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EXAMINING THE ATTITUDES OF PRIMARY SCHOOL STUDENTS TOWARDS SCIENCE AND SOCIAL STUDIES COURSES[1]

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ABSTRACT

The study aims to identify the fourth graders' attitudes towards the courses of science and social studies and the correlations between them. The study was conducted with the participation of 285 fourth graders attending the primary schools in Mersin and Balıkesir in 2017-2018 academic year. The "Attitudes towards Science Scale" developed by Geban, Ertepınar, Yılmaz, Altın and Şahbaz (1994) and the "Attitudes towards Social Studies Course Scale" developed by Kalın and Topkaya (2017) were used in this study as the tools of data collection. The Cronbach's Alpha internal consistency coefficient was found to be .84 for the attitudes towards social studies course. The attitudes towards science scale is a five-pointed Likert type scale of 15 items. The reliability for the scale was found as 0.88. At the end of the study, the fourth graders' attitudes towards science course and social studies course were analysed according to gender and the city where they lived, and consequently, recommendations were made to their teachers. The most important finding obtained in the study was that there were medium, positive and significant correlations between fourth graders' attitudes towards science course and their attitudes towards social studies course. Thus, the interpretation that the two courses influence each other can be made. In this context, it can be concluded that these two courses should be handled within the framework of common themes with an interdisciplinary understanding.

Keywords: *Primary school, science, social studies, attitude*.

[1] This study is the extended version of the paper entitled "*The Attitudes of Primary School Students Towards Science and Social Studies Courses*" presented as a summary in the Second International Congress on Primary Education (UTEK) held on 23-27 October 2019.

INTRODUCTION

The positive effect of positive attitude towards any course on learning is known. This positive effect is assumed to be the key to success. *An attitude is "the tendency to display learnt, positive or negative reactions to a certain object, situation, institution, concept or to other people"* (Tezbaşaran, 1986). In other words, an attitude can be considered as learnt tendencies leading individuals to displaying reactions against certain people, objects and situations (Demirel and Ün, 1987; Cited by Serin, Kesercioğlu, Saracoğlu and Serin, 2003). An attitude is generally the tendency of an individual caused by his/her thoughts, feelings and behaviours for an object or a situation (Smith, 1968; Cited by Avan, 2011: 7). It can be said that an attitude is the positive approach to ideas or objects or that it is the negative refrainment from them (Travers, 1982; Cited by Köklü, 1995). Attitudes are related to coping with and controlling the feelings arising in the process of learning and they play important roles in directing human behaviours. In this context, education is an important instrument to determine attitudes and to modify the negative attitudes (Bozdoğan and Yalçın, 2005). Measuring the attitudes in the process of education and teaching is beneficial in many ways such as in determining learners' attitudes at a certain time and thus predicting their future behaviours, in determining their attitudes towards the circumstances they live in, in learning about learners' choices in order to change their attitudes or to develop new attitudes (Nuhoğlu, 2008: 629). A number of variables should have positive properties in order for a course to attain its goals. It is impossible for a course to attain success when a physical environment facilitating teaching the lesson and a teacher and students having positive attitudes towards the lesson are available (Kalın and Topkaya, 2017). Research done in such diverse areas as social studies, foreign language, science and mathematics indicate that there are positive correlations between attitudes and achievement (Neathery, 1991; Ramos, 2003). Accordingly, students' positive attitudes contribute to their achievement. Research has shown that there are positive correlations not only between attitudes and achievement but also between students' attitudes and their choice of career (Haladyna, Shaughnessy and Redsun, 1982).

According to Barth (1991), active individuals who constitute a democratic society should have the following four skills- which are also among the objectives of social studies: being able to obtain information, being able to use the information analytically, developing appropriate attitudes and values and being able to take on active roles as individuals equipped with knowledge and skills in society (Cited by Öztürk and Ünal, 1999). The social studies course along with science course was regarded as a helmet course in primary education curriculum since it is predicted to attain such important objectives. Helmet courses are determined so that students can see the associations between their domains and so that they can comprehend the subjects as a whole (Sözer, 1998). Another reason for regarding social studies as a helmet course is that it is regarded as a citizenship training programme in Turkey as in many other countries (Öztürk and Ünal, 1999). Students' attitudes towards the course is important in order for social studies course to fulfil its mission of training young generations as good citizens. Social studies is one of the most essential course for students to be informed of the society and of social problems, to learn about their responsibilities as citizens and to comprehend the national characteristics.

