

THE EFFECT OF FLIPPED CLASSROOM PRACTICES ON STUDENTS' ACADEMIC ACHIEVEMENT AND RESPONSIBILITY LEVELS IN SOCIAL STUDIES COURSE

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ABSTRACT

One of the main objectives of the Social Studies course is to raise individuals with a high level of responsibility. In this direction, many responsibilities are given to the students with the flipped classroom practices known as the replacement of the homework process at home with the theoretical knowledge process in the classroom and increase their academic success. The aim of this study is to investigate the effect of flipped classroom practices on students' academic achievement and responsibility levels in 5th-grade Social Studies course. The research was carried out according to the embedded experimental design which is one of the mixed-method designs. The study group consists of 5th-grade students studying in the 2018-2019 academic year in two different classes designated as experimental and control groups of a public secondary school in the middle socioeconomic level and Social Studies teacher of these classes. The data were obtained with the Student Responsibility Scale, academic achievement test and semi-structured interviews. As a result of the research, it was found that flipped classroom practices significantly increased the academic achievement and responsibility levels of the students in the experimental group. Teachers and students emphasized that e-learning videos had a significant effect on the increase in achievement and responsibility level. It is suggested that the flipped classroom practice can be used to improve students' responsibility and academic achievement levels.

Keywords: Social studies, flipped classroom practices, responsibility, academic achievement.

INTRODUCTION

Social Studies is a primary and secondary school course that tries to reach its own goals by using the content and methods of social science disciplines. In the literature, the Social Studies course is defined in different ways. Barr, Barth, and Shermis (2013, p.16) define Social Studies as: "a combination of social sciences and humanities for teaching purposes in citizenship education". In another definition that emphasizes citizenship dimension, Social Studies is defined as (Garcia and Michaelis, 2001, p. 9): "a program area that examines human relations and transfers the basic characteristics of cultural heritage to raise responsible citizens in a democratic society". Although there are many definitions of Social Studies, the emphasis on raising citizens, the use of content and methods of social sciences and the holistic approach of social sciences are similar expressions in the definitions. In this way, students' citizenship skills are tried to be developed by using information about daily life and society with the Social Studies course (Savage and Armstrong, 1996). Some of these citizenship skills are; to be active and responsible in democratic life, critical thinking, decision-making, and problem-solving skills developed (Ross, 2006). Social studies course has an important role in classroom learning-teaching processes in achieving these goals.

The learning-teaching process is a stage in which students and teachers interact and sometimes play the role of the learner and the teacher in a changing framework. At this stage, teachers and students experience some changes in knowledge, skills, behaviors, values or attitudes both during and after the process (Arslan, 2007; Saglam & Gungor, 2012). Since 2005, Social Studies course learning-teaching processes are required to proceed in accordance with the constructivist understanding that has developed in the light of the ideas put forward by John Dewey. The learning-teaching process in accordance with constructivist approach; it can be expressed that students are the most important actors of the learning-teaching process, participate actively in the process and reach new information by experiencing their existing knowledge (Chen, 2003). Cooperative learning, large and small group studies, individual or social problems based on problem-solving studies and large and small group class discussions are the main activities of this understanding in the learning-teaching process (Ata, 2006). Some teaching models allow these activities. Blended learning models are one of them.

Blended learning models that combine face-to-face education and online education create rich opportunities for activities within and outside the classroom for the Social Studies course. In recent years, it has become important to benefit from technology support in education and to improve the quantity and quality of materials and applications that can be used for this purpose and to make blended learning gain importance (Yolcu, 2015). There are many models of blended learning. It can be said that the most preferred blended learning model is the flipped model in the practices in schools (Demiralay and Karatas, 2014; El Hajji et al., 2016). Flipped model or flipped learning; it is a displaced form of homework and practical work outside the classroom, with theoretical expression based on knowledge in the classroom (Bergman and Sams, 2012; DeLozier and Rhodes, 2016). In other words, flipped learning is the transfer of information to the large learning group within the classroom with the help of various technologies (Hamdan, McKnight, McKnight and Arfstrom, 2013). According to Boyer (2013), the application process of flipped learning consists of three stages. While one of these stages takes place outside the classroom, the other two stages are implemented inside the classroom. First of all, students gain basic information about the content outside the classroom through videos, news links, and visuals they watch, then they come to class. The practice process in the classroom is carried out in two stages. The first stage is the organization of the information learned. The last stage is the activities performed using this information. In this model, the teacher has the task of preparing e-learning videos and sharing these videos with the students as well as organizing the activities in the classroom (Bergmann and Sams, 2012). Similarly, students have various tasks such as participating in-class activities, participating in-class discussions and group activities, making evaluations and suggestions about videos, producing related products and presenting them to their friends (Formica, Easley and Spraker, 2010; Overmyer; Tucker, 2012). Upon the fulfillment of these tasks, a Social Studies course that is conducted in accordance with flipped learning will increase the participation of students (Chen, 2016; Lazarus, 2018). In addition, re-watching the videos before the exams in flipped classroom practices positively affect students' academic achievement in terms of preparation for exams (Bergmann & Sams, 2012). In addition to this, it is stated that responsibility will develop in students with the use of flipped classroom practices in Social Studies (Evseeva and Solozhenko, 2015; O'Flaherty and Phillips, 2015). It is thought that the increase in the tasks of the students in the classroom and outside the classroom, leaving the control of learning to the student and giving emphasis to the high-level thinking skills in the activities in the classroom (Li, Bailey & Littlejohn, 2017). Responsibility, which is emphasized to develop in students with flipped classroom practices, is defined as follows: "The individual is to adapt, to fulfill his / her duties and to assume the consequences of the effects of his / her action on others, to respect the rights of others and to protect the consequences of his / her behavior" (Sezer, 2008, p.63). On the other hand, the upbringing of students as individuals responsible for their behaviors is important for a Social Studies class where collaborative activities take place (Hintz, 2017). This situation also manifests itself in the 2018 Social Studies Study Program (SSSP) and the textbook. It is often emphasized that responsibility should be given to students as a value in the Social Studies course, in both the study program and the textbook (MoNE, 2018). There are some studies carried out in the Social Studies course in line with the flipped classroom practices (Dursunlar, 2018; Erdogan, 2018; Nayci, 2017). Many of the studies were carried out in other courses and at different educational levels (Carlisle, 2018; Cakir, 2017; Duffy, 2016; Gross, 2014; Guggisberg 2015). As a result of all these studies, it has been demonstrated that the practices performed positively affect the academic achievement of students. In addition, many applied studies have been conducted in other secondary school courses. These studies are as follows; Physical education (Turkcapar, 2011), Computer education (Ceylan,

