

The Effect of Cooperative Learning Method and Systematic Teaching on Students' Achievement and Retention of Knowledge in Social Studies Lesson*

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Abstract

Problem Statement: Many effective instructional strategies, methods, and techniques, which were developed in accordance with constructivist approach, can be used together in social studies lessons. Constructivist education comprises active learning processes. Two active learning approaches are cooperative learning and systematic teaching.

Purpose of the Study: The present study was conducted to determine the effect of the cooperative learning method and the systematic teaching and constructivist learning approaches on student achievement and retention in teaching the social studies lesson unit "The Place We Live" in a 4th grade class at the elementary school level.

Method: The research was based on pretest-posttest control group experimental design. Accordingly, experiment group 1 received instruction based on the cooperative learning method, experiment group 2 received instruction based on the systematic teaching method, and control groups 1 and 2 were instructed through the constructivist learning approach. A total of 110 students were assigned to the experiment and control groups, and the paired samples t test and one-way ANOVA were used to analyze the data.

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Findings: The results of the study suggested that the cooperative learning method and the systematic teaching and constructivist learning approaches are effective ways of enhancing students' achievement. Conversely, experiment and control group post test scores were not significantly different from each other. The cooperative learning method and the systematic teaching and constructivist learning approaches (control-1) were found to secure retention of knowledge, but failed to achieve retention of the knowledge among students in control group 2.

Conclusion and Recommendations: The study found that cooperative learning and the systematic teaching and constructivist learning approaches were effective in enhancing student achievement and retention in social studies lessons (except for control-2). Based on these results, it is recommended that in order to enhance academic achievement and retention of gains in social studies lessons, the cooperative learning method and systematic teaching can be used in addition to the constructivist learning approach. Moreover, failure of the constructivist learning approach to achieve retention in control group 2 can be based on different reasons. One reason can be the teachers' lack of knowledge about the basic philosophy and steps of constructivist approach. In this context, it is recommended that teachers should have in-service training about the constructivist approach.

Keywords: Social studies, cooperative learning method, systematic teaching, constructivist learning approach

Introduction

With the implementation of the 2005 curriculum in Turkey, the constructivist learning approach was employed to provide students with basic knowledge, skills, attitudes, and values regarding social life in social studies lessons. Constructivism is based on the idea that people learn better when they actively construct knowledge and associate new knowledge with previous knowledge (Smerdon, Burkam & Lee, 1999). Students who learn according to the constructivist approach discover knowledge and use it effectively in various situations (Perkins, 1999). In this context there are two principles of constructivism. First, knowledge cannot be acquired in passively. Knowledge is actively constructed and this constructed knowledge can differ from person to person. Second, there is not a single truth in the world. Since individuals try to understand the world through their own experiences, truth differs according to every individual's own perception (Wheatley, 1991). Furthermore, constructivism is not a theory of teaching but rather of learning (Richardson, 2003, p. 1629). Grennon Brooks and Brooks (1993, as cited in Brooks & Brooks, 1999, p. 20) define the five basic principles of constructivism as follows:

1. A constructivist teacher seeks for and cares about learners' viewpoints.

2. A constructivist teacher constructs (plans) the lessons to challenge the students' assumptions.

3. A constructivist teacher is aware that students need to make additions regarding the curriculum.

4. A constructivist teacher does not construct (plan) the lessons around small fragments of knowledge, but instead around great ideas.

5. A constructivist teacher does not evaluate the students' learning separately, but instead within the context of daily classroom research.

Though it has different definitions and procedures, the nature of constructivist lessons involves four well accepted components. These are:

1. Students construct meaning on their own.

2. New learning is constructed on previous knowledge.

3. Learning is consolidated with social interaction.

4. Meaningful learning develops through authentic tasks (Good & Brophy, 1994 as cited in Cooperstein & Kocevar-Weidinger, 2004).

These principles must be considered if the constructivist learning approach is to bring about meaningful learning and students' awareness (Unal, 2010). Another approach that can help achieve meaningful learning in social studies lessons is cooperative learning. Cooperative learning is the most remarkable and productive of all fields of practice, research, and theory in education (Johnson, Johnson & Stanne, 2000). Johnson & Johnson (1999, p. 68) state that cooperative learning is a versatile procedure and can be used for a variety of purposes. In other words, cooperative learning develops when students work together in order to achieve common learning goals (Johnson & Johnson, 1999 as cited in Johnson, Johnson & Stanne, 2000). Furthermore, cooperative learning is the cooperative work of students in order to achieve shared learning goals, including the completion of certain assignments and tasks in a period of several weeks (Johnson, Johnson & Smith, 1998). To succeed in these cooperative activities, basic principles of the cooperative learning method should be taken into consideration. These five basic principles include: positive interdependence, face-to-face interaction, individual accountability, social skills, and group process (Johnson, Johnson & Holubec, 1992).

Another approach to enhance learner achievement in social studies lessons is systematic teaching. Systematic teaching is based on the probability philosophy, which states that education can be arranged for every student, for certain groups, or even for all people. Moreover, teaching, learning, and evaluation activities can be handled in a similar vein with multi or single dimensional perspectives. How all activities are constructed changes according to the situation and conditions. As there is no single learning-teaching strategy, theory, method, technique, or tactic for now, there may be no strategy, theory, method, technique, or tactic that learners always use to acquire every kind of behavior. Many rationales can be employed. One may

prefer discovering, comprehending, using, and reproducing knowledge while acquiring knowledge, skills, affects, and intuitions (Sonmez, 2004).

Systematic teaching is based on discovering, making sense of, using, and reproducing knowledge by students. A teacher can only be a guide. Any kind of learning and teaching activity can generally be centered on the students. Teachers should generally arrange the settings and provide resources for the students to discover, comprehend, use, and reproduce knowledge. Students should discuss with pictures, slides, cases, dialogues, and dramatizations, and discover the principles and method themselves. Teachers should only provide cues, feedback, and correction (Sonmez, 2010). Educational games, contests, scientific research, time, love, reasoning, a democratic environment, and multidimensional evaluations are the major components of systematic teaching (Sonmez, 2010).