Therefore, the factors influencing students' learning the course should be known very well (Yanpar, 1994). One of the factors influential is students' attitudes towards the social studies course. Students' attitudes towards the course are thought to affect their learning in positive or negative ways.

Several studies aiming to determine and measure students' attitudes towards the social studies course have been performed for 50 years (Fernández, Massey and Dornbusch, 1976; Fraser, 1981; Haladyna, Shaughnessy and Redsun, 1982; Shaughnessy and Haladyna, 1985; Stodolsky, Salk and Glaessner, 1991;Thornton and Houser, 1996; Chiodo and Byford, 2004; Kılınç and Dere, 2015). Studies performed abroad and concerning students' attitudes towards social studies course generally reached the conclusion that students did not find the course interesting, that they found it boring and that they had negative attitudes towards the course (Haladyna, Shaughnessy and Redsun, 1982; Shaughnessy and Haladyna,1985; Chapin, 2006; Stodolsky, Salk and Glaessner, 1991; Chiodo and Byford, 2004). The major reasons reported for the situation include the following: teachers' negative attitudes towards the course, students who are not active while teachers are using the measurement and evaluation methods, choosing teacher-centred teaching methods, teachers' choice of books as the most effective teaching materials for the course but inadequacy of supplementary materials and course books, students' failure to associate the subjects of social studies with their own life and the inadequacy of the curriculum for the course in helping students to understand the world and to take on roles in this world (Alazzi ve Chiodo, 2004; Bolinger and Warren, 2007; Chiodo and Byford 2004; Lintner, 2006; Öztürk and Baysal,1999; Russell and Waters, 2010; Stodolsky, Salk and Glaessner, 1991).

On examining the studies concerning the attitudes towards social studies course conducted in Turkey, we find that the results are not similar to the ones obtained in the studies conducted abroad. It was demonstrated in studies conducted in Turkey that both primary and secondary education students had positive attitudes towards social studies course (Öztürk and Baysal, 1999; Kayalı, 2003; Ergin, 2006; Yılmaz and Şeker, 2011; Aktepe, Tahiroğlu and Sargın, 2014). Yılmaz and Şeker (2011) concluded that students whose parents received primary school education also had positive attitudes towards social studies and that they considered it as an interesting course. Kayalı (2003) found that children who were the 6^{th} and 7^{th} graders in primary education schools had positive attitudes towards social studies course. An M.A thesis produced by Ergin (2006) also found that the primary school students who were the 4^{th} and 5^{th} graders generally had positive attitudes towards social studies course and the study reached the conclusion that parents' levels of education and student gender did not cause any significant differences in students' attitudes towards the course.

The main goal of science education is to inculcate in students the scientific attitudes and skills necessary for being able to solve the problems they are to encounter throughout their life and for being able to have access to knowledge- rather than make them memorise the scientific knowledge related to physical sciences (Kaptan, 1999). Gardner (1975) defines attitudes towards science as "*learning to learn science and learning to evaluate objects, humans, actions and situations in certain methods*" (Cited by Bilen, 2011). It is known that attitudes are greatly important for students to learn science subjects meaningfully (Tereci, Aydın and Orbay, 2008). Having