2015; Kurt, 2012), Mathematics education (Coulal, 2014; Dafoe, 2016; Kinderman, 2015; Larsen, 2013; Martin, 2015; Ramaglia, 2015; Wiley, 2015) and foreign language education (Cashin, 2016; Prefume, 2015). In these studies, it was emphasized that the benefits of flipped classroom practices mostly for teachers and students. However there are no studies that associate flipped classroom practices and values education in the Social Studies course and show the effects of these practices on the academic achievement of 5th-grade students in accordance with mixed research methods. The aim of this study is to investigate the effect of flipped classroom practices on students' academic achievement and responsibility levels in the 5th grade Social Studies course. As part of this overall objective has been sought answers to the following research questions:

1. Is there a statistically significant difference between the academic achievement levels of experimental group and control group students using flipped classroom practices in the 5th grade Social Studies course?
2. Is there a statistically significant difference between the level of responsibility of the experimental group and control group students using flipped classroom practices in the 5th grade Social Studies course?
3. What are the views of teachers and students about the effect of the use of flipped classroom practices on the academic achievement and responsibility level of students in the Social Studies course?

METHOD

Combining the strengths of qualitative and quantitative approaches, mixed patterns are used in social science research to minimize the limitations of each approach (Tashakkori and Teddlie, 2010). In this study, the embedded experimental pattern, one of the mixed method patterns, was used (Creswell and Plano-Clark, 2007). Qualitative and quantitative data in embedded patterns are obtained in two different categories. One of these data has a secondary role and has been collected to support the other set of data. This pattern is particularly suitable for studies where qualitative data are used to explain quantitative data (Creswell and Plano-Clark, 2007). Embedded patterns are divided into embedded experimental patterns and embedded correlational patterns (Creswell and Plano-Clark, 2007). The qualitative data of this study were collected to support the quantitative data obtained for the purposes of the research and to explain these data in depth. Therefore, the research was carried out in accordance with the embedded experimental design. First of all, participants were determined by using academic achievement test and responsibility scale and quantitative pre-test data were collected. Then, the application process was carried out for 10 weeks and then quantitative post-test data were collected. Finally, semi-structured interviews were conducted with the teachers and students in the experimental group and the qualitative support data of the study were obtained. Information on the mixed-method design of the study is given in Figure 1.

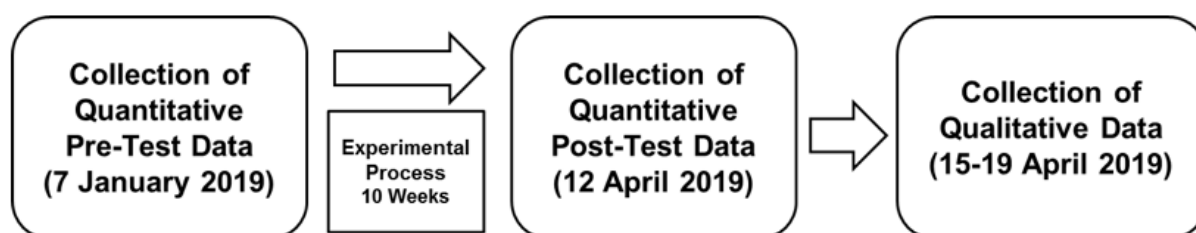


Figure 1. Mixed-method design of the study

Participants

The study group consists of group two separate classes of the 5th-grade students and Social Studies teachers of these classes of a public secondary school located in the middle socio-economic level of Eskisehir city center. One of these classes is determined as the control group and the other one as the experimental group. The criterion sampling method which is one of the purposive sampling methods was used in determining the

study group of the study. While determining the study group, some criteria were determined by considering the structure of the study. In this context; the consent of the families of students, the possibility of students to have access to the Internet outside the school via a computer, smart tablet or phone, the socio-economic level of the school's environment (the middle socio-economic level), and the willingness of teachers and students and the school administration to participate in the research are considered criteria. Implementation of this research conducted in the 2018-2019 academic year was carried out within the framework of the 2018 SSSP. When this program is examined, it is seen that one of the class levels in which the responsibility value is intensively tried to be gained is the 5th-grade level. In addition, it is thought that an education carried out in order to strengthen some values in students may be more effective in lower age groups in which values begin to take shape (Dogany, 2012). Therefore, the research was carried out with 5th-grade students, who are the lowest age group in which the Social Studies course is applied at the secondary school level.