In this context, both cooperative learning and systematic teaching can be regarded as active learning methods. Considering the theoretical accounts above, it is assumed that social studies lessons conducted per the constructivist learning approach can be executed with the cooperative learning method and systematic teaching as well. The constructivist learning approach, cooperative learning method, and systematic teaching mainly suppose that students can access and internalize knowledge through different activities and participation in learning activities. In addition to this, considering that enriching the learning environment with different strategies, methods, and techniques enhances learning, the constructivist learning approach, the cooperative learning method, and systematic teaching are believed to be effective ways of instruction. The rationale behind this study was the pedagogical importance of investigating and comparing the contributions of the constructivist learning approach, the cooperative learning method, and systematic teaching to students' learning and retention of knowledge. It is also believed that this comparison will once again stress the necessity of using different activities, like the cooperative learning method and systematic teaching, beside those in the teacher's guide for a social studies course in order to enhance the retention of knowledge. It is thought that the findings of this study will contribute to increasing the efficacy and productivity of social studies lessons and serve as a reference to future research.

A review of relevant literature reveals there is research on cooperative learning for different grades, subject fields, and units, and cooperative learning has been generally compared with traditional teaching methods or the constructivist approach (Karaoglu, 1998; Ozkal, 2000; Celebi, 2006; Law, 2008; Eskitürk, 2009). Various research has been conducted about using systematic teaching for different grades, subject fields, and units, and it is generally compared with traditional teaching methods or the constructivist approach (Alacapinar, 2002; Cetin, 2003; Kocak, 2004; Memisoglu, 2004; Pas, 2004; Piji, 2006; Kapicioglu, 2006; Kucukoglu, 2007; Takkac, 2007; Ontas, 2010). No research has been found with the aim of comparing the efficacy of more than one approach in this subject field, unit, and grade. Therefore, the present research is regarded as important in providing resourceful findings for future research.

The Purpose of the Study

The present research aimed to investigate whether or not there is any statistically significant difference between the levels of achievement and knowledge retention of 4th class elementary students regarding "The Place We Live" unit taught in social studies using the cooperative learning method and the systematic teaching and constructivist learning approaches. In line with this major purpose the following hypotheses were tested:

Hypothesis 1: There are statistically significant differences between pre- and post-experiment achievement levels of students who were taught using the cooperative learning method (experiment-1) and the systematic teaching (experiment-2) and constructivist learning approaches (control group 1-2).

Hypothesis 2: There are no statistically significant differences between post-experiment achievement levels of students in experiment and control groups.

Hypothesis 3: There are no statistically significant differences between post-experiment achievement levels and knowledge retention levels of students in experiment and control groups.

Hypothesis 4: There is no statistically significant difference between knowledge retention levels of students in experiment and control groups

Method

Research Method

In line with the purpose of the study a quantitative approach was employed and pretest-posttest control group experimental design was used. The experimental method is based on experiments, defined as a test conducted under controlled conditions in order to investigate the truth of a hypothesis or to reconfirm an already known truth. The key element in this definition is control, which distinguishes experimental design from non-experimental designs (Muijs, 2004, p. 13).

Data Source

Data were collected from 4th grade students studying at two elementary schools in Kirsehir province during the 2011-2012 school year. Since four groups (two experiments and two controls) were involved in the study, a multi-stage sampling method was used. Multi-stage sampling requires using different sampling methods at every stage of sampling (Buyukozturk, Kilic Cakmak, Akgun, Karadeniz & Demirel, 2010). A convenience sampling method was used for the present study, which brings speed and ease to the research (Yildirim & Simsek, 2011). Accordingly, the sample was selected from the city where the researchers worked. In the second stage a simple random sampling method was used. Accordingly, the names of the elementary schools in Kirsehir province were written on pieces of paper, and one paper was selected randomly. In the third stage the purposive sampling method was used. Those schools similar to elementary school A (selected in the second stage) in

terms of socio-economic environment and school success were determined; i.e., a homogeneous sampling method was used. Next, the second school (B) was selected randomly from among the elementary schools selected according to the homogeneous sampling. Elementary school A had a total of five 4th classes and school B had eight 4th classes. All of these classes were administered the pre-test and, according to the results, three classes (two experiment and one control) were selected from school A and one class (control group) was selected from school B as the study groups. A total of 110 students were involved in these four groups. These four equivalent 4th classes were randomly assigned as experiment and control groups. Some descriptive are given in Table 1 below.

Table 1.

Descriptives for the Study Groups

School	Group	\bar{X}	S	Treatment	Class	Gender		Number of students
						Girl	Boy	
A	<i>Experiment -1</i>	13,03	4,48	<i>Cooperative learning</i>	4-A	13	15	28
A		10,91	3,41		4-B	17	15	32
A	<i>Experiment -2</i>	13,23	4,55	<i>Systematic teaching</i>	4-C	15	11	26
A	<i>Control-1</i>	13,53	5,12	<i>Constructivist learning</i>	4-D	11	17	28
A		14,71	3,63		4-E	13	19	32
B		22,15	1,94		4-A	16	18	34
B		10,52	3,58		4-B	15	14	29
B	<i>Control-2</i>	12,57	4,37	<i>Constructivist learning</i>	4-C	16	12	28
B		8,72	3,34		4-D	14	11	25
B		16,82	3,80		4-E	19	14	33
B		16,46	3,85		4-F	17	11	28
B		9,59	3,97		4-G	16	13	29
B		21,88	1,75		4-H	12	14	26

Of those 4th graders who participated in the study, 55 (50%) were boys and 55 (50%) were girls.

