The Effect of Jigsaw and Cluster Techniques on Achievement and Attitude in Turkish Written Expression

Jigsaw ve Küme Tekniğinin Yazılı Anlatım Becerilerindeki Başarı ve Tutum üzerine Etkisi

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ABSTRACT: The aim of the present paper is to assess the effect of the jigsaw and conventional cluster techniques on achievement and attitude in Turkish written expression in primary school. The sampling of this study is composed of 61 8th grade students studying in two different classes of a primary school in Turkey in 2009-2010. One of the classes has been randomly selected as a control group (N=31) in which the conventional cluster technique is used, while the other is the experimental group (N=30) in which the jigsaw technique is used. The data related to the students' attitudes toward written expression have been collected using an Attitude Scale for Written Expression (ASWE) as a pre-test and a post-test, while their academic achievement in written expression has been evaluated by using the Achievement Test of Written Expression (ATWE), and the results have been analyzed. As a result of the statistical analysis, a significant difference has been determined between control and experimental groups, in terms of attitude, academic achievement and retention in favor of the jigsaw technique.

Keywords: Turkish teaching, cooperative learning, written expression, jigsaw technique, cluster technique.

ÖZET: Bu çalışma, Jigsaw ile geleneksel küme yönteminin ilköğretim Türkçe dersi kapsamında yazılı anlatım becerilerine yönelik akademik başarı ve yazılı anlatıma yönelik tutum üzerindeki etkisini tespit etmek amaçlamaktadır. Çalışmanın örneklemi, 2009–2010 akademik yılında Türkiye'de bir ilköğretim okulunun iki ayrı 8. sınıftaki 61 öğrenciden oluşmaktadır. Şubelerden biri geleneksel küme yönteminin uygulandığı kontrol grubu(N=31) diğeri Jigsaw tekniğinin uygulandığı deney grubu(N=30) olarak rastgele belirlenmiştir. Grupların yazılı anlatıma yönelik tutumlarına ait veriler ön test ve son test olarak Yazılı Anlatıma Yönelik Tutum Ölçeği (YAYTÖ) ile yazılı anlatıma yönelik akademik başarıları Yazılı Anlatım Başarı Testi (YABT) toplanmış, sonuçları analiz edilmiştir. Yapılan istatistiki analizler sonucunda, yazılı anlatım konusunun öğretiminde deney ve kontrol grubu arasında tutum, akademik başarı ve kalıcılık yönünden Jigsaw tekniği lehine anlamlı bir farkın olduğu görülmüştür.

Anahtar Kelimeler: Türkçe öğretimi, iş birlikli öğrenme, yazılı anlatım, jigsaw tekniği, küme yöntemi

1. INTRODUCTION

Educational activities have two basic aims which do not change according to the society or other conditions: namely, socializing (socialization) and individualizing (individualization). Socializing refers to human beings' real life activities in the outer world. The reason for people having social skills in life is their need for interaction. The person shapes these social skills in his/her inner world, thus affecting his individualizing. However, individualizing is not the opposite of socializing (Tezcan, 1997). Accordingly, societies determine their educational targets in light of these aims.

Modern education perception deals with not only teaching and management but also a full learning, teaching, management and course teaching program prepared for students. The concept of education has currently become student-centered and coalesced with life. In this respect, some proper arrangements are made for socializing and individualizing in education and teaching. The constructivist approach, which is also used in Turkey, focuses on students and tries to develop knowledge, attitudes and skills by combining them with prior knowledge and incorporating

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teaching activities with all their aspects into the process. This process, however, is shaped by existing teaching programs. Teaching programs, renewed in the light of the student-centered education approach, need to use strategies, methods and techniques which are appropriate for the constructivist approach. These include active participation of the student in the education process.

One of the significant teaching methods, based on the student's cooperation and active participation, is the cooperative learning method. Cooperative learning methods and techniques, which are considered as a part of active learning methods and techniques, are kinds of learning methods which enable the students to generate solutions by cooperating as groups and to confirm these evaluations with various activities.

The cooperative learning method is a process in which students work together towards a common goal in small groups by helping each other to learn (Açıkgöz 1992: 3). The cooperative learning method is a concept which is dramatically attractive for teachers, school managers and pedagogues; moreover it is one of the approaches which is widely seen in the implementation of theory research and education (Slavin and Sharan 1990; Johnson and Johnson 1999; Graham 2005; Maloof and White 2005). Cooperative learning, in which the positive effect on success in the learning process has been proved, is continually becoming more widespread (Slavin, Madden, Karweit, Livermon and Dolan 1995; Webb, Sydney and Farivor 2002; Siegel 2005, Köseoğlu 2011).