Practice

In this study, pilot implementation was carried out. This application was carried out in the 5th-grade Social Studies course for 5 weeks from 19 February 2018 to 23 March 2018. Following the pilot implementation, the practice process of the study was started.

Information on the practice process is given in Table 1.

Table 1. Practice Process

Pre Test	Experimental Procedure					Post Test	Semi Structured Interviews
	<u>1. Week</u>	<u>2. Week</u>	<u>3. Week</u>	<u>4. Week</u>	<u>5. Week</u>		
7 January 2019	6 February 2019	13 February 2019	20 February 2019	27 February 2019	6 March 2019	12 April 2019	15-19 April 2019
	<u>6. Week</u>	<u>7. Week</u>	<u>8. Week</u>	<u>9. Week</u>	<u>10. Week</u>		
	13 March 2019	20 March 2019	27 March 2019	3 April 2019	10 April 2019		

The researcher prepared a presentation by using the Microsoft Powerpoint program by first benefiting from the related acquisitions in the study program and the content in the textbook and then shot the lecture video using the Adobe Presenter Video Creator program. The videos were edited using the same program and then uploaded to the Edpuzzle system. Before the sharing of the videos with the students, open-ended, multiple-choice or true-false questions were written on the videos using the tools in the Edpuzzle system. Each video, which is 8 to 12 minutes long, has an average of 2 to 4 questions. In addition, various news, visuals and video links about the content were placed on the courses and students were asked various questions to comment on these links. Thus, 25 videos with a total length of 227.44 minutes were shared with the students during the 10-week application period and the student movements were monitored through the Edpuzzle system.

Another study was to prepare student-centered activities in the classroom. In this context, the researcher prepared a total of 26 lesson plans covering all the processes of flipped classroom practices lasting 10 weeks. In accordance with these plans, in the first 8 to 10 minute period of each course the students' questions which they bring into the classroom about learning that takes place outside the classroom, comments and notes were discussed. In the rest of the course, student-centered activities based on a large number of active participation, such as group studies, cooperative learning studies, large and small group discussions, case studies, news reviews, creative writing studies, and problem-solving studies, were organized.

Data Collection and Analysis

The data of the study were collected by academic achievement test, responsibility scale, semi-structured interview, and structured observation. The academic achievement test developed by the researcher covers

11 achievements in the fields of “Science, Technology and Society” and “Production, Distribution and Consumption” in which teaching practice is conducted. For the test, 33 draft questions and statement tables prepared in accordance with Bloom’s taxonomy were presented to the opinion of eight experts. Following the expert opinion, the 33-item draft achievement test was applied to 210 5th-grade students in other schools outside the practice schools and item analyzes were performed. For each item, item discrimination coefficient (D) and item difficulty indexes (P) were calculated. Following these analyses, 3 items were excluded from the test and the test consisting of 30 questions was finalized. Finally, the internal reliability of the test was measured in the development of the academic achievement test. The KR-20 (Kuder-Richardson) value was calculated to measure the internal reliability of the 30-item achievement test and was found to be 0.859. This figure indicates a statistically strong level (Fraenkel, Wallen and Hyun, 2011). With the developed academic achievement test, pre-test and post-test data were collected.

The other measurement tool used in the study is the Responsibility Scale for Grade 5 Students developed by Golzar (2006) within the scope of her master’s dissertation. This scale, which was developed in one dimension, consists of 24 items and the Cronbach Alpha coefficient was 0.83 for internal consistency. The researcher applied the scale to 192 5th-grade students in schools outside the practice school in order to make validity and reliability analyses of the scale. After the application, the scale of responsibility was verified by the Amos program and Confirmatory Factor Analysis (CFA) was conducted in addition to the internal consistency of the scale. The cohesion statistics obtained by CFA confirmed the structure put forward by Golzar (2006). Then, the internal consistency coefficient (Cronbach’s Alpha) of the scale was examined and this value was found to be 0.827. This value is accepted as strong in the literature (Fraenkel, Wallen and Hyun, 2011; Ozdamar, 2010). Pre-test and post-test data were collected from the control group with 29 students and the experimental group with 28 students using this measurement tool.

Qualitative data of the study were collected through semi-structured interviews with teachers and students. Semi-structured interviews allow asking alternative questions, to conduct in-depth interviews and to ask alternative deepening questions against new situations that arise during the interview (Yildirim & Simsek, 2006). The interview questions prepared by the researcher in line with the literature were presented to the opinion of two experts. With the arrangements made in line with the opinions of the experts, the interview questions were made ready for the pilot implementation. After the pilot implementation, semi-structured interview questions were arranged and finalized for the application process. Following the teaching application, interviews were conducted with the Social Studies teacher and 28 students in the experimental group. The data obtained from these interviews were presented using code names.

