statistical package program was used. Before data obtained were analyzed, it was checked whether or not data were distributed normally (if data showed a normal distribution or not). In order to determine whether or not scores taken from scales had normal distribution, we benefitted from analysis results of Shapiro-wilk, Histogram and Q-Q Plot, and from Kolmogorov-Smirnov test ($p>.05$). It is accepted that there is a normal distribution when Kurtosis and Skewness values are -1.5 and $+1.5$ (Tabachnick & Fidell, 2013). It was concluded that scores, taken from tests which were performed to determine whether or not prospective teachers' attitude towards learning and their epistemological beliefs have a normal distribution, satisfied normality assumption ($p>.05$). Independent t-test for unrelated (independent) two samples and one-way analysis of variance (ANOVA) were carried out (Büyüköztürk, Çakmak, Akgün, Karadeniz, & Demirel, 2014).

Pearson's correlation coefficient was applied to determine the relationship between prospective teachers' attitude towards learning and their epistemological beliefs. In all analyses performed, significance was tested on $p<.05$ level and findings/results were presented in tabular form.

Interview form was examined by content analysis method. Content analysis is a method that data obtained are first conceptualized, later are arranged within a certain reasoning/logic, and categories are established (Yıldırım & Şimşek, 2011). Investigator (Researcher) triangulation was performed to determine validity and reliability of the study. The investigator triangulation is that two or more investigators (researchers) analyze qualitative data obtained independently of each other and that findings are compared (Patton, 2014). Data were coded including one as investigator (researcher) and the other as another academician in the field of educational sciences. Later, percentage of agreement (matching) was calculated as 80.1% by comparing code results made. In cases where percentage of agreement is 70% or above, qualitative studies/researches are accepted as reliable (Miles & Huberman, 1994). Therefore, it was revealed that also qualitative part of the study was reliable. Codes taking place in same class (grade) were subsumed under appropriate categories.

FINDINGS/RESULTS

In this part, we gave a place to findings (results) for prospective teachers' attitudes towards learning and their epistemological beliefs. Later, we examined the relationship between prospective teachers' attitudes toward learning and their epistemological beliefs. In this part, there are also qualitative data that presented prospective teachers' epistemological beliefs and their attitudes towards learning.

Findings of quantitative part of the study

Values of arithmetic mean (average), standard deviation and minimum-maximum for prospective teachers' scores of epistemological belief scale and attitude scale toward learning were

given in Table 2. According to this, score (point) average of prospective teachers' attitude scale towards learning is 3.51 and it contains the statement 'I agree' (high). Scores of epistemological belief scale are 2.62 and could be considered as medium level (mixed).

Table 2. Descriptive statistics for scales

	Number	Mean	Standart Deviation	Minimum	Maximum
Attitude Towards Learning	213	3.5095	0.58698	1.59	4.63
Epistemological Belief	213	2.6232	102.967	1.76	4.80

Values of arithmetic mean (average), standard deviation and minimum-maximum for prospective teachers' sub-dimension scores of attitude scale toward learning were shown in Table 3. Score taken from sub-dimension of avoidance of (escaping from) learning is 4.08. The scale belonging to this sub-factor is in the form of the statement "I strongly agree", by its items. It is seen that prospective teachers' scores from avoidance of learning (escaping from learning) are high. While score average taken from sub-dimension of caring about learning (attaching importance to learning) corresponds, with 3.47, to the interval of 3.40-4.19, that is, to the statement "I agree"; score of struggle to learn is, with 3.31, to the interval of 2.60-3.39, that is, "I neither agree, nor disagree: I am neutral (medium level)."