Actually, the cooperative learning method looks like conventional group work used at primary school level, but it has some differences in practice. While groups in group work are formed directly by teachers according to students' characteristics (like girls and boys, hardworkers and others), groups in the cooperative learning method are heterogeneously formed and controlled by the teacher. In addition, the students in group work stay uniform for a long time and their study topics differ from each other, whereas groups consisting of 2-6 students and changing after a particular time, study the same topic in the cooperative learning method. These changes provide for socialization and cooperation among the students. The teacher behaves according to student features (gender, success, economical, cultural etc.) while generating cooperative learning groups. Cooperative learning group members have different features in a heterogeneous form. For these groups, group success is more significant than that of the individual. Accordingly, heterogeneous groups learn the topic together by helping each other. That is, according to Tezcan (1997), any child acquires many features by socializing. These are communication, cooperation, participation, interaction and social skills. As can be seen, it is obvious that a person acquires cooperative skills by socializing. Socializing refers to a person recognizing his/her features shared with others and his/her differences from the others. The individualizing of a person can then be developed.

Table 1. Differences Between Cooperative Learning Group And Conventional Learning Group

Cooperative Learning Groups	Conventional Learning Groups
It depends on positive dependence among group members. A child in the group can reach his/her aims only if other children are also successful. In this dependence, there are aim, reward, source, role, symbol introduction, fancy unity, mission and reaction dependency.	No positive dependence in the group is observed.
Heterogeneous groups are formed. Groups are mixed in terms of skill, gender, race, social and personal attributes. This kind of grouping provides a place in class for disabled and marginalised children.	Instead of forming heterogeneous groups, a homogeneous group form is preferred.
Leadership is shared by each group member.	There is only one leader who guides the group.
Members shoulder each other's responsibility. There is group responsibility.	Members rarely take responsibility for learning of the others. There is individual responsibility.
The aim is to build good working relationships in order for a high level of learning by each member. The focus is on only one product from the group. Working and persistence are highly regarded. There is interdependence leading to progression.	There is generally self-study. Group members create individual products and care about committed work.
Social skills are directly taught (like leadership, communication skills, honesty with each other, decision making, conflict solution in the group, sharing).	Less importance is paid to social skills. Relationships between the individuals and small group skills are generally formed in the wrong way and there is rivalry.
The teacher has the role of observer and member. He/she solves problems seen during a group activity and gives feedback by leading the group.	The teacher rarely joins groups and observes. He/she does not give importance to the group and evaluate individual studies.
The teacher sets the required processes in motion so that groups can study more effectively.	Configuration of required processes is disregarded in the implementation period.

Cooperative Learning Groups	Conventional Learning Groups
Individual responsibility is given to group members. This responsibility is related to the material which each member evaluates. Members give feedback to each other about their progress. Group members know who needs help and motivation. The group moves on its way by effective use of group activity, in order to reach its goal.	There is not enough individual responsibility to provide for sharing in group working. Utilization of each other's work is rarely seen .

(Miller 1989; Johnson, Johnson ve Holubec 1994; cited from Gömleksiz 1993).

Every small group work, especially group working which is applied in our schools, is not cooperative learning. Cooperative learning, as general, is a process of learning through the students having different levels of ability, genders, races and level of social skills, helping in each other's learning, with a common goal and work in small groups. The classes in which cooperative learning is applied are not the places where students compete individually or as a group, they directly listen to their teacher or study individually by sitting separately. On the contrary, cooperative classes are places where students have interactions in small groups and teachers help the ones who need support (Açıkgöz 1992). The distinctive feature, through which cooperative group working differs from other group work, is that groups reach the result all together by cooperatively helping each other. Cooperative learning is a type of internal relationship which exists among students when they try to reach a goal (Miller 1989). This relationship gives the students an opportunity of utilizing their own and their friends' opinions in order to attain knowledge. Furthermore, cooperative learning includes following the teacher's instructions and working together without thinking. As a background to the action, there is an orderly environment and strong friendliness (Cartwright 1993). All of these are very effective features so that students can obtain positive skills both academically and as a social individual.