Instrument

In order to measure to what extent the students in the experiment and control groups gained the objectives of the unit, an achievement test developed by researchers was used. This test was administered on the participants three times as a pre-test, post-test, and retention test. The achievement test was developed according to the objectives of the "The Place We Live" unit in the curriculum of 4th grade Social studies lesson in line with the following steps:

1. First, a table of specifications was prepared for the achievement test.
2. After preparing the specifications table, 65 multiple-choice items were written for unit "The Place We Live", based on the 4th grade social studies curriculum, course books, student workbooks, teacher guide books, and reference books.
3. The draft test was consulted by an expert panel of three academicians from Ahi Evran University who specialized in teaching social studies; one social studies teacher and two classroom teachers. The test was revised based on their feedback. Next, an achievement test was administered to 196 fifth graders who had already studied the relevant unit. As a result of the pilot study, indices for difficulty and discrimination for each item and the reliability for the test in general were calculated. The final form of the achievement test comprised 25 items and the alpha reliability coefficient of the test was estimated to be .82.

Procedure

Necessary permissions were granted before implementing the study and the following actions were taken:

1. The instrument was developed. Using this instrument, study groups were assigned and the pre-test applied.
2. Lesson plans were prepared in accordance with the cooperative learning method and systematic teaching to be implemented in experiment groups 1 and 2, respectively. Lesson plans for systematic teaching were prepared based on the sample plans developed by Sonmez (2010). The cooperative learning method-based lesson plans were consulted by two academicians from Ahi Evran University who had written a thesis and articles about cooperative learning. Systematic teaching-based lesson plans were consulted by three academicians who specialized in curriculum development. Based on feedback from these academicians, lesson plans were revised.
3. As the social studies lesson plans are currently used based on the constructivist approach, no alternative lesson plans were prepared for the control groups. The lesson plans provided in teacher guides were used for these groups.
4. Before the treatment, students in experiment groups 1 and 2 were separately informed about the cooperative learning method and systematic teaching and the relevant activities used in these methods, respectively.

7. The treatment was done for five weeks between 1 November 2011 and 30 November 2011. The duration of the treatment, as assigned in the curriculum, was 15 lesson hours.

8. Students heterogeneously assigned into clusters during cooperative group work in experiment group 1, and scenarios were successively given to each cluster in accordance with the lesson objectives. Five distinct topics in the unit "The Place We Live" were taught using techniques from the cooperative learning method, including combining, ask together learn together, student team achievement parts, learning together, and group inquiry. The activities arranged in accordance with the basic principles and steps of these techniques were applied for five weeks. Each of these techniques and relevant tasks were introduced and explained to the students before the treatment. Students were given different tasks and thus engaged to the lesson activity. Group members were changed for each topic. The seats were rearranged before each lesson according to the techniques. Various resources and materials were used while teaching the unit and topics. Various worksheet and activities were prepared for the topics and revision tests were administered at the end of each week. Activities took place in the classroom.

9. Students in experiment group 2 were taught lessons using systematic teaching. Various resources and materials were used while teaching the topics. The behavioral objectives were determined and then teaching and learning processes were arranged. The lesson plans included proper and consistent activities regarding the behavioral objectives, and strategies, methods, and techniques suitable for these objectives. The questions to be asked to the students, and their correct answers, cues, corrections and feedback, and reinforcements were prepared. Questions were asked equally to all students in order to engage them in the lessons. Relevant pedagogical materials were prepared and used when necessary. Colored picture sets and sample cases were used to ensure that students could discover the knowledge and produce new knowledge based on what they had learned. During the development part of the lesson the teacher projected slides and used examples about the topic to contextualize verbal explanations. The teacher asked questions about the concepts taught. After explaining the topics, the teacher helped the students acquire the relevant knowledge thanks to colored pictures and sample cases. Students were asked to make short dramatizations (using puppets) about the topics. Summaries were provided from time to time. Supportive points were presented during transitional summaries, and main points were presented during the final summary. Relevant activities were prepared and revision tests were administered at the end of each week. Students were evaluated for their gains during the process.

10. Students in control groups 1 and 2 were taught the lessons according to the constructivist learning approach. The teacher used the methods as specified in the teacher guidebook in order to have the students achieve the objectives. She used the activities in the student workbook and adopted the lesson plan as suggested in the teacher guide book. The constructivist approach-based social studies curriculum was implemented accompanied with a main course book and a student workbook. Before transition to the main topic, the teacher made an introduction using the statements

from the lead-in part of the lesson plan, and then implemented the instructional activities following the directions in the teacher guidebook. Classroom teachers met before the lessons and exchanged their views about how to teach.

11. A social studies achievement test was administered twice following the completion of relevant lessons with all four groups, one as the post-test (2 December 2011) and the other as a retention test 4 weeks later (30 December 2011).

Data Analysis

While evaluating the social studies achievement test administered as the pre-test, post-test, and retention test, correct answers were scored with one (1) point, whereas wrong or unanswered items were scored as zero (0). Scores were recorded in a computer and analyzed using SPSS software. The data were analyzed using mean, standard deviation, paired samples *t* test, and one-way ANOVA. The level of significance was considered $p < 0.05$.

Results

One-way ANOVA was used to test the statistically significant differences between the pre-test scores of students in the experiment and control groups. The results are given in the table below.

Table 2.

Results of One-Way ANOVA Test regarding Pre-Test Scores of Experiment and Control Groups

Source of variance	Sum of squares	df	Mean squares	F	p
Between groups	13.690	3	4.563		
Within groups	2283.401	106	21.542	.212	.888
Total	2297.091	109			

According to Table 2, there is no significant difference between the pre-test scores of groups [$F_{(3-106)} = .212$; $p > 0.05$]. Based on this finding, the pre-test scores of the groups before the treatment can be said to be equivalent.

Hypothesis 1: There are statistically significant differences between pre- and post-test experiment achievement levels of students who were taught using the cooperative learning method (experiment-1) and the systematic teaching (experiment-2) and constructivist learning approaches (control group 1-2).