Finally, in-class activities in the experimental and control groups were followed in accordance with the structured observation form. This observation control form was developed by the researcher in accordance with the literature of flipped classroom practices. This form consists of 12 items, “I agree,” “partially agree / partially disagree” or “disagree” is including 3-point Likert-type. The form was finalized after it was used in pilot applications and necessary arrangements were made in the articles. The studies carried out in the experimental and control groups were followed by the observer according to the form.

Before the pre-test and post-test data of the study were analyzed, normality distributions were obtained. For normality distribution, kurtosis, skewness values, and histogram graphs and Shapiro-Wilk tests were examined. Responsibility scale pre-test and post-test data show the normal distribution in both classes. While the post-test scores of the achievement test show the normal distribution in both classes, pre-test scores are distributed normally in the 5/A class and not normally distributed in the 5/C class. SPSS24 program was used to analyze the data and the following tests were performed:

- The Mann-Whitney U test was used for the measurement of the pre-test scores of the academic achievement test of the control and experimental groups, while the Welch test was used for the measurement between the post-test scores.
- Independent samples T-test was used for the measurement between the pre-test scores of the control and experimental group’s responsibility scale, and One-Way ANCOVA was used for the measurement between the post-test scores.

In addition to quantitative data, qualitative data were obtained through semi-structured interviews with Social Studies teacher and experimental group students at the end of the study. The interview data were

analyzed inductively with the help of the Nvivo12 qualitative data analysis package program. In an inductive analysis, researchers try to code from all available data and thus create a meaningful whole (Glesne, 2012). In this direction, firstly the interviews were made into written text and uploaded to the Nvivo12 program. Codes and themes were formed from the opinions obtained regarding the effect of teaching practice on academic achievement and responsibility. The themes were reported to support quantitative data.

FINDINGS

Findings Regarding the Effects of Flipped Classroom Practices on Academic Achievement Levels of Students in Social Studies Course

The first of the aims of the study is to reveal the effect of flipped classroom practices on students' academic achievement. For this purpose, quantitative and qualitative data were collected. Firstly, the normality distributions of the data were examined in order to determine which tests should be performed in the analysis of quantitative data. For this, kurtosis-skewness coefficients, Shapiro-Wilk normality test, histogram and box graphs were examined (Karagoz, 2016). Table 2 shows the normality distribution of the pre-test and post-test data of the academic achievement test.

Table 2. Normality distribution values of academic achievement test pre-test and post-test data

		Number of People	Mean	Sd	Skewness	Kurtosis	Shapiro-Wilk
Pre-Test	Control	29	20,2069	5,37	-,352	-,634	,301
	Experimental	28	20,3929	5,76	-1,148	1,022	,003
		Number of People	Mean	Sd	Skewness	Kurtosis	Shapiro-Wilk
Post-Test	Control	29	20,8276	5,52	-,564	-,023	,435
	Experimental	28	25,3929	3,09	-,882	-,904	,085

In a normal distribution, the skewness and kurtosis values are expected to be between -1 and +1 (Huck, 2012; Karagoz, 2016). When the skewness and kurtosis coefficients of the data obtained from the academic achievement test were examined, it was seen that all the data except the pre-test data of the experimental group were in this range. Another test to be considered in testing the normal distribution of data is Shapiro-Wilk or Kolmogorov-Smirnov. Shapiro Wilk test is preferred in cases where the sample group is small and if the significance level of Shapiro-Wilk value is greater than 0.05, it can be said that the data distribution is normal (Kalayci, 2010). In this respect, it is seen that the data except the pre-test data obtained from the experimental group meet the normal distribution condition. For this reason, non-parametric tests were used to measure the academic achievement pre-test scores between the control and experimental groups. Mann-Whitney U test was used to compare the pre-test results of the academic achievement test of both groups. Mann-Whitney U test is one of the nonparametric tests used instead of independent samples t-test in cases where normal distribution cannot be achieved (Ary, Jacobs, Sorensen, and Razavieh, 2010; Kalayci, 2010; Karagoz, 2016). Table 3 shows the comparison of the academic achievement test pre-test performed before the experimental procedure according to the groups. According to these values, no statistically significant difference was found between experimental and control group achievement test scores before the experimental procedure ($p = .754 > .05$).

Table 3. Comparison of academic achievement test pre-test application by groups

Grup	Number of People	Mean Rank	Rank Sum	U	p
Experimental	28	29,70	831,50	386,500	,754
Control	29	28,33	821,50		

After the pre-tests, the experimental process of the study was started. After the 10-week experimental process, the academic achievement test post-test scores of the experimental and control groups were compared. One-way analysis of variance was used to compare the post-test scores of the two groups. In this respect, the assumptions for one-way analysis of variance were tested first. Homogeneity of variances, normal distribution of data, and unrelated sampling are the basic assumptions of analysis of variance (Buyukozturk, 2019; Kalayci, 2010). Firstly, the normality distributions of the data were examined. The post-test data of both groups showed normal distribution. After that, the homogeneity of variances was examined with the Levene test. As a result of this test, it was concluded that the variances were not homogeneous ($p = .009 < .05$). In order to compare the difference between the means of the groups and to obtain the F value if the variances are not homogeneous, there are two alternative tests for a one-way analysis of variance. These tests are Brown-Forsythe and Welch tests. Both tests are effective in controlling the Type 1 error caused by multiple applications of the same measuring instrument in the same sample. When the two tests are compared, it can be said that the Welch test is more powerful (Field, 2009). For this reason, the Welch test was preferred for intergroup comparisons. The results of this analysis are given in Table 4.

