

The Effects of Educational Practice with Cartoons on Learning Outcomes

Cevat Eker

Assistant Professor
Dr., Bülent Ecevit University
Eregli Faculty of Education
Educational Sciences Department
Zonguldak, Turkey

Oğuzhan Karadeniz

Assistant Professor
Dr., Bülent Ecevit University
Eregli Faculty of Education
Department of Elementary Education
Social Studies Education Department
Zonguldak, Turkey

Abstract

This study aims to determine the effects of teaching practices done by using cartoon on students' achievement and knowledge retention. In this study, pretest, posttest control group experimental design was used on a group of 56 4th grade primary school students in 2013-2014 school year. The study was conducted during six-week long "Good That There" unit in social studies class. Achievement test developed by the researcher was administered three times as pre-test, post-test and retention test. The achievement scores gathered from the experiment and control groups were compared with t-test to examine whether there are significant differences between the groups. Findings indicated that the teaching practices done by using cartoon provided significant differences in increasing students' academic achievement and the level of knowledge retention in favor of the experimental group. This result illustrated that the teaching done with cartoons affects students' achievements and knowledge retention positively.

Keywords: Cartoon, Social Studies, academic achievement, retention

1. Introduction

Today, science and technology has changed rapidly and people have tried to keep pace with these changes. The students who are expected in this swift and mass process, are not the ones who are rote, passive and can respond quickly by using only the shortest way. On the contrary to, the aim of the education is to train the students who participate in the lesson actively and can create alternative ways to solve a problem and can think critically. This situation has led to that new education and training approaches gain importance in our education system.

It is important that students discover fun and enjoyable aspect of the course and they participate in the lesson actively and the usage of visual aids that can provide more meaningful learning for them by creating discussion environment. One of these tools is cartoons, too. Cartoons are the tools that draw students' attention and ensure the continuity of this attention, reduce tension and test anxiety and create a more comfortable learning environment. (Heitzmann,1998). While Aşçıoğlu (2001) defines "the cartoon" is a humour art which takes its essence from drawing and can be created by facilitating the technical possibilities of the visual arts, Uslu (2007) defines as humorous drawing of certain depictions.

Cartoons are effective tools which are used in order to teach and advise in addition they are funny. Cartoons can be easily detected by children. In the process of signification of the cartoons, students first concentrate on the line in the cartoon, then think over every detail, make comments by establishing connection and weave a story in minds putting out the contrast and associations between objects. Thus, the students think in creative and critical manner (Özalp, 2006).

With this aspect, cartoons are improving the students' critical thinking and problem solving skills and they also allow them to express themselves, to think freely and imagine to tell their thoughts and feelings orally and in writing (Uslu, 2007). Moreover, cartoons enable the students to realize the events in different aspects while they make them smile (Black, 2003).

In the course, not only making the students laugh but also make them think is one of the main objectives of the cartoon. In cartoons, there is usually a critical perspective. The topic discussed with the creativity is requested to be examined with a critical perspective by the reader (Topuz, 1986). Course connotations which are taught a cartoon which is suitable with its subject are effective and memorable. It is an alternative for education system based on rote training with bleeding wounds. In the meantime, classes are both fun and develops the intellectual sphere of the mind. It increases the ability to comment on a topic. According to Efe (2004), a teacher who knows cartoon and can use the best save today's youth from the cartoons which are distasteful, and only include elements of humor. Instead of this, it provides visibility by offering intellectual lines, motivates the students and creates the the opportunity of discussion (Özer, 1994).

Taking advantages of cartoons in education has not been sufficiently preferred today. However, no tool can make teaching as interesting as a cartoon. So, cartoon visual aids, it motivates the students and creates the opportunity to discussion. Communicating with cartoon is an easy communication which isn't complicated. It is noteworthy and surprising, it will be a part which is memorable. The warmth and the charm of the cartoon, and the comfort, which laughing and smiling, have given make the desired message by utilizing relaxation easier to facilitate insertion into the memory (Özer, 2005).

When the students are given lesson by taking advantage of cartoon, those ones will better understand the fact and especially the knowledge about that subject. (Grünwald, 1979).Cartoons are examined by observing the fine details and then they contain crucial messages which are generated with the way that events are defined by being simplified the details. Therefore, the function of the cartoons which press firmly on the ground of getting the students to instruct and to think, increases the effect of cartoon in education (Özer,1998). In this sense, the cartoon has great importance in terms of education. The importance of the benefitting from cartoons in the process of education and instruction benefit from cartoons, can be summarized as follows: (Holliday ve Grskovic, 2002; Brummett, 2003; Kleeman, 2006; Uslu, 2007).