To test the first hypothesis a paired sample *t* test was used. The results are presented in the following table.

Table 3.

Results of Paired Samples T Tests Comparing Pre-Test and Post-Test Scores of Experiment And Control Groups

Group	Test	N	\bar{X}	S	df	t	P
Experiment-1	Pre-test	28	13.03	4.4843	27	-11.524	.000
	Post-test	28	21.17	2.6254			
Experiment-2	Pre-test	26	13.23	4.5546	25	-13.001	.000
	Post-test	26	19.80	4.1087			
Control-1	Pre-test	28	13.53	5.1170	27	-8.011	.000
	Post-test	28	19.07	2.8011			
Control-2	Pre-test	28	12.57	4.3667	27	-7.745	.000
	Post-test	28	19.25	4.4524			

An analysis of table 3 reveals that there are statistically significant differences between pre-test and post-test achievement scores of experiment and control groups [($t_{(27)} = -11.524$; $p < 0.05$); ($t_{(25)} = -13.001$; $p < 0.05$); ($t_{(27)} = -8.011$; $p < 0.05$); ($t_{(27)} = -7.745$; $p < 0.05$)]. Based on these findings, the first hypothesis of the research is proven. In other words, using the cooperative learning method (experiment-1) and the systematic teaching (experiment-2) and constructivist learning approaches (control groups 1 and 2) had a positive impact on student achievement.

Hypothesis 2: There are no statistically significant differences between post-experiment achievement levels of students in experiment and control groups.

To test the second hypothesis a one-way ANOVA was used. The results are presented in the following table.

Table 4.

Results of One-Way ANOVA Comparing Post-Test Scores of Experiment and Control Groups

Source of variance	Sum of squares	df	Mean squares	F	p
Between groups	76.465	3	25.488	1.994	.119
Within groups	1355.253	106	12.785		
Total	1431.718	109			

According to Table 4 there is no significant difference between the post-test achievement scores of the groups [$F_{(3-106)} = 1.994$; $p > 0.05$]. In other words, the second hypothesis was also proven. According to these findings, the post-test achievement scores of the groups are not statistically different from each other.

Hypothesis 3: There are no statistically significant differences between post-experiment achievement levels and knowledge retention levels of students in experiment and control groups.

To test the first hypothesis a paired sample *t* test was used. The results are presented in the following table.

Table 5

Results of Paired Samples T Tests Comparing Post-Test and Retention Test Scores of Experiment and Control Groups

Group	Test	N	\bar{X}	S	df	t	P
Experiment-1	Post-test	28	21.17	2.6254	27	.570	.573
	Retention	28	20.96	2.7282			
Experiment-2	Post-test	26	19.80	4.1087	25	.101	.921
	Retention	26	19.77	3.8813			
Control-1	Post-test	28	19.07	2.8011	27	.412	.684
	Retention	28	18.85	3.7978			
Control-2	Post-test	28	19.25	4.4524	27	3.126	.004
	Retention	28	16.60	5.2163			

The analysis of Table 5 reveals there are no statistically significant differences between post-test achievement scores and retention test scores of both experiment groups and the control group 1 [($t_{(27)} = .510$; $p > 0.05$); ($t_{(25)} = .101$; $p > 0.05$); ($t_{(27)} = .412$; $p > 0.05$)], whereas there is a statistically significant difference between post-test achievement scores and retention scores of control group 2 in favor of post-test scores ($t_{(27)} = 3.126$; $p < 0.05$). These findings suggest that the third hypothesis of the study is contradicted. In other words, while the teaching approaches used in experiment groups 1 and 2, and control group 1, secured the retention of knowledge the students learned, in control group 2 the constructivist learning approach failed to guarantee the retention of knowledge.

Hypothesis 4: There is no statistically significant difference between knowledge retention levels of students in experiment and control groups.

To test the fourth hypothesis a one-way ANOVA was used. The results are presented in the following table.

Table 6.

Results of One-Way ANOVA Comparing Retention Test Scores of Experiment and Control Groups

Source of variance	Sum of squares	df	Mean squares	F	p	Difference (Scheffe)
Between groups	284.168	3	94.723			1-4
Within groups	1701.687	106	16.054	5.900	.001	2-4
Total	1985.855	109				

As seen in Table 6, a significant difference was observed between the retention scores of the experiment and control groups [$F_{(3-106)} = 5.900$; $p < 0.05$]. The post-hoc Scheffe test revealed there are significant differences between experiment group 1 and control group 2, and between experiment group 2 and control group 2, in favor of the experiment groups.

Discussion and Conclusion

According to the results of the research, there were no significant differences between pre-test scores of the experiment and control groups; i.e., the groups were equivalent in terms of achievement before the experiment.

It was concluded that the cooperative learning method (experiment-1) and the systematic teaching (experiment-2) and constructivist learning approaches (control groups 1 and 2) increased the level of student achievement significantly and positively. The relevant literature also suggests that the cooperative learning method (Karaoglu, 1998; Ozkal, 2000; Celebi, 2006; Eskitürk, 2009; Kus & Karatekin, 2009), systematic teaching (Sonmez, 2001; Kocak, 2004; Memisoglu, 2004; Pas, 2004; Takkac, 2007; Ontas, 2010; Sezginsoy & Akkoyunlu, 2011) and constructivist learning approach (Unal & Celikkaya, 2009) enhances learning success in social studies lessons. Moreover, it was reported that students' academic achievement in other lessons are enhanced through the cooperative learning method (Johnson, Johnson & Scott, 1978; Walker & Crogan, 1998; Johnson, Johnson & Stanne, 2000; Anderson, Mitchell & Osgood, 2005; Adeyemi, 2008) and through the systematic teaching (Alacapinar, 2002; Cetin, 2003; Kapicioglu, 2006; Piji, 2006; Kucukoglu, 2007) and constructivist learning approaches (Karasu & Unlu, 2006; Teyfur, 2010). Thus, it appears that the findings of the present study are in agreement with the results of previous research.