positive attitudes towards physical sciences course will enable students to learn the science subjects more easily and to have more retention in learning (Uyanık, 2017). Attitudes towards the concepts of science consist of individuals' beliefs causing their affective reactions to a concept and their episodes associated with the concept. The emergence of such reactions causes is influential in making such decisions as choosing the science course, being informed of scientific subjects or taking on a hobby related to science (Çakır, Şenler and Taşkın, 2007: 638). Several studies concerning the science course are available in the literature. On examining the studies it was found that there are a great number of studies analysing especially the correlations between students' achievement in science course and their attitudes towards the course and investigating the effects of the use of various teaching methods and techniques on attitudes towards science (Kesamang and Tawio, 2002; Altınok, 2005; Güven and Sülün, 2012; Uyanık, 2017). In a study conducted with the inclusion of approximately three thousand students, predicting primary school students' attitudes towards science and investigating school and student-related factors, Hacıeminoğlu (2019) concluded that the rate of female science teachers, skills categorisation between science classes and the quality of the physical infrastructure of schools did not contribute significantly to students' attitudes to science but that the quality of schools' educational resources contributed significantly to students' attitudes. It was found through analysing the variables related to students' characteristics that gender did not make significant contributions to the model but that the level and science achievement of the classes made significant contributions to students' attitudes towards science.

On examining the curricula for social studies and sciences courses, it is apparent that the fundamental skills and specific goals are similar in some respects (MNE, 2018a, 2018b). On examining the curricula from the aspect of fundamental skills, it is found that skills such as researching, environmental literacy, digital literacy, critical thinking, entrepreneurship, making observations, cooperating, using evidence, decision-making, problem-solving and communicating are common to both curricula.

An examination of the specific goals in science curriculum (MNE, 2018a), it was found that such goals as adopting scientific process skills and scientific research approach, generating solutions to the problems encountered, getting individuals to notice the interactions between individuals, the environment and the society, developing the consciousness of sustainable development in relation to society, economy and natural resources, arousing interest in and curiosity about the events occurring in the immediate environment, developing attitudes, developing the capability of reasoning, scientific thinking habits and decision-making skills by using socio-scientific subjects and securing that universal moral values, national and cultural values and principles of scientific ethic are adopted in the process of exploring the nature and understanding the human-environment relations were available.

It was remarkable that the primary education curriculum for the course of social studies (MNE, 2018b) included goals such as recognising the general geographical properties of the environment one lives in and of the world and thus describing the relations between humans and the environment and developing the skills of perceiving the location, becoming aware of the limitations of the natural environment and of the resources and thus making

efforts to protect the natural resources with environmental sensitivity, having mentality of sustainable environment, comprehending the developmental process of science and technology and its effects on social life and thus using information and communication technologies consciously, protecting scientific moral in accessing to knowledge on the basis of scientific thinking, in using and generating the knowledge and having critical thinking skills as individuals who know the ways of reaching accurate and reliable knowledge. While the primary education social studies course curriculum contained such statements as "the method used by social scientists (geographers, scientists, etc.) should be implied to students. students should be made to face real life problems and conflicting situations by using the events happening inside and outside the school and thus they should be made to reflect on the social problems they encounter"; the curriculum for physical sciences course (MNE, 2018a) also contains similar statements such as " helping them to understand how scientific knowledge is generated by scientists, the processes that such knowledge goes through and how the processes are used in new research". Both curricula lay emphasis on out-of-the-school learning. They mention the importance of implementing science and of the fact that it provides input for economy. The domains of learning available in social studies course curriculum are "the individual and the society; culture and heritage; humans, places and environments; science, technology and the society; production, delivery and consumption; active citizenship and global ties" but the learning domains available in the curriculum for science course are "living things and life; the world and the universe; physical events; the substance and its nature". On examining the specific goals in the two curricula, there are remarkable parallelisms in such subjects as "the environment in which we live; nature; the concept of sustainability; how scientists think; the reflections of scientific process skills into real life; reflective thinking; the skills of using knowledge and making decisions and science ethics and moral". While talking about the importance of interactions between disciplines so much today, it is apparent that the curricula for the two courses have considerable similarities in their specific goals and in the skills that they aim to inculcate in students. When the features of these two courses and the objectives of the program are examined; it is seen that the skills of access to information, the use of information analytically, the development of appropriate attitudes and values, and the ability to take an active role in the society as an individual equipped with knowledge and skills can be provided especially through science and social studies courses. Therefore, it is important to examine the attitudes towards these two courses and the relationship between them.

