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The Impact of Collaborative Learning Techniques on Written Expression, Self- Regulation and Writing Motivation*

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Abstract

The study examines the effects of collaborative learning techniques on written expression, self-regulation and writing motivation. It was designed according to the pre-test-post-test control group experimental model. The research was conducted during the 2017-2018 academic year with a total of 88 students in in one control and two experimental groups. The first experimental group performed writing exercises according to Co-Op Co-Op and the second experimental group utilized the STAD technique. The control group, on the other hand, carried out writing studies according to the Turkish Lesson Teaching Program (MEB, 2018). Data were collected via a Personal Information Form, 6+1 Analytical Writing and Evaluation Scale, Writing Oriented Self-Regulation Scale and Writing Motivation Scale and were analyzed with the SPSS program. When the findings are examined, a significant difference was seen between the experimental groups and the control group's post-test score average for self-regulation in writing. No significant difference was found between the written expression skills and writing motivation post-test mean scores.

Keywords:

Co-Op Co-Op, STAD, Written Expression, Self-regulation, Writing Motivation, Elementary School

Introduction

Group-based methods and techniques are very important in a classroom environment where students are responsible for each other's learning activities, produce outcomes in line with common goals, aid each other in the learning process and provide mutual feedback (Fung, 2010; Shafiee & Khavaran, 2017). Many complex skills can be evaluated by dividing tasks into sub-steps during a group session. Learning groups can be created according to objectives, student characteristics and size. One group-based method in which students of different levels come together is the collaborative learning processes. Collaborative writing is the co-writing of a single text by two or more authors, with writers taking part in all stages of the creation process, and the finished work belonging to members of the group (Storch, 2013). In the collaborative writing process, students discuss the relationships between

content-related ideas and offer responses to each other's suggestions and explanations (Vass et al., 2008). Writing in small groups or pairs can improve writing skills, conceptual understanding, knowledge of the subject matter and reflective thinking (Nykopp et al., 2014).

When available research is examined, different learning techniques based on collaboration are seen as ways to improve writing skills (Abe, 2020; Anggraini et al., 2020; Fung, 2010; Lai et al., 2016; Teng, 2021). Two specific techniques, Co-Op Co-Op and Student Teams-Achievement Divisions (STAD), have been used widely in the research mainly because such methods can be planned in accordance with the stages of the writing process, students become responsible for each other's learning process and a more supportive classroom environment is created. The Co-Op Co-Op technique consists of a student-centered classroom discussion, the selection and formation of learning teams, choice of a team topic and sub-topics, preparation and presentation of sub-topics, preparation, presentation and evaluation of team presentations (Kagan, 1994). Lecture presentation, teams, tests, progress points and team award constitute the stages of the STAD technique (Slavin, 1995).

There are two basic processes for collaborative writing as determined by cognitive and sociocultural theories to be important for language learning: interaction and content generation (Storch, 2018). Piaget (1976) stated that during the collaborative process, discussions were held where cognitive conflicts occurred and were resolved. Vygotsky (1978) also emphasized that information is social and should be structured in collaborative environments in order to acquire and make use of it. In the collaborative writing process, each group member has a share of the decision-making process throughout the creation process.

When collaborative group work is included in an education or training process, some elements must be provided between collaborative groups. These are "positive dependence, responsibility to account individually and as a group, face-to-face supportive interaction, interpersonal and small group skills, and evaluation of the group's process (Johnson & Johnson, 2005). Individuals and groups maintaining these factors will be more successful in the development of complex skills, with a combination of many sub-skills such as the use of prior knowledge, adherence to the writing subject, choosing appropriate writing strategies, choosing the right words, establishing significant connections between sentences and style of expression. All aptitudes contribute to the emergence of a quality written product. When collaborative texts were examined, it was seen that a higher level was produced in terms of fluency, complexity and lack of errors compared to texts written individually (Dobao, 2012; Vass et al., 2008).

Writing is the process of fabricating the symbols and signs necessary to express our thoughts (Akyol, 2005), and the acquisition of such skill is not easy (Kellogg, 2006). Since cognitive processes are used more effectively in writing, it requires more cognitive effort than reading (Snowling, 2000). For this reason, establishing regular and continuous writing sessions is necessary to develop writing skills. It is also important to impart to students that effective writing happens in certain stages. While presenting an essay or paper from students, many skills are required before, during and after writing. Students can use these skills by making self-regulation for writing. Self-regulation refers to learning that results from students' self-generated thoughts and behaviors that are systematically oriented toward the attainment of their learning goals (Schunk & Zimmerman, 2013). Talented writers have extensive knowledge of the writing process, type of text and coordinating writing, as well as fluent text creation (McCutchen, 2000). Students who are good at writing have learned related strategies and use some of these techniques in the writing process including repeated reading, editing during the writing process, questioning the topic and considering the type of language they choose.