1. Students want entertainment during lesson. Cartoon has the power to achieve it through the language of humor. This language of humor learning leads the student to learn. This enables the students to participate more in class without getting bored and will provide the lessons with a fun dimension. Because a positive classroom environment created in the course by smiling is more beneficial than the lesson taught by being used the method of narration.
2. It is effective in terms of learning the skills and abilities of the students. The teachers attract the student's attention and help them to learn the subject by asking question about cartoon drawn in the lesson. In addition, the students develop oral and written skills by examining the cartoon which they draw.
3. Cartoons are important in terms of that the students establish a relationship between the subjects and they contribute learners to develop problem solving skills. Students' perspective for cartoon will be different and it will bring a wealth of ideas. Thus, it will be easier to capture the details from the information.
4. Children's attention span is very limited. The student's attention is quickly distracted in the class and they quickly get bored. Teaching the subjects with cartoons will prevent them from getting bored and will provide the focus on lesson for a long time. At the same time, it will be a significant contribution to like the course.
5. Cartoon has an important role on motivating the student to the lesson for a long time. When introduction knowledge is being given and their interests decline during lesson, it is effective for focusing on lesson again. This situation will get them to retention.
6. Cartoon makes a positive contribution to the development of the students' thinking and comprehension skills. Therefore, they have a role in the formation of a ready audience as the objectives set are effective in teaching them well.
7. Cartoon is effective to communicate with the students. It makes the students it easier to memorize the messages related with the goals. It can be mentioned that humour approach is attractive while communicating with the students. Communicating with the cartoon is an easy way that is not complex, there is a side kept in mind.

8. Education with cartoon has not memorizing. Since cartoons are composed of different, interesting, images and symbols, they remain in the minds of individuals for along time. As a result, it is easy to remember the knowledge learned.
9. Cartoons improve the students' abilities to comment. Students perspectives for cartoons will be different and interpretations will be emerge on the same subject. In addition to this case show the richness and diversity of ideas among students, group discussion and finding the most accurate results together brings.
10. Drawing cartoon in the classroom will help the students who are interested in cartoon and have the capable for cartoon to emerge.

Even if cartoon is common in our books and schools in recent years, it has been effective on education which doesn't depend on memorization. As a result of this effect, the importance of cartoon in instruction has been emphasized by being taken place the acquisition expression "Students will perceive the message in the cartoon" in the field of the visual reading and visual presentation in Turkish lesson for the 4th grade in the primary school (MEB, 2005). Many studies have been done with regard to cartoons in the direction of this importance. However, when the studies are examined abroad (Keogh & Downing, 2001; Stephenson and Warwick, 2002; Alaba, 2007; Chen, Ku & Ho, 2009) and in Turkey (Demir, 2008; Baysarı, 2007; Durmaz, 2007; Üstün, 2007; Atasoy ve Akdeniz, 2009; Şaşmaz-Ören, 2009; Yalçın, 2010; Gölgeci ve Saraçoğlu, 2011; Erdoğan ve Cerrah Özgeç, 2012; Tokcan ve Alkan, 2013; Yılmaz, 2013), it has been observed that the concept cartoons are about benefits and limitations of the classroom practices, the research (Mauro ve Kubovy, 1992; Kılınç, 2006; Durualp, 2006; Özalp 2006; Toh, 2007; Köse, 2008; Üner, 2009; Şengül, 2011) that reveals the effects of writing cartoon on the subject which students repeat information, they have learned with free cartoon use and reinforce them to have been conducted, but the studies correlated to teaching Social Studies lesson in primary school the examined aren't sufficient. Therefore, the use of the cartoon in the courses as means of alternative and fun have an importance in terms of supporting to meaningful learning.

In this respect, the purpose of this study is to research how the usage of cartoon and that students draw cartoon affect on academic achievement of students and the retention levels of their achieved knowledge the process of teaching the unit which is entitled as "Good That There" in Social Studies in the 4th grade students in Primary school. For this purpose, following questions will be sought for answer.

Is there a significant difference between the academic achievement pre-test scores of the students in the experimental group and academic achievement pre-test scores of the students in the control group?

Is there a significant difference between the academic achievement pre-test and last-test scores of the experimental group?

Is there a significant difference between the academic achievement pre -test and last test- scores of the control group?

Is there a significant difference between the academic achievement last-test scores of the students in the experimental group and academic achievement last-test scores of the students in the control group?

Is there a significant difference between retention scores of the students in the experimental group and retention scores of the students in the control group?

2. Method

In this section, the research design which will be used in the study, study group, data collection tools, and documents related with interpretation of the data and being analyzed have been taken place.

2.1. Research Design

This research has been carried out according to "pre-test-post-test control group model". There are two groups formed by randomly assigning in pre-test, post-test control group model. Thus, an experimental and a control group has been formed in this study. In both groups, measurements have been made pre and after the experiment. Pre-tests which take place in the design and are applied to before practices help us to determine the level of similarity of the groups before experiment and last-tests help us interpretation of results (Cohen, Manion ve Morrison, 2007).

The experimental design used in this study has been shown in Table 1.