Table 4. Welch test results for academic achievement test post-test comparison between groups

	Stats (F)	sd1	sd2	p
Welch	14,950	1	44,31	.000

According to the data in Table 4, there is a statistically significant difference between the academic achievement test scores of the experimental group and the control group [Welch $F(1, 44.31) = 14,950$, ($p = .000 < .05$)]. In the study, since there was only one independent variable (teaching practice) and two groups, descriptive statistics and means plot were examined instead of post-hoc tests to find out which group favored the difference between the means. Descriptive statistics are given in Table 5.

Table 5. Descriptive statistics of academic achievement test post-test comparison between groups

	Number of People	Pre-Test Mean	Post-Test Mean	Sd	sh
Experimental	28	20,23	25,39	3,09	.58
Control	29	20,20	20,82	5,52	1,02
	57	20,21	23,07	5,01	.66

According to the data in Table 5, after the 10-week experimental procedure, the post-test means of the experimental group was 25.39, while the post-test mean of the control group was 20.82. Thus, it is seen that the significant difference between the means of the groups by the Welch test is in favor of the experimental group. If the differences between the means are significant, it is important to include the effect size. Because the effect size is valuable in terms of showing how meaningful the results of the studies are in practice (Ozsoy & Ozsoy, 2013). In this study, Cohen's d value was calculated as the effect size based on the difference of group means and this value was found to be 0.45. This figure reveals that the result obtained has a moderate effect size (Cohen, 1988). The quantitative findings of the study suggest that the flipped classroom practices increase students' academic achievement statistically. Afterward, qualitative data were collected to support quantitative data in accordance with the research pattern. According to the findings obtained from the

qualitative data, almost all of the Social Studies teacher and experimental group students stated that they got higher scores than the trial exams held in the school and that their grades increased in the written exams of the Social Studies course which determined their report scores compared to the first semester. The opinions of the participants, who attribute this increase in academic achievement to some factors within and outside the classroom, are collected in the sub-headings in Figure 2.

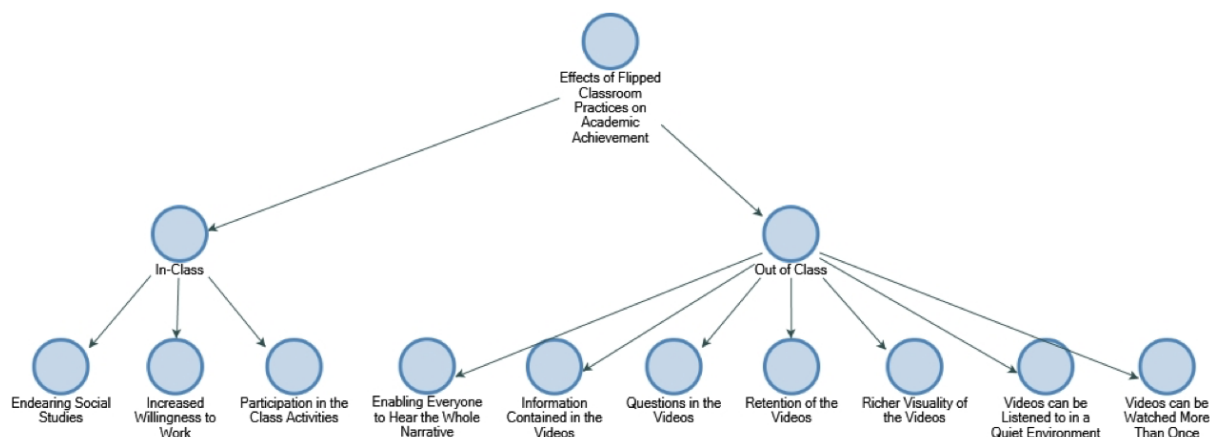


Figure 2. Student views on the effect of flipped classroom practices on academic achievement

When the opinions of teachers and students are examined, it is seen that extracurricular processes are more dominant in terms of increasing academic success. Especially because e-learning videos can be watched more than once and these videos are richer in terms of visuality, it is one of the most expressed opinions of students. Ilker, one of the participants, uses the following statements: *“I think it was good for studying the exams. We listen to the teachers in the classroom, but we have more than one chance to listen. We can listen to the lessons at any time.”*

Another aspect of flipped classroom practices that positively affect academic achievement outside the classroom is that the e-learning videos are visually richer. To support this, Ilker uses the following statements: *“When it comes to video, I understand more. I understand a little less when the teachers tell me. I’m intrigued by the photos and so on, it’s better to be visual.”* Some of the participants explaining how flipped classroom practices positively affect academic achievement state that e-learning videos can be listened to in a quiet environment, enabling everyone to hear the whole narrative. In this context, Cengiz, one of the participants, explains that there are many distractions in the classroom and therefore it is important for him to listen to the lecture in a quiet environment at home:

“Teacher, I think it’s beautiful. I think it would be better if we have this in every lesson. Because doing activities at school and studying at home. There are all kinds of sounds at school. You can hear some things, but you can not hear certain things, but if you do it at home if you have your room at home or in another room even in the room of your parents you can listen to the course quietly. Our teacher used to give us homework. In the classroom s/he was telling the subject, but there was a lot of noise there. Sometimes I was talking during the lesson and sometimes he was talking or she was talking so the lessons were a bit too hard because of the sound.”