It is therefore essential to provide awareness of the effectiveness of such approaches to both teachers and teacher candidates. This might be considered more important for teacher candidates, since they regard becoming a teacher as a complicated process (Schoeman & Mabunda 2012). For example, teacher candidates may feel that they are ready to teach reading which is a receptive language skill; however, they do not feel ready to teach writing, specifically creative writing, which is a productive skill (Condy et al. 2010). It should also be remembered that students learn better when they carry out an activity themselves (Zulu, 2011; Doymuş et al. 2005); thus, teacher candidates need to practice these skills at schools with real students.

Jigsaw, one of the cooperative learning techniques, is a technique which is based on group dynamics and social interaction. It is one of the "pure" cooperative learning techniques across the world (Açıkgöz, 2006: 210). This technique asserts that students' success in written expression gradually increases. This technique, as well as using in language teaching, has been considerably used across the world in improving of written success of students (Şahin 2011a; Maden et al. 2011). This technique, invented by Elliot Aronson in 1978, improves the cooperation among students, which includes two different implementations of small groups to help learning (Hedeen 2003; trans. Şimşek, 2007: 18). As for the implementation, in the jigsaw technique, some steps are followed. A) Forming groups: The groups consist of three to seven people. Heterogeneous groups are preferred. B) Dividing material: The topic is divided into small segments which equal the number of students. One segment is given to each student. C) Expert groups: A student from each jigsaw group, leaving his own group, joins other students assigned to the same segment.

Students in this expert group try to discuss the main points of their segment, plan how they can teach this segment to others and they teach the topic to the others after coming back to their own jigsaw group. Finally, in the completion step, the teacher may organize an activity which is individual with the small group or participated in by all students in the class in order to strengthen the learning of students. For instance, he/she may have one of the main groups make a presentation to summarize their material or strengthen the learning of students by having them make individual presentations. In the process of evaluation of students, the work is completed by evaluations used in the cooperative learning method (Şimşek 2007: 19).

For all these reasons, in this research the aim has been to determine the effect of the jigsaw technique and conventional cluster technique on achievement and attitude in written expression in Turkish lessons in primary school.

For this purpose, an attempt has been made to answer the following research questions:

-Are there any significant differences between the student's attitudes in the control and experimental groups after and before the application of a pre-test and a post-test related to written expression?

-Are there any significant differences between the pre-test, post-test and retention test results for academic achievement in written expression between the students in the experimental group in which the Jigsaw technique was applied and the control group in which the conventional cluster technique was applied ?

2. METHOD

2.1. Research design

In this research, a "Pretest-Posttest Control Group Design", an experimental design, has been used.

2.2. Participants

The population of the study consisted of 61 students, attending the 8th grade, from two different classes of a primary school in Erzurum city center during the 2009-2010 school year. Since a significant difference was not seen between the pretest data in the experimentation process planned as a quasi-experimental design, one of the classes was randomly selected as the control group (N=31), in which the conventional cluster technique was used, while the other was the experimental group (N=30) in which the jigsaw technique was used.

Table 2. Implementation Process

Pretest	Group	Applied Technique	Posttest	Retention
ATWE	Experimental	Jigsaw	ATWE	ATWE
ASWE	Control	Conventional cluster	ASWE	

Data Acquisition and Analysis

2.3. Personal Information Form (PIF)

The form was prepared and implemented in order to determine gender, educational status of father and mother, occupation of father and mother, income state of family, and school report

for Turkish course of the students in the experimental group. The information obtained from the form was used while setting up jigsaw groups before implementation**.** The aim of this form was to prepare heterogeneous groups.

2.4. Attitude Scale for Written Expression (ASWE)

In the research, students' attitudes to written expression were acquired from the participants before and after the experiment, by using the "Attitude Scale for Written Expression"**.** The 25-item scale was developed by Temizkan and Sallabaş (2009). The items in the attitude scale were created as a Likert-scale with "Strongly disagree", "Disagree", "Neither agree nor disagree", "Agree" and "Strongly agree" options. Positive items were graded as 1-2-3-4-5 and negative ones as 5-4-3-2-1. A reliability analysis of the scale was determined and examined with the Cronbach Alpha internal consistency coefficient. As a result of reliability analysis, the internal consistency coefficient of the scale was calculated as 0.84. The acquired data showed that the scale was reliable. The validity of the scale was determined by factor analysis. KMO (Kaiser Meyer-Olkin), one of the factor analysis techniques, was used for this purpose. The KMO value of the scale was calculated as 0.81 and the Barlett test as 1924.11. After reliability and validity studies, it was determined that the scale would be applicable.

