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EFFECTIVENESS OF COOPERATIVE LEARNING APPROACHES USED IN THE COURSE OF SOCIAL STUDIES IN TURKEY: A META-ANALYSIS STUDY[i]

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Abstract:
In Turkey, it is seen that there are a number of experimental studies conducted in relation to the course of Social Studies to reveal the influence of cooperative teaching approaches on achievement. However, in literature, there is no research combining the findings obtained in these studies. In this respect, with the help of the meta-analysis method, the present study aimed at revealing the influence of cooperative teaching approaches used in the course of Social Studies in Turkey on academic achievement. For this purpose, a total of 22 studies, 32 comparison were examined in line with the inclusion and exclusion criteria determined within the scope of the study. For the analysis of the research data, the software of Comprehensive Meta-Analysis (CMA) was used. In addition, regarding the analysis of the data, the treatment effectiveness meta-analysis was applied. In the study, in order to calculate the effect size, "Hedge's g" was used. According to Thalheimer and Cook (2002), seven studies were found to have a large effect size. Six of the studies had a medium and perfect levels of effect size, while four of them had a very large effect size; three had a trivial effect size; and one had a low level of effect size. As a result of the research, the overall effect size was 0.959 according to the random effects model. The study was carried out by taking into account the study year, type of study, class level and sample size. Accordingly, only a significant difference in sample size has emerged. Consequently, when the meta-analysis results were examined in accordance with the random effects model, it could be stated that use of cooperative approaches in the course of Social Studies increased students' academic achievement. Accordingly, in the study, related suggestions were put forward.

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1. Introduction

Social Studies is a multi-disciplinary course which helps students acquire basic life skills from early ages. Thanks to this course, students also develop and increase their academic knowledge as well as their attitudes, behaviors, values and skills regarding life. Considering all these goals, Social Studies could be defined as a course directly related to life itself.

The course of Social Studies is fairly important since it allows children to become effective individuals in the society in their future lives and to help maintain the democratic values of the society (Atwood, 1991). As required by its structure and nature, the course of Social Studies is a discipline which requires individuals to take action based on their own lives and which includes the skills and information that will have direct influence on their own lives (Kamber, Acun & Akar, 2011). Social Studies is a course which makes use of the information and methodology provided by Social and Human Sciences so that citizens can make decisions in various conditions and solve problems (Öztürk, 2009). The course of Social Studies, in line with its overall purpose of training effective citizens, help students acquire the skills regarding living together, adapting oneself to the society, cooperation, problem solving and decision making. In order for students to transfer these skills into life, they are supposed to be active in the teaching and learning process. One of the learning approaches appropriate to the nature of Social Studies course which allows students to acquire these skills by doing and living is the cooperative learning.

Cooperative learning is a way of teaching in small groups formed for the purpose of maximizing students' learning via working together (Jolliffe, 2007; Johnson, Johnson & Holubec, 1993; Slavin, 1991). Olsen and Kagan (1992) define cooperative learning as a group learning activity in which information sharing between group members is structured on social basis and in which each individual is responsible not only for his or her own learning but also for other group members' learning. In other words, in this type of learning, students help one another and learn by working together in small groups (Açıkgöz, 2002). Cooperative learning dates theoretically back to 1920s, yet its first use in research applications in educational environments was in 1970s. In general, it includes four models: student groups, Jigsaw, learning together and group research (Slavin, 1991). Five basic elements that emphasize the positive aspects of cooperative learning could be summarized as follows (Jolliffe, 2007):

- **Positive interdependence:** Each student in a group should feel the need for another student to accomplish a task. For this purpose, common goals could be set; collective awards could be given; information and materials could be shared; and roles could be assigned to group members.
- **Individual accountability:** Measuring individuals' success regularly in the process and providing the necessary feedbacks play an important role in

determining both individuals' learning and group success. In relation to this, individuals' learning and group success can be determined either with the help of test-type measurement tools to be applied to each of the cooperative learning groups formed in the learning process or by selecting a member of the group on random basis and asking him or her to give information about the group.

- **Group processes**: By providing the group with the related instructions and allocating enough time for the material or the object to be taught, the group members' studies could be observed considering the goals previously set.
- **Skills between individuals and small groups:** Such skills students are supposed to have as communication, leadership, giving confidence, decision making and conflict management could be used effectively within the group.
- **Face-to-face interaction:** Thanks to face-to-face interaction, students have the opportunity not only to establish physical communication but also to take active part and make related discussions in the process.

As can be seen, cooperative learning contributes positively to learning and group development and thanks to individual skills. In the process, the individual is expected to take responsibility for not only his or her own learning but also for others' learning.

The following suggestions could be put forward for teachers who want to create a cooperative learning environment in class (Johnson & Johnson, 2002):

- Directing students' attention to the material to be learned;
- Developing motivation and expectation regarding learning;
- Helping discover the material (the learning object) in a lesson;
- Making sure students learn the material cognitively;
- Ending the teaching process.

