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The Effect of Station Technique on Academic Success, Attitude, and Retention in Turkish Language Teaching[1]

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Abstract

The purpose of this study is to identify the effect of the station technique, used in the Turkish class of the 6th grade in an elementary school, on the students' academic success and on their attitudes towards the Turkish class, The research was carried out with the participation of the 6th grade students at Süleyman Demirel Middle School in Sivas city center during the 2015-2016 Fall Semester. The study group comprised 35 students in total, of which 18 students were in the experimental group and 17 were in the control group. The station technique was implemented in the experimental group and the current programme was used in the control group. The Achievement Test, developed by the researcher and the Attitude Scale Related to the Turkish Class (ASRTC), developed by Acat (2000) were used in order to collect data in the research. An experimental design with a pretest-posttest control group was preferred in the research. The data obtained from the research was analyzed using the SPSS 22 packet program and statistical methods. The results of the study indicated that using a station technique in the Turkish class positively affected the academic achievement and the retention scores of the experimental group. In a comparison of the posttest and retention scores of the experimental and control groups, the research showed that the experimental group students were more successful. The study has also shown that the attitude scores of both the experimental group students, using the station technique, as well as the control group students, using the current programme, have increased positively. In terms of the comparison between the attitude scores of the students in the experimental group and the students in the control group, the research indicated that the scores of the students in the experimental group were higher.

Keywords: Turkish language teaching, Station technique, Cooperative learning, Academic success, Attitude.

1. Introduction

Today, education is one of societies' priority issues. Rapidly advancing technology, increasing fund of knowledge and the changes in economic, social, political and cultural areas result in the emphasis placed on education to grow day by day (Çalık, 2006, p. 14). In a world that is ever changing, the abilities and qualifications that individuals, the building blocks of society, are required to have are also constantly changing. We need to raise individuals who are capable of accessing information in the shortest time and sorting out, presenting and, most importantly, generating knowledge (Şahan, 2011, p. 239). Conventional education systems are unable to fulfill the requirements of this era and raise individuals who have the necessary qualifications (Açıkgöz, 2004, p. 4; Akınoğlu, 2005, p. 32; Külahoğlu, 2006, p. 77). However, the future of a society is directly proportional to; the preparation of individuals for life, the quality of life and the quality of the education process. This is of particular concern, primarily to the educational institutions and therefore to the educators (Bozpolat, 2012, p. 1). It can be seen that Turkey is taking these developments into account and has gravitated toward making the necessary changes and innovations in its education programs (Akınoğlu, 2005, p. 32). The previously applied behavioral education approach was discontinued and the constructivist education approach has been adopted since the school year 2004-2005 (Şahin, 2007, p. 47).

In the essence of the constructivist approach lies the reconstruction of knowledge by transferring it to the new circumstances encountered, that is, the reconstruction and implementation of the knowledge by the learner

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(Perkins, 1999, p. 8). Thus, the purpose is to raise individuals who research, discover and generate solutions for the problems they encounter, rather than those who just learn by rote (Arslan, 2007, p. 47-48; Sönmez, 2009, p. 145; Yurdakul, 2011, p. 41). Unlike the conventional approach to education, which is based on the belief that all students have similar qualities, the constructivist education approach places emphasis on the individual differences between students. In this context, individual differences should be taken into account and attention should be paid to the heterogeneity of students in planning and carrying out the educational activities so that all students can benefit from them (Kurt & Ekici, 2013, p. 45). In order for the educational activities prepared in this way to be carried out effectively in the classroom, it is crucial to select the models, methods and techniques suited to the constructivist education approach (Ocak, 2008, p. 215). These models primarily include cooperative learning, problem-based learning, project-based learning and inquiry-based learning (Bayrakçeken, Doymuş & Doğan, 2013, p. 1). Among them, cooperative learning is not an ordinary group study (Açıkgöz, 1998, p. 297). It is an approach based on active teaching, in which learners study in small heterogeneous groups (Açıkgöz, 1998, p. 296; Ekinci, 2011, p. 94), learn the concepts at high level and convey the information to their peers (Doymuş, Şimşek & Bayrakçeken, 2004, p. 103) to attain their common learning objectives (Gözütok, 2007, p. 178). There are numerous techniques developed in accordance with the cooperative learning model. Student teams-achievement divisions, team game tournament, cooperative integrated reading and composition, team-assisted individualization, reciprocal teaching, jigsaw, and station technique are some of the cooperative learning techniques (Senemoğlu, 2007, p. 501).

Station technique is a modern one that allows students to study independently and use plenty of tools and equipment, saves them from the monotony of the conventional method, and serves the purpose of teaching and learning knowledge permanently (Demirörs, 2007, p. 4). Sönmez (2009, p. 253) describes the station technique as a teaching/learning technique, which ensures that activities are completed after going through certain phases and thus helps the groups develop views, whereas Hesapcioglu (2008, p. 330) defines it as a learning technique in which a certain subject is addressed collectively from different perspectives and a common product is developed. Benek (2012, p. 8) describes it as a technique that is well suited to the contemporary approach, is based on cooperative learning, makes use of the multiple intelligences and active learning approaches and thus enables students to be involved in the learning process effectively and realize self-learning.

In applying the station technique, certain learning areas are prepared in which teaching activities are carried out. These learning areas are called “station centers” or “learning stations”. In the station technique, stations should be prepared beforehand and activities should be well designed to ensure that students are able to study in accordance with the objectives. For this purpose, the activities planned for each station should be organized in such a way that they can be carried out without assistance of teachers (Demirörs, 2007, p. 14-15; Köseoğlu, Soran & Storer, 2009, p. 211), and the tools and equipment required for the activities should be made ready for use (Cosgrove, 1992, p. 1; Bulunuz, 2006, p. 278; Demirörs, 2007, p. 9; Tseng, 2008, p. 12; Benek, 2012, p. 8) before starting the implementation of the station technique. In this process, it is important that the implementer makes meticulous preparations and uses their creativity (Güneş, 2009, p. 9). Usually preferred in small classes, the station technique can also be easily used in crowded classes, if good planning is made prior to implementation (Güneş, 2009, p. 9; Sönmez, 2009, p. 254).