It is possible to see the extent to which the objective in the educational system are attained only by measuring the attitudes which are believed to change through time. Therefore, the importance of measuring the attitudes in education has been increasing day by day (Tereci, Aydın and Orbay, 2008). Students' attitudes towards social studies and science which are very important in primary education and which are interrelated- are also important in this sense. For this reason, this paper aims to investigate the fourth graders' attitudes towards science course and social studies course and the correlations between the two. Thus, it seeks answers to the following research questions:

1. What are the scores of the fourth graders' attitudes towards science course?
2. What are the scores of the fourth graders' attitudes towards social studies course?
3. Do the fourth graders' attitudes towards science course differ according to the city where they live, their mark at the end of the semester and according to gender?
4. Do the fourth graders' attitudes towards social studies course differ according to the city where they live, their mark at the end of the semester and according to gender?
5. Are there any correlations between the fourth graders' attitudes towards science course and their attitudes towards social studies course?

METHOD

The study was conducted in relational survey model since it intended to identify the current situation. A survey model aims to describe the current situation as it is. It makes efforts to describe the individuals, objects or events which are the subject matter of the research in their circumstances as they are without aiming to change them (Karasar, 2004).

The Study Group

The study was conducted with the participation of 285 fourth graders attending the primary schools in Mersin and in Balıkesir in 2017-2018 academic year.

Data Collections Tools

The "Attitudes towards Science Scale" developed by Geban, Ertepınar, Yılmaz, Altın and Şahbaz (1994) and the "Attitudes towards Studies Course Scale" developed by Kalın and Topkaya (2017) were used as the tools of data collection in this study. The attitudes towards social studies scale contained 12 items and the Cronbach' Alpha internal consistency coefficient for the scale was found as .84. On the other hand, the attitudes towards science scale was a five-pointed Likert type scale and it contained 15 items. The reliability for the scale was calculated as 0.88. while the Cronbach's Alpha reliability coefficient was 0.79 for the attitudes towards science scale was 0.79, the reliability coefficient for the attitudes towards social studies course was found to be 0.92 in this study.

Data Analysis

The normal distribution of the data- the parametric test assumptions of the data coming from the attitudes towards science scale and from the attitudes towards social studies course scale- and the homogeneity of variances were tested statistically. Whether the data collected from the groups had normal distribution was analysed with skewness and kurtosis coefficients and with Kolmogorov Smirnov test while the homogeneity of variances was analysed with Levene's test of equality of error variances. Graphs (boxplot, histogram and run chart) were also used to test normality. Because the p values were found to be smaller than 0.05 with

Kolmogorov-Smirnov test and Levene's test, because the skewness and kurtosis coefficients were not at the desired intervals (-1, +1) and because the graphs did not give representations of normality; it may be said that the data distribution was not normal and that the variances were not homogeneous. Non-parametric statistics were used because the data did not meet the test conditions after the analyses.

Primarily the mean, standard deviations, the minimum and the maximum values were calculated for the scores that the 4th graders had received from the scales of attitudes toward science and social studies courses in the analysis of the data to see the state of their scores. In addition to that, whether or not the scores they received from the two scales differed according to the city where they lived or according to gender was checked with Mann Whitney U test and whether their scores differed significantly according to end-of the semester grades was checked with Kruskal-Wallis H-test. On the other hand, whether there were any correlations between their attitudes towards science and social studies courses was checked with Spearman's correlation coefficient since the variables did not have normal distribution. Apart from that, the effect sizes (r) were calculated to decide on the power of correlations between the variables; and the values of 0.10, 0.30 and 0.50 were interpreted as small, medium and large effects, respectively (Cohen, 1988, 1992). Bonferroni correction was made to control the type 1 errors in analysing the data. Bonferroni correction is found with the formula significance level/ the number of groups (Vialatte and Cichocki, 2008). The significance level was found as 0.05/2= 0.035 when the number of groups is 2 and it was found as 0.01 when the number of groups is 5 with Bonferroni correction. Thus, the significance level- which was used to test the differences between groups- was found as shown above depending on the number of groups. The data were analysed on the SPSS 23.0 package programme.

FINDINGS (RESULTS)

This section includes the research findings and evaluation of the findings.