Cooperative learning strategies could be successfully used for students from all age groups with various learning styles (Goodwin, 1999). Cooperative learning is an approach that increases students' participation in courses, their academic achievement and their motivation for learning (Polloway, Patton & Serna, 2001 cited in Şimşek & Koç, 2013). Also, it is seen in the literature, cooperative learning method is the most used method among the student-centered methods (Yeşilpınar-Uyar & Doğanay, 2018). Therefore, the cooperative learning approach is used to make students active in the course of Social Studies and to increase their academic achievement and their attitudes towards the course. In this respect, in related literature, a great number of experimental studies have been conducted to reveal the influence of cooperative learning approaches on students' achievement in the course of Social Studies. When these studies are examined, it is seen that cooperative learning increases academic achievement. However, in literature, there is no research which combines the findings of other studies and which investigates the extent of this influence on academic achievement in the course of Social Studies. For this reason, it is seen as a necessity to use the meta-analysis approach in order to show the effect of cooperative learning approach on academic achievement in Social Studies course. Because meta-analysis studies allows interpretation of the information stack in related literature and allows to open up new horizons for future studies (Akgöz, Ercan & Kan, 2004). Moreover, the necessity to

implement meta-analysis study has emerged when considering that some studies in Turkey have a negative effect on academic achievement.

It is seen that different meta-analysis studies have been conducted for researches conducted using a cooperative learning approach in the literature. It is seen that different meta-analysis studies such as conceptual change (Şen & Yılmaz, 2013), academic achievement (Johnson, Johnson & Stanne, 2000), mathematics achievement (Özdemirli, 2011); science education in Turkey (Karakuş & Öztürk, 2016) have been made about the effect of cooperative learning approach to academic achievement. It is expected that this study will also contribute to the field of Social Studies in terms of reflecting the context of Turkey as well as focusing on the studies made in Social Studies course. The present study aimed at revealing the influence of cooperative learning on students' academic achievements in the course of Social Studies in elementary and secondary schools with the help of meta-analysis method. In this context, the following questions were examined in the research:

1. What is the effect of cooperative learning on academic achievement in Social Studies course?
2. Is there a significant difference between the effect sizes of the cooperative learning studies according to the years?
3. Is there a significant difference between the effect sizes of the cooperative learning studies according to the study type?
4. Is there a significant difference between the effect sizes of the cooperative learning studies according to the class level?
5. Is there a significant difference between the effect sizes of the cooperative learning studies according to the sample size?

2. Method

In this study, the meta-analysis method was used to reveal the influence of cooperative learning used in Social Studies courses on students' academic achievement. In the study, the meta-analysis method was applied to determine the influence of cooperative learning used in the course of Social Studies on students' academic achievement based on the studies reported in related literature.

Meta-analysis includes combining and interpreting the quantitative findings of similar studies conducted in a field of study by grouping these studies with respect to certain criteria determined (Dinçer, 2014). In other words, meta-analysis means gathering the results of studies in a consistent and appropriate manner (Cohen, 1988). Meta-analysis is conducting by following such steps as defining the meta-analysis problem, reaching the related studies in literature, coding the studies, transforming the findings into a common scale and conducting related statistical analyses (Üstün & Eryılmaz, 2014 cited in Glass, 2006, p. 10).

There are two types of meta-analysis in the literature: group contrast and correlational association. While the group contrast is composed of the types of treatment effectiveness and group difference within itself; Correlational relationship

consists of test variance and variable covariance meta-analysis (Borenstein et al, 2009). Treatment effectiveness meta-analysis were utilised in this study. Because, in the treatment effectiveness model, the difference between the experiment and control group is based on the calculation of the standardized effect size, denoted by "d" or "g".

2.1 Data Collection

The research data were collected via Master theses, doctorate theses and papers conducted in Turkey as well as via the articles published in Turkey. In order to reach the Master theses and the doctorate theses, the National Thesis Center of Higher Education Council was used. In this respect, in the section of *advanced search*, the phrases of "Social Studies" and "Cooperative Learning" were typed. To reach the papers, EBSCO, ULAKBİM and GOOGLE SCHOLAR were searched using the phrases of "Social Studies" and "Cooperative Learning". The reason for preferring the English words of 'Cooperative Learning' to the Turkish words of 'İşbirliğine Dayalı Öğrenme' (which means 'cooperative learning' in English) as the keywords is that this concept is referred to using different phrases in related Turkish literature. In the study, International Primary Teacher Education Symposiums (USOS), International Symposium on Social Studies Education (USBES), International Conference on Curriculum and Instruction (ICCI-EPOK), and International Conference on Educational Sciences (ICES-UBEK) were examined to obtain presented papers. Two papers have been reached (Yaşar & Baş, 2015; Karadağ & Daşdemir, 2012) that addresses the impact of cooperative learning approach on academic achievement in Social Studies courses. However, the data of those papers have not been reached. In this respect, a total of 32 studies were reached. Depending on the inclusion criteria determined and on the availability of the studies, a total of 22 studies were included in the present study. However, as more than one experimental or control groups were used in some of the studies, 32 data comparisons were examined. In the study, such criteria as being conducted after 2005, using experimental methods, including the data of mean scores, standard deviations and sample groups for the experimental and control groups, and having no significant difference in pretests were determined as the inclusion criteria. In the study, investigating the studies carried out since 2005 is related the fact that cooperative learning is related with constructivism (Johnson, Johnson & Stanne, 2000; Şen & Yılmaz, 2013) and in this sense, the implementation of the Social Studies curriculum in Turkey which adopts the constructivist approach in 2005. In addition, research reports were excluded because of their low availability. In the study, a coding form was prepared for such information about the studies as the author of the study, year when the study was conducted, research type, the class grade level at which the study was conducted, size of the experimental and control group samples, posttest scores and standard deviations. Appendix 1 presents the studies included in the analysis process of the present study, and Table 1 demonstrates information about the studies.