Table 3. Descriptive statistics for sub-dimensions of attitude scale towards learning

	Avoidance of Learning	Caring about Learning	Struggle (Effort) to Learn
Number	213	213	213
Average (Mean)	3.6808	3.4718	3.3153
Standard Deviation	.72707	.97639	.86143
Minimum	1.33	1.33	1.53
Maximum	4.83	5.00	4.89

Values of arithmetic mean, standard deviation and minimum-maximum for prospective teachers' sub-dimension scores of epistemological belief scale were shown in Table 4. Score taken from sub-dimension of authority and accuracy (certainty/trueness) is 2.62. The scale belonging to this sub-factor is in the form of the mixed (medium level), by its items. While score average taken from sub-dimension of process of knowledge generation corresponds, with 3.87, to modern (constructivist); that of sub-dimension of source of knowledge is in the form of the mixed (medium level) since it corresponds to the statement 3.18. Reasoning is in the form of modern (3.82) being high whereas changeability of knowledge is of medium level (3.27).

Table 4. Descriptive statistics for sub-dimension of Epistemological Belief Scale

	Authority and Accuracy	Process of Knowledge Generation	Source of Knowledge	Reasoning	Changeability of Knowledge
Number	213	213	213	213	213
Avarage (Mean)	2.6232	3.8700	3.1772	3.8185	3.2664
Standard Deviation	1.02967	0.69218	0.93950	1.13757	1.35296
Minimum	1.00	1.83	1.00	1.00	1.00
Maximum	5.00	5.00	4.75	5.00	5.00

Prospective teachers' attitudes towards learning show a significant difference by place of birth. It is seen that urban-born students (prospective teachers)' attitudes towards learning are more positive than rural-born ones. When examined sub-dimensions of their attitudes towards learning, scores of struggle (effort) to learn, caring about learning and avoidance of learning show a significant difference by prospective teachers' place of birth. While struggle to learn and caring about learning are higher in urban-born ones; attitude towards avoidance of learning is higher in rural-born ones.

Table 5. T-Test Results For Prospective Teachers' Attitudes Towards Learning And For Sub-Dimensions of Attitude Scale Towards Learning, By where They Spend Their Lives (Where They Live)

		Number	Mean	St. Dev.	t	P
Attitude Towards Learning (Whole of Scale)	Rural	89	3,0621	0,75718	-7,646	.000*
	Urban	124	3,7263	0,51039		
1.Struggle (Effort) to Learn	Rural	89	2,8716	0,90531	-6,531	.000*
	Urban	124	3,5484	0,60674		
2.Caring about Learning	Rural	89	2,9024	0,93066	-6,472	.000*
	Urban	124	3,6116	0,66893		
3.Avoidance of Learning	Rural	89	2,2097	1,17463	3,840	.000*
	Urban	124	1,7030	0,74885		

*p<0,05

Prospective teachers' epistemological beliefs show an significant difference by place of birth. Urban-born ones' attitudes are higher than rural-born ones. When examining sub-dimensions of epistemological belief, dimensions of reasoning and process of knowledge acquigeneration show a significant difference by prospective teachers' place of birth. In these two dimensions, urban-born ones' average scores are higher. When examining other sub-dimensions, it is seen, while urban-born ones' average score higher in dimensions of source of knowledge and changeability of knowledge, that (score) of authority and accuracy is less (lower). However, no significant difference appeared in these sub-dimensions.

Table 6. T-Test Results For Epistemological Belief And Sub-Dimensions of Epistemological Beliefs Scale, By Prospective Teachers' Place of Birth

		Number	Mean	Std. Deviation	t	P
Epistemological Beliefs (Whole of the Scale)	Rural	89	3,0530	0,59228	2.136	.034*
	Urban	124	3,2277	0,58644		
1.Authority and Accuracy	Rural	89	2,6671	1,02697	0.526	.599
	Urban	124	2,5917	1,03460		
2. Reasoning	Rural	89	3,5243	1,26819	-3,268	0,00*
	Urban	124	4,0296	0,98683		
3. Process of Knowledge Generation	Rural	89	3,2491	1,03631	-2,486	0,01*
	Urban	124	3,5833	0,91571		
4. Source of Knowledge	Rural	89	3,2016	0,91382	0,446	0,65
	Urban	124	3,1433	0,96044		
5. Changeability of Knowledge	Rural	89	3,0927	1,41089	-1,593	0,22
	Urban	124	3,3911	1,30128		

*p<0,05

As is seen in Table 7, the relationship between prospective teachers' epistemologicl beliefs and their attitudes towards learning was examined. There is a significant relationship between epistemological belief and attitude towards learning.