2.5. Achievement Test of Written Expression (ATWE)

In the research, the data for academic achievement of the students was collected by the "Achievement Test of Written Expression". The questions in the ATWE were selected by the researchers from previous entrance exams to high schools of the National Education Ministry. In the process of developing the achievement test, first of all, a question pool of 50 questions was created and the number was decreased to 30 by obtaining the views of experts in the field. In order to examine the reliability of the achievement test, it was piloted with 120 primary school students. According to the results of the reliability analysis of this application, it was decided to remove five items having low reliability from the scale. After these processes, the difficulty of the remaining 25 achievment items was analyzed and the results ranged from 0.29 to 0.79. Afterwards, the internal consistency coefficient of the test was calculated at 0.78 with the KR-20 formula. Each question in the achievement test was scored as 1 point. The achievement test, which consists of 25 questions, was applied to the experimental and control group as a pretest, posttest and retention test.

2.6. Implementation Process

In the research, in order to determine whether there was a significant difference between the academic achievements in written expression of the experimental group, in which the jigsaw technique would be applied, and the control group, in which the conventional cluster technique would be applied, the ATWE was applied to both groups as a pretest at the beginning of the implementation period.

2.7. Processes for Experimental Group

Before the implementation, the students were informed about the principles of the jigsaw process and what would be done in class as a part of the research. Information about the students in the experimental group was saved on personal information forms and the students were divided into heterogeneous groups with respect to the information (Table 3). Each group was coded with a letter, thus six groups of five students were formed: A, B, C, D and E. The members of the groups were coded in terms of their topics. (Example: A1, A2, A3, A4, A5, A6.)

The subtopics of the written expression lesson were divided amongst the members in the jigsaw main groups by the group leaders.

Subtopics of Written Expression Lesson for Groups
A1, B1, C1, D1, E1: Correct Usage of the Word.
A2, B2, C2, D2, E2: Correct Usage of Punctuation.
A3, B3, C3, D3, E3: Consistency in the Sentence.
A4, B4, C4, D4, E4: Correct Usage of Word Groups and Sentence Elements.
A5, B5, C5, D5, E5: Voice of Verbs and Correct Usage of Verbs.
A6, B6, C6, D6, E6: Correct Usage of Affixes.

All subtopics were divided so that the students having the same code in all groups took the same subtopic.

Table 3. Main Group Plan

Main Group A			Main Group B			Main Group C			Main Group D			Main Group E	
A1	A2	A3	B1		B2	C1	C2	C3	D1	D2	D3	E1	E2
A4		A5	B3	B4	B5	C4			D4		D5	E3	E4
A6			B6			C5		C6	D6			E5	E6

Six expert groups, each with five members, were formed by coming together after the students having the same code in experimental groups had done preparation in the main groups, and they were told they would study their own topic and come back to their groups **(Table 4)**.

Table 4. Distribution Plan Of Expert Groups

Expert Group 1	Expert Group 2	Expert Group 3	Expert Group 4	Expert Group 5	Expert Group 6
A1,B1,C1 D1, E1	A2,B2,C2 D2, E2	A3,B3,C3 D3, E3	A4,B4,C4 D4,E4	A5,B5,C5 D5, E5	A6,B6,C6 D6, E6

Processes for Control Group

In the control group, the subtopics of the written expression topic were lectured on by the researcher for the first two weeks, and then clusters were generated. In accordance with the cluster technique based on conventional teaching, the students selected their cluster friends as they wished, and then elected the spokesman and leader of their cluster. In addition, the subtopics were randomly divided within each cluster. Since the clusters were formed with respect to the number of subtopics, in total six groups started to study .

Subtopics of Written Expression Lesson for Groups
A1, B1, C1, D1, E1: Correct Usage of the Word.
A2, B2, C2, D2, E2: Correct Usage of Punctuation.
A3, B3, C3, D3, E3: Consistency in the Sentence.
A4, B4, C4, D4, E4: Correct Usage of Word Groups and Sentence Elements.
A5, B5, C5, D5, E5: Voice of Verbs and Correct Usage of Verbs.

A6, B6, C6, D6, E6: Correct Usage of Affixes.