Table 1: Information about the studies

Variable		**f**
Year when the study was conducted	2005-2010	9
	2011-2016	13
Research type	Thesis	10
	Paper	12
Class grade level at which the study was conducted	4	8
	5	5
	6	5
	7	4
Sample size	1-25	10
	26 and over	22
Cooperative learning technique	Academic contradiction	
	Paired check applications	
	Cooperative learning	
	The combining technique	
	Studies including combined use of more than one technique	
	Group research	
	Reading-writing-presentation	

As can be seen in Table 1, those with the highest frequency (f=13) among all the studies included in the analysis were conducted between 2011-2016 years. Of all these studies, 10 of them were theses, and 12 of them were papers. The studies were mostly carried out with 4th grade students. When the sample size of the experimental groups was examined, it was seen that there were 10 study implemented with 1-25 person sample and 22 study with 26 and over person sample. In the studies, learning techniques based on cooperation such as academic contradiction, paired check applications and combining were used. In addition, in some of the studies, it was seen that more than one cooperative learning technique were used together.

The coding form was developed in order to increase the reliability in the coding of the suitability of the studies involved in the meta-analysis in the study. Researches have been investigated in the direction of this developed coding form. Two researchers filled the coding form separately and then reached consensus on non-overlapping coding.

The most important criticism made in relation to meta-analysis studies was subjective publication. In order to avoid subjective publication, it is necessary to calculate how many studies which will make the size of the influence zero should be included in the analysis (Özcan, 2008). For the purpose of determining whether there was subjective publication or not, the funnel chart could be taken into account. Figure 1 presents the funnel chart obtained in the study.