Table 7. The Relationship Between Prospective Teachers' Epistemological Beliefs and Their Attitudes Towards Learning

	Attitude Towards Learning	
Epistemological Belief	r	,179**
	P	0,009
	N	213

*p<0.01

As is seen in Table 8, the relationship between sub-dimensions of epistemological belief scale and those of attitude scale towards learning was examined. According to this, it was determined a negative relationship significantly between struggle (effort) to learn and authority&accuracy; and a positive one significantly between reasoning, process of knowledge generation, source of knowledge and changeability of knowledge. It revealed there was a positive relationship significantly between caring about learning and process of knowledge generation; and a significant one positively between avoidance of learning and authority&accuracy.

Table 8. The Relationship Between Sub-Dimensions of Prospective Teachers' Epistemological Beliefs and Those of Attitude Scale Towards Learning

		Authority and Accuracy	Reasoning	Process of Knowledge Generation	Source of Knowledge	Changeability of Knowledge
Struggle (Effort) to Learn	R	-,367**	,235**	-,173*	,147*	,146*
	P	0,000	0,001	0,011	0,032	0,034
	N	213	213	213	213	213
Caring about Learning	r	-0,013	0,121	,243**	0,000	0,129
	P	0,847	0,078	0,000	0,994	0,060
	N	213	213	213	213	213
Avoidance of Learning	r	,421**	0,105	0,127	-0,040	0,089
	P	0	0,128	0,064	0,563	0,196
	N	213	213	213	213	213

**p<0.01

*p<0,05

Findings/Results for Qualitative Dimension of the Study

In this part, there are analysis results of data obtained from interviews with prospective teachers. Analysis results were divided into theme, sub-theme (category) and codes. Representations in the form of A.1, A.2, A.3, A.4, A.25 were used for prospective teachers who participated into the interview.

Findings/Results for Epistemological Beliefs

Five themes were generated for prospective teachers' epistemological beliefs. Findings/results belonging to these themes are as below:

Authority and Accuracy (Certainty/Trueness)

Two categories were determined about theme of authority and accuracy. Codes belonging to these categories and frequency values for the codes were given in Figure 1. While ten prospective teachers expressed a positive opinion on authority and accuracy of knowledge, fifteen prospective teachers stated an adverse (negative) opinion on authority and accuracy of knowledge. This finding is in accord with data obtained from quantitative part of the study.



Figure 1. Prospective Social Studies Teachers' Opinions on Theme of Authority and Accuracy

A.1, A.2, A.5, A.9, A.10.A.15. A.16, A.18. A.23 ve A.25 expressed an opinion toward knowledge is right and exact (precise). Prospective teachers, who have stated that knowledge is exact and right, believe that science tells exact truths (accuracies) and that also scientists tell truths. Of prospective teachers, A.3,A.4, A.6, A.7, A.8, A. A.11, A.12, A.13, A.14, A.17, A.19, A.20, A.21, A.22, A.24 expressed an opinion toward disbelieving that science tells exact truths. Some of these opinions were given below:

A.1: “Of course, we take data that we have obtained from those who are engaging in science, as truer (more exact) knowledge. We consider them as true (accurate).”

A.5: “I have no doubt about exact trueness (truth/accuracy) of what those engaging in science tell.”

A.4: “I am of the opinion that it is not exact (accurate). I think that there is no accuracy (preciseness/certainty) of science.”

A.7: “Science is based on experiment and observation, but there is no such thing as exact truth in science.”

A.8: “I try to reach exact results by benefitting generally from several sources but not one and I test its accuracy (trueness)”.

A.20:”What is exact truth is there is no exact truth.”

A.21:”Truths (Rights) can be tomorrow’s wrongs. It is not reliable.”