It is stated that the stages of the station technique can be explored under the headings: objective, content, educational background and evaluation (Güneş, 2009, p. 9; Avcı, 2015, p. 32). In the station technique, the objectives of the topic to be explored should first be identified (Güneş, 2009, p. 9; Benek, 2012, p. 13) and the objectives and the students, who will participate in the implementation, should be at least at the level of implementation (Alacapınar, 2009, p. 138; Sönmez, 2009, p. 253). After identifying the objectives of stations, the contents (sub-activity, test, developing a product, etc.) of the activities at the stations need to be planned, so that the students are able to attain the objectives (Cosgrove, 1992, p. 4; Benek, 2012, p. 14; Avcı, 2015, p. 33). During the planning of the activities at the stations, the planners should take into account what goals the teacher wants the students to attain, what the goals of the station centers are, which activities are suited to these goals and attainments, which of them can be applied by students (Benek, 2012, p. 16), and the individual differences and learning styles of the students (Avcı, 2015, p. 33). The activities at the stations should be prepared in accordance with the objectives identified and should be of such a nature that they enable students to attain these objectives (Cosgrove, 1992, p. 4; Furutani, 2007, p. 13). The learning centers, designed in accordance with the station technique, should be equipped with tools and equipment, selected in accordance with the attainments of the center, which the students will be able to use easily (Gözütok, 2007, p. 256; Ocak, 2008, p. 250; Benek, 2012, p. 9). The tools and equipment used in the station technique vary depending on the course in which they are used, and should be simple rather than complex, readily available, appealing to different types of intelligence, suitable

for scientific purposes and robust, as they will be used throughout the study (Tofte, 1982, p. 14; Demir, 2008, p. 35; Benek, 2012, p. 20). In forming the groups that will study at the station centers, the planners should take into consideration how many stations will be established, the number of students in the class, the structure of the topic and the purpose of the activity (King-Sears, 2007; p. 138; Güneş, 2009, p. 15; Sönmez, 2009, p. 255; Maden & Durukan, 2010, p. 302; Komisyon, 2014, p. 112). They should pay attention to the heterogeneity of the groups, taking into account the types of intelligence, learning styles, genders, success levels, etc. of the students (Demirörs, 2007, p. 25; Ocak, 2008, p. 250; Benek, 2012, p. 14; Erdağı, 2014, p. 14). Teachers should plan the schedule flexibly and in harmony with the requirements of the students (Breyfogle, Nelson, Pitts & Santich, 1976, p. 5; Demir, 2008, p. 34; Erdağı, 2014, p. 15). Prior to starting the lesson, all necessary preparations should be completed and the class should be informed of the station technique and its implementation. Stations should be established by dividing the students in the classroom into groups, depending on the characteristics of the topic and the number of students (Alacapınar, 2009, p. 138; Sönmez, 2009, p. 254; Komisyon, 2014, p. 112). When a group finishes the activity at a station within the specified time, it moves on to the next station.A group arriving at a station takes into account what the previous group has done and resumes the activity. When the time is up, the groups should be replaced by others, thereby enabling each group to study at each station. Activities are completed when the groups present or exhibit their products to the class at the end of the exercise (Morgil, Yılmaz & Yavuz, 2002; Gözütok, 2007, p. 257; Hesapçıoğlu, 2008, p. 330; Sönmez, 2009, p. 254; Erdağı, 2014, p. 17; Erdağı & Önel, 2015, p. 29). In the evaluation process, the products created during the exercise, the answers given by the students to the questions, the tasks accomplished, the study papers, the notes taken and any other material that can be used for evaluation, to help the teacher determine the result and give feedback to the students (Schmidt & Harriman, 1998, p. 5; Demir, 2008, p. 55; Gregory & Hammerman, 2008, p. 11; Güneş, 2009, p. 15; Benek, 2012, p. 18).

With the station technique, the most critical role of the teacher is to plan the teaching process well, prepare the tools and equipment used at the stations by the students, and establish the infrastructure for the effective use of the technique by explaining the tasks to the students (Cosgrove, 1992, p. 3; Bulunuz, 2006, p. 278; Ocak, 2008, p. 250-251). For this purpose, the teacher should provide the students with information on the activities to be carried out in relation to the topics learned at the stations, methods and techniques to be employed, how and when the tools and equipment will be used, general features of the implementation process, the schedule and the evaluation (King-Sears, 2007, p. 141). In the implementation stage of the station technique, the teacher should guide the students (Oğuzkan, 1989, p. 95; Bulunuz, 2006, p. 277; Tseng, 2008, p. 16; Güneş, 2009, p. 16; Maden & Durukan, 2010, p. 301; Demir, Kartal, Ekici, Öztürk & Bozkurt, 2011, p. 383; Benek, 2012, p. 22). Although students study in groups in the station technique, they are responsible for their own learning, as well as for using the time efficiently and should cooperate with their group members when required (Tofte, 1982, p. 15; Demir, 2008, p. 52; Tseng, 2008, p. 12; Benek, 2012, p. 24; Erdağı, 2014, p. 24). Students should fulfill their tasks during the activities at the station centers (Schmidt & Harriman, 1998, p. 5; Tseng, 2008, p. 15; Benek, 2012, p. 24; Erdağı, 2014, p. 24), be open to communication and willing to learn, make efforts to construct their own learning, have a healthy communication with their peers and interact with them. They should also use the tools and equipment at the stations in accordance with their purpose, as well as taking care of them, and request assistance of the teacher and their peers when they need (Benek, 2012, p. 24).