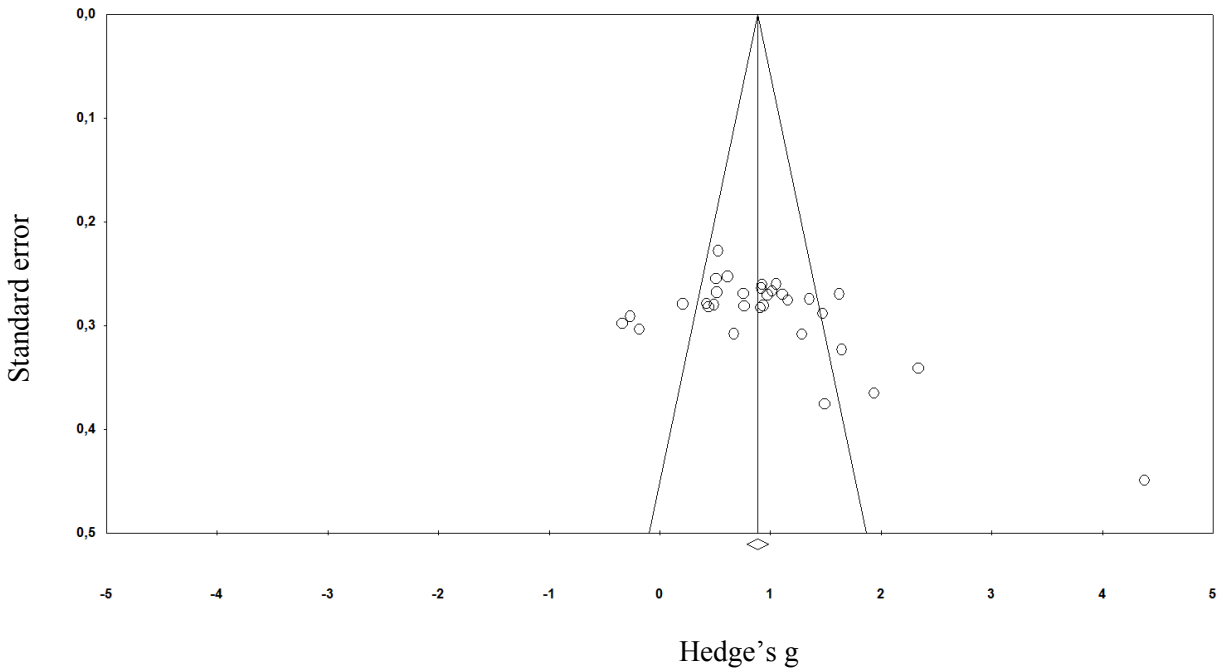

Figure 1: Funnel Chart

According to the funnel chart, it is necessary to look at the other values regarding subjective publication as some of the studies included in the present study were out of the graphic. One of the values to be used to reveal the subjective publication is the Rosenthal safe N value. According to the Rosenthal method, this value obtained in the study was 2777. Since this value was quite high, it could be stated that there was no subjective publication in the study. This value was 534 when the significance level was taken as 0,05 according to Orwin's method. Depending on these results, it could be stated that the results of meta-analysis in the study were reliable.

2.2 Data Analysis

For the analysis of the research data, the Comprehensive Meta-Analysis (CMA) program was used, and the treatment effectiveness meta-analysis was conducted. In the study, for the purpose of calculating the effect size, "Hedge's g" was used. For the interpretation of the effect size in the study, the following classification was used (Thalheimer & Cook, 2002):

- -0.15-0.15: no level;
- 0.15-0.40: low level;
- 0.40 -0.75: moderate level;
- 0.75 -1.10: high level;
- 1.10 -1.45: very high level;
- 1.45 or higher: excellent level.

3. Results

In this section, research findings are presented according to sub-questions.

3.1 Research Findings Concerning the First Sub-Question of the Study

In the present study, which aimed at determining the influence of the cooperative learning approach academic achievement in the course of Social Studies, the sample sizes of the experimental and control groups, standard deviations and posttest mean scores were used for the calculation of the effect sizes. Accordingly, Table 2 presents the effect sizes of the studies included in the present study, confidence intervals and study weights.

Table 2: Combined effect sizes, confidence intervals and study weights

Author	Effect Size	Confidence Interval		Study Weight (Fixed Effects	Study Weight (Random effects)
		Lower limit	Upper limit		
Akbulut, 2013	1,160	0,619	1,701	3,31	3,18
Arslan, 2011	1,017	0,494	1,541	3,53	3,22
Arslan & Yanpar, 2006	1,284	0,680	1,889	2,65	3,06
Avşar & Alkış, 2007	2,338	1,669	3,006	2,17	2,93
Baş, 2012	1,625	1,096	2,153	3,47	3,21
Çaycı, Demir, Başaran & Demir, 2007	1,109	0,579	1,638	3,46	3,21
Çelebi, 2006	0,672	0,068	1,276	2,65	3,06
Eskitürk, 2009	1,354	0,816	1,891	3,35	3,19
Geçit & Ölmez, 2016	0,757	0,229	1,284	3,48	3,21
Göğebakan Yıldız, 2012a	0,211	-0,337	0,758	3,23	3,17
Göğebakan Yıldız, 2012b	0,493	-0,056	1,042	3,21	3,17
Göğebakan Yıldız, 2015a	0,918	0,400	1,435	3,61	3,23
Göğebakan Yıldız, 2015b	0,510	0,010	1,010	3,87	3,26
Göğebakan Yıldız & Talu Bümen, 2013a1	0,910	0,355	1,464	3,15	3,16
Göğebakan Yıldız & Talu Bümen, 2013a2	0,936	0,386	1,487	3,20	3,16
Göğebakan Yıldız & Talu Bümen, 2013b1	0,442	-0,111	0,994	3,17	3,16
Göğebakan Yıldız & Talu Bümen, 2013b2	0,422	-0,125	0,969	3,24	3,17
Gürbüz, Şimşek & Berber, 2015a	-0,337	-0,922	0,248	2,83	3,10
Gürbüz, Şimşek & Berber, 2015b	-0,186	-0,781	0,410	2,73	3,08
Gürbüz, Şimşek & Berber, 2015c	-0,266	-0,837	0,305	2,97	3,12
Ilgar & Babacan, 2012	1,473	0,907	2,039	3,02	3,13
İrevül Hamlı, 2011	0,528	0,081	0,975	4,84	3,36
Kaşaveklioğlu, 2013	4,381	3,501	5,261	1,25	2,51
Korkmaz Toklucu, 2013a	0,764	0,213	1,314	3,19	3,16
Korkmaz Toklucu, 2013b	0,518	-0,007	1,043	3,51	3,21
Kuş & Karatekin, 2009a	0,974	0,444	1,504	3,44	3,20
Kuş & Karatekin, 2009b	1,051	0,541	1,560	3,73	3,24
Meral & Şimşek, 2014a	1,938	1,222	2,654	1,89	2,83
Meral & Şimşek, 2014b	1,491	0,755	2,227	1,79	2,79
Öner, 2007	1,643	1,010	2,277	2,41	3,00
Özkümüş, 2010	0,615	0,120	1,111	3,94	3,27
Uysal, 2010	0,924	0,413	1,435	3,71	3,24

In Table 2, the combined effect sizes for the studies included in the analysis are presented. Related forest plot showing distribution effect size values of studies is given in the Appendix 2. These findings constituted the basis of presentation of the combined effect sizes. When Table 2 is examined, it is seen that among the effect sizes of the studies included in the present study, three of them were negative. The negative effect sizes were considered to be a result in favor of the control groups. Because the effect sizes were found positive in most of the studies, it could be stated that use of cooperative learning approaches in the course of Social Studies was influential on academic achievement. Considering Thalheimer and Cook's classification (2002), Table 3 presents the classification of the values of the effect sizes of the studies.