1.Descriptive Analyses for the Fourth Graders' Scores of Attitudes towards Science Course

The descriptive statistics for the fourth graders' scores they received from the attitudes towards science scale are shown in Table 1.

Table 1. Descriptive Statistics for the Scores the 4th Graders Received from the Attitudes towards Science Scale and from the Attitudes Towards the Social Studies Course Scale

Attitudes scales	N	Minimum	Maximum	$\overline{X}$	Ss
Attitudes towards science scale	285	38	75	65.07	7.69
Attitudes towards the social studies course scale	285	12	48	41.67	7.64

As clear from table 1, while the maximum scale receivable from the attitudes towards science scale was 75, the participants' average score they received from the scale was 65.07. on the other hand, while the maximum score

receivable from the attitudes towards the social studies course was 48, the average score they received from the scale was 41.67. on examining the findings, it may be said that the fourth graders have positive attitudes towards the science course and the social studies course.

2.Findings on whether the Fourth Graders' Attitudes towards the science and the Social Studies Courses Differ according to the City Where They Live

Whether or not the fourth graders' average scores they received from the attitudes towards science scale and from the attitudes towards the social studies course scale differed according to the city where they lived was tested with Mann-Whitney-U test, and the results are shown in table 2.

Table 2. The Mann-Whitney- U Test Results for the fourth Graders' Average Scores for the Attitudes towards Science Scale and for the Attitudes towards the Social Studies Course Scale according to the Cities Where They Live

Attitudes scales	*The city of living*	*n*	*Rank averages*	*Rank total*	*U*	*p*
The attitudes towards science scale	Mersin	185	143.95	26631.50	9073.50	0.79
	Balıkesir	100	141.24	14123.50		
The attitudes towards the social studies course scale	Mersin	185	137.66	25467.00	8262.00	0.13
	Balıkesir	100	152.88	15288.00		

According to table 2, the fourth graders' average scores they received from the attitudes towards science scale and from the attitudes towards the social studies course scale did not differ significantly according to the city where they lived ($U_{science}$=9073.50, U_{social}=8262.00; p>0.025).

3.Findings on whether the Fourth Graders' Attitudes towards the science and the Social Studies Courses Differ according to Gender

Whether or not the fourth graders' average scores they received from the attitudes towards science scale and from the attitudes towards the social studies course scale differed according to gender was tested with Mann-Whitney-U test, and the results are shown in Table 3.

Table 3. The Mann-Whitney- U Test Results for the fourth Graders' Average Scores for the Attitudes towards Science Scale and for the Attitudes towards the Social Studies Course Scale according to Gender

Attitudes scales	*Gender*	*n*	*Rank averages*	*Rank total*	*U*	*p*
The attitudes towards science scale	Female	147	151.10	22212.00	8952.00	0.09
	Male	138	134.37	18543.00		
The attitudes towards the social studies course scale	Female	147	148.00	21756.50	9407.50	0.29
	Male	138	137.67	18998.50		

An examination of table 3 makes it clear that the fourth graders' average scores they received from the attitudes towards science scale and from the attitudes towards the social studies course scale did not differ significantly according to gender ($U_{science}$=8952.00, U_{social}=9407.50; p>0.025).

4.Findings on whether the Fourth Graders' Attitudes towards the science and the Social Studies Courses Differ according to End-of- the Semester Grades

Whether or not the fourth graders' average scores they received from the attitudes towards science scale and from the attitudes towards the social studies course scale differed according to their end-of-the-semester grades was tested with Kruskal-Wallis-H test, and the results are shown in table 4.

Table 4. The Kruskal Wallis-H Test Results for the fourth Graders' Average Scores for the Attitudes towards Science Scale and for the Attitudes towards the Social Studies Course Scale according to end-of-the semester Grades

Attitudes scales	*End-of-the-semester grades*	*n*	*Rank averages*	*Sd*	χ^2	*p*	*Significant differences*	*r(effect size)*
The attitudes towards science scale	1(0-44) fail	-	-	3	19.71	0.00*	3-5	0.24
	2 (45-54) pass	2	112.50				4-5	0.21
	3 (55-69) medium	20	93.88					
	4 (70-84) good	89	122.71					
	5(85-100) very good	174	159.38					
The attitudes towards the social studies course scale	1(-0-44) fail	-	-	3	20.50	0.00*	3-5	0.18
	2 (45-54) pass	2	115.75				4-5	0.25
	3 (55-69) medium	20	109.25					
	4 (70-84) good	89	117.10					
	5(85-100) very good	174	160.44					