Table 5. Cluster Distribution Plan

Cluster A	Cluster B	Cluster C	Cluster D	Cluster E	Cluster F
A1,A2,A3 A4,A5	B1,B2,B3 B4,B5	C1,C2,C3 C4,C5	D1,D2,D3 D4,D5	E1,E2,E3 E4,E5	F1,F2,F3 F4,F5,F6

3. RESULTS

3.1. Findings for Students' Attitudes toward Written Expression

The ASWE was applied in order to determine the differences in attitudes toward s written expression of the experimental and control groups before and after the implementation. The T-test analysis results of independent samples, for the data acquired from the pretest and posttest, are given in Table 6.

Table 6. ASWE Pretest And Posttest Results

Tests	Groups	N		Standard Deviation	t	p
Pretest	Jigsaw	30	2,69	,465	1.482	0,144
	Cluster	31	2,90	,650		
Posttest	Jigsaw	30	4,12	,379	4.044	0,000
	Cluster	31	3,27	1,094		

In table 6, it can be seen that there is not a significant difference (t=1,482, p>0,05) between the means of the ASWE pretest for written expression attitudes of students in the experimental and control groups.

When the analysis results of ASWE posttest data after the experiment are considered, it can be seen that there is a significant difference (t= 4.044, p< 0,05) between the means of the experimental and control groups.

3.2. Findings for Academic Achievements of Experimental and Control Groups

The findings and commentaries on the data acquired from the ATWE pretest, posttest and retention test for written expression achievements of the experimental and control groups, are given in Table 7. In order to see the variances between the groups in the pretest, posttest and retention test measurements, all at the same time, the *Two-Way Mixed Factorial ANOVA* technique was used.

Table 7. Mean And Standard Deviation Rates Of ATWE For Experimental And Control Groups

|	n	Pretest	S.s.	Posttest	S.s.	Retention test	S.s.
Experimental	30	16,20 (% 65)*	1,94	23,40 (% 94)*	1,61	21,00 (% 84)*	1,88
Control	31	16,13 (% 64)*	2,03	21,26 (% 85)*	1,61	17,97 (% 72)*	1,85

* Absolute achievement level = Mean / maximum score

As is seen in Table 7, while the arithmetic mean in the ATWE pretest of the experimental group, in which jigsaw techniques were used, was = 16,20, it rose to = 23,40 in the posttest, and it was calculated as = 21,00 in the retention test. The means of the control group, in which a conventional cluster technique was applied, are respectively = 16,13, 21,26 and 17,97. According to these findings, it can be seen that there is an increase in the mean scores of the students in both the experimental and control groups. When they are evaluated in terms of absolute achievement level, it can be seen that the students in the experimental group reached 65% of the target in the pretest results; this percentage rises to 94% in the posttest and declines to 84% in the retention test. It was determined that the students in the control group reached 64% of the target in the pretest results, 85% in the posttest results, and 72% in the retention results.

Table 8. ATWE Anova Results For Experimental And Control Groups

Source of Variance	SS	df	MS	F	Sig.
Between participants	543,246	60			
Group (Experimental-Control)	139,814	1	139,814	20,447	,000
Error	403,432	59	6,838		
Within participants		122			
Measurement (Pretest-Posttest-Retention)	1418,356	2	580,506	366,397	,000
Group* measurement	70,389	2	35,195	22,214	,000
Error	186,955	118	1,584		
Total	4798,314	162			

When the data in table 8 is examined, it is seen that there is a significant difference ($F_{(1, 59)}=20,447$, $p<0,05$) between the results for the ATWE pretest, posttest and retention test applied in the experimental and control groups before and after the implementation. This finding shows that there is a difference between the mean scores of the students in the experimental and control groups on a non-discriminatory basis for measurement (before and after the implementation). At the same time, it can be determined that there is a significant difference ($F_{(2, 122)}= 336,397$, $p<0,05$) between the mean scores of the students in the research before and after the implementation on a non-discriminatory basis for the groups. This finding states that the achievements of the experimental and control groups in the pretest, posttest and retention test rise and differ from each other.
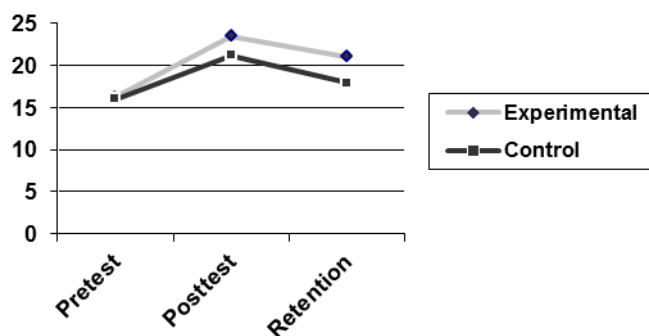
Shape 1. Graph Change in mean scores of ATWE for experimental and control groups

When the graph is considered, it can be seen that there is not any difference between the means in the ATWE pretests of the experimental and control groups. However, it can also be seen that there is a distinctive difference in the posttest and retention test in favor of the experimental group.