Reasoning

It was determined two categories about theme of Reasoning. Codes belonging to these categories and frequency values for the codes were given in Figure 2. Seventeen prospective teachers find favourable for (approach positively to) reasoning factor. This finding is in accord with data obtained from qualitative part of the study.

Positive	Negative
<ul style="list-style-type: none"> •Satisfying sense of wonder (curiosity)(2) •Important of prior knowledge(14) •Understanding functioning of events (5) 	<ul style="list-style-type: none"> • Existing of basic knowledge in scientific sources (4)

Figure 2. Prospective Social Studies Teachers’ Opinions on Reasoning

A.1, A.2, A.3, .A.4, A.5, A.6, A.7, A.8, A.10, A.11, A.12, A.14, A.15. A.16, A..18, A.19, A.20, A.21, A.22, A.23 and A.25 approach to (find favourable for) reasoning positively. They expressed an opinion toward that obtaining (acquiring) prior knowledge facilitates to understand new knowledge and toward understanding functioning (running/working) of events and facts and importance of sense of curiosity (wonder). Of prospective teachers, A.9, A.13, A.17, A.24 stated that basic knowledge have already existed (there have already been basic knowledge) in course books. Some of these opinions were given below:

A.1: “Knowledge provides me with understanding more easily and more readily.”

A.5: “To have knowledge about provides me with associating (relating/correlate) what are known to what are unknown. This makes learning permanent.”

A.11: I desire more about research when I have an idea on the subject.”

A.17. All needed things have already been teaching in courses.”

A.24: To have prior knowledge enables me to carry out more qualified research/study. It facilities for me to correlate between events and cases.”

Process of Knowledge Generation

Two categories were determined in this theme. Codes belonging to these categories and frequency values for codes were given in Figure 3. While nineteen prospective teachers expressed an opinion toward that scientific studies were effective during process of knowledge generation, six prospective teachers stated that press (media) was influential during this process. This finding is in Accord with data obtained from quantitative part of the study.

Scientific Studies	Media
<ul style="list-style-type: none"> • Articles (7) • Course Books (9) • Teachers (3) 	<ul style="list-style-type: none"> • General (Public) Network (4) • Films (Movies) and Documentaries (2)

Figure 3. Prospective Social Studies Teachers’ Opinions on Process of Knowledge Generation

A.1, A.2, A.4, A.5, A.6, A.7, A.8, A.9, A.10, A.11, A.12, A.14, A.15, A.16, A.18, A.21, A.22, A.23 and A.25 expressed an opinion toward that process of knowledge opinion is based on scientific studies and observations. Prospective teachers “A.3, A.13, A.17, A.19, A.20, A.24” stated that knowledge could be generated via press (media). Some of these opinions were given below:

A.3: “While geography is source that is based on nature and society observations, history is one that we have knowledge about based upon works which past civilizations left. For this reason, publications belonging to researchers, who are studying in this field during process of knowledge generation, become sources/references to which “We” also refer.”

A. 8: Social studies, by its nature, is based on observation and research. Articles which are written based on these researches are quite important.”

A.10: “Scientific studies, carried out by teachers in generating knowledge, are the most important parts of the process.”

A.13: “Various observations and researches/studies are used in generating knowledge.”

A. 16. “Knowledge by former teachers who studied in their field.”

A. 18: “I see (aware of) that course books are also reference to generating new knowledge.”

A.23: ”Now, internet and knowledge we obtain from internet are quite effective in generating new knowledge.”

Source of Knowledge

Two categories were determined on category of source of knowledge. Codes belonging to these categories and frequency values for codes were given in Figure 4. Thirteen prospective teachers

expressed an opinion toward that they learned knowledge through courses during education-teaching process. Twelve prospective teachers stated that they reached knowledge in their own rights (efforts) and tries (works). This finding is in accord with data obtained from qualitative part of the study.