Table 1: Experimental Design of the study

Groups	Pre-tests	Experimental Procedure	Last-tTests	Retention Test
Experimental group	Academic achievement test (12.02.2014)	Insruction techniques done with the use of cartoon. (13.02.2014 / 20.03.2014)	Academic achievement test (21.03.2014)	Retention Test (11.4.2014)
Control Group	Academic achievement test	Traditional method (Insruction activities based on high school curriculum, teacher's book, approaches	Academic achievement test	Retention test

2.2. Study Group

The population and sample of the study have consisted a total of 56 students at 4th grade who study in two different classroom of a primary school in the city which is medium sized in the West Black Sea Region in Turkey in 2013-2014 academic year.

Datum which is obtained from the scores which are taken from academic achievement pre-test in the units within the research, and opinions of Social Studies teachers lesson have been benefitted in the determination of the experimental and control groups. There have been 28 students in the experimental group and 28 students in the control group. The distribution of students in the sample group has been given in table 2.

Distribution of students located in the expermental and control group.

Table 2: Distribution of Students Located in the Expermental and Control Group

Groups	Female	Male	Total
Expermental group	16	12	28
Control group	13	15	28

When Table 2 is examined, it has been seen that there have been 16 girls in the experimental group, 16 girls in the control group, 12 female students and 15 male students.

2.3. Data Collection Tool

Academic achievement test, this test has been prepared for the purposes the acquisitions of the unit which is entitled as "Good That There" in order to determine academic achievement of the students and the level of retention. 24 questions have been prepared for 6 acquisition expressions about the unit which is entitled as "Good That There". While the questions of the academic achievement test are being prepared, the views of an assessment experts from the education faculty, two experts in the field, five secondary school classroom teachers have consulted. In the line of these views, test has been given final shape after necessary corrections are done.

The academic achievement test has been applied to a total of 120 students at the 4th grade in secondary school which are similar to study group in order to determine the reliability of the test. The reliability study has been conducted by being analyzed datum obtained with IteMan program. The items 12 (0,14), 14 (0,18) 18 (0,22), 21 (0,10) which the power of discriminant is under %30 have been removed from the test at the end the result of item analyzes and a ultimate test which consists twenty question items has been created. The ultimate test statistics have been given in the following table:

Table 3: The Statistical Results of the Academic Achievement Test Which Belong the Unit "Good that There"

The number of the students	The number of the questions	\bar{x}	Ss	KR-20	Test avarege difficulty
120	20	17.90	5.42	0.89	0.68

When Table 3 is examined, it has been observed the arithmetic average of the test of unit “Good That There” is ($\bar{x}= 17,90$), the standard deviation of the test is ($S_s= 5,42$), KR-20 reliability 8,89, the average difficulty of the test 0,68. Accordingly, it can be said that the academic achievement test has sufficient reliability (Bayrakçeken, 2007).

It is expected the average of difficulty degree of the item must be round 0.50 in the test measure achievement. It has been seen that the difficulty level of the questions is medium difficulty when we look into the datum obtained. It can be said that it can be distinguish students who know from the students who don't know and the degree of distinctiveness is quite good with this respect of the test.

2.4. Application Process

This study has been carried out in a way that it will cover a period of 6 weeks in the first semester of the 2013 - 2014 academic year. 56 students studying in the 4th grade have been participated into the study. The practicing study has been applied to the experimental group for in a way that it will last for 3 hours. The students have been given information about what the cartoon is, what its goals are and how they will be able to comment before application starts. Additionally, the studies which last for 6 hours about drawing cartoon have done by the art teacher with the students.

Classroom teacher has been conducted the lesson in accordance with the current curriculum. Required disclosures have been made to the classroom teacher by the researcher, 18 ready cartoons have been given to the teacher so that he can use in the lesson and researcher has been participated in the course as an observer. During the lesson, students have been asked to draw own cartoons in order to repeat the topics handled in the lesson. These cartoons have been examined and interpreted with students. In the process of experimental procedure;

First week (2/13/2014): In the first week of practice: Teaching the content for acquiring the acquisition “he/she classifies technological products in his/her environment according to the field of use.” has been studied. Cartoon(s) which is appropriate to the course topic has been shown in a way that all students will be able to see during lesson. Cartoons have been given to each student by copying. The students have interpreted what they understand from the cartoons by oral or written narrative technique after students are given a certain amount of time for analyzing the cartoons. At the end of lesson, students have been asked to draw a cartoon about the topic. The cartoons drawn at the last hour of the lesson have been summarized by students. The study of the cartoon has been given to the students at the end of lesson as a homework in order that they can repeat the topics learned and reinforce them or they can have knowledge about next subject.

Second week (20.02.2014): The analysis and evaluation of the cartoon which draw in order that they can repeat the topics learned and reinforce them have been done. In the second week of practice: Teaching the content for acquiring the acquisition “He/She knows certain time measurement tools which man use and determining methods.” has been studied. Cartoon(s) which is appropriate to the course topic has been shown in a way that all students will be able to see during lesson. Cartoons has been given to each student by copying. The cartoons have been interpreted with the students at the last hour of the lesson. At the end of lesson, students have been asked to draw a cartoon about the topic handled. The cartoons have been summarized by the students at the last hour of the lesson. On the necessary situations, feedbacks have been given about the cartoon to the students. The study of the cartoon has given to the students at the end of lesson as a homework in order that they can repeat the topics learned and reinforce them or they can have knowledge about next subject.