4. DISCUSSION and CONCLUSION

In the research, the aim was to determine the effect of the jigsaw technique and conventional cluster method on academic achievement and attitude to written expression in Turkish language in primary school. As a result, findings in favor of the experimental group were obtained.

Although a significant difference between the ATWE pretest means of the students in the experimental and control groups could not be found, a significant difference between the posttest means of the groups was seen. The findings related to achievements in written expression indicate that the jigsaw technique is more efficient for academic achievement, compared to the conventional cluster method.

In addition to these findings, a significant difference was found between the achievement means of the retention test, which was applied to the experimental and control groups five weeks after the implementation, in favor of the experimental group in which the jigsaw technique was applied. As a result of these findings, it can be said that the jigsaw technique for academic achievement in written expression is more efficient than the conventional cluster method for learning and retention. The findings concerning the effect of the jigsaw technique on achievement in written expression have similarities to the results of some related studies in the literature (Ernst and Byra 1998; Huang 2000; Johnson and Ward 2001; Cadopi et al. 2002; Barrett 2005; Ward and Lee 2005; Tunçel 2006). Yet, in a research carried by Arslan (2012) on teaching of word types, a meaningful difference could not be found in terms of success between two techniques such as jigsaw and conventional ones.

In general, it was seen that the jigsaw technique is a more effective learning tool than the cluster method for achievement in written expression and the attitude toward written expression. According to these results, it can be predicted that jigsaw techniques, as general cooperative learning strategies, are useful for teaching language skills in all education grades. The existing results also support the findings of Maden (2011), Şahin (2010), Şahin (2011a) and Şahin (2011b) and in which it can be seen that jigsaw techniques obviously have an effective place in students' achievements in writing, compared to conventional teaching methods.

In further research, the jigsaw technique could be applied to the teaching of different language skills and for students having different age and education levels. Actually, as a global contribution to the related literature, there is not any study in the literature, concerning writing training, with regards to comparing cluster and jigsaw groups in. The results of this study can give, to a great extent, contribution to the education literature.

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Geniş Özet

İş birlikli öğrenme yöntemleri, dil öğretiminde akademik başarı, tutum ve kalıcılık üzerinde etkili olabilecek sistem ve uygulamalara sahiptir. İş birlikli öğrenme yöntemi, öğrencilerin ortak bir amaç doğrultusunda küçük gruplar halinde birbirlerinin öğrenmelerine destek oldukları bir süreci içerir. İş birlikli öğrenme; öğretmenler, okul yöneticileri ve eğitim bilimcilerin dikkatini önemli ölçüde çekmeye devam eden bir kavram olmakla beraber teori, araştırma ve eğitim uygulamaları alanında yaygın bir şekilde görülen yaklaşımlardan biridir. Öğrenme sürecindeki başarıda olumlu etkisi kanıtlanmış olan iş birlikli öğrenme her gün daha fazla kullanım alanı bulmaktadır. Jigsaw, iş birlikli öğrenme uygulamalarının en saf tekniklerinden biridir. Jigsaw grup dinamiğine, sosyal etkileşime ve ayrılıp birleşmeye dayalı bir tekniktir. Heterojen gruplara ayrılan öğrenciler öğretmen rehberliğinde önce kendi gruplarında birlikte çalışır, daha sonra jigsaw adı verilen yeni gruplar oluştururlar. Jigsaw gruplarında çalıştıkları konularda uzmanlaştıktan sonra tekrar asıl gruplarına döner ve sorumlu olduğu arkadaşlarına sunumlar yaparlar. Bu teknik yapısı ve kazandırdıklarıyla küme tekniğinden çok farklı özelliklere sahiptir. Birbirinden farklı bu iki tekniğin, yazılı anlatım becerisinin geliştirilmesine yönelik, deneysel desende karşılaştırılmasının literatüre katkı yapacağı düşünülmüştür.