Supporting students during the writing process, proper planning, limiting writing to student discussions, providing timely feedback to students and creating collaborative learning groups help students encounter fewer problems during the writing process. Harris and Graham (2016) stated that writing skills will improve in environments that students enjoy and are presented with greater motivation. As experience with writing increases, students can bring their prior knowledge to the writing environment, organize the writing process better, identify deficiencies and plan subsequent writing exercises more easily. This increases motivation, affecting student attitudes towards writing positively. Motivation can also be expressed as the power source that drives an individual to write (Boscolo & Hidi, 2006). It is important for students who are lacking in skills to write often to gain experience with writing tasks that support future motivation. These individuals need to face complex writing tasks, get help in setting attainable targets, receive feedback on progress towards goals, learn writing strategies and how to employ them (Bruning & Horn, 2000). For the acquisition of writing skills, teachers are expected to include collaborative learning group sessions in classroom writing activities. When students learn together in groups, they do not feel alone in their writing tasks allowing them to overcome the difficult process with the support of the group when they find some difficulty writing, are hesitant about what to write or are discouraged and their motivation decreases.

Children frequently encounter this type of text through picture story books in preschool period and narrative texts in primary school textbooks. Thus, the

most common type of writing skills found in reading text in elementary schools is writing narrative text (Cole & Feng, 2015). When primary school level writing achievements are examined in the Republic of Turkey Ministry of National Education Board of Education Turkish Lesson Teaching Program (MEB, 2018), it is seen that the students will express themselves better in writing at the fourth-grade level compared to previous grade levels. Since it is thought that students will adapt better to lesson plans prepared according to the abovementioned techniques, learners were given narrative text writing tasks in collaborative groups with activities based on the Co-Op Co-Op and STAD techniques.

In examining national literature, the collaborative learning method is based on reading comprehension (Bozpolat, 2012; Tanrıverdi, 2019; Tok, 2008; Top, 2014; Yıldırım, 2010), speaking (Görgülü, 2009; Yılar, 2012), listening (Karabay & Yıldırım, 2016; Kırbaş, 2018) and writing skills (Bayburtlu, 2015; Dönmez & Gündoğdu, 2018; Karakoyun, 2010; Kardaş, 2013; Maden, 2011; Şahin, 2011; Ulaş et al., 2015; Yağmur Şahin, 2013).

When the international literature is examined, cooperative learning method improves writing skills, using language, understanding words, improving vocabulary (Choi & Mantik, 2017; Fung, 2010; Herder et al., 2018; Shafiee & Khavaran, 2017), self-regulation skills (Rojas). -Drummond et al., 1998; Qiu & Lee, 2020) and writing attitude (Sutherland & Topping, 1999) were found to have a positive effect.

When both national and international literature was reviewed, it was seen that studies conducted using the collaborative learning method were effective in the development of basic language skills. Considering studies on writing skills, the cooperative learning method is seen to be important in acquiring the cognitive and affective characteristics of writing. When writing by students produced individually and within groups is compared, it is seen that the texts created with the group are more qualified. For this reason, the collaborative learning method should be used more in developing writing skills. This research aims to examine the effects of STAD and Co-Op Co-Op technique, two collaborative learning techniques, on written expression, self-regulation skills and the writing motivation of primary school fourth-grade students.

The research question is: Is there a significant difference in favor of the experimental groups between the average scores of written expression, self-regulation and writing motivation of the experimental groups and control group?

Sub-problems identified in line with the research problem are as follows:

- Is there a significant difference in favor of the experimental groups between the written expression mean scores of the experimental groups and control group?
- Is there a significant difference in favor of the experimental groups between the self-regulation for writing mean scores of the experimental groups and control group?
- Is there a significant difference in favor of the experimental groups between the writing motivation mean scores of the experimental groups and control group?

Method

In this section, information about the research design, study group, data collection tools, formation of experimental and control groups, application process and data analysis are included.