No significant difference was observed between post-test scores of the experiment and control groups. In other words, cooperative learning, systematic teaching, and constructivist learning approaches altogether increase the students' success without any superiority or inferiority to each other.

It was concluded that the cooperative learning method and the systematic teaching and constructivist learning approaches applied in both experiment groups 1

and 2, and control group 1, had a positive impact on the retention of the knowledge students learned. However, the constructivist learning approach applied in control group 2 had no significant effect on the retention of the knowledge students learned. The relevant literature suggests that the cooperative learning method (Karaoglu, 1998; Eskitürk, 2009) and the systematic teaching (Sonmez, 2001; Kocak, 2004; Memisoglu, 2004; Pas, 2004; Sezginsoy & Akkoyunlu, 2011) and constructivist learning approaches (Unal & Celikkaya, 2009) had a positive effect on the retention of knowledge in social studies lessons. The failure of the constructivist learning approach to achieve retention of knowledge does not concur with either the results for control group 1 or the results in the literature.

The research also revealed significant differences between the experiment and control groups' scores from retention tests 4 weeks after the completion of treatment. These significant differences were between experiment group 1 (where the cooperative learning method was used) and control group 2 (where the constructivist learning approach was used), and between experiment group 2 (where systematic teaching was used) and control group 2 (where the constructivist learning approach was used) in favor of experiment groups 1 and 2. Karaoglu (1998) and Eskitürk (2009) found that the cooperative learning method was more effective on the retention of academic achievement of the students compared to other methods. Likewise, Sonmez (2001), Alacapinar (2002), Cetin (2003), Kocak (2004), Memisoglu (2004), Pas (2004), Kapicioglu (2006), Piji (2006), and Sezginsoy and Akkoyunlu (2011) also found that systematic teaching was more effective in the retention of the academic achievement of the students compared to other methods. These findings support the findings of the present study. However, it was observed that although the constructivist learning approach achieved long-lasting learning in control group 1, it failed to do so in control group 2. This may stem from several different factors. For example, teachers may be inadequate in applying the constructivist approach in these groups. Furthermore, the fact that the constructivist learning approach was applied by teachers dependant on the teacher guide books (this is just an observation that needs to be investigated and proven) might have created an improper setting of constructivist learning environments.

Recommendations

This study concluded that both the cooperative learning method and systematic teaching were effective in enhancing student achievement and retention in social studies lessons. Based on these results, it is recommended that the cooperative learning method and systematic teaching be used to enhance academic achievement and retention of gains in social studies lessons.

According to the research results, the cooperative learning method and the systematic teaching and constructivist learning approaches were effective in enhancing student achievement and retention in social studies lessons (except for control group 2). Teachers teach social studies lessons - and all other lessons (though this needs research) - following teacher guide books. Based on the results of the present study, it is recommended that in order to enhance academic achievement and

retention of gains in social studies lessons, teachers should not confine their lessons only to the activities in the guide books. Instead, they should use other approaches, strategies, methods, and techniques, especially those using the cooperative learning method and systematic teaching.

It was found that while teaching social studies lessons with the constructivist approach increased achievement and secured retention in control group 1, it only increased achievement and failed to guarantee retention in control group 2. This may be for different reasons, such as the teacher factor. In the present study, lessons in experiment groups were conducted by the researchers, while lessons in control groups were conducted by classroom teachers. In the future, research lessons in experiment and control groups should be conducted by the researcher and the results should be retested.

It was concluded that using systematic teaching was effective in enhancing student achievement and retention in social studies lessons. In this context, considering its contribution to teaching social studies lessons, the systematic teaching approach should be taken into consideration in curriculum development procedures.

In this study five different techniques belonging to the cooperative learning method (combining, ask together learn together, student team achievement parts, learning together, and group inquiry) were used. These techniques were effective in increasing the success and retention of learning in social studies lessons. In future research, these different techniques should be used to determine their impact on learning success and retention. Moreover, the subjects in the teacher guide books that are compatible with cooperative learning be determined, and teachers can be informed in detail about which techniques to use to apply the relevant methods.

One finding of the present study was the failure of the constructivist learning approach in control group 2 to achieve the retention of knowledge. This result suggests that there may be some drawbacks in implementation of constructivism. In this context, it can be said that teachers need some in-service training.

References

- Adeyemi, B.A. (2008). Effects of cooperative learning and problem-solving strategies on junior secondary school students' achievement in social studies. *Electronic Journal of Research in Educational Psychology*, 6, 691-708.
- Alacapinar, F.G. (2002). Effect of programmed instruction on achievement and retention. *Eurasian Journal of Educational Research*, 9, 172-185.
- Anderson, W.L., Mitchell, S.M., & Osgood, M.P. (2005). Comparison of student performance in cooperative learning and traditional lecture-based biochemistry classes. *Biochemistry and Molecular Biology Education*, 33, 387-393.
- Brooks, M.G., & Brooks, J.G. (1999). The constructivist classroom. *Educational Leadership*, 57(3), 18-24.