Sevgi, one of the participants who emphasized the positive effect of e-learning videos in terms of academic success, stated that thanks to the information contained in the videos, she solved the questions in the test book more easily: *“Our teacher gave me a test book. When I watch these videos, I think of your sentences from the videos here, I can easily finish my test with their help. My test book is over and I’m very relieved.”* Some of the students who think that flipped classroom practices increase their academic success think that this increase is due to the learning-teaching processes in the classroom. Many of the participants say that their participation in the class increases thanks to the activities carried out in the classroom and thus their success increases. In this direction, Gozde expresses her thoughts as follows: *“I actively participate in classes now. My grades have improved, and now I’m better attending my classes. My self-esteem is fulfilled. When you watch the videos, the*

way you tell them is beautiful.” Thus, qualitative data support the quantitative data that flipped classroom practices positively affect academic achievement.

Findings on the Effects Flipped Classroom Practices on Students’ Responsibility Levels in Social Studies Course

In this study, the effect of flipped classroom practices on students’ level of responsibility as well as the academic achievement was examined. Accordingly, quantitative and qualitative data were collected. Firstly, the normality distributions of the data were examined in order to determine which tests should be performed in the analysis of quantitative data. For this, kurtosis-skewness coefficients, Shapiro-Wilk normality test, histogram and box graphs were examined (Karagoz, 2016). Table 6 shows the normality distribution of the pre-test and post-test data of the responsibility scale.

Table 6. Normality distribution values of responsibility scale pre-test and post-test data

		Number of People	Mean	SD	Skewness	Kurtosis	Shapiro-Wilk
Pre-Test	Control	29	66,6897	3,46	-,831	,392	,102
	Experimental	28	65,8571	3,79	,040	-,885	,299
		Number of People	Mean	SD	Skewness	Kurtosis	Shapiro-Wilk
Post-Test	Control	29	67,7931	2,95	-,478	-,549	,154
	Experimental	28	69,2143	2,16	-,556	-,469	,05

Pre-test data were collected from the experimental and control groups before starting the teaching practice. When the normality values of these pre-test data collected with the responsibility scale were examined, it was found that normality conditions were met in both groups. For this reason, independent samples t-test, one of the parametric tests, was used for the measurement between the pre-test scores of the responsibility scale of the experimental and control groups before starting the experimental procedure. Independent samples t-test is used to determine the significance of the difference between the means of two independent samples (Buyukozturk, 2019; Huck, 2012; Muijs, 2010). Table 7 shows the comparison of the responsibility scale pre-test scores with independent t-test according to the groups.

Table 7. Responsibility scale pre-test independent samples t-test results for comparison between groups

Group	Number of People	Mean	Sd	df	t	p
Experimental	28	65,85	3,79	55	.83	.391
Control	29	66,68	3,46			

For the comparison in Table 7, the values in the column where the variances are homogeneous are taken into consideration. Because the Levene statistic, which tests the homogeneity of variances, is seen to be homogeneous ($p = .452 > .05$). As a result of this comparison, no statistically significant difference was found between the pre-test scores of the experimental and control groups’ responsibility scale before the experimental procedure ($p = .391 > .05$). After the pre-tests, the experimental process was started and then the responsibility scale post-test scores of the experimental and control groups were compared. This comparison was performed by One Way ANCOVA (Covariance Analysis) test. Covariance analysis provides control of one or more variables that are thought to affect the dependent variable while examining the effect of an experimental process (Ary, et al., 2010; Buyukozturk, 2019). In this study, the responsibility scale pre-test data were assigned as the covariant variable. Assumptions tested for covariance analysis are as follows (Buyukozturk, 2019, p.122; Kalayci, 2010, p.16): “Regression coefficients within groups are equal, data distribution is normal and variances are equal, and the groups whose mean values will be compared are

unrelated.” First, both groups of data have been identified which exhibit the normal distribution. Thereafter, the regression coefficients were tested for equality. After the ANOVA results to test the equation of regression coefficients, p value ($p = .895 > .05$) was found. This result shows that the regression coefficients are equal. Levene test was used to determine the homogeneity of the variance which is the last assumption. Levene test results showed that the variances were homogeneous ($p = .136 > .05$). Thus, covariance analysis was started after assumptions were met. In this context, the pre-test and post-test mean scores of the experimental and control groups and the post-test mean scores corrected according to the pre-tests were examined. These values are given in Table 8.