Third week (27.03.2014): The analysis and evaluation of the cartoon which draw in order that they can repeat the topics learned and reinforce them have been done. In the third week of practice: Teaching the content for acquiring the acquisition “He/She comprehends the evolution of the technological products in time.” has been studied. Cartoon(s) which is appropriate to the course topic has been shown during lesson. The cartoons have been interpreted with the students at the last hour of the lesson. At the end of lesson, students have been asked to draw a cartoon about the topic handled. The cartoons have been summarized by the students at the last hour of the lesson. On the necessary situations, feedbacks have been given about the cartoon to the students. At the end of lesson, drawing the cartoon has been given to the students as a homework in order that they can repeat the topics learned and reinforce them or they can have knowledge about next subject.

Fourth week (06.03.2014): The analysis and evaluation of the cartoon which draw in order that they can repeat the topics learned and reinforce them have been done. In the fourth week of practice: Teaching the content for acquiring the acquisition “He/She compares past and today by taking into account that the technological products make changes in our lives and environment.” has been studied. Cartoon(s) which is appropriate to the course topic has been shown during lesson. The cartoons have been interpreted with the students at the last hour of the lesson. At the end of lesson, students have been asked to draw a cartoon about the topic handled. The cartoons have been summarized by the students at the last hour of the lesson. On the necessary situations, feedbacks have been given about the cartoon to the students. At the end of lesson, the study of the cartoon has been given to the students as a homework in order that they can repeat the topics learned and reinforce them or they can have knowledge about next subject.

Fifth week (13.03.2014): The analysis and evaluation of the cartoon which draw in order that they can repeat the topics learned and reinforce them have been done. In the fifth week of practice: Teaching the content for acquiring the acquisition “He/she designs original products based on the needs of his surrounding.” has been studied. Cartoon(s) which is appropriate to the course topic has been shown during lesson. The cartoons have been interpreted with the students at the last hour of the lesson. At the end of lesson, students have been asked to draw a cartoon about the topic handled. The cartoons have been summarized by the students at the last hour of the lesson. On the necessary situations, feedbacks have been given about the cartoon to the students. At the end of lesson, the study of the cartoon has been given to the students as a homework in order that they can repeat the topics learned and reinforce them or they can have knowledge about next subject.

Sixth week (20.03.2014): The analysis and evaluation of the cartoon which draw in order that they can repeat the topics learned and reinforce them have been done. In the sixth week of practice: Teaching the content for acquiring the acquisition “He/She uses the technological products without harming himself/herself, others and the nature.” has been studied. Cartoon(s) which is appropriate to the course topic has been shown during lesson. The cartoons have been interpreted with the students at the last hour of the lesson. At the end of lesson, students have been asked to draw a cartoon about the topic handled. The cartoons have been summarized by the students at the last hour of the lesson. On the necessary situations, feedbacks have been given about the cartoon to the students. The studies which are made in the unit process have been archived. The cartoons which are chosen from archives at the end of the practice have been exhibited at the school and classroom board.



Figure 1: An Example of the Cartoon Drawn by the Experimental Group Students



Figure 2: An Example of the Cartoon Drawn by the Experimental Group Students

When the practice finishes, the achievement test has been applied to experimental and control groups as last-test. In addition, in order to determine the retention of the information learned during the unit, the achievement test about the unit has been applied again after three weeks when the topics are learned to experimental and control groups.

2.5. Data Analysis

The datum obtained from the achievement test have been transferred to a computer statistics program named SPSS 15 and the statistical analysis of all tests has been made by being using this program. The results of pre-test and last test of the experimental and control groups have been compared and has examined whether there is a significant difference. The situations which datum are different between groups have been tested at the level of $p < .05$ significance

3. Results

In this section, the findings obtained from experimental and control group students' pre-test and post-test and retention tests have been reported.

First sub-problem of the study has been questioned as following “Is there a significant difference between the academic achievement pre-test scores of the experimental group and control group?” In accordance with this sub-problems, the findings about the experimental pre-process of academic achievement of the experimental and control group have been presented in table 4.

Table 4: Being Compared Academic Achievement Pre-Test Scores of the Students in the Experimental And Control Group

Groups	n	\bar{x}	Ss	t	P
Experiment	28	38.72	14.27		
Control	28	37.56	13.68	,32	,78

$p < 0,05$

When table 4 is examined, it is found that average academic achievement score of the students of the experimental group before starting the application is ($\bar{x}=38.72$), standard deviation is ($SD = 14.27$). It is found that average academic achievement score of the students of the control group before starting the application is ($\bar{x}= 37,56$), standard deviation is ($Ss=13,68$). Whether there is a significant difference between the scores obtained at the end of group pre-test applications is calculated with the t test, it has been concluded that there no significant difference the resulting ($t= ,32$) value and the level of ($p < 0,05$). According to the results, it can be said that students in the experimental and control groups are equivalent in terms of academic achievement pre-test scores.