- Buyukozturk, S., Kilic Cakmak, E., Akgun, O.E., Karadeniz, S., & Demirel, F. (2010). *Bilimsel arastirma yontemleri* [Scientific research methods]. Ankara: Pegem Akademi.
- Cooperstein, S. E., & Kocevar-Weidinger, E. (2004). Beyond active learning: A constructivist approach to learning. *Reference Services Review*, 32(2), 141-148.
- Celebi, C. (2006). *The Effect of cooperative learning based to constructive approach to students achievement and attitudes at primary school 5th year social studies lesson*. Unpublished master dissertation. Selcuk University, Konya.
- Cetin, K. (2003). *The evaluation of teaching the unit of Ataturk's life in Turkish revolutionary history and the lesson of Ataturkculuk according to the programmed learning at primary education with pupils of grade 8*. Unpublished master dissertation. Abant İzzet Baysal University, Bolu.
- Eskiturk, M. (2009). *The effect of cooperative learning activities which take the base critical thinking ability to academic success in social science lesson*. Unpublished master dissertation. Canakkale Onsekiz Mart University, Canakkale.
- Jonson, D.W., Johnson, R.T., & Holubec, E.J. (1992). *Advanced cooperative learning*. Edina, Minnesota: Interaction Book Company.
- Johnson D.W., Johnson R.T., & Scott, L. (1978). The Effects of cooperative and individualized instruction on student attitudes and achievement. *The Journal of Social Psychology*, 104, 207-216.
- Johnson, D.W., & Johnson R.T. (1999). Making cooperative learning work. *Theory into Practice*, 38(2), 67-73.
- Johnson D.W., Johnson R.T., & Smith, K.A. (1998). Cooperative learning returns to college: What evidence is there that it works? *Change*, 20(4), 26-35.
- Johnson D.W., Johnson R.T., & Stanne, M.B. (2000). Cooperative learning methods: A meta-analysis. <http://www.tablelearning.com/uploads/File/EXHIBIT-B.pdf> (accessed May 5, 2012).
- Kapicioglu, M.O.K. (2006). *The effectiveness of the systematic teaching*. Unpublished doctoral dissertation. Hacettepe University, Ankara.
- Karaoglu, I.B. (1998). *The Effects of traditional teaching methods and cooperative learning on student achievement, retention and classroom management*. Unpublished doctoral dissertation. Dokuz Eylul University, İzmir.
- Karasu, Z., & Unlu, M. (2006). The effect of achievement academic of constructive method in geography education. *Marmara Geographical Review*, 12, 105-128.
- Kocak, M. (2004). *The Effects of programmed education on retention and students' attitude towards the in the course and effectiveness of social science*. Unpublished master dissertation. Abant İzzet Baysal University, Bolu.

- Kus, Z., & Karatekin, K. (2009). Isbirliğine dayalı öğrenmenin sosyal bilgiler dersinde akademik başarı üzerine etkisi [Effects of cooperative learning on academic achievement in social studies lesson]. *Uludağ Üniversitesi Eğitim Fakültesi Dergisi*, 2, 589-604.
- Kucukoglu, A. (2007). *The effect of systematic instruction on students' achievement*. Unpublished doctoral dissertation. Ataturk University, Erzurum.
- Law, Y. (2008). Effects of cooperative learning on second graders learning from text. *Educational Psychology*, 28, 567-582.
- Memisoglu, H. (2004). The effect of programmed teaching on students' achievement and retention scores of social sciences geographical subjects at primary schools. *Eurasian Journal of Educational Research*, 16, 128-137.
- Muijs, D. (2004). *Doing quantitative research in education*. London: Sage Publications.
- Ontas, T. (2010). *Effectiveness of the differences between systematic learning and constructivist approach on the student achievement in elementary social studies course*. Unpublished master dissertation. Hacettepe University, Ankara.
- Ozkal, N. (2000). *The effects of cooperative learning and traditional teaching methods on social studies self-concept, attitudes and achievement*. Unpublished doctoral dissertation. Dokuz Eylül University, İzmir.
- Pas, A.K. (2004). *Determining teaching of unit of how to reach the Republic as a programmed teaching at five class of social science lesson*. Unpublished master dissertation. Abant İzzet Baysal University, Bolu.
- Perkins, D. (1999). The many faces of constructivism. *Educational Leadership*, 57 (3), 6-11.
- Piji, D. (2006). *The Effects of the accompaniment course program developed in accordance with the systematic technique on academic success, attitude, competence perception and permanence*. Unpublished doctoral dissertation. Marmara University, İstanbul.
- Richardson, V. (2003). Constructivist pedagogy. *Teachers College Record*, 105(9), 1623-1640.
- Sezginsoy, B., & Akkoyunlu, B. (2011). Effectiveness of systematic instruction on the achievement of history consciousness in social sciences course. *H.U. Journal of Education*, 41, 411-422.
- Smerdon, B.A., Burkam, D.T., & Lee, V.E. (1999). Access to constructivist and didactic teaching: who gets it? Where is it practiced? *Teachers College Record*, 100 (1), 5-34.
- Sonmez, V. (2001). *Program geliştirilmede öğretmen el kitabı* [Curriculum Development Teacher's Handbook]. Ankara: Ani Yayıncılık.
- Sonmez, V. (2004). *Dizgeli eğitim* [Systematic teaching]. Ankara: Ani Yayıncılık.
- Sonmez, V. (2010). *Sosyal bilgiler öğretimi* [Teaching social studies]. Ankara: Ani Yayıncılık.

- Takkac, A. (2007). *Effectiveness of systematic learning on the achievement of fifth year primary school students in social studies course*. Unpublished master dissertation. Hacettepe University, Ankara.
- Teyfur, E. (2010). The effect of computer aided learning environments organized according to constructivist perception on student success and their attitude towards 9th grade geography class. *Journal of Kirsehir Education Faculty*, 11 (3), 85-106.
- Unal, C., & Celikkaya, T. (2009). The effect of constructive approach on success, attitude and permanency at the social sciences teaching (5th class example). *Journal of Graduate School of Social Sciences*, 13(2), 197-212.
- Unal, M. (2010). The Relationship between meta-cognitive learning strategies and academic success of university students (Ahi evran university sample). *International Online Journal of Educational Sciences*, 2 (3), 840-864.
- Walker, I., & Crogan, M. (1998). Academic performance, prejudice, and the jigsaw classroom: new pieces to the puzzle. *Journal of Community & Applied Social Psychology*, 8, 381-393.
- Wheatley, G.H. (1991). Constructivist perspectives on science and mathematics learning. *Science Education*, 75 (1), 9-21.
- Yildirim, A., & Simsek, H. (2011). *Sosyal bilimlerde nitel araştırma yöntemleri* [Qualitative research methods in social sciences]. Ankara: Seckin Yayıncılık.