Table 8. Pre-test and post-test scores of the groups and their corrected mean scores

Group	Number of People	Pre-Test		Post-Test		Adjusted Mean
		Mean	Sd	Mean	Sd	
Experimental	28	65,85	3,79	69,21	2,16	69,23
Control	29	66,68	3,46	67,79	2,95	67,76

According to the values in Table 8, it is seen that there is a difference between the groups’ corrected responsibility scale mean scores. In order to determine whether this difference is significant, the covariance analysis was performed. The covariance analysis results are given in Table 9.

Table 9. Comparison of the mean scores of the post-test scores of the responsibility scale of the groups with covariance analysis

Source of Variance	Sum of Square	Sd	Mean Square	F	p
Pre-Test (Reg.)	2,430	1	2,430	.356	.553
Group	30,344	1	30,344	4,44	.040
Error	369,043	54	6,834		
Sum	400,246	56			

According to the results of the covariance analysis in Table 9, there is a statistically significant difference between the post-test corrected mean scores of the responsibility scale of the experimental and control groups [$F(1, 54) = 4.44, p = .040 < .05$]. According to these values, it can be said that the class variable makes a significant difference between the students’ responsibility scale post-test scores (Huck, 2012). In order to determine which group was in favor of the significant difference between the mean scores, a pairwise comparison was performed with the Bonferroni test (Buyukozturk, 2019). Accordingly, a statistically significant difference was observed in favor of the experimental group. Finally, the effect size of the significant difference resulting from the experimental process was calculated. Cohen’s d value, based on the difference of group means as the effect size, was calculated and this value was found to be 0.264. This value reveals that the result obtained has a small effect size (Cohen, 1988).

The quantitative findings of the study reveal that flipped classroom practices increase students’ level of responsibility statistically. Afterward, qualitative data were collected to support quantitative data in accordance with the research pattern. According to the findings obtained from the qualitative data, the Social Studies teacher and most of the students in the experimental group think that flipped classroom practices increase the level of student responsibility. In order to support this opinion the participants use phrases such, “*It affected my level of responsibility well.*” (Gizem), “*My responsibilities increased.*” (Nadir), “*My responsibilities increased so it affected my responsibility well.*” (Sefa). The participants stated that flipped classroom practices affect their level of responsibility in two different ways. These headings are shown in Figure 3.

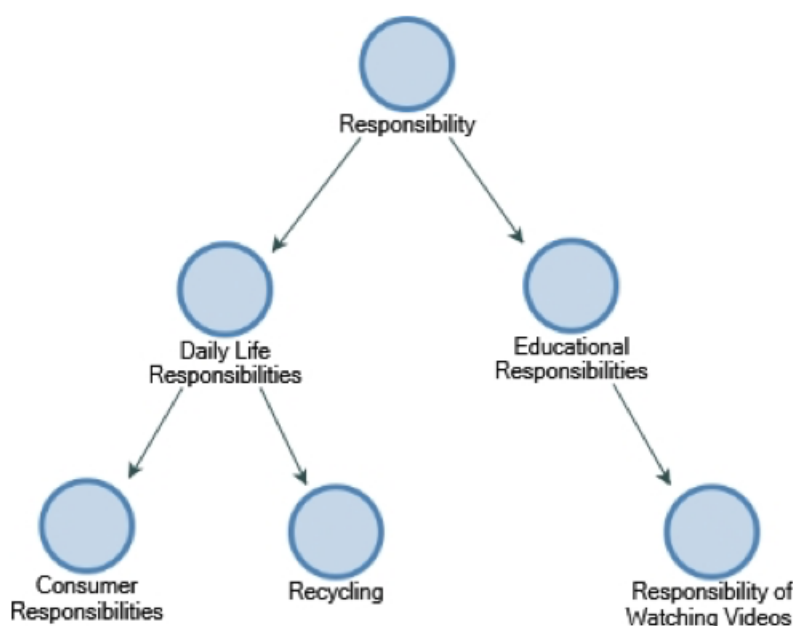


Figure 3. Student views on the effect of flipped classroom practices on the level of responsibility

The majority of the participants emphasized the increase in their educational responsibilities through flipped classroom practices. The Social Studies teacher and most of the participants mentioned the responsibility of watching e-learning videos in the context of educational responsibilities. The Social Studies teacher uses the following statements regarding the positive impact of flipped classroom practices on responsibility: *“Since the child has to watch at home, as the next day at school depends on the things s/he will follow, s/he feels inevitably the need to watch it. I think that this will improve the awareness of responsibility”*. Similarly, among the participants, Sefa stated that their responsibilities increased: *“It affected. I had a responsibility when I was studying. But now I have more responsibility. By watching videos from the Internet and working from books”*. Also, one of the participants, Asli explained how the practices affect her in terms of responsibility by saying: *“The practices affected my understanding of responsibility. I fulfill my duties. By watching the videos I do more of my responsibilities”*. Zafer stated that the level of responsibility increased and his family was positively affected by the practices:

“We used to do it from a book. My mother used to say ‘Sit at the table and study’. Now when the exam day comes, she says ‘Play the videos and watch them’. My responsibility really increased. I used to have a lot of minuses if you see my minus table, there was a lot of minuses. Now we have started to reduce the minuses in making homework. I wish it would always stay that way.”