Research Design

A quasi-experimental research approach was used in this study in which the effects of writing activities based on Co-Op Co-Op and STAD techniques on the motivation of writing expression, self-regulation and writing of fourth-grade students were examined. This research approach does not meet the criterion of an unbiased assignment of participants to groups. Participants in quasi-experimental studies are selected for groups prior to the research and independent of researcher influence (Gliner et al., 2009). This study was designed according to the pre-test-post-test control group experimental model, and carried out with two experimental and one control groups. Co-Op Co-Op and STAD techniques were assigned to the experimental group impartially. The control group, on the other hand, carried out writing activities according to the Turkish Lesson Teaching Program. Before the application, written expression work was done in the groups and following "the Writing Oriented Self-Regulation Scale (WOSRS)" and "Writing Motivation Scale (WMS)" were applied. Texts written by students were evaluated with the 6+1 Analytical Writing and Evaluation Scale (6+1 AWES). After the application, these scales were applied to the students once again. The symbolic view of the model is given in Table 1.

Study Group

The study group of the research consists of 88 fourth-grade students in Zonguldak. Within the scope of the research, the writing achievements in the Turkish Lesson Teaching Program (MEB, 2018) were examined. In particular, the grade levels at which students can express themselves in writing were evaluated. The research group was composed of fourth-grade students, since the students had more writing experiences than in previous years. The writing experiences of the students in the study group, the

time allotted to writing, socio-economic level, age and gender information were collected with a Personal Information Form. According to the information received before the application, the writing processes of the students were carried out according to the traditional teaching methods and the activities in the Turkish course workbook. The time students spend on writing in a day is generally between thirty minutes and an hour. The students in the study group continue their education in a public school. In terms of socio-economic characteristics, the students in the first and second experimental group are generally from middle and upper socio-economic levels; control group students come from middle socio-economic level. The average age of the students in the first experimental group is 9.9, the average age of the students in the second experimental group is 9.7 and the average age of the students in the control group is 9.6. The frequency and percentage distributions of male and female students in the experimental and control groups are given in Table 2.

Looking at Table 2, it can be seen that the first experimental group consists of 29 students, the second consists of 30 and the control group consists of 29 students. 51.724% of the students constituting the first experimental group are girls and 48.276% boys. 40.000% of the students in the second experimental group are girls and 60.000% boys. 44.828% of the students making up the control group are girls and 55.172% boys. It was observed that there was no significant difference in the number of male and female students in the experimental and control groups.

Data Collection Tools

In this section, information is given about measurement tools used in the data collection process and their intended use.

6+1 Analytical Writing and Evaluation Scale

The 6+1 AWES was used to evaluate students' written language. It was developed by researchers at the USA Northwest Regional Training Laboratory (NWREL), and was adapted to Turkish culture by Özkara (2007). The features evaluated were grouped under seven headings, in line with the opinions of researchers and academicians on the subject. These titles are: ideas, organization, voice, word choice, sentence fluency, spelling and presentation. While the maximum value that each dimension can have is 5, the minimum value is 1.

Written expression studies were scored by both researchers and a subject specialist in order to ensure reliability in the evaluation and scoring of texts written by students in the pre-test and post-test about "sharing". The specialist has completed an undergraduate and graduate degree in the field of Turkish Language and Literature. The Pearson correlation coefficient was used for rater reliability. A correlation coefficient of 1.00 indicates a perfectly positive relationship, -1.00 is a perfectly negative relationship and 0.00 indicates that there is no relationship. The correlation coefficient is high when the values are between 0.70-1.00, between 0.70-0.30 indicates a medium and 0.30-0.00 shows a low level of relationship (Büyüköztürk, 2011; Nettleton, 2014). When the reliability between raters was evaluated, the Pearson correlation coefficient for the pre-test score was .504, while the correlation coefficient for the post-test score was .732. Accordingly, when the pre-test correlation coefficient was calculated, a positive and medium level was found among the raters and related to the post-test score, a positive and high level relationship was determined between the raters.

Writing Oriented Self-Regulation Scale

This scale was developed by Uygun (2012) to determine the self-regulation of writing for fifth-grade students in primary education. In the scale, a three level rating was developed as "Never, Sometimes, Always".

Table 1

Symbolic View of the Experimental Research Model

Group	Pre-Application Tests	Techniques	Post-Application Tests
1st Experimental	6+1 AWES - WOSRS - WMS	Co-Op Co-Op	6+1 AWES - WOSRS - WMS
2nd Experimental	6+1 AWES - WOSRS - WMS	STAD	6+1 AWES - WOSRS - WMS
Control	6+1 AWES - WOSRS - WMS	Techniques in the Turkish Lesson Teaching Program	6+1 AWES - WOSRS - WMS

Table 2

Frequency and Percentage Distribution of Male and Female Students in Experimental and Control Groups

Gender	1st Experimental Group		2nd Experimental Group		Control Group	
	f	%	*f*	%	*f*	%
Female	15	51.724	12	40.000	13	44.828
Male	14	48.276	18	60.000	16	55.172
Total	29	100	30	100	29	100