Through School-Courses	With his/her own tries/works
<ul style="list-style-type: none"> • What are learned in courses only (9) • Primarily courses (4) 	<ul style="list-style-type: none"> • Providing learning more 8) • Desire to learn on areas of interests (4)

Figure 4. Prospective Social Studies Teachers' Beliefs of Theme of Source of Knowledge

For A.1, A.2, A.3, A.6, A.8, A.9, A.10, A.11, A.12, A.14, A.16, A.23, A.24, only courses and primarily what they have learned in courses constitute source of knowledge. Prospective teachers in this group regard only courses and primarily what they have learned in courses as source of knowledge. A.4, A.5, A.7, A.13, A.15, A.17, A.18, A.19, A.20, A.21, A.22, A.25 expressed an opinion toward that they reached knowledge as a result of their curiosity and researches. Examples belonging to these opinions were presented below:

A.1 “We can much more reinforce a knowledge, which I have learned in course, when we encounter it in our life. Actually, we exactly learn through experience (experiential learning).”

A.8: “I learn also in courses, however, I learn incomplete parts as a result of my researches (investigations). It can be thought that, sometimes, course durations can fall short in terms of learning everything on a subject, so I try to complete these deficiencies myself. Films (movies), documentaries and so on.”

A.24:”I learn in courses since it is more helpful to learn it in the course.”

A.4: “In general, I learn to satisfy my curiosity. Because, curiosity enables human to be more eager to learn.”

A.5:“I learn knowledge which I have learned, as a result of my researches (investigations) and efforts, rather.”

A.7: “In my own rights (efforts) to research. Courses remain at the medium level. Of course, there are much things that I have learned in courses, but, when I have thought in general, my own investigations (researches) provided me with much more knowledge since I know my area of interest(s) myself.”

A.17: “I learn making an effort by my investigations (researches).”

A.18:I am in the opinion that I have learned in my own rights (efforts). What is read becomes permanent in the mind.

A.25:I learn as a result of my own investigations and efforts. Because, I learn better making an effort myself, instead of listening.

Changeability of Knowledge

Two categories were determined on theme of changeability of knowledge. Codes belonging to these sub-categories and frequency values for codes were given in Figure 5.Ten prospective teachers think that knowledge is unchangeable; sixteen prospective teachers think that knowledge is changeable. This finding is in accord with data obtained from quantitative part of the study.

Unchangeable	Changeable
<ul style="list-style-type: none">• Basic ideas and principles will remain constant (5)• Basic change will not be despite of some changes (5);...will be unchangeable	<ul style="list-style-type: none">• Emerging new findings (8)• Inevitability of change (4)• Social changes will create/make a change (4)

Figure 5. Prospective Teachers' Beliefs of Theme of Changeability of Knowledge

A.7, A.11, A.12, A.13, A.14, A.16, A.20, A.21, A.24 expressed an opinion on that knowledge will not change. A.1, A.2, A.3, A.4, A.5, A.6, A.8, A.9, A.10, A.15, A.17, A.18, A.19, A.23, A.25 stated that knowledge can change. Prospective teachers expressed an opinion toward that with emerging new knowledge, change will become unavoidable; changes in life are inevitable; and that also basic knowledge specific (peculiar) to social studies can change together with social changes. Some examples belonging to these opinions were presented below:

A.7: "In time, there can be little changes. But, basic principles will not be able to be changed even if they were tried to change as governments changed.

A. 16: "I am on the fence about this subject. For example, I have thoughts such as, on the one hand, it will not change that moon rotates (moves) around the earth, but on the other hand, the old knowledge (old/given knowledge) will be able to change when new knowledge have been found in archaeology or history".

A. 20: "I don't think that basic principles will change; however, new additional knowledge to basic principles or auxiliary principles can be developed".

A. 24: "Basic principles of social studies will not change. These principles are situations that are always at the forefront in our lives."

A.1: "I think that it can change. Basic principles and knowledge can differ (vary) by the situation of society's at that moment. In addition, when an older source was able to be found by a knowledge which was accepted before, new knowledge replaces that knowledge".

A. 5: "If characteristics, which are requested from individual in the future, become different as a result of globalization and social changes, there can be changes in basic principles and knowledge."