The relevant literature was explored and numerous studies were found in which the station technique had been applied with positive outcomes (Howatson, 1971; Strauber, 1981; Tofte, 1982; Norman & Toddonio, 1990; Roberts, 1999; Eilks, 2002; Porter, 2004; Bulunuz, 2006; Demirörs, 2007; Demir, 2008; Tseng, 2008; Alacapınar, 2009; Güneş, 2009; Maden & Durukan, 2010; Ocak, 2010; Demir et al., 2011; Mergen, 2011; Batdı & Semerci, 2012; Benek, 2012; Benek & Kocakaya, 2012; Genç, 2013; Sürücü, Baştürk & Özdemir, 2013; Erdağı, 2014; Avcı, 2015; Erdağı & Önel, 2015; Korsacılar & Çalışkan, 2015). It was seen that positive outcomes were achieved in the study, “The Effects of Station Technique on Creative Writing Ability and Its Attitudinal Effect on Turkish Lesson”, conducted by Maden and Durukan (2010) and using the station technique for teaching Turkish, but no other study was found involving the use of the station technique for teaching Turkish. The fact that little research was found on the use of the station technique for teaching Turkish reveals the need for the present study. Determination of how the use of the station technique for teaching Turkish affects the success of students and their attitudes toward the Turkish class will contribute to the relevant literature. The purpose of this study is to identify the effect of the station technique, used in the Turkish class of the 6th grade in an elementary school, on the students' academic success and their attitudes toward the Turkish class. Within these terms of reference, the hypotheses for the achievement test developed and the purposes relating to the students’ attitudes toward the Turkish class are given below.

Hypotheses for the Achievement Test

1. There is a significant difference between the achievement pre-test and post-test scores of the experimental group students on whom the station technique was applied for teaching Turkish.
2. There is a significant difference between the achievement pre-test and post-test scores of the control group students on whom the current program was applied for teaching Turkish.
3. There is a significant difference between the achievement post-test scores of the experimental group students, on whom the station technique was applied and the control group students, on whom the current program was applied, for teaching Turkish.
4. There is a significant difference between the achievement post-test scores and retention scores of the experimental group students on whom the station technique was applied for teaching Turkish.
5. There is a significant difference between the achievement post-test scores and retention scores of the control group students on whom the current program was applied for teaching Turkish.
6. There is a significant difference between the achievement test retention scores of the experimental group students on whom the station technique was applied and of the control group students on whom the current program was applied for teaching Turkish.

Purposes for the Attitudes of Students toward Turkish Class

1. Is there a significant difference between the Attitude Toward Turkish Class Scale (ATTCS) pre-attitude and post-attitude scores of the experimental group students on whom the station technique was applied in the Turkish class?
2. Is there a significant difference between the ATTCS pre-attitude and post-attitude scores of the control group students on whom the current program was applied in the Turkish class?
3. Is there a significant difference between the ATTCS post-attitude scores of the experimental group students on whom the station technique was applied and of the control group students on whom the current program was applied in the Turkish class?

2. Method

The section of the study gives details on the research model, study group, data collection tools, data analysis and the application of the station technique.

2.1 Research Model

The research model involves the arrangement of the conditions required to collect and analyze the data in accordance with the purpose of the study and in an appropriate and economical way. The models that the researcher can use are basically classified into two groups; namely, screening and experimental models (Karasar, 2014, p. 76). Screening models are studies conducted to explore specific characteristics of a group (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz & Demirel, 2014, p. 15), to delineate a previous or current condition, as it was or as it is (Karasar, 2014, p. 77). With the experimental model the aim is to find the cause and effect relationships between the variables (Kaptan, 1973, p. 198). If the researcher wants to predict what might happen in the future, that is, if they want to discover new and different things and change the current conditions, they should opt for the experimental model (Sönmez & Alacapınar, 2011, p. 76; Baki & Gökçek, 2012, p. 3). The pretest-posttest control group experimental pattern was used to obtain the quantitative data for this research where the experimental model was employed. In the pretest-posttest control group experimental pattern, where no selection is made in forming groups (Sönmez & Alacapınar, 2011, p. 59), there are two groups formed by random assignment. Pretest and posttest measurements are conducted in both groups (Kaptan, 1973, p. 229; Büyüköztürk et al., 2014, p. 204; Karasar, 2014, p. 97). There are two basic advantages of the pretest-posttest control group experimental pattern. One of them is that a high level of relationship is usually found in the measurements under different experimental conditions, as measurements are conducted on the same participants. This will reduce the error rate, thereby increasing the statistical power. The second advantage is that it requires fewer participants. Thus, the researchers will save time and money while they are not wasting their sources to test the same participants in each process (Büyüköztürk et al., 2014, p. 205).

There is one experimental and one control group in this research. The symbolic representation of the experimental model of the research is as follows:

G_E	R	$O_{1.1}$	X	$O_{1.2}$
G_C	R	$O_{2.1}$		$O_{2.2}$

G_E : Experimental group on which the station technique was applied
G_C : Control group on which the current program was applied
R : Random assignment of the participants to the groups
X : Teaching by the station technique
$O_{1.1} – O_{1.2}$: Pretest and posttest measurements of the experimental group
$O_{2.1} – O_{2.2}$: Pretest and posttest measurements of the control group

2.2 Study Group

The study group for the research was selected from the students of Süleyman Demirel Elementary School in Sivas in the 2015-2016 academic year. Two classes in the 6th grade in this school were included within the scope of the research. One of these classes was set as the experimental group and the other as the control group. The study group comprised 35 students in total, of which 18 were in the experimental group and 17 were in the control group. In the class containing the experimental group, three groups of five students and two groups of six students were established. Students were randomly assigned in the research carried out in accordance with the experimental pattern. The criteria for the random assignment were as follows:

- ✓ Grade point averages of students in the 5th grade,
- ✓ Grade point averages of students for the Turkish class in the 5th grade,
- ✓ Grade point averages of students for the Turkish class in the first semester of the 5th grade,
- ✓ Grade point averages of students for the Turkish class in the second semester of the 5th grade,
- ✓ Pretest scores of students (to check for ris of bias)

The distribution of students in the experimental and control groups obtained from the analyses is given in Table 1.