İşbirlikli Öğrenme Yöntemi ve Dizge Eğitimin Sosyal Bilgiler Dersinde Öğrencilerin Başarısına ve Bilgilerinin Kalıcılığına Etkisi

Atıf:

- Korkmaz Toklucu, S., & Tay, B. (2016). The effect of cooperative learning method and systematic teaching on students' achievement and retention of knowledge in social studies lesson. *Eurasian Journal of Educational Research*, 66, 315-334
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Özet

Problem Durumu: Yapılandırmacı anlayışa göre hazırlanan sosyal bilgiler dersinde etkili öğrenme ve öğretmeyi sağlayacak pek çok strateji, yöntem ve teknik bir arada kullanılabilir. Yapılandırmacı anlayış aktif öğrenme süreçlerini kapsamaktadır. Aktif öğrenme yaklaşımlarından biri işbirlikli öğrenme ve bir diğeri de dizgeli eğitim olabilir. Yapılandırmacı öğrenme yaklaşımı, işbirlikli öğrenme yöntemi ve dizgeli eğitimin temelde öğrencilerin farklı etkinlikler yoluyla ve öğrenme etkinliklerine katılımlarıyla bilgiye ulaşabilecekleri, ulaşabildikleri bilgileri

bu yollarla kalıcı hale getirebilecekleri varsayılmaktadır. Bununla birlikte öğrenme ortamlarının farklı strateji, yöntem ve tekniklerle zenginleştirilmesinin öğrenmeyi olumlu yönde etkilediği düşüncesinden hareketle yapılandırmacı öğrenme yaklaşımının, işbirlikli öğrenme yönteminin ve dizgeli eğitimin bu bağlamda etkili olabileceği düşünülmektedir.

Bu araştırma ile yapılandırmacı öğrenme yaklaşımı, işbirlikli öğrenme yöntemi ve dizgeli eğitimin öğrenci başarısına ve bilginin kalıcılığına etkisinin karşılaştırılmasının eğitim öğretim açısından önemli olduğu düşünülmüştür. Bu karşılaştırma ile Sosyal Bilgiler derslerinin sadece öğretmen kılavuz kitaplarında yer alan etkinliklerle değil işbirlikli öğrenme yöntemi ve dizgeli eğitim gibi öğrencilere farklı aktiviteler yapmaya ve böylelikle öğrenilenlerin kalıcılığını artırmaya dönük etkinliklere yer verilmesi gerekliliği bir kez daha gözler önüne serilmesi düşünülmüştür. Araştırmanın sonuçlarının, Sosyal Bilgiler öğretiminin daha etkili ve verimli olmasına katkıda bulunacağı ve yapılacak araştırmalara kaynaklık edebileceği düşünülmektedir.

Araştırmanın Amacı: Bu çalışmada işbirlikli öğrenme yöntemi, dizgeli eğitim ve yapılandırmacı öğrenme yaklaşımına göre öğrenim gören 4. sınıf öğrencilerinin Sosyal Bilgiler dersinde "Yaşadığımız Yer" ünitesiyle ilgili başarı ve bilgilerinin kalıcılık düzeyleri arasında istatistiksel olarak anlamlı düzeyde bir farklılık olup olmadığı betimlenmeye çalışılmıştır. Bu temel amaç doğrultusunda aşağıdaki hipotezler test edilmiştir:

1. İşbirlikli öğrenme yöntemi (deney-1), dizgeli eğitim (deney-2) ve yapılandırmacı öğrenme yaklaşımlarına (kontrol-1 ve kontrol-2) göre öğrenim gören öğrencilerinin deneysel işlem öncesi ve sonrası başarı düzeyleri arasında istatistiksel olarak anlamlı düzeyde bir farklılık vardır.

2. Deney ve kontrol gruplarında öğrencilerinin deneysel işlem sonrası başarı düzeyleri arasında istatistiksel olarak anlamlı düzeyde bir farklılık yoktur.

3. Deney ve kontrol gruplarında öğrencilerinin son test başarıları ile edindikleri bilgilerin kalıcılık düzeyleri arasında istatistiksel olarak anlamlı düzeyde bir farklılık yoktur.

4. Deney ve kontrol gruplarında öğrencilerinin edindikleri bilgilerin kalıcılık düzeyleri arasında istatistiksel olarak anlamlı düzeyde bir farklılık yoktur.

Araştırmanın Yöntemi: Araştırmanın modeli öntest-sontest kontrol gruplu deneysel desendir. Deney-1 grubunda işbirlikli öğrenme yöntemi, deney-2 grubunda dizgeli eğitim, kontrol-1 ve kontrol-2 grubunda ise yapılandırmacı öğrenme yaklaşımı uygulanmıştır. Deney ve kontrol gruplarında toplam 110 öğrenci yer almış ve verilerin çözümlenmesinde bağımlı gruplar t testi ve tek yönlü varyans analizinden yararlanılmıştır.

Araştırmanın Bulguları: Araştırma sonunda elde edilen bulgulara göre, işbirlikli öğrenme yöntemi, dizgeli eğitim ve yapılandırmacı öğrenme yaklaşımlarının öğrencilerin akademik başarılarını artırmada etkili olduğu tespit edilmiştir. Deney ve

kontrol gruplarının akademik başarı son test puanlarının birbirinden anlamlı düzeyde farklı olmadığı bulgulanmıştır. İşbirlikli öğrenme yöntemi, dizgeli eğitim ve yapılandırmacı öğrenme yaklaşımlarının (kontrol-1) öğrencilerin edindikleri bilginin kalıcılığını sağlamada etkili olduğu ancak kontrol-2 grubunda öğrencilerin edindikleri bilginin kalıcılığını sağlamada etkili olmadığı tespit edilmiştir.