*p<0.01

As is clear from table 4, the fourth graders' average scores they received from the attitudes towards science scale and from the attitudes towards the social studies course scale differed significantly according to their end-of-

the-semester grades (X^2 (3) science=19.71, X^2 (3) =20.50 social; p<0.01). The finding demonstrated that the students' end-of-the-semester grades for science and social studies courses was a variable influential in their attitudes towards these two courses. The Mann-Whitney U test was done to find the group or groups causing the differences. Consequently, it was found that the students whose end-of-the-semester grades were 5 (very good) in both courses had higher attitudes towards science course than those whose end-of-the-semester grades were 3 (medium) and that the differences were significant. On examining the effect size, it was found that the effect was generally small in all groups. The situation showed that effects explained approximately 4-5% of the total variance.

5.Findings for the Correlations between the fourth Graders' Attitudes towards Science and Social Studies Courses

Whether or not there were any correlations between the fourth graders' attitudes towards science and social studies courses was checked with Spearman' correlation coefficient, and the results are shown in table 5.

Table 5. The Correlations between the Fourth Graders' Attitudes towards Science and Social studies Courses

	Attitudes towards social studies course
Attitudes towards science course	0.52**

*p<0.05 **p<0.01

According to table 5, there are medium level, positive and significant correlations between the fourth graders' attitudes towards science and social studies courses (r=0.52; p<0.01). Accordingly, it may be said that attitudes towards the social studies course increase as the attitudes towards the science course increase. Considering the determination coefficient (r^2=0.27), it can be said that 27% of the total variance in attitudes towards science course stems from attitudes towards social studies course. In addition to that, the theoretically explained variance can also be interpreted for the other variance.

CONCLUSION and DISCUSSION

The findings obtained in this study were analysed in terms of similarities and differences they had in comparison with the findings obtained in the literature. For instance, some of the studies (Gürkan and Gökçe, 2000; Türkmen, 2002; Serin, Kesercioğlu, Saracaloğlu and Serin, 2003; Bilgin and Geban, 2004; Can and Şahin, 2015) concluded that attitudes towards science course did not differ according to gender. Greenfield (1997) did not find any differences between attitudes towards science according to gender. Younger students' attitudes towards science were found to be more positive than the older students' attitudes. Altınok (2005), in a study conducted with the inclusion of the fifth graders, demonstrated that students' attitudes towards science were generally positive, that there were no differences between boys' and girls' attitudes and that their achievement affected their attitudes. This paper did not find any differences between attitude scores according to gender either. Uyanık

(2017), however, found that the female students had higher attitude scores for the science course than the male students. Besides, high, positive and significant correlations were found between female students' attitudes towards science course and their academic achievement whereas medium level, positive and significant correlations were found between male students' attitudes towards science course and their academic achievement.

A review of the studies in the literature demonstrates that primary school students' attitudes towards science is quite high and that there is a decrease in their attitudes in parallel to the rise in grade levels (Bıkmaz, 2003). Rennie and Punch (1991) investigated the correlations between achievement in science and affective properties and considered students' attitudes and interests as affective properties. They found that there were high correlations between affective properties and achievement. Oruç (1993), Weinburgh (1995) and Freedman (1997) also stated that there were high correlations between students' attitude scores and their achievement scores. In a similar vein, this study also found that the students with high end-of-the-semester grades had higher science and social attitude scores.