Belirtilen gerekçelerden hareketle bu çalışmada, iş birlikli Jigsaw ile geleneksel küme tekniğinin ilköğretim Türkçe dersi kapsamında yazılı anlatım becerilerine yönelik akademik başarı ve yazılı anlatıma yönelik tutum üzerindeki etkisini tespit etmek amaçlanmıştır. Bu amaç doğrultusunda çalışmada aşağıdaki araştırma sorularına cevap aranmıştır:

1- Deney ve kontrol grubu öğrencilerinin yazılı anlatıma yönelik uygulama öncesi ve sonrasında tutumları arasında anlamlı bir fark var mıdır?

2- Jigsaw tekniğinin uygulandığı deney grubu ile geleneksel küme yönteminin uygulandığı kontrol grubu öğrencilerinin yazılı anlatım becerileri akademik başarıları ön test, son test ve kalıcılık testi puanları arasında anlamlı bir fark var mıdır?

Bu araştırmada deneysel modellerden "Kontrol Gruplu Ön test-Son test Modeli" kullanılmıştır. Araştırmanın çalışma grubu Türkiye'de bir ilköğretim okulunun iki ayrı 8. sınıfındaki 61 öğrenciden oluşmaktadır. Yarı deneysel bir desende planlanan deney sürecinde, sınıflardan biri geleneksel küme yönteminin kullanıldığı grup kontrol grubu (N=31) olarak, diğeri ise Jigsaw tekniğinin kullanıldığı deney grubu (N=30) olarak tanımlanmıştır. Araştırmada öğrencilerin yazılı anlatıma ya da yazma eylemine yönelik tutumları deney öncesi ve sonrası "Yazılı Anlatıma Yönelik Tutum Ölçeği" (YAYTÖ) ile toplanmıştır. Revize edilen tutum ölçeğinde 25 madde bulunmaktadır. Tutum ölçeğinin güvenirliği SPSS 15.0 paket programı aracılığıyla saptanmış ve Cronbach Alfa iç katsayısıyla sınanmıştır. Yapılan güvenirlik analizi sonucunda ölçeğin alfa iç tutarlılık katsayısı 0.84 olarak tespit edilmiştir. Elde edilen veriler, tutum ölçeğinin güvenilir olduğunu göstermektedir. Ölçeğin geçerliği ise faktör analizi ile yapılmıştır. Yapılan güvenirlik ve geçerlik çalışmaları sonunda ölçeğin uygulanabilir olduğu saptanmıştır. Ayrıca çalışma grubundaki öğrencilerin yazılı anlatım becerilerine yönelik başarılarını tespit etmek amacıyla araştırmacı tarafından "Yazılı Anlatım Başarı Testi" (YABT) geliştirilmiştir. Başarı testinin güvenirliğini sınamak amacıyla 40 ilköğretim öğrencisi üzerinde bir pilot uygulama yapılmıştır. Bu işlemler sonrasında 25 maddeye düşürülen başarı testinin madde güçlükleri analiz edilmiş ve 0,29 ile 0,79 arasında değiştiği görülmüş, ardından testin iç tutarlık katsayısı KR–20 formülü ile 0,78 olarak tespit edilmiştir. Bu veriler başarı testinin uygulanabilir olduğunu göstermektedir.

Uygulamanın başlangıcında YAYTÖ ve YABT hem deney (Jigsaw) grubuna hem de kontrol grubuna ön test olarak uygulanmıştır.

Deney grubunda, deney sürecinin ilk haftasında öğrencilerin konuya nasıl hazırlanacaklarını gruplar kendileri belirlemiş ve araştırmacı tarafından yürütülecek çalışma ile ilgili eğitim verilmiştir. Öğrenciler ikinci hafta öğretim materyalleri ile yazılı anlatım konusuna kendileri hazırlanmıştır. Üçüncü hafta deney grubunda aynı kodlu grup üyeleri bir araya getirilip uzman gruplar oluşturulmuştur. Uzman gruplar bu amaç doğrultusunda aynı alt başlık üzerinde çalışmış ve konularında uzmanlaşmışlardır. Dördüncü hafta uzman gruplar, uzmanlık konularına iş birliği, etkileşim ve yardımlaşma ile hazırlanmışlar ve çalışmalarını bir rapor haline getirmişlerdir. Beşinci haftada Uzman Gruplar asıl gruplara dağıtılarak yeniden birleşme işlemi gerçekleştirilmiştir. Uzmanlar asıl gruplarına döndükten sonra hazırladıkları rapor doğrultusunda kendi grup üyelerine de konularını anlatmışlardır. Altıncı hafta her gruptan seçkisiz örnekleme yöntemiyle seçilen bir kişi uzmanlaşma konusunu sınıf ortamında bütün öğrencilere sözlü olarak sunmuştur.