Table 3. Classification of effect sizes

Level of Effect Size	**f**
-0,15-0,15: no level	3
0,15-0,40: low level	1
0,40-0,75: moderate level	8
0,75-1,10: high level	9
1,10-1,45: very high level	4
1,45 or higher: excellent level	7

As can be seen in Table 3, nine studies had a high level of effect size. Of all the studies, eight of them had moderate levels of effect size; seven of them had excellent levels of effect size. Also, of all the studies, four had a very high level of effect size; three had a trivial level of effect size. Only one of them had a low level of effect size. Table 4 presents the results regarding the effectiveness of the studies included in the present study on students' attitudes comparatively with respect to the models.

Table 4. Comparison of the results of meta-analysis according to the effect models

Model	**N**	**z**	**p**	**Q**	**Chi-Square table value (p=0.05)**	**Effect Size**	**Confidence Interval**	
							Lower limit	**Upper Limit**
Fixed effects model	32	17,609	0,000	180,338	44,985	0,884	0,786	0,982
Random effects model	32	7,878	0,000	180,338	44,985	0,959	0,720	1,197

When Table 4 is examined, it is seen that according to the fixed effects model, the lower limit of the confidence interval of 95% was 0,786 and the upper limit was 0,982. In addition, the average effect size was calculated as 0,884. This effect size was accepted as a high level of effect according to Thalheimer and Cook (2002). As a result of the z test calculations to determine statistical significance, z score was found to be 17,609. This result could be said to be statistically significant at the level of p=0.000. The results of homogeneity test revealed that the Q value was 180,338. This value was found to exceed the value of 44,985 in the freedom degree of 31 in the table of $\chi 2$ (Dinçer, 2014). Accordingly, the distribution of the effect sizes was found to be heterogeneous. As the

results of the homogeneity test were higher than the critical value, the random effects model was evaluated.

According to the random effects model in Table 4, the confidence interval of 95% had a lower limit of 0,720 and an upper limit of 1,197, and its average effect size was calculated as 0,959. This effect size, according to Thalheimer and Cook (2002), was accepted as a high level of effect. As a result of the z test calculations to determine the statistical significance, the z score was found to be 7,878. This result could be said to be statistically significant at the level of p=0.000. In this respect, it could be stated that cooperative learning approaches are more influential on increasing academic achievement in the course of Social Studies than traditional methods.

3.2 Research Findings Concerning the Second Sub-Question of the Study

Findings related to sub-question "Is there a significant difference between the effect sizes of the cooperative learning studies according to the years?" in the study are shown in Table 5.

Table 5: Effect sizes of studies according to years

Year	N	Hedge's g	%95 Confidence Interval		Heterogeneity Test	
			Lower Limit	Upper Limit	Qb Value	p
2005-2010	10	1,169	0,885	1,453		
2011-2016	22	0,861	0,546	1,1176		
Total between (Fixed effect model)					11,330	0,001
Total between (Random effect model)					2,027	0,155

According to the analysis results given in Table 5, the effect size of the studies conducted between 2005 and 2010 is 1,169; the effect size of the studies carried out between 2011 and 2016 is 0,861. The Q statistical value obtained as a result of the homogeneity test was calculated to be 11,330. Since this value is greater than the value of 3,841 at the 95% confidence interval of 0.05 significance level, the random effects model was evaluated. Accordingly, it can be said that the distribution has a heterogeneous structure. As a result of the analysis made, it can be said that there is no meaningful difference between the groups according to years (Qb = 2,027; p = 0,155).

3.3 Research Findings Concerning the Third Sub-Question of the Study

Findings related to sub-question "Is there a significant difference between the effect sizes of the cooperative learning studies according to the study type?" in the study are shown in Table 6.

Table 6: Effect sizes of the studies according to the study type

Study type	N	Hedge's g	%95 Confidence Interval		Heterogeneity test	
			Lower Limit	Upper Limit	Qb Value	p
Thesis	19	0,833	0,704	0,962		
Paper	13	0,954	0,803	1,106		
Total between (Fixed effect model)					1,426	0,232
Total between (Random effect model)					0,778	0,378

When Table 6 is examined, the effect size of thesis is 0,833; the effect size of papers is 0,954. The Q statistical value obtained as a result of the homogeneity test was calculated as 1,426. The fixed effect model was evaluated because this value was less than the value of 3,841 at the 95% confidence interval 0.05 significance level. Accordingly, it can be said that the distribution has a homogeneous structure. As a result of this analysis, it can be said that there is no meaningful difference in the effect sizes between groups according to the study group (Qb = 1,426; p = 0,232).