A.8: "Improvements can be made to keep up with the changing education, technology and the globalizing world, but there are unchanging constituents (basic units/building stones) for social studies."

A. 22: "In general, history has changeable knowledge. It is not proven depending on experiments and there is a situation of emerging/appearing new knowledge continuously. As a consequence of new studies/researches and examinations, new knowledge are able to emerge, and in that case, also basic principles and knowledge can change. For example, new knowledge can emerge about the first settlement places of the world. Therefore, course content also can change."

Prospective Teachers' Opinions on Learning

Whole of prospective teachers' opinions on learning is positive opinion statements. Two sub-themes were determined on the learning theme. Codes belonging to these sub-themes (category) and frequency values for codes were given in Figure 6:

Imperativeness (Obligation)	Request (Desire/Want)
<ul style="list-style-type: none">•Acquiring qualification (11)•Self-confidence (3)•To have a profession (3)	<ul style="list-style-type: none">•A part of life (5)•Felicific (Pleasing) (2)

Figure 6. Prospective Teachers' Opinions on Learning Theme of Knowledge

A.1, A.2, A.5, A.6, A.7, A.8, A. 10, A.11, A.12, A.14, A.16, A.17, A.18, A.20, A.21, A. 22, A.24, A.25 stated that learning is an imperativeness (obligation). A.3, A.4, A.9, A.13, A.15, A.19, A.23 are prospective teachers who expressed an opinion toward desiring to learn. Prospective teachers who considered learning as a obligation emphasized that learning is necessary to acquire/obtain qualification, to provide self-confidence and to have a profession. On the other hand, prospective teachers who desired to learn expressed an opinion toward that learning is a part of life and that they are glad to learn. Some examples of these opinions were presented below:

A.4: "Knowledge is a thing that will be always necessary for our life. It is for being informed/getting knowledge by improving ourselves, but not for having a profession or taking on/assuming a qualification. For this reason, like to take a step to rights (truths) deleting wrongs from our lives. And, as long as there are good teachers like you, to learn becomes enjoyable".

A.8:"To learn gives a power to person. It increases self-confidence. I care that I have ideas to talk about."

A.10: "I think that to learn is effective and helpful for people in expressing themselves, in acquiring sense of confidence and in their behaviours."

A.13: "Learning is an important phenomenon for each individual who has come into the world."

A.17:"To learn makes you different always within society. It distinguishes you, with either your attitudes or your stance, from others. Among them, you shine a jewellery, are distinguished and become a distinguished (exclusive) person. There is a need for the distinguished people for future and a need to learn in order to be able to the distinguished. To learn, for this reason, is important to me."

A.20"First of all, to learn means an individual who is the informed, that is, self-sacrificing, self-confident. (As long as) we should learn, so respect and confidence to ourselves will increase."

A. 21: "We need to learn in order to save money".

A.23:"Learning is a part of life and an element that provides continuance of life. Just as a baby needs mother, it is in question our neediness to learning (we need to learn). It is of great importance to me. It continues for life, together with us..."

DISCUSSION AND CONCLUSION

It was concluded that prospective teachers' attitudes towards learning are at high level in whole of the scale. Findings/results tally with studies by Adıgüzel & Dolmacı (2018) and Aktürk (2012), as well. When taking sub-dimensions of the scale into consideration, avoidance of (escaping from) learning and caring about (attaching importance to) learning are at high level; struggle (effort) to learn is at medium one. In qualitative findings/results of the study, majority of prospective teachers consider the learning as obligation to have a profession, to gain prestige and self-confidence. For this reason, it can be said that prospective teachers care about learning. In addition, avoidance of learning's being high can be associated with (related to) prospective teachers' exam anxiety and anxieties of selection examinations which they will face at the entrance to the teaching profession. As a matter of the fact that, anxiety against learning was found to be at medium level in study by Adıgüzel (2014), as well. Erdamar (2010) found out that prospective teachers' attitudes towards studying belong to factors of perceiving self to be successful and of developing a positive attitude towards the teaching stuff. On the other side, belief that learning is based (depending) upon effort (struggle) was also found in the study by Terzi, Şahan, Çelik & Zöğ 2015. Struggle (effort) to learn is higher in urban-born ones than rural-born ones. In addition to this, it was found that while rural-born prospective teachers' state of avoidance of learning was higher, struggle to learn and caring about learning are higher in urban-born prospective teachers. This result can be interpreted as urban spaces being places where scientific developments are spread and as them being open to new ideas (innovations).