The scale is a Likert type and scored in reverse, with 3-2-1 for positive expressions and 1-2-3 for negative expressions. The scale includes 19 items; 18 positive and 1 negative. The lowest score that can be obtained is 19, and the highest is 57. It consists of three factors: before writing, while writing and after writing. As a result of factor analysis, 7 items were included in the first factor, 5 items in the second factor and 7 items in the third factor. The load values of items in the first factor ranged from 0.735 to 0.563, load values of the items in the second factor ranged from 0.718 to 0.597, and load values of items in the third factor ranged from 0.794 to 0.443. The total reliability coefficient of the scale was expressed as 0.87, where a reliability coefficient between 0.7 and 0.9 indicates a good level of reliability (George & Mallery, 2003).

Writing Motivation Scale

The WMS developed by Öztürk (2013) consists of 22 items related to the writing motivation of fourth-grade students in primary school. As a consequence of factor analysis, the Kaiser-Meyer-Olkin value was determined as .899. According to Sheskin (2020), as it was greater than 70, it was concluded that factor analysis could be done on these data. Secondly, by looking at Bartlett's Sphericity test (χ^2 = 2724,641, p =.000) it was seen that acquired values were suitable for factor analysis because they showed significant difference (Pett et al., 2003). In factor analysis, the varimax return axis was carried out as being 1 of Eigenvalue of 22 items by giving priority to principal components analysis. As a consequence of validity work, it was found that the scale has a five factor structure. The variance explanation rates of this scale are 29.42% for a positive attitude factor against writing, 18.52% for the purpose factor owned, 6.07% for the failure loading factor in the article, 5.37% for the writing sharing factor and 4.89 for the writing effort factor. When the whole scale, including 22 items in total, is considered, it shows a five factor structure. Load value in factors of 22 items in the scale varied between 0.42-0.78. Five factors in scale explain 54.2% percent of total variance. These values show that this scale explains the writing motivation of fourth-grade students very well. The 5 factor structure consisting of 22 items acquired by exploratory factor analysis was tested via exploratory factor analysis CFA (Confirmatory Factor Analysis). The coherence index was found as χ^2= 440.32 (*sd* = 198, p = .00), χ^2 / *sd* = 2.22 SRMR = 0.053, RMSEA = 0.056, GFI = 0.91, AGFI = 0.88, CFI = 0.97, NFI =0.94 and NNFI = 0.96. As a result of first level EFA, it was seen that nine items in the first factor maintain a standard solution between .52 and .79. Standard solutions of four items in the second factor differ between .46 and .62. It was found that three items in the third factor change between .48 and .70, three items in the fourth factor change between .36 and .65 and three items in the fifth factor changes between .39 and .83. Standard solution t values were then checked between factors and items. The lack of a red arrow with t values shows that all items are significant at .05 levels. As a result of operated second level CFA, when it was evaluated whether identified five factors explained the implicit variable of writing motivation in a significant way or not, it was understood that all factors explained the implicit variable of writing motivation in a significant way. When the standard solution in the latent variable of factors is checked in the result of second level CFA, it is seen that there is a change between .32 and .92. The importance of factors in latent variable came out. After standard solution t values between factors and items was looked at, the lack of a red arrow related Joreskog and Sorbom (1996) t values shows that all items and factors are significant at a level of .05 factors. It was understood then that t values in the latent variable of factors changed between 2.83-13.93, and was significant at the .01 level due to being greater than 2.76. As a result of the performed analysis, coherence indexes were found as χ^2 = 453.61 (*sd* = 202, p = .0000), χ^2 / *sd* = 2.25, SRMR = 0.054, RMSEA = 0.056, GFI = 0.91, AGFI = 0.88, CFI = 0.97, NFI =0.94 ve NNFI = 0.96. A streak (2007) χ^2/*sd* value of 5 or less, RMSEA value of .08 or less and SRMR value of .10 or less indicate that they are needed for good coherence. Again, IFI, CFI, NFI and NNFI of over .90 indicate a good model. On the other hand, with AGFI .80 or over, GFI .85 or over indicate good coherence. It could be said that all values show good coherence when they are evaluated this way. On the basis of this indication, it could be expressed that the scale provides construct validity. The Cronbach Alpha reliability coefficient determined in the development phase of the scale is 0.81. The internal coefficient of consistence concerning sub-dimension is given below: .79 for "a positive attitude towards writing" sub factor, .80 for the "possessed objective" sub factor, .82 for "loading failure to writing" sub-factor, .81 for the "sharing of writing" sub factor and .82 for the "efforts to writing" sub-factor were found. The range of 22-51.3 points received from WMS is low, 51.4-80.7 points is medium and 80.8-110 scores were determined to be high motivation levels.