Table 1. Distribution of the Experimental and Control Groups Students by Gender

Groups	Female		Male		Total
	n	%	n	%	n
Experimental	7	38.9	11	61.1	18
Control	10	58.8	7	41.2	17

Table 1 shows that the numbers of students in the experimental and control groups are very close. Although the numbers of students in the experimental and control groups are not conspicuously different, an assessment for the neutrality criteria of the research was deemed necessary. First, it was determined whether the criteria used in the research were normally distributed or not. As the number of students in the experimental (n=18) and control (n=17) groups was lower than 50, the Shapiro-Wilk test was considered suitable. The Shapiro-Wilk test is one of the tests used to assess the normality assumption (Kalaycı, 2014, p. 212). If the p value calculated in this test is above .05, then the sample is interpreted as normally distributed (Büyüköztürk, 2010, p. 42; Alpar, 2011, p. 117). In the case that the p value calculated in the Shapiro-Wilk test is lower than .05, the decision on normality is made by looking at the skewness and kurtosis values. For a significance level of .05, the normality assumption is deemed to be met if the skewness value is between -1 and +1, and the kurtosis value is between -1.96 and +1.96 (Kalaycı, 2014, p. 212). The findings of the Shapiro-Wilk test are given in Table 2.

Table 2. Shapiro-Wilk Test Results for Neutrality Criteria

Criteria	Groups	S-W	p	Skewness coefficients	Kurtosis coefficients
Grade point averages of students in the 5th grade	Experimental	.940	.286	-.682	-.127
	Control	.933	.247	.509	-.752
Grade point averages of students for the Turkish class in the 5th grade	Experimental	.932	.208	-.355	1.176
	Control	.909	.095	.796	-.212
Grade point averages of students for the Turkish class in the first semester of the 5th grade	Experimental	.941	.301	-.041	-1.142
	Control	.916	.124	.631	-.464
Grade point averages of students for the Turkish class in the second semester of the 5th grade	Experimental	.890	.038	-.971	.017
	Control	.958	.595	.225	-.601

According to the p value and skewness and kurtosis coefficients obtained from the Shapiro-Wilk test, the values for the grade point averages in the 5th grade, grade point averages for the Turkish class in the 5th grade, grade point averages for the Turkish class in the first semester of the 5th grade, grade point averages for the Turkish class in the second semester of the 5th grade meet the normality assumption. Accordingly, it was decided to use the independent samples t-test, one of the parametric tests for the relevant criteria.

Table 3. Independent Samples T-Test Results for Neutrality Criteria

Criteria	Groups	n	$\overline{X}$	sd	df	Levene's test		t	p
						F	p		
Grade point averages of students in the 5th grade	Experimental	18	83.98	8.79	33	.079	.781	.001	.999
	Control	17	83.98	7.92					
Grade point averages of students for the Turkish class in the 5th grade	Experimental	18	83.23	9.14	33	.218	.644	.892	.379
	Control	17	80.49	9.03					
Grade point averages of students for the Turkish class in the first semester of the 5th grade	Experimental	18	81.00	9.24	33	.000	.993	.284	.778
	Control	17	80.09	9.72					
Grade point averages of students for the Turkish class in the second semester of the 5th grade	Experimental	18	85.46	9.76	33	.001	.982	1.380	.177
	Control	17	80.89	9.84					

The results of the independent samples t-test for the grade point averages in the 5th grade [$t_{(33)}$= .001; p=.999], grade point averages for the Turkish class in the 5th grade [$t_{(33)}$=.892; p=.379], grade point averages for the Turkish class in the first semester of the 5th grade [$t_{(33)}$=.284; p=.778], and grade point averages for the Turkish class in the second semester of the 5th grade [$t_{(33)}$=1.380; p=.177] were found to be statistically insignificant. The insignificance of the results of the independent samples t-test used for the unbiasedness criteria may lead to an interpretation that the neutrality criteria were met in forming the experimental and control groups. In order to confirm that the experimental and control groups were formed in an unbiased manner and are equivalent to each other, their pretest scores in the achievement test developed by the researcher were compared. Shapiro-Wilk test was applied in an attempt to determine whether the pretest scores meet the normality assumption. Results of the Shapiro-Wilk test indicate that the pretest scores of the experimental group students are [S-W=.948; p=.400] and the pretest scores of the control group students are [S-W=.931; p=.225], meaning that the normality assumption is met. Among the parametric tests, on the basis of these results the decision was made to use the independent samples t-test to compare the pretest scores of the experimental and control groups in the achievement test. Table 4 shows the independent samples t-test results relating to the pretest scores of the groups in the achievement test.

Table 4. Independent Samples t-Test Results Relating to the Pretest Scores of the Experimental and Control Groups in the Achievement Test

Groups	n	$\overline{X}$	sd	df	Levene's test		t	p
					F	p		
Experimental	18	21.11	6.26	33	6.488	.016	-.746*	.462
Control	17	19.82	3.70					

*p>.05

According to the analysis results of the independent samples t-test relating to the pretest scores of the experimental and control groups in the achievement test given in Table 4, there is no significant difference between the students' scores in the achievement test [$t_{(33)}$=-.746; p=.462]. It may be said that the experimental and control groups are similar in terms of their pretest scores and were formed in an unbiased manner.

2.3 Data Collection Tools

In collecting the data for the quantitative aspect of the research, the Turkish class achievement test developed by the researcher to measure the students' success in the Turkish class and the "Attitude Toward Turkish Class Scale" developed by Acat (2000) to determine the students' attitude toward the Turkish class were used.

2.3.1 Achievement Test

Before starting to develop the achievement test, the relevant literature was reviewed to acquire preliminary information regarding how the test items would be developed (Gultekin, 2012, p. 170) and this information was taken into account in developing the items of the achievement test. Various resources suited to the grade and level of the students were explored in preparing the achievement test. In this context, the elementary course books and study books approved by the Board of Education and Discipline as well as teacher guides, test books, Internet documents, Turkish class course books, theses and previous examination questions (prepared by the Ministry of Education) were scrutinized. The researcher sought to design different types of questions, taking into account the level of the students. Furthermore, the resources were also scanned to find visual elements that facilitate the understanding of the questions. Using this information, 46 questions in total were prepared, each with four choices, meaning that there are at least six questions for each attainment. The questions were submitted to experts to obtain their opinions. The experts examined the questions from the perspective of conformance with the Turkish Class Teaching Program, including suitability for the grade and level of students, scientific integrity, language and expression, content, conformance with the question preparation technique, and gave their opinions. On the basis of these opinions and suggestions, the necessary corrections were made and the achievement test was prepared for preliminary application. A total of 301 students from six secondary schools in Sivas took the achievement test. Eight of the tests were declared invalid, as they did not have the necessary characteristics. Thus, the analyses for the validity and reliability of the achievement test were conducted on the remaining 293 data using jMetrik 4.0. Each question in the test was "1" point. Upon completion of the analysis of the test items, a test consisting of 33 items was obtained. The average difficulty index of the test was found to be .51. The analyses show that the both KR-21 value and Guttman's L2 value of the achievement test are .88, indicating high reliability.