The second sub-problem of the study has been questioned as following “Is there a significant difference between the academic achievement pre -test and last -test scores of the experimental group?”. In accordance with this sub-problem, the findings related with the academic successes before the experimental process of the students in the experimental group are given in table 5.

Table 5: Being Compared Academics Achievement Pre-Test Scores of the Students in the Experimental Group

Experimental group	n	\bar{x}	Ss	t	P
Pre test	28	38.72	14.27		
Last test	28	68.20	16.23	8,76	,000

$p < 0,05$

When table 5 is examined, it is found that the post-test average score is ($\bar{x} = 68,20$), standard deviation ($SD = 16.23$) while average academic achievement pre-test score of the students of the experimental group is ($\bar{x} = 38.72$), standard deviation is ($SD = 14.27$). Whether there is a significant difference between the average scores of the pre-test and the average scores of the last-test of the students in the experimental group is calculated with the t test, It is seen that there is a significant difference the resulting ($t = 8,76$) value and the level of ($p < 0,05$). That is it can be said that the average scores after application of the students in the experimental group increase in a meaningful way.

The third sub-problem of the study has been questioned as following ‘Is there a significant difference between the academic achievement pre -test and last test- scores of the control group? In accordance with this sub-problem, the findings related with the academic successes before the experimental process of the students in the control group are given in table 6.

Table 6: Being Compared Academic Achievement Pre-Test Scores of the Students in the Control Group

Control grubu	n	\bar{x}	Ss	t	P
Pre-test	28	37.56	13.68		
Last test	28	57.48	18.25	6,82	,000

$p < 0,05$

When table 6 is examined, it is found that the last-test average score is ($\bar{x} = 57,48$), standard deviation ($SD = 18.25$) while average academic achievement pre-test score of the students of the control group is ($\bar{x} = 37.56$), standard deviation is ($SD = 13.68$). Whether there is no significant difference between the average scores of the pre-test and the average scores of the last-test of the students in the experimental group is calculated with the t test. It is seen that there is a significant difference the resulting ($t = 6,82$) value and the level of ($p < 0,05$). That is, it can be said that the average scores after application of the students in the control group increase in a meaningful way.

The fourth sub-problem of the study has been questioned as following. “Is there a significant difference between the academic achievement last-test scores of the students in the experimental group and academic achievement last-test scores of the students in the control group?”. In accordance with this sub-problem, the findings related with the academic achievements after the experimental process of the students in the control group are given in table 7.

Table 7: Being Compared Academic Achievement Last-Test Scores of the Students in the Control and Experimental Group

Groups	n	\bar{x}	Ss	t	P
Experiment	28	68.20	16.23		
Control	28	57.48	18.25	5.42	.000

$p < 0,05$

When table 7 is examined, it is found that the average academic achievement score of the students of the experimental group after the application is ($\bar{x} = 68.20$), standard deviation is ($SD = 16.23$).

It is found that average academic achievement score of the students of the control group is ($\bar{x}=57,48$), standard deviation is ($Ss=16,23$). Whether there is a significant difference between the scores obtained at the end of last-test applications of the groups is calculated with the t test, it has been found that there is a significant difference the resulting ($t=5,42$) value and the level of ($p<0,05$) in favor of the experimental group. According to the results, it can be said that teaching the topics in the lesson by the use of cartoon effects the students in the experimental group in a positive way.

The fifth sub-problem of the study has been questioned as following: "Is there a significant difference between retention scores of the students in the experimental group and retention scores of the students in the control group?". In accordance with this sub-problem, the findings related with the academic achievement after the experimental process of the students in the experimental and control group are given in table 8.

Table 8: Being Compared the Retention Scores of the Students in the Control and Experimental Group

Groups	Last test			Retention testi			t	P
	N	\bar{x}	Ss	N	\bar{x}	Ss		
Experiment	28	68.20	16.23	28	65.68	8.78	4.28	.000
Control	28	57.48	18.25	28	53.20	11.27		

$p<0,05$

When table 8 is examined, it has been found that arithmetic average of the academic achievement last test scores of the students in the experimental group is ($\bar{x}=68,20$), standard deviation is ($SD=16,23$). It has been found that arithmetic average of the academic achievement last test scores of the students in the control group is ($\bar{x}=57,48$), standard deviation is ($SD=18,25$). It has been found that arithmetic average of the retention test scores of the students in the experimental group is ($\bar{x}=65,68$), standard deviation is ($SD=8,78$). It has been found that arithmetic average of the retention test scores of the students in the control group is ($\bar{x}=54,43$), standard deviation is ($SD=11,27$). In other words, during the period which lasts between last test of the students in the experimental group and the application of retention test, there has been a decrease of 2.52 and there has been a decrease of 4.28 in the average scores of the students in the control group. Whether difference occurring between the last test and retention scores of the groups is meaningful is interpreted with the t test, it has been found that there is a meaningful difference the resulting ($t=4,28$) value and the level of ($p<0,05$) in favor of the experimental group.