While studies concerning attitudes towards science course conducted in Turkey and abroad have similarities, the studies concerning social studies course have differences. The studies conducted abroad in relation to students' attitudes towards social studies course generally concluded that students found the course boring and that they had negative attitudes towards the course (Haladyna, Shaughnessy and Redsun, 1982; Shaughnessy and Haladyna,1985; Chapin, 2006; Stodolsky, Salk and Glaessner, 1991; Chiodo and Byford, 2004). The main reasons included teachers' negative attitudes towards social studies, students' remaining passive while teaching and evaluation methods were used, the inadequacy of supplementary books and course books, students' failure to set up associations between the subjects of social studies and their lives and the inadequacy of social studies curriculum to enable students to understand the world and to take on roles in the world (Stodolsky, Salk and Glaessner 1991; Öztürk and Baysal,1999; Alazzi and Chiodo, 2004; Chiodo and Byford 2004; Russell and Waters, 2010). Chiodo and Byford (2004) analysed students' attitudes towards social studies course on the basis of the results obtained in studies that had been performed in the last 30 years and they concluded that students did not like the course and that they considered such courses as mathematics, English and science more important for their future career. Khaled (2013) analysed the 8^{th} and 12^{th} graders' attitudes towards social studies course and concluded that students' positive attitudes towards the course depended on their relations with their teacher, that the students found the coursebooks boring and that different teaching methods employed in social studies lessons influenced students' attitudes towards the course in positive ways.

A review of the studies conducted in Turkey in relation to attitudes towards social studies course makes it clear that the results obtained in those studies were similar to the ones obtained in studies conducted abroad. The studies in Turkey demonstrated that both primary education and secondary education students had positive attitudes towards social studies course (Öztürk and Baysal, 1999; Kayalı, 2003; Ergin, 2006; Yılmaz and Şeker, 2011; Aktepe, Tahiroğlu and Sargın, 2014, Sidekli, 2010). Ergin (2006) found that the 4^{th} and 5^{th} graders in general

had positive attitudes towards social studies course and reached the conclusion that parents' levels of education and student gender did not cause significant differences in students' attitudes towards the course. Tay and Tay (2006), in a study aiming to determine the 5th graders' attitudes towards social studies course, demonstrated that the students had positive and high attitudes towards the course and also found that there were significant correlations between students' attitudes and their academic achievement and that both the attitudes and achievement increased or decreased at similar rates. Kayalı (2003) demonstrated that the students at the second stage of primary education had 80% positive attitudes towards social studies course and that they did not hate the course. Akengin, Sağlam and Dilek (2002) concluded that the teacher was 60% influential in the 4th and 5th graders' like for the social studies course. 81% of the students who were included in the research said that they liked the course and 755 of them said that they attained good or very good achievement in the course. Sidekli (2010), in a study conducted to determine the 5th graders attitudes towards the social studies course according to the 2004 curriculum, found that students had positive attitudes towards the course and that their attitudes did not differ according to gender. In a study entitled 'Primary Education Students' Views on Social Studies Course', Alkış and Güleç (2006) concluded that the things that the 8th graders liked about social studies course were more than the things they did not like about the course and that the students had positive approaches towards the course.

No studies directly investigating the correlations between physical sciences and social studies courses were found in the literature. However, Öztürk and Baysal (1999) found differences of .01 significance level between teachers' frequency to do experiments related to the subject of a lesson and students' levels of attitudes towards social studies course. Thy reported that the highest attitude scores were found in the group in which experiments were done the most frequently. This current study also found positive correlations between scores for attitudes towards science and scores for attitudes towards social studies. Thus, the interpretation that the two courses influence each other can be made.

RECOMMENDATIONS

In the light of the findings obtained in this study and of the studies in the literature, the following recommendations could be made:

Teaching activities in schools should be done in a manner as to change the attitudes towards all courses- mainly towards science and social studies courses so as to make students' attitudes positive. In this respect, teachers' quality is also important. Thus, it would be beneficial in developing positive attitudes towards courses if primary school teachers in particular used effective teaching methods and techniques, did activities attracting students' interest and attracted students' attention by using technology-based and colourful materials. Therefore, primary school teachers' professional development should be monitored through in-service training and activities to motivate them should be organised.

In addition to that, a scale concerning science and social skills could also be developed by taking the similarities in the curricula for science and social studies into consideration. The teaching process could be planned by considering the similarities in science and social studies courses. Experimental studies demonstrating interdisciplinary interactions could be performed with the participation of prospective teachers and students.

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