2.3.2 Attitude Scale

In order to reveal the students' attitudes toward the Turkish class, the Attitude Toward Turkish Class Scale (ATTCS) developed by Acat (2000) was used upon permission of the researcher. The scale consisted of 20 items in total: 10 positive and 10 negative. IThe scale consisted of 20 items in total: 10 positive and 10 negative and was prepared as a 5-point Likert scale, with 5 meaning "strongly agree", 4 meaning "agree", 3 meaning "neutral", 2 meaning "partially agree" and 1 meaning "disagree". The negative items (2, 4, 6, 8, 10, 12, 14, 16, 18 and 20) in the scale were coded in reverse. The highest achievable score from the scale is 100, while the lowest score is 20. Cronbach's Alpha value of the scale is .81.

2.4 Analysis of Data

The SPSS 22 software package was used to analyze the data collected in the research. Percentage and frequency values were used in analyzing the individual data. In the analysis of the data obtained from the preliminary application of the achievement test developed by the researcher, the item difficulty and item discrimination indexes, test reliability, and test item difficulty were calculated. The suitability of the Attitude Toward Turkish Class Scale used to determine the students' attitudes toward the Turkish class for the study group was confirmed by CFA using Lisrel. First, Shapiro-Wilk test was applied in an attempt to determine whether the scores meet the normality assumption. On the basis of the analysis results, it was found that all data were normally distributed

and it was decided to apply parametric tests in the analysis. In this context, dependent samples t-test and independent samples t-test were employed in the analysis of the ATTCS and the achievement test.

2.5 Implementation of Station Technique

The responsible teacher of the class in the experimental group applied the station technique, and the researcher did not interfere in the teaching of the course by the teacher. The role of the researcher in this process is to prepare and organize the materials (study papers, forms, materials, etc.) to be used each week during the technique, assist in the distribution and collection of the materials, guide the students when they change tables, and observe the implementation process.

Following a consultation with the teacher and taking into account the weekly schedule of the class, the implementation was planned to be two hours a week and was carried out for a period of six weeks in total. The students in the classroom were instructed to carry out five different activities on five different tables, with ten minutes given for each activity. When the time was over for an activity, they were instructed to leave the activity and move on to the other tables for other activities. Thus, it was ensured that all groups studied at all of the five prepared tables. In this process, various activities were carried out to help the students:

- comprehend the simple, derived and compound words at the matching table,
- comprehend the compound words at the jigsaw table,
- learn the stem and affix, and simple and derived words, comprehend the features of derivational affixes and the meanings they provide to the words, and distinguish the noun and verb stems, and derivational and inflectional affixes at the paragraph construction table,
- comprehend the stem and affix, word root, simple and derived word, and distinguish noun and verb roots, and derivational and inflectional affixes at the snipping table,
- learn the stem and affix, comprehend the features of derivational affixes and the meanings they provide to the words, and distinguish the noun and verb stems, and derivational and inflectional affixes at the text completion table.

The practice was carried out during two course hours every week that is 80 minutes a week. Students studied for ten minutes at each table; fifty minutes in total. The time the students spent changing tables and distributing and collecting the study papers, etc. was not taken into account; therefore, the remaining time was used to carry out such activities. For a part of the remaining time, the researcher answered the students' questions on the implementation and provided them with feedback on the activities they had carried out.

The researcher did not intervene in the teaching of the class in the control group on which the current program was applied, and the teacher was asked to carry on with the normal teaching of the class. Classes were taught in accordance with the scope of the Turkish Class Teaching Program and the Turkish class plan prepared by the Turkish teachers in the school. Activities in the Turkish course book and the student's study book were carried out as planned. The application of the current program means this process in the control group. The researcher made observations on the practices in the control group during the process and confirmed that the process was carried out in accordance with the program.

3. Findings

This section includes the findings obtained from the analyses conducted on the basis of the hypotheses and purposes, and the interpretation of such findings.

3.1 Findings Concerning the Achievement Test

Findings obtained from the analyses for the hypotheses of the research are given below.

Hypothesis 1: There is a significant difference between the achievement pre-test and post-test scores of the experimental group students on whom the station technique was applied for teaching Turkish.

In order to determine the test to be used to compare the pretest and posttest scores of the experimental group students in the achievement test, first the pretest and posttest score averages of the students were checked whether they met the normality assumption. Results of the Shapiro-Wilk test indicated that the pretest and posttest score averages of the experimental group [S-W=.977; p=.912] were normally distributed. It was therefore decided to use the dependent samples t-test, one of the parametric tests, to compare the pretest and posttest scores of the experimental group students in the achievement test. Results of the dependent samples t-test are given in Table 5.

Table 5. Results of Dependent Samples t-Test Concerning Pretest and Posttest Scores of the Experimental Group

Experimental Group	n	$\overline{X}$	sd	df	t	p
Pretest	18	21.11	6.26	17	-3.154*	.006
Posttest	18	24.28	5.15			

*p<.05

Table 5 shows that there is a statistically significant difference between the pretest ($\overline{X}$ =21.11) and posttest ($\overline{X}$ =24.28) scores of the experimental group students on whom the station technique was applied, and this difference is in favor of the posttest scores [$t_{(17)}$=-3.154; p=.006]. This result can be interpreted as an enhancement of the success level of the experimental group students on whom the station technique was applied. Hypothesis 1 was confirmed on the basis of the findings obtained.

Hypothesis 2: There is a significant difference between the achievement pre-test and post-test scores of the control group students on whom the current program was applied for teaching Turkish.