Araştırmanın Sonuçları ve Önerileri: Araştırmada işbirlikli öğrenme yöntemi (deney-1), dizgeli eğitim (deney-2) ve yapılandırmacı öğrenme yaklaşımlarının (kontrol-1 ve kontrol-2) öğrencilerin akademik başarılarını anlamlı ve olumlu düzeyde artırdığı, deney ve kontrol gruplarının sontest toplam puanları arasında anlamlı bir farklılık olmadığı tespit edilmiştir. Bir başka ifade ile işbirlikli öğrenme, dizgeli eğitim ve yapılandırmacı öğrenme yaklaşımları öğrenci başarısını olumlu düzeyde artırırken kendi aralarında öğrenci başarısını artırmada anlamlı düzeyde üstünlükleri ya da eksiklikleri bulunmamaktadır.

Bu araştırmada her iki deney grubu ve kontrol-1 grubunda uygulanan işbirlikli öğrenme yöntemi, dizgeli eğitim ve yapılandırmacı öğrenme yaklaşımlarının öğrencilerin edindikleri bilgilerin kalıcılığında olumlu düzeyde etkili olduğu sonucuna ulaşılmıştır. Fakat kontrol-2 grubunda uygulanan yapılandırmacı öğrenme yaklaşımının öğrencilerin edindikleri bilgilerin kalıcılığında etkili olmadığı tespit edilmiştir. Bununla birlikte, deney ve kontrol gruplarına deneysel işlemler bittikten 4 hafta sonra uygulanan kalıcılık testinden grupların aldıkları toplam puanlar arasında anlamlı bir fark olduğu sonucuna ulaşılmıştır. Bu anlamlı fark işbirlikli öğrenme yönteminin uygulandığı deney-1 grubu ile yapılandırmacı öğrenme yaklaşımının uygulandığı kontrol-2 ve dizgeli eğitimin uygulandığı deney-2 grubu ile yapılandırmacı öğrenme yaklaşımının uygulandığı kontrol-2 grupları arasında deney-1 ve deney-2 grupları lehine olmuştur.

Araştırmada hem işbirlikli öğrenme yöntemi hem dizgeli eğitim hem de yapılandırmacı öğrenme yaklaşımı Sosyal Bilgiler dersinde öğrencilerin başarılarını ve öğrenilenlerin kalıcılığını artırmada (kontrol-2 grubu hariç) etkili olduğu sonucuna ulaşılmıştır. Bu sonuçtan hareketle Sosyal Bilgiler dersi öğretiminde başarıyı artırmada ve öğrenilenlerin kalıcılığını sağlamada yapılandırmacı öğrenme yaklaşımının yanında işbirlikli öğrenme yöntemi ve dizgeli eğitim kullanılabilir.

Araştırma sonucuna göre kontrol-2 grubunda yapılandırmacı öğrenme yaklaşımı öğrenilenlerin kalıcılığını artırmada etkili olmamıştır. Bir araştırma sonucuna ihtiyaç duyulmakla birlikte öğretmenlerin tüm derslerde olduğu gibi Sosyal Bilgiler dersinde de öğretmen kılavuz kitaplarına bağlı kalarak ders işledikleri gözlenmekte ve bilinmektedir. Araştırma sonucuna bağlı olarak öğretmenlerin Sosyal Bilgiler dersinde sadece öğretmen kılavuz kitaplarında yer alan etkinliklerle sınırlı kalmayıp başta işbirlikli öğrenme ve dizgeli eğitim olmak üzere farklı anlayış, yaklaşım, yöntem ve teknikleri kullanmaları önerilebilir. Kontrol 2 grubunda ortaya çıkan bu durumun farklı nedenleri olabilir. Bu durumun bir nedeni olarak öğretmen faktörü düşünülebilir. Bu araştırmada deney gruplarında dersler araştırmacı tarafından, kontrol gruplarında ise sınıf öğretmenleri ile yürütülmüştür. Yapılacak diğer araştırmalarda deney ve kontrol gruplarında araştırmacı tarafından dersler

yürütülüp sonuçlar tekrar test edilebilir. Bununla birlikte bu sonucun yapılandırıcılığın uygulanmasında bazı aksaklıkların olduğunu da gösterdiği düşünülmektedir. Bu bağlamda öğretmenlerin hizmetiçi eğitime ihtiyaç duydukları söylenebilir.

Bu araştırmada dizgeli eğitimin Sosyal Bilgiler dersinde öğrencilerin başarılarını ve öğrenilenlerin kalıcılığını artırmada etkili olduğu sonucuna ulaşılmıştır. Bu bağlamda Sosyal Bilgiler öğretiminde dizgeli eğitimin katkısı göz önünde tutularak program geliştirme aşamalarında bu anlayışın da dikkate alınması önerilebilir.

Bu araştırmada işbirlikli öğrenme yöntemine ait beş farklı teknik (birleştirme, birlikte soralım birlikte öğrenelim, öğrenci takımları başarı bölümleri, birlikte öğrenme, grup araştırması) kullanılmıştır. Bu teknikler Sosyal Bilgiler dersinde başarıyı ve öğrenilenlerin kalıcılığını artırmada etkili olmuştur. Yapılacak diğer araştırmalarda işbirlikli öğrenme yöntemine ait birden fazla farklı teknik kullanılarak bu tekniklerin başarı ve kalıcılık üzerine etkisi belirlenebilir. Ayrıca öğretmen kılavuz kitaplarında hangi konuların işbirlikli öğrenmeye uygun olduğu belirlenebilir, belirtilen yöntemlerin hangi teknikle verileceği ayrıntıları ile açıklanarak uygulanabilir.

Anahtar Sözcükler: Sosyal bilgiler, işbirlikli öğrenme yöntemi, dizgeli eğitim, yapılandırıcı öğrenme yaklaşımı.