3.4 Research Findings Concerning the Fourth Sub-Question of the Study

Findings related to sub-question "Is there a significant difference between the effect sizes of the cooperative learning studies according to the class level?" in the study are shown in Table 7.

Table 7: Effect sizes of the studies according to the class level

Class Level	N	Hedge's g	%95 Confidence Interval		Heterogeneity test	
			Lower Limit	Upper Limit	Qb Value	p
4	10	0,846	0,681	1,011		
5	9	0,712	0,526	0,898		
6	9	0,764	0,570	0,958		
7	4	1,751	1,450	2,052		
Total between (Fixed effect model)					36,747	0,000
Total between (Random effect model)					5,855	0,119

When Table 7 is examined, it is seen that the highest effect size according to class levels is 7th grade with 1,751 and the lowest effect size is 5th grade with 0,712. The Q statistical value obtained as a result of the homogeneity test is calculated as 36,747. Since this value is greater than the value of 7,815 at the 95% confidence interval and 0.05 at the significance level, the random effects model was evaluated. Accordingly, it can be said that the distribution has a heterogeneous structure. As a result of this analysis, it can be said that there is no meaningful difference between the effect sizes of the groups according to the study type (Qb = 5,855; p = 0,119).

3.5 Research Findings Concerning the Fifth Sub-Question of the Study

Findings related to sub-question "Is there a significant difference between the effect sizes of the cooperative learning studies according to the sample size?" in the study are shown in Table 8.

Table 8: Effect sizes of the studies according to the sample size

Sample Size	N	Hedge's g	%95 Confidence Interval		Heterogeneity test	
			Lower Limit	Upper Limit	Qb Value	p
0-25	10	0,396	0,211	0,582		
26 and over	22	1,076	0,960	1,192		
Total between (Fixed effect model)					37,125	0,000
Total between (Random effect model)					9,579	0,002

When Table 8 is examined, the effect size of studies with a sample size of 0-25 in the experimental group is 0,396; the sample size of the studies with a sample size of 26 and over in the experimental group is 1,076. The Q statistical value obtained as a result of the homogeneity test was calculated as 37,125. Since this value is greater than the value of 3,841 at the 95% confidence interval of 0.05 significance level, the random effects model was evaluated. Accordingly, it can be said that the distribution has a heterogeneous structure. As a result of this analysis, there is a significant difference between the groups in terms of sample size (Qb = 9,579; p = 0,002). According to this finding, it can be stated that cooperative learning is effective in the number of students 26 and over in the implementation of Social Studies course. In cases where the number of students is acceptable (up to about 40), it can be said that cooperative learning has a positive effect on success due to its increasing interaction.

4. Discussion, Conclusion and Suggestions

This meta-analysis study which efforts to contribute to the teaching of Social Studies has its own limitations. Researches that include pre-test and post-test data and sample numbers were included in the study. The study is only limited with the Social Studies course in the context of Turkey. Thus, it is thought that the results of the study reflect the process of Social Studies education and contribute to the education-training process in this context.

In related literature, a number of studies were conducted to reveal the influence of cooperative learning approach on academic achievement in the course of Social Studies. In the present study, related experimental studies were combined via meta-analysis, and the effect sizes were determined.

In the study, a total of 22 studies were included in meta-analysis. It has been seen that the most studies were carried out in 2011-2016 with 13 studies. It was found that of all the studies, at most three studies were conducted in 2007, 2012 and 2013 and that they included equal numbers of theses and papers. The studies included in the scope of

the present study were mostly conducted with 4th grade students. Ten of the studies included in the analysis are thesis; 12 of them are articles. Twenty two of the meta-analysis comparisons have a sample size of 26 and above. It may be effective that the students transition from the concrete operational stage to the formal operational stage at this age and facing with the Social Studies course at 4th grade first time. In addition, it has been observed that some cooperative learning techniques such as academic controversy, jigsaw, dual control, reading-writing-presenting, and group research were used in the included studies. However, the other cooperative learning techniques such as teams-games-tournaments, mutual interrogation, student-team-achievement-divisions were not utilized in the teaching of Social Studies.

Among the studies included in the meta-analysis, it has been found that cooperative learning approach has a positive effect on the academic achievement in the Social Studies. Only one of the studies included in the analysis was found to have a negative effect. Similarly, in related literature, in studies examining the influence of different teaching methods in different courses (Ayaz & Söylemez, 2015; Ayaz, 2015; Çelik, 2013), a negative effect was seen.