In order to determine the test to be used to compare the pretest and posttest scores of the control group students in the achievement test, first the pretest and posttest score averages of the students were checked whether they met the normality assumption. Results of the Shapiro-Wilk test showed that the pretest and posttest score averages of the experimental group [S-W=.931; p=.229] were normally distributed. It was therefore decided to use the dependent samples t-test, one of the parametric tests, to compare the pretest and posttest scores of the control group students in the achievement test and obtained results are given in Table 6.

Table 6. Results of Dependent Samples t-Test Concerning Pretest and Posttest Scores of the Control Group

Control Group	n	$\overline{X}$	sd	df	t	p
Pretest	17	19.82	3.70	16	-.229	.822
Posttest	17	20.06	6.39			

Table 6 shows that there is an increase in favor of the posttest scores between the pretest ($\overline{X}$ =19.82) and posttest ($\overline{X}$ =20.06) scores of the control group students on whom the current program was applied, but this difference is not statistically significant [$t_{(16)}$=-.229; p=.822]. That is, no significant different was observed between the achievement scores of the control group students on whom the current program was applied. *Hypothesis 2* could not be confirmed on the basis of the findings obtained.

Hypothesis 3: There is a significant difference between the achievement post-test scores of the experimental group students, on whom the station technique was applied and the control group students, on whom the current program was applied, for teaching Turkish.

Results of the Shapiro-Wilk test conducted in an attempt to determine the test to be applied to compare the posttest scores of the experimental and control group students indicated that the posttest scores of both the experimental group students (S-W=.976; p=.897) and the control group students (S-W=.911; p=.103) were normally distributed. Among the parametric tests, the independent samples t-test was decided to be used to compare the posttest scores of the experimental and control group students in the achievement test, on the basis of these findings. Results of the independent samples t-test are given in Table 7.

Table 7. Results of Independent Samples t-Test Concerning Posttest Scores of the Experimental and the Control Groups

Groups	n	$\overline{X}$	sd	df	Levene's test		t	p
					F	p		
Experimental	18	24.28	5.15	33	1.522	.226	-2.156*	.038
Control	17	20.06	6.39					
Total	35							

*p<.05

According to the results of the independent samples t-test concerning the posttest scores of the experimental and control group students in Table 7, there is a statistically significant difference between the experimental and control groups [$t_{(33)}$=-2.156; p=.038]. Results of the independent samples t-test indicate that the mean posttest score of the experimental group students ($\overline{X}$ =24.28) is higher than the mean posttest score of the control group students ($\overline{X}$ =20.06). Thus, it may be said that the implementation of the station technique in the experimental group led to an increase in the achievement scores of the students. *Hypothesis 3* was confirmed on the basis of

the findings obtained.

Hypothesis 4: There is a significant difference between the achievement post-test scores and retention scores of the experimental group students on whom the station technique was applied for teaching Turkish.

In order to determine the test to be used to compare the posttest and retention scores of the experimental group students in the achievement test, first the posttest and retention score averages of the students were checked whether they met the normality assumption. Results of the Shapiro-Wilk test indicated that the posttest and retention score averages of the experimental group [S-W=.968; p=.759] were normally distributed. It was therefore decided to use the dependent samples t-test, one of the parametric tests, to compare the posttest and retention scores of the experimental group students in the achievement test. Results of the dependent samples t-test are given in Table 8.

Table 8. Results of Dependent Samples t-Test Concerning Posttest and Retention Scores of the Experimental Group

Experimental Group	n	$\overline{X}$	sd	df	t	p
Posttest	18	24.28	5.15	17	-2.297*	.035
Retention	18	25.78	3.59			

*p<.05

According to the results of the analysis concerning the achievement posttest and retention test scores of the experimental group students on whom the station technique was applied in Table 8, there is a significant difference between the posttest ($\overline{X}$ =24.28) and retention ($\overline{X}$ = 25.78) scores of the students, which is in favor of the retention scores [$t_{(17)}$=-2.297; p=.035]. On the basis of these results, one may say that the implementation of the station technique in the Turkish class has an effect on the lasting learning by students. The increase in the retention score may be attributed to the fact that implementation process was completed prior to the end of the semester, which the classes continued in the period between the posttest and retention test, and that learning was reinforced during this process. *Hypothesis 4* was confirmed on the basis of the results obtained.

Hypothesis 5: There is a significant difference between the achievement post-test scores and retention scores of the control group students on whom the current program was applied for teaching Turkish.

In order to determine the test to be used to compare the posttest and retention scores of the control group students in the achievement test, first the posttest and retention score averages of the students were checked whether they met the normality assumption. Results of the Shapiro-Wilk test showed that the posttest and retention score averages of the control group [S-W=.929; p=.209] were normally distributed. It was therefore decided to use the dependent samples t-test, one of the parametric tests, to compare the posttest and retention scores of the experimental group students in the achievement test and obtained results are given in Table 9.

Table 9. Results of Dependent Samples t-Test Concerning Posttest and Retention Scores of the Control Group

Control group	n	$\overline{X}$	sd	df	t	p
Posttest	17	20.06	6.39	16	-.085	.933
Retention	17	20.18	8.07			

Table 9 presents the results of the dependent samples t-test concerning the achievement posttest and retention scores of the control group students on whom the current program was applied. The mean posttest and retention test scores of the control group students indicate that there is an increase between the posttest ($\overline{X}$ =20.06) and retention ($\overline{X}$ =20.18) scores, which is in favor of the retention scores, but this increase is not statistically significant [$t_{(16)}$=-.085; p=.933]. This may be interpreted as a failure to achieve proper lasting learning for the control group students to whom the current program was applied. *Hypothesis 5* could not be confirmed on the basis of the results obtained.

Hypothesis 6: There is a significant difference between the achievement test retention scores of the experimental group students on whom the station technique was applied and of the control group students on whom the current program was applied for teaching Turkish.