Prospective teachers' epistemological beliefs are at medium level. Also Demir (2012), in his study he carried out with prospective teachers who were studying at department of primary education, concluded that prospective teachers' epistemological beliefs were at medium level. In their studies, Keskin & Aydın found that prospective teachers' epistemological beliefs are low. In sub-dimensions of the study, authority and accuracy were found to be at medium level. In qualitative part of the study, no great difference was determined between those (10) having the undeveloped/unimproved beliefs in this field and ones (15) having developed/improved beliefs. It revealed that prospective teachers' beliefs of process of knowledge generation are constructivist. Also in qualitative findings, number of those expressed opinion toward that scientific method was used during process of knowledge generation is (much) more (19). Source of knowledge is at medium level; as a matter of the fact that, it was seen that attendees who stated that source of knowledge was course and prospective teachers who learned in their own rights (efforts) were numerically at approximate value. Prospective teachers' scores of reasoning are at high level. Also in qualitative findings, there are findings which indicate improved belief level for this sub-factor (21). Changeability of knowledge is at medium level. In also qualitative findings, frequencies of prospective teachers who stated that knowledge is unchangeable (10) and those who said that it is changeable (15) are close to eachother (at approximate in number).

In their studies by Aslan & Aybek 2018, prospective teachers believe partly that knowledge is exact and true. In a study, carried out with prospective social studies teachers to determine epistemological beliefs, prospective teachers believe at high level that knowledge is the one and exact. Trautwein & Lüdtke 2007 revealed that university students' cultural accumulations (backgrounds) predicted negatively their beliefs of accuracy (preciseness/certainty) of knowledge. On the other hand, prospective teachers have a medium level of beliefs that source of knowledge is scientific books and those who engage in science. This result ensued in studies by Akyıldız 2014 and Murat & Erten 2018, as well.

It revealed that urban-born ones' epistemological beliefs are stronger than rural-born ones. On the other side, individuals with the undeveloped/unimproved epistemological beliefs think that learning ability is gifted for (inherent in born) and it can not be developed later (Schommer, 1990). For this reason, to raise (grow) in urban (city) strengthens also beliefs that learning skill can be developed. By sub-factors of the scale, reasoning and process of knowledge generation were found to be high in urban-born ones. It can be said that while urban-born prospective teachers have had deeper beliefs of

learning, rural-born ones have tended towards approaches such as rote. On the other hand, authority and accuracy (certainty/preciseness) were found to be high in rural-born ones.

When examining the relationship between sub-dimensions of attitude scale towards learning and those of epistemological belief scale, it revealed there was a negative relationship significantly between struggle/effort) to learn and authority and accuracy. Prospective teachers' struggles to learn, who believe that knowledge is exact true, are less (lower). Also in a study which were carried out with teachers, it revealed that teachers had partly developed/improved beliefs that there is a single truth. A very poor, negatively and significant relationship was found between belief that learning is based on effort (struggle) and positive attitude towards investigations (researches) (Kürşad, 2015). It can be said, as reason for this situation, the fact that prospective teachers' some epistemological beliefs that have not improved, yet, has had an impact on their attitudes towards learning. Particularly, education that prospective teachers have received, has an impact on their attitudes towards learning and epistemological beliefs. It should be provided that prospective teachers who are receiving social studies education should take an education with suitable qualification to the inquiry (research and investigation)-based teaching strategy; and an education understanding, at which constructivist teaching that is a learning theory suitable for this is implemented, should be strengthened.

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