The effect size of the studies included in the present study according to the fixed effects model was found to be 0,889. However, as a result of the homogeneity test conducted, as the Q table 180,338 in 31 degrees of freedom value exceeded the critical value, the random effects model was evaluated. In relation to this model, the effect size was calculated as 0,959 of the %95 confidence interval (0.715-1.271). According to Thalheimer and Cook (2002), depending on the effect size classified as a high level of effect size, cooperative learning could be said to increase academic achievement in the course of Social Studies. In related literature, existence of meta-analysis studies demonstrating that cooperative learning increases academic achievement (Özdemirli, 2011; Tarım, 2003; Johnson, Johnson & Stanne, 2000; Şen & Yılmaz, 2013; Karakuş & Öztürk, 2016) supports the related finding obtained in the present study. The methods applied in other studies investigating the influence of different teaching methods on academic achievement (Çelik, 2013; Topan, 2013; Camnalbur, 2008; Vernon & Blake, 1993; Okursoy Günhan, 2009; Ayaz, 2015; Dağyar & Demirel, 2015; Ayaz & Söylemez, 2015; Yeşilpınar-Uyar & Doğanay, 2018) were found to increase academic achievement. In these studies, in a meta-analysis study which was investigated the effect of cooperative learning approach on science achievement, effect size was found moderate effect with 0,694 according to random effects model (Karakuş & Öztürk, 2016). Similarly, in a study, the effect of cooperative learning on academic achievement in mathematic course was found to be 0.82 (Tarım, 2003), in another study, the effect size was found to be 0.59 (Özdemirli, 2011). In a study which investigates the effect of cooperative learning on conceptual change, the effect size was found as 1.294 (Şen & Yılmaz, 2013). According to this, meta-analysis studies on cooperative learning have shown that the effect sizes have changed moderate to very high level. In addition, in one study conducted by Yaşar and colleagues (2015), it was revealed via the meta-analysis method that student-centered teaching methods (computer-assisted learning, alternative learning approaches, problem based learning, concept maps, etc.) increase

academic achievement in the course of Social Studies. The study conducting by Yaşar and colleagues (2015) to examine the experimental studies focusing on cooperative learning is parallel to the present study. Therefore, considering the results of the present study and those of other related studies, use of cooperative learning in the teaching-learning process could be said to increase academic achievement just as other learning approaches like problem-based learning and project-based learning do. In this context, when considering the nature of the Social Studies, cooperative learning techniques that play an important role in increasing both students' interest and academic achievement can be utilised. Because, as a result of the study, it is concluded that cooperative learning has a wide effect on academic achievement.

Factors such as, the year of the conducted study, the type of the study, class level, and sample size of the experimental group were used as sub-group variables to determine the effect of cooperative learning on achievement in social studies course. It was thought that these sub-group variables discussed in the research will contribute to the interpretation of the difference in student achievement.

Studies included in the meta analysis, the distribution of the studies conducted were determined as 2005-2010 and 2011-2016, the study type as paper and thesis, class level of the study conducted as 4, 5, 6, 7, sample size of the experimental group as 1-25, and 26 and over. It is revealed whether there is any difference according to these sub-group variables determined in the research. As a result of the analyzes made, it was seen that only studies differed in sample size. In the study conducted by Şen and Yılmaz (2013), it was found that the meta-analysis on the conceptual change effect of cooperative learning did not differ according to the year, study type, class level and sample size. This research overlaps with the year, publication type, and grade level of the mentioned research. However, the sample size is not similar. Again, Karakuş and Öztürk (2016), who investigated the success of collaborative learning in Science, showed a significant difference in publication type, but did not reveal any similarity with this research at the class level. In the literature, it was seen that there was no significant difference in sample size in the studies which were examining the effect of the problem-based learning and brain-based learning on the student achievement through meta-analysis (Gözüyeşil & Dikici, 2014; Dağyar & Demirel, 2015). In this study, it can be said that the difference in academic achievement according to the sample size is related to the cooperative learning based on in-class interaction.

Besides the studies examining the influence of cooperative learning approach on academic achievement in educational environments, there are other studies revealing different outcomes in terms of individual competencies. In this respect, it was found that cooperative learning could be functional in gaining certain citizenship competencies in terms of democratic values, attitudes and behaviors (Johnson & Johnson, 2016); that it increased such social interactions of individuals in a group as questioning, critical thinking and reflection (Genç, 2016); and that it was more effective than learning environments based on individualism and on competition in terms of interpersonal interactions, social support, self-confidence, perspective, learning together and solving disputes (Johnson & Johnson, 2002). The social studies course is a course

from life which aims to provide students with democratic attitudes and values such as peace, tolerance, respect and with knowledge and skills related to daily life such as spatial perception, chronology, geographical formations, problem solving, critical thinking, and inquiry. Therefore, considering the fact that the course of Social Studies aims at helping students acquires certain individual competencies and raising effective citizens, cooperative learning could be said to be influential in this respect as well.