4. Discussion and Conclusion

According to findings obtained, the following results are obtained:

In this study which is researched the effect of use of cartoon in the teaching of Social Studies topics on the student achievement, it has been seen there are not statistically significant difference between the scores of the academic achievement pre-test of the experimental and control group. Accordingly, it is said that experimental and control groups are equivalent prior to application. When we look into the students' academic achievement last-test scores, it has been found that there have been significant increases in both the experimental and the control group. When the students' achievement scores in the experimental group which teaching is done by using the cartoon and the students' achievement scores in the control group which teaching is done without using the cartoon are compared, it has been found that academic achievement scores of students in the experimental group are higher. These results suggest that the teaching supported by cartoon is more effective the teaching based on traditional methods.

The use of the cartoons in Social Studies might have ensured the continuity of interest in the subject, might have made learning fun. It is thought that situation leads to an increase in students' academic achievement. Students can understand almost everything easily, if any subject is presented to them in a form which they can understand (Bruner, 2009).

Because, visual messages have been configured in their mind easily than reading (Örs, 2007). In addition, the students might have individually identified their inadequate sides about the topic and overcome their problem as the cartoons are drawn by giving students as homework. It can be said that the feedbacks given by the cartoons which the students draw have a positive role on being overcome their inadequate sides and the realization of meaningful learning.

These result has been consistent with the research results (Mauro ve Kubovy, 1992; Kılınç,2006; Durualp,2006; Özalp, 2006; Toh,2007; Köse, 2008; Üner, 2009; Şengül, 2011) which emphasize that drawing the cartoon in the lesson increases academic achievement. Mauro and Kubovy (1992) has been demonstrated that the use of the cartoon during the lesson affects the efficiency in education positively. Kılınç (2006) has reached the conclusion that teaching done by the use of the cartoon as a material has a positive contribution to the students' academic achievement in his study about the effect of the use the cartoon as a material on student achievement in teaching History. Toh (2007) wants their students to draw a cartoon related with presented topics by showing a cartoon about learned topics to the students. He has found the results that students are active in the lesson which is handled with the cartoon and a more permanent learning is provided. In the study which research the effect of the use of the cartoon in teaching Social Studies on the student achievement, Durualp (2006) He has found the results that the students of the experimental group which teaching is done by using the cartoon are more successful than the students studying with traditional teaching methods. Özalp (2006) has found the results that teaching done by using the cartoon gives more successful result than traditional teaching methods and it makes learning and configuring easier and it makes students more active in his study which he conducts.

It has been found that the students' retention scores in the experimental group which teaching is done by using the cartoon are higher than the students' retention scores in the control group which teaching is done without using the cartoon when examined the retention test scores. According to research on learning, the students learns more and what they learn is more stable when they can associate the new information with the information which they already have. Visual materials also make it easier to learn and to remember later by simplifying complex information. The use of the cartoon all departments in insruction provides different configurations and more permanent learning (Kalaycı, 2001). Dereli (2008) has reached the conclusion that teaching done by using the cartoons affect the retention of the knowledge learned in a positive way.

In the light of the results of the study, the following suggestions can be proposed:

Cartoons, as a visual and intellectual teaching tool, should be presented to the students in the first years of teaching-learning process and should be frequently used by teachers as educational activities to put an end to the education system based on rote-learning and to be able to occur permanent learning as required.

The cartoons should not be used only in the classroom but the students also should be encouraged to think and discuss about the subjects by hanging out the cartoons drawn by the students on the class and school board.

As the results of the study put forward, enough amount of cartoons should be put on the course books to be able to see and take the advantage of them more frequently, for the reason that cartoons affect student achievement positive

References

- Akengin, H., & İbrahimoğlu, Z. (2010). Sosyal Bilgiler Dersinde Karikatür Kullanımının Öğrencilerin Akademik Başarısına ve Derse İlişkin Görüşlerine Etkisi. *Ondokuz Mayıs Üniversitesi Eğitim Fakültesi Dergisi* 2010, 29 (2), 1-19.
- Alaba, S. (2007). The Use of Educational Cartoons and Comics in Enhancing Creativity in Primary School Pupils in Ile-ife. *Osun State, Nigeria. Journal of Applied Sciences Research*, 3(10), 913-920.
- Aşıcıoğlu, E. A. (2001). Yazısız karikatürlerin grafik sanatındaki yeri, yazısız karikatür uygulamaları. *Yayınlanmamış yüksek lisans tezi, Hacettepe Üniversitesi, Ankara.*
- Atasoy, G., & Akdeniz, A. R. (2009). Kavram karikatürlerinin etki-tepki kuvvetleri ile ilgili yanılgıları gidermeye etkisi. *3. Uluslararası Bilgisayar ve Öğretim Teknolojileri Sempozyumu, Karadeniz Teknik Üniversitesi, Trabzon/Türkiye.*
- Avşar, S. (2007). Tarih öğretiminde karikatür imgesi. *Yayınlanmamış yüksek lisans tezi, Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.*
- Ayyıldız, N. (2010) Coğrafya Öğretiminde Karikatür Materyali Kullanmanın Öğrenci Başarısına Etkisi. *Yayınlanmamış yüksek lisans tezi, Marmara Üniversitesi Eğitim Bilimleri Enstitüsü, İstanbul.*
- Bayrakçeken, S. (2007). *Test Geliştirme. Ölçme ve Değerlendirme.* Editör: Emin Karip. Ankara: Pegem A Yayıncılık,