Kontrol grubunda ise yazılı anlatım konusu, araştırmacı tarafından anlatılmış ve öğrenciler geleneksel küme yöntemi ile çalışma yapmışlardır. Küme yöntemi kapsamında öğrenciler eşit sayıda gruplara ayrılmış ve her bir grup konunun alt başlıklarından birini çalışmak için görevlendirilmiştir. Kontrol grubunda, deney grubunda olduğu gibi haftada 3 saat süresince tüm konu başlıklarına yönelik teorik bilgilerin öğretim faaliyetleri araştırmacı tarafından 6 hafta süreyle yürütülmüştür. Bu süreç günlük planların ve araç-gereçlerin araştırmacı tarafından önceden hazırlanmasıyla yürütülmüş, öğrencilerden alınan dönütler doğrultusunda eksik öğrenilen konular öğretmen tarafından tekrar anlatılmıştır.

Deney ve kontrol gruplarının, uygulama öncesinde yazılı anlatıma yönelik tutumlarındaki farklılıkları belirlemek için uygulanan YAYTÖ ön testinden elde edilen veriler için yapılan bağımsız örneklemler t testi analiz sonuçlarına göre grupların ortalama puanları arasında anlamlı bir fark olmadığı görülmektedir. Uygulama sonrası YAYTÖ son test verileri analiz sonuçlarına bakıldığında ise deney grubu ile kontrol grubu ortalamaları arasında anlamlı bir farkın olduğu ortaya çıkmıştır. Bu etki, Jigsaw tekniğinin öğrenciye hem grup içinde hem de bireysel kararlar almasında sağladığı özerklik ve yüksek katılıma bağlanabilir. Sonuç olarak bu bulgular yapılan araştırmanın 1. Araştırma sorusuna cevap niteliğindedir.

Deney öncesi, sonrası ve kalıcılık testi (YABT) ölçümlerinde gruplar arasındaki değişim farklılıklarını aynı anda görmek için *Karışık Ölçümler İçin İki Faktörlü Anova* tekniği kullanılmıştır. Jigsaw tekniğinin kullanıldığı deney grubunun ön test aritmetik ortalaması x= 16,20 iken, son testte x= 23,40'a yükselmiş ve kalıcılık testinde ise x=21,00 olarak hesaplanmıştır. Geleneksel küme yönteminin uygulandığı kontrol grubunda ise ortalama puanları ön test aritmetik ortalaması x= 16,13 iken son testte x=21,26'ya yükselmiş ve kalıcılık testinde ise x=17,97 olarak hesaplanmıştır. Bu bulgulara göre hem deney hem de kontrol grubundaki öğrencilerin ortalama puanlarında artış olduğu tespit edilmiştir. Bu bulgu,

deney ve kontrol gruplarında bulunan öğrencilerin ortalama puanları arasında ölçüm ayrımı (uygulama öncesi ve sonrası) yapılmaksızın farklılık olduğunu göstermektedir. Bununla birlikte ölçüm temel etkisi ile ilgili olarak grup ayrımı yapmaksızın, araştırmada yer alan öğrencilerin deney öncesi ve sonrası ortalama puanları arasında anlamlı bir farkın olduğu da belirlenmiştir. Sonuç olarak bu bulgular, yapılan araştırmanın ikinci araştırma sorusuna cevap niteliğindedir, yani jigsaw tekniğinin uygulandığı deney grubundaki öğrencilerin ortalama puanlarındaki değişimlerin, geleneksel küme yönteminin kullanıldığı kontrol grubundaki öğrencilerin ortalama puanlarındaki değişimlerin deney grubu lehine farklı olduğunu göstermektedir.

Sonuç olarak tutum ve akademik başarı üzerinde Jigsaw ve geleneksel küme yöntemine göre daha etkili olduğu söylenebilir. Elde edilen bulgular, literatürdeki benzer çalışmaların sonuçlarını destekler niteliktedir. Bu sonuçlardan hareketle tüm eğitim seviyelerinde yazma becerilerinin öğretiminde Jigsaw tekniğinin kullanılmasının faydalı olacağı öngörülebilir.

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