Results of the Shapiro-Wilk test conducted in an attempt to determine the test to be applied to compare the retention scores of the experimental and control group students indicated that the retention scores of both the experimental group students (S-W=.952; p=.465) and the control group students (S-W=.912; p=.110) were normally distributed. Among the parametric tests, the independent samples t-test was decided to be used to compare the retention scores of the experimental and control group students in the achievement test, on the basis of these findings. Results of the independent samples t-test are given in Table 10.

Table 10. Results of Independent Samples t-Test Concerning Retention Scores of the Experimental and the Control Groups

Groups	n	$\overline{X}$	sd	df	Levene's test		t	p
					F	p		
Experimental	18	25.78	3.59	33	15.975	.000	2.626*	.015
Control	17	20.18	8.07					
Total	35							

*p<.05

According to the results of the independent samples t-test concerning the retention scores of the experimental and control group students in Table 7, there is a statistically significant difference between the experimental and control groups [$t_{(33)}$=-2.626; p=.015]. Results of the independent samples t-test indicate that the mean retention score of the experimental group students ($\overline{X}$ =25.78) is higher than the mean retention score of the control group students ($\overline{X}$ =20.18). In this context, it may be said that the implementation of the station technique in the experimental group is more effective for lasting learning. *Hypothesis 6* was confirmed on the basis of the findings obtained.

Upon general assessment of the results of the analyses conducted, it shows that the experimental group students, on whom the station technique was applied were more successful than the control group students, on whom the current program was applied. On the basis of these results, it could be said that the implementation of the station technique has a positive effect on the students' achievement, when compared with the current program.

3.2 Findings on the Attitudes of Students toward Turkish Class

Purpose 1: Is there a significant difference between the Attitude Toward Turkish Class Scale (ATTCS) pre-attitude and post-attitude scores of the experimental group students on whom the station technique was applied in the Turkish class?

Results of the Shapiro-Wilk test conducted in an attempt to determine the test to be applied to compare the pre-attitude and post-attitude scores of the experimental group students in the ATTCS indicated that the mean pre-attitude and post-attitude scores of the experimental group students [S-W=.913; p=.098] were normally distributed. On the basis of the results obtained, the dependent samples t-test, one of the parametric tests was chosen, to compare the pre-attitude and post-attitude scores of the experimental group students in the ATTCS. Results of the dependent samples t-test are given in Table 11.

Table 11. Results of Dependent Samples t-Test Concerning Pre-Attitude and Post-Attitude Scores of the Experimental Group

Experimental Group	n	$\overline{X}$	sd	df	t	p
Pre-Attitude	18	81.11	10.16	17	-6.489*	.000
Post-Attitude	18	91.50	5.18			

*p<.05

Table 11 presents the results of the dependent samples t-test concerning the pre-attitude and post-attitude scores of the experimental group students in the ATTCS. The arithmetic means indicate that there is a statistically significant difference between the pre-attitude ($\overline{X}$ =81.11) and post-attitude ($\overline{X}$ =91.50) scores of the students, which is in favor of the post-attitude scores [$t_{(17)}$=-6.489; p=.000]. On the basis of these results, it could be said that the implementation of the station technique has a positive effect on the students' attitudes towards the Turkish class.

Purpose 2: Is there a significant difference between the ATTCS pre-attitude and post-attitude scores of the control group students on whom the current program was applied in the Turkish class?

Results of the Shapiro-Wilk test conducted in an attempt to determine the test to be applied to compare the pre-attitude and post-attitude scores of the control group students in the ATTCS showed that the mean pre-attitude and post-attitude scores of the control group students [S-W=.904; p=.080] were normally distributed. On the basis of the normality results obtained, the dependent samples t-test, one of the parametric tests, was chosen to compare the pre-attitude and post-attitude scores of the experimental group students in the ATTCS, and the results of the analysis are given in Table 12.

Table 12. Results of Dependent Samples t-Test Concerning Pre-Attitude and Post-Attitude Scores of the Control Group

Control group	n	$\overline{X}$	sd	df	t	p
Pre-Attitude	17	80.70	9.34	16	-3.008*	.008
Post-Attitude	17	86.88	7.72			

*p<.05

Table 12 presents the results of the dependent samples t-test concerning the pre-attitude and post-attitude scores of the control group students on whom the current program was applied in the ATTCS. The pre-attitude and post-attitude scores of the students in the ATTCS indicate that there is a statistically significant difference between the pre-attitude ($\overline{X}$ =80.70) and post-attitude ($\overline{X}$ =86.88) scores of the students, which is in favor of the post-attitude scores [$t_{(16)}$=-3.008; p=.008]. This may be interpreted as follows: the application of the current program led to a significant difference in relation to the attitudes of the control group students toward the Turkish class.

Purpose 3: Is there a significant difference between the ATTCS post-attitude scores of the experimental group students on whom the station technique was applied and of the control group students on whom the current program was applied in the Turkish class?

In order to decide which test to be used to compare the post-attitude scores of the experimental and control group students in the ATTCS, first of all, the post-attitude scores of the students were checked to determine whether they met the normality assumption. The results of the Shapiro-Wilk test indicated that the post-attitude scores of the experimental group students [S-W=.939; p=.275] were normally distributed, whereas the post-attitude scores of the control group students [S-W=.891; p=.047] were not. Skewness and kurtosis values for the control group were checked, and the skewness (S_C=-.902) and kurtosis (K_C=-.061) values were found to be within the acceptable range. On confirming that both groups met the normality assumption, the independent samples t-test was chosen to compare the post-attitude scores of the experimental and control group students in the ATTCS. Results obtained from the analysis are given in Table 13.

Table 13. Results of Independent Samples t-Test Concerning Post-Attitude Scores of the Experimental and the Control Group

Groups	n	$\overline{X}$	sd	df	Levene's test		t	p
					F	p		
Experimental	18	91.50	5.18	33	3.048	.090	2.089*	.045
Control	17	86.88	7.72					
Total	35							

*p<.05

According to the results of the independent samples t-test concerning the post-attitude scores of the experimental and control group students given in Table 13, there is a statistically significant difference between the groups [$t_{(33)}$=2.089; p=.045]. Results of the independent samples t-test indicate that the mean post-attitude score of the experimental group students ($\overline{X}$ =91.50) is higher than the mean post-attitude score of the control group students $\overline{X}$ =86.88). The fact that there is a significant difference between the groups in favor of the experimental group may be interpreted as follows: the positive effect of the station technique on the students' attitudes toward the Turkish class is higher than that of the current program.