- Baysarı, E. (2007). İlköğretim Düzeyinde 5. Sınıf Fen ve Teknoloji Dersi Canlılar ve Hayat Ünitesi Öğretiminde Kavram Karikatürü Kullanımının Öğrenci Başarısına, Fen Tutumuna ve Kavram Yanılgılarının Giderilmesine Olan Etkisi. Yayınlanmamış yüksek lisans tezi, Dokuz Eylül Üniversitesi Eğitim Bilimleri Enstitüsü, İzmir.
- Black, L. (2003). Tarih Öğretim Ve Öğreniminde Yöntem Sorunları, Tarih Eğitimine Eleştirel Yaklaşımlar. Avrupalı-Türkiyeli Tarih Eğitimcileri Buluşması (28- 33), (Hazırlayan Oya Köymen), İstanbul: Tarih Vakfı Yurt Yayınları.
- Brummett, P. (2003). İkinci Meşrutiyet Basınında İmge Ve Emperyalizm 1908-1911, (Çev. Aysen Anadol), İstanbul: İletişim Yayınları.
- Bruner, J. (2009). Eğitim Süreci (Çev. Talip Öztürk), Ankara: Pegem Akademi Yayıncılık.
- Chen, W. C., Ku, C. H. & Ho, Y. C. (2009). Applying the strategy of concept cartoon argument instruction to empower the children's argumentation ability in a remote elementary science classroom. Hollanda, Amsterdam: 13th European Conference for Research on Learning and Instruction.
- Cohen, L, Manion, L & Morrison, K. (2007). Research Methods in Education (6th edition). London: RoutledgeFalmer.
- Demir, Y. (2008). Kavram yanılgılarının belirlenmesinde kavram karikatürlerinin kullanılması. Yayınlanmamış yüksek lisans tezi. Fen Bilimleri Enstitüsü. Atatürk Üniversitesi, Erzurum.
- Dereli, M. (2008). Tam sayılar konusunun karikatürle öğretiminin öğrencilerin matematik başarılarına etkisi. Yayınlanmamış yüksek lisans tezi, Marmara Üniversitesi, İstanbul.
- Durmaz, B. (2007). Yapılandırıcı Fen Öğretiminde Kavram Karikatürlerinin Öğrencilerin Başarısı ve Duyuşsal Özelliklerine Etkisi (Muğla İli Merkez İlçe Örneği). Yayınlanmamış yüksek lisans tezi, Muğla Üniversitesi Fen Bilimleri Enstitüsü, Muğla.
- Durualp, E. (2006). İlköğretimde Sosyal Bilgiler Öğretiminde Karikatür Kullanımı. Yayınlanmamış yüksek lisans tezi, Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü, Ankara.
- Efe, H. (2004). Karikatür ve Popüler Kültür Soruşturması. Bilim ve Aklın Aydınlığında Eğitim Dergisi, 57.
- Efe, H. (2005). Karikatür ve Eğitim Karikatür Sanatının Eğitimdeki işlevi, Etki Yayınları, İzmir.
- Efe, H. (2008). Derslerde Karikatür İle Konuyu Bütünleştirme Aşamaları. Bilim ve Aklın Aydınlığında Eğitim Dergisi, 97, 51-53.
- Erdoğan, A. & Cerrah, Ö. L. (2012). Kavram Karikatürlerinin Öğrencilerin Kavram Yanılgılarının Giderilmesi Üzerindeki Etkisi: Sera Etkisi ve Küresel Isınma Örneği. Turkish Journal of Education; 1(2)
- Gölgeli, D., & Saraçoğlu S. (2011). Fen ve Teknoloji Dersi "Işık Ve Ses" Ünitesinin Öğretiminde Kavram Karikatürlerinin Kullanımının Öğrencilerin Akademik Başarısına Etkisi. Sosyal Bilimler Enstitüsü Dergisi Sayı: 31 /2, 113-124.
- Grünwald, D. (1979). Karikatur im Unterricht: Geschichte, Analysen, Schulpraxis. Beltz Praxis. Almanya,
- Heitzmann, W. R. (1998). The Power of political Cartoons in the Classroom. International Studies Perspectives.
- Holliday, D. C., & Jnice A. G., (2002). "Using Political Cartoons: An Activity For Students Of Every Ability". Middle Level Learning,15, (Pp M8- M9), National Council For The Social Studies.
- Kılınç, A. (2008). Öğretimde Mizahi Kavramaya Dayalı Bir materyal Geliştirme Çalışması: Bilim Karikatürleri. Yayınlanmamış doktora tezi, Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.
- Kleman, G. (2006). Using Cartoons To investigate Social And Environmental issues. Ethos, 14(3), 9-19.
- Keogh, B. & Naylor, S. (1999). Concept cartoons, teaching and learning in science: an evaluation. International Journal of Science Education, 21(4), 431446.
- Keogh, B., Naylor, S. & Downing, B. (2003). Children's interactions in the classroom: argumentation in primary science. Noordwijkerhout, Netherlands: 4th European Science Education Research Association Conference (1923 Ağustos).
- Köse, E. Ö. (2008). Biyoloji Eğitiminde Karikatür Destekli Öğretimin Öğrenci Başarısına Etkisi [Özet]. Çağdaş Eğitim Aylık Eğitim-Öğretim Dergisi, Sayı:356 14-22.
- Mauro, R. & Kubovy, M. (1992). Caricature and face recognition, psychonomic society. Memory and cognition, 20(4). 433-440.
- Örs, F. (2007). Eğitim ve Karikatür. Bilim ve Aklın Aydınlığında Eğitim, 84(7), 15-18.
- Özalp, I. (2006). Karikatür Tekniğinin Fen ve Çevre Eğitiminde Kullanılabilirliği Üzerine Bir Araştırma. Yayınlanmamış yüksek lisans tezi, Celal Bayar Üniversitesi, Manisa.
- Özer, A. (1994). İletişimin çizgi dili karikatür. Eskişehir: Anadolu Üniversitesi Yayınları.