According to some of the participants, the studies carried out in the classroom in the direction of flipped classroom practices affect their understanding of responsibility for daily life. One of these is consumer responsibilities. One of the participants, Ahmet, stated that he was more willing to fulfill consumer responsibilities along with the activities: *“Teacher, I learned better about the consumer information. For example, when buying something from a store, from now on I will pay more attention to the warranty certificate or the receipt”*. Likewise, Cengiz, one of the participants, states that the flipped class practices carried out positively affected him in terms of consumer responsibilities by saying:

“One of them, teacher, it has been more in my life, how can I say, it contributed to my life. For instance, in primary school, I knew the subject of being a conscious consumer as that I just should look at the TSE stamp or look at it if it doesn’t have another stamp. We look at the expiration date or something. Now when we go to the store, I warn my parents. We did the shopping last time. At shopping, I said to my mom, ‘Look at it, Look at that, even I stand by her all the time. I ran after my parents. I made my family even more conscious. It contributed a lot to me.”

DISCUSSIONS AND CONCLUSION

As a result of this study, it was determined that flipped classroom practices increased the academic achievement of students statistically and significantly. This result is consistent with the results of numerous studies in the literature. Some of these studies were carried out in Social Studies course, (Dursunlar, 2018; Erdogan, 2018; Nayci, 2017); while others were conducted in other courses and at different educational levels (Carlisle, 2018; Cakir, 2017; Duffy, 2016; Gross, 2014; Guggisberg 2015). Qualitative data were used to reveal how and in which activities the increase in academic achievement was realized and e-learning videos out of the classroom were found to be effective in this regard. In support of this result, Herreid and Schiller (2013) emphasize the importance of videos that enable students to focus on content in flipped classroom practices and emphasize that such videos will positively affect the classroom process and bring about a student-centered environment. In addition, Hsin and Cigas (2013) showed that video usage increases students' achievement scores, in line with the results obtained in the study. One of the most important features of videos that increase academic success is that they can be watched again in a quiet environment according to learning preferences and stay in the virtual classroom system at all times. In support of this result, Oyola (2016) concluded that flipped classroom practices encouraged the student to learn at home and that re-teaching was facilitated by watching the videos again. In addition to this feature of the videos, the questions included in the videos also positively affected the increase in academic achievement. Similar to this result, Wilson (2016), in his research, tried to reveal the effectiveness of the questions added to the videos he shared in the Edpuzzle application and as a result of the study, the questions added to the videos were found to be effective in improving students' learning.

Another result of flipped classroom practices positively affecting academic achievement is related to the visuality of e-learning videos shared with students. Visually rich educational materials are thought to appeal to more senses and people (Dhandabani, and Sukumaran, 2015). In this study, some of the students said that the visuality of the videos makes the information better understood and remembered and their success increases. There are some studies in the literature that overlap with this result of the research. In one of these studies, Cabi (2018) suggests that videos that guide students in extracurricular studies should be selected or produced with rich content.

The other half of the results of this study are related to the level of responsibility of the students. The first of the results is that in the 5th grade Social Studies course, flipped classroom practices increase students' level of responsibility statistically significant. This result is consistent with the results of some studies in the literature (Gough, 2016; Medone, 2019; Wagner, 2018). In these researches, it has been shown that students' level of responsibility has increased with flipped classroom practices.

The development of students' level of responsibility is divided into two categories as educational responsibilities and responsibilities related to daily life. In particular, most of the students stated that there was an increase in their own educational responsibilities with flipped classroom practices and as a result of this, their level of responsibility improved. This result is consistent with many studies in the literature. In one of these studies, students stated that their responsibilities increased with the use of flipped classroom practices (McCallum, Schultz, Sellke and Spartz, 2015). In another study, Parham (2018) concluded that there was an increase in the responsibilities of the students in terms of acquiring the information in the videos and using this information to participate in the classroom activities with other students. Another result reached in line with the opinions of students who emphasize watching e-learning videos as a part of educational responsibility, regularly watching e-learning videos outside the classroom increases the level of responsibility of students. This result is consistent with the results of other studies in the literature. In parallel with this result, Oyola (2016) found that the students have more responsibilities in flipped classroom practices and especially their tasks at home increase their responsibilities. Similarly, Evseev and Solozhenko (2015) in the work they have done in English class, have concluded that through the tasks the students become more responsible for their learning and have reached higher self-discipline.

In general, it is seen that the results of this research, in which the effect of flipped classroom practices on students' academic achievement and responsibility levels in Social Studies course, are in line with the results of the studies in the literature. From this point of view, it can be said that benefiting from flipped classroom practices in the 5th-grade Social Studies course has a positive effect on students' academic achievement and responsibility levels.

Suggestions

Based on the results, the following suggestions can be made; In order to increase the academic achievement and level of responsibility of students in 5th grade Social Studies course, flipped classroom practices can be utilized, in the Social Studies course, a guide can be prepared with examples of activities that can be used in the classroom for teachers who want to benefit from flipped classroom practices in the Social Studies course. In-service trainings can be provided to improve the technological competence of teachers in order to realize flipped classroom practices in Social Studies education. Research can be conducted to examine the effects of flipped classroom practices on variables such as attitude, interest and participation in the Social Studies course. In addition research can be conducted to examine the effect of flipped classroom practices on students' self-regulation and self-discipline skills.

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