Upon general assessment of the results of the analyses conducted, it was found that there was a significant difference between the pre-attitude and post-attitude scores of both the experimental group students on whom the station technique was applied and the control group students to whom the current program was applied. When comparing the post-attitude scores of the experimental and control group students, it was found that there was a significant difference in favor of the experimental group students. The results obtained indicate that both the station technique and the current program positively affected the students' attitudes toward the Turkish class, but the station technique had a more positive effect on the students' attitudes towards the Turkish class when compared with the current program.

4. Conclusion, Discussion and Recommendations

This section presents the conclusions derived from the research findings, as well as a discussion in which this

study is compared with the previous studies in the relevant literature, and the recommendations given on the basis of the conclusions.

This research sought to determine the effect of the station technique used in the Turkish class on the academic achievement of the students and their attitudes toward the Turkish class. As a result of the implementations, it was found that there was an increase in the achievement level of both the experimental group of students to whom the station technique had been applied and the control group students to whom the current program had been applied, but this increase was statistically significant only between the scores of the experimental group students. Upon comparison of the posttest scores of the experimental and control group students, it was found that there was a significant difference in favor of the experimental group, and that the experimental group students were more successful than the control group students. There are other studies in the relevant literature indicating that the station technique has a more positive effect on the achievement of students when compared with the conventional method (Howatson, 1971; Day & Hunt, 1974; Vacca & Vacca, 1976; Sunday, 1979; Strauber, 1981; Cohen & Anthony, 1982; Fraling, 1982; Tofte, 1982; Norman & Toddonio, 1990; Roberts, 1999; Hall & Zentall, 2000; Eilks, 2002; Morgil et al., 2002; Farkas, 2003; Porter, 2004; Lebak, 2005; Bulunuz, 2006; Demirörs, 2007; Furutani, 2007; Demir, 2008; Tseng, 2008; Alacapınar, 2009; Güneş, 2009; Köseoğlu et al., 2009; Gerçek, 2010; Maden & Durukan, 2010; Ocak, 2010; Demir, et al., 2011; Geier & Bogner, 2011; Mergen, 2011; Batdı & Semerci, 2012; Benek, 2012; Benek & Kocakaya, 2012; Genç, 2013; Erdağı, 2014; Avcı, 2015; Erdağı & Önel, 2015; Korsacılar & Çalışkan, 2015). It is remarkable that the present study was conducted in relation to the Turkish class and the results obtained tally with those of the study conducted by Maden and Durukan (2010). In both studies, it was concluded that the implementation of the station technique had a positive effect on the achievements of the students in the Turkish class. Furthermore, Maden and Durukan (2010) stated that this technique could be applied at all course levels and its use was recommended in language studies.

Both groups took the retention test 6 weeks after the completion of the implementation. It was found that there was an increase between the posttest and retention scores of both the experimental group students to whom the station technique had been applied and the control group students to whom the current program had been applied, but this increase was significant only between the scores of the experimental group students. Upon comparison of the retention scores of the experimental and control group students, it was found that there was a significant difference in favor of the experimental group, and that the retention scores of the experimental group students were higher than those of the control group students. This suggests that the implementation of the station technique in the Turkish class has a positive effect also on the retention of knowledge acquired by students. The literature review indicated that there were studies suggesting the positive effect of the use of the station technique in chemistry (Morgil et al., 2002), science and technology (Demirörs, 2007; Güneş, 2009; Ocak, 2010; Benek, 2012; Erdağı, 2014; Erdağı & Önel, 2015), life sciences (Demir, 2008), English (Tseng, 2008; Avcı 2015), Turkish (Maden & Durukan, 2010), social studies (Mergen, 2011), computer and instructional technologies (Batdı & Semerci, 2012) and physics (Korsacılar & Çalışkan, 2015) classes on lasting learning. In this context, it is possible to say that the results of the present study are consistent with the results of other studies conducted for the Turkish class and other classes.

As to the effect of the implementations in the experimental and control groups on the students' attitudes toward the class, it was found that both the station technique and the current program had a positive effect on the students' attitudes toward the class. However, when the contour scores of the experimental and control groups were compared, It was determined that there was a significant difference in favor of the experimental group. In this respect, it is possible to say that the implementation of the station technique is more effective on the students' attitudes towards the course than the current program practice. The exhaustive literature review indicates that the results obtained are consistent with the results of other similar studies (Tofte, 1982; Roberts, 1999; Farkas, 2003; Demirörs, 2007; Furutani, 2007; Tseng, 2008; Maden & Durukan 2010; Erdağı, 2014; Erdağı & Önel, 2015).

Generally speaking, it was found that the implementation of the station technique in the Turkish class had a more positive effect on the students' achievements in the class, lasting learning and attitudes toward the class when compared with the current program.

The recommendations below are given on the basis of the results obtained.

1. It is clear that the implementation of the station technique positively affects the achievements and attitudes of students. Accordingly, the activities involving the implementation of this technique should find more widespread use in the Turkish class teaching programs.
2. It was found that the station technique was effective in ensuring lasting learning by the students. Taking this

into account, teachers should be informed on the use of the station technique both in the teaching and in the repetition and reinforcement of the subjects in the Turkish classes and other classes.

3. In order to benefit to the greatest extent from the implementation of the station technique, it is suggested that teachers should be given the necessary information about the technique, and that the authorities should take into consideration the features of contemporary teaching methods and techniques when establishing physical learning environments in schools.
4. This study was conducted for the Turkish class. Researchers may be recommended to conduct studies for different aspects of the Turkish class and for other classes, and to compare the results.
5. Teachers should be provided with applied training courses on the methods/techniques designed in accordance with the constructivist approach, from which positive results were obtained, within the scope of on-the-job training programs provided by the Ministry of Education.
6. It would be useful to conduct similar studies at different teaching levels and grades, and to compare their results.

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