- Özer, A. (2005). Karikatür eğitimcinin yazı tahtası üzerindeki işini fazlasıyla kolaylaştırır. Hürriyet gösteri sanat edebiyat dergisi, 73.
- Stephenson, P. & Warwick, P. (2002). Using concept cartoons to support progression in students' understanding of light. *Physics Education*, 37(2), 135-141.
- Şaşmaz, Ö. F. (2009). Öğretmen Adaylarının Kavram Karikatürü Oluşturma Becerilerinin Dereceli Puanlama Anahtarıyla Değerlendirilmesi. *e-Journal of New World Sciences Academy*, 4 (3), 994-1016.
- Şengül, S. (2011). Effects of Concept Cartoons on Mathematics Self- Efficacy of 7th Grade Students. *Kuram ve Uygulamada Eğitim Bilimleri, Educational Sciences: Theory & Practice* - 11(4).
- Toh, T. L. (2009). Use of cartoons and comics to teach algebra in mathematics classrooms. *MAV Annual Conference*, 230-239.
- Tokcan, H. & Alkan, G. (2013). Sosyal Bilgiler Öğretiminde Kavram Karikatürlerinin Öğrenci Başarısına Etkisi, *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi (KEFAD) Cilt 14, Sayı 2, Ağustos 2013, Sayfa 1-19*.
- Topuz, H. (1986). İletişimde Karikatür ve Toplum. *Eskişehir: Anadolu üniversitesi basımevi*.
- Uğurel, I. & Morali, S. (2006). Karikatürler ve Matematik Öğretiminde Kullanımı. *Milli Eğitim Dergisi*, 170. Erişim tarihi: 5 Ocak 2014. <http://yayim.meb.gov.tr/dergiler/170/170/sevgi%20morali.pdf>
- Uslu, H. (2007). Eğitimde Karikatür. *Bilim ve Aklın Aydınlığında Eğitim*, 84(7), 15-18. Erişim tarihi: 5 Ocak 2014 <http://baae.meb.gov.tr/index.php/joomlaorg/viewcategory/8-2007>.
- Üner, İ. (2009). İlköğretim Okullarında Karikatürle Öğrenmenin Öğrencilerin Başarı ve Tutum Düzeylerine Etkisi. *Yayınlanmamış yüksek lisans tezi, Marmara Üniversitesi Fen Bilimleri Enstitüsü, İstanbul*.
- Üstün, Ö. (2007). Ortaöğretim üçüncü sınıfta Türk Dili ve Edebiyat dersinde karikatür. *Yayınlanmamış yüksek lisans tezi, On sekiz Mart Üniversitesi, Çanakkale*.
- Yalçın, F. (2010). İlköğretim öğrencilerinin küresel ısınma ve sera etkisi konularındaki bilgi düzeylerinin ve yanlış kavramalarının belirlenmesi üzerine bir çalışma. *Yayınlanmamış Yüksek Lisans Tezi, Eğitim Bilimleri Enstitüsü, Gazi Üniversitesi, Ankara*.
- Yılmaz, T. (2013). Kavram Karikatürleriyle Desteklenmiş Bilimsel Hikayelerin Öğrencilerin Akademik Başarıları, Tutumları ve Motivasyonları Üzerine Etkisi. *Yayınlanmamış Yüksek Lisans Tezi, Celal Bayar Üniversitesi, Fen Bilimleri Enstitüsü, Manisa*.