Within the scope of the present study, the following suggestions could be put forward:

- In this study, the effect of cooperative learning on academic achievement in the Social Studies courses was examined through meta-analysis. Similarly, the effect of cooperative learning on student attitudes in the Social Studies courses can be examined through meta-analysis.
- In this study, cooperative learning approach was considered as a whole in the Social Studies course. For this reason, independent from any course, which cooperative learning techniques is more effective can be investigated through meta-analysis.
- It is seen in the studies included in this study that some have negative effect sizes. In those studies, it is possible to investigate which factors the negative effect originated from.
- The influence of cooperative learning on achievement in different courses could be investigated.
- From the studies, included cooperative learning approach has been found to be effective in increasing academic achievement in Turkey. In this sense, it can be examined whether there is a cultural factor in the success of cooperative learning.
- It has been found that cooperative learning has a positive effect on improving academic achievement compared to traditional teaching methods. For this reason, teachers can effectively use cooperative learning approaches in Social Studies to increase success.
- Sample activities that will guide teachers on how to use cooperative learning approaches can be taken place in Social Studies curriculum.
- Meta-analysis studies have been seen important in terms of interpreting the literature by combining different findings. The increase in the number of such studies will provide significant contributions to the educational sciences. However, if the values required for calculating the effect sizes are included in the studies, it will make it possible to obtain more reliable results.

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Appendices **

Appendix 1: List of Studies Included

Author	Year	Title of the Study	Research Type
Güzide Uysal	2010	The effects of cooperative learning on students achievement on elementary school social studies, problem solving skills, learning styles and the views of student	Thesis
Duygu İrevül Hamlı	2011	The effect of dual control technique used in social studies lesson for fourth (4th) grade students in primary school	Thesis
Derya Göğebakan Yıldız	2012	Effects of cooperative learning and conflict resolution training integrated into Turkish and social studies curriculum on students' achievement, communication and social problem solving skills	Thesis
Züleyha Avşar and Seçil Alkış	2007	The effects of cooperative learning "jigsaw I" technique on students' success in social studies courses	Paper
Barış Çaycı, Mehmet Kaan Demir, Mustafa Başaran and Metin Demir	2007	Concept teaching with cooperative learning on social studies lesson	Paper
Rüştü Ilgar and Şevki Babacan	2012	The effect of multiple intelligence theory supported by cooperative learning method on achievement in teaching geography curriculum	Paper
Zafer Kuş and Kadir Karatekin	2009	The effect of cooperative learning on academic achievement in social studies course	Paper
Elif Meral and Ufuk Şimşek	2014	The effect of cooperative learning methods on 6th grade students' academic success in social studies course	Paper
Yılmaz Geçit and Nurcan Ölmez	2016	The contribution of "six thinking hats" to the effectiveness of cooperative learning method in social studies lesson	Paper
Nurten Gürbüz, Ufuk Şimşek and Kadir Berber	2015	The effect of cooperative learning model on the academic success of students at 6th grade social studies lesson	Paper
Derya Göğebakan Yıldız	2015	The effect of the techniques of academic controversy and jigsaw ii that are used in social studies education on learning outcomes	Paper
Ali Arslan	2011	The effect of jigsaw iv on gains, self-efficacy belief and self-regulation skill	Paper
Celalettin Çelebi	2006	The effect of cooperative learning based on constructive approach on students' gains and attitudes in elementary school 5th grade course of social studies	Thesis
Gökçe Akbulut	2013	The effect of the application of cooperative learning (learning together and team assisted	Thesis

		individualization) method on student attitudes and achievement of 6th grades social studies	
Kenan Baş	2012	Effects of cooperative learning method in the teaching of primary school seventh grade social studies	Thesis
Mehmet Eskitürk	2009	The effects of cooperative learning activities based on critical thinking skills in the course of social studies on academic achievement	Thesis
Selma Korkmaz Toklucu	2013	Comparison of the influence of cooperative learning method and systematic education on achievement, permanency and attitudes in the 4th grade course of social studies	Thesis
Sümeyra Kaşaveklioğlu	2013	The effect of usage of cooperative learning method in social studies classes of 7th grades on the perceptions of democratic attitudes and human rights with academic achievement	Thesis
Tuğba Özkümüş (Yetkin)	2010	The effects of cooperative learning method in teaching social studies in 4th grade primary school students towards their academic success and their attitudes to this lesson	Thesis
Ümmühan Öner	2007	The effect of cooperative learning method on student achievement in teaching the history subjects that are in social studies course at seventh grade in elementary school	Thesis
Ali Arslan ve Tuğba Yanpar	2006	The effects of cooperative learning based on constructivist approach in primary social studies	Paper
Derya Göğebakan Yıldız & Nilay Talu Bümen	2013	Effects of cooperative learning and conflict resolution training integrated into curriculum on academic achievement, social problem solving skills	Paper
Ali Arslan & Tuğba Yanpar	2006	The effects of cooperative learning based on constructivist approach in primary social studies	Paper
Derya Göğebakan Yıldız & Nilay Talu Bümen	2013	Effects of cooperative learning and conflict resolution training integrated into curriculum on academic achievement, social problem solving skill	Paper

Appendix 2: Forest plot showing distribution effect size values of studies