Personal Information Form

Through this form, information about school in which they study, gender, age, socio-economic level, frequency of reading books, types of books that they enjoy reading, time allocated for writing in a day, first semester Turkish lesson grade and preferences regarding the study method were obtained. This form was used to define the characteristics of students in the experimental and control groups.

Determination of Experimental and Control Groups

In an interview with the Zonguldak Provincial Directorate of National Education, information was provided about the implementation process.

Application was planned in Turkish lessons for 15 weeks, 3 hours per week, with three fourth- grade branches in Merkez and Kozlu districts. The Provincial Directorate of National Education stated that due to the long implementation period, it is necessary to first meet with the principals in the Merkez and Kozlu districts and the fourth-grade teachers working in these schools. As such, a preliminary interview was held with six primary school principals who have more than one fourth-grade in the central district, and after the interview, necessary permissions were obtained from three primary schools. Fourth-grade teachers from the schools where permission was obtained were informed of the study, and some teachers stated that they did not want to be involved. In the Kozlu district, five primary school principals with more than one fourth-grade branch were interviewed and necessary permission was obtained from two primary schools. Required documents for the research were submitted to the Provincial Directorate of National Education and then the research permission was obtained. Pre-tests were conducted in fifteen fourth-grade branches within the scope of permission. In the first hour, students were asked to write a narrative text on the subject of "sharing", and in the second lesson, a Personal Information Form, WOSRS and WMS were instituted. During completion of the scales, each item was read and explained by researchers and students were then asked to mark the items in a way that suited them best. The normality distribution of the scores of the fifteen branches from the scale of written expression, self-regulation and motivation to write was examined. Branches with normal distribution were determined according to the results of the Shapiro-Wilk test. Next, groups of three were selected from these branches and a one-way analysis of variance (ANOVA) was performed for the average scores received from each scale. According to the results, three branches where there was no significant difference between the average scores of the branches from the scales were then identified for research. In determining groups for the study, criteria such as the number of students in each branch, the number of male and female students, the frequency of reading books, the type of book preferred, the time allocated to writing and the Turkish course success grade were also taken into account. Collaborative learning techniques were then assigned to two of the three branches determined as a result of the analysis.

When Table 3 is examined, the 6+1 AWES pre-test mean score of the groups in the first experimental group is 21.00, the second experimental group 21.80, and the control group 20.44. WOSRS pre-test scores mean are: first experimental group 48.48, second experimental group 47.77 and control group 49.24. WMS pre-test means are: first experimental group 83.24, second experimental group 84.23 and control group 85.76. When the mean scores and standard deviation values of the experimental and control groups from the scales are examined, it is seen that these scores are close to each other. In Table 4, the results of a one-way analysis of variance regarding the pre-test mean scores of the experimental and control groups from the scales are given.

When Table 4 is examined, the 6+1 AWES [$F_{(2,85)}$ = .440, p >.05], WOSRS [$F_{(2,85)}$ = .755, p> .05] and the WMS [$F_{(2,85)}$ = .240, p >.05] pre-test mean scores were not found to be significantly different. Table 5 shows the percentage

Table 3

Descriptive Analysis Results of the Pre-Test Scores of the Experimental and Control Groups from the Scales

		6+1 AWES		WOSRS		WMS	
Group	*N*	*M*	*sd*	*M*	*sd*	*M*	*sd*
1st Experimental	29	21.00	4.81	48.48	4.84	83.24	14.87
2nd Experimental	30	21.80	5.74	47.77	4.59	84.23	12.27
Control	29	20.44	6.07	49.24	4.38	85.76	14.60

Table 4

One-Way Analysis of Variance Results of the Pre-Test Mean Scores of the Experimental and Control Groups from the Scales

Scales	Source of Variance	Total of Squares	*sd*	Average of Squares	*F*	*p*	Significant Difference
6+1 AWES	Between Groups	27.300	2	13.650	.440	.645	
	Within Groups	2635.972	85	31.011			
	Total	2663.273	87				
WOSRS	Between Groups	32.070	2	16.035	.755	.473	
	Within Groups	1805.918	85	21.246			
	Total	1837.989	87				
WMS	Between Groups	93.285	2	46.643	.240	.787	
	Within Groups	16521.987	85	194.376			
	Total	16615.273	87				

*p<.05

and frequency distributions of the experimental and control groups regarding the variables.

As seen in the table, 55.172% of the first experimental group students read one book a week and 13% read one book a month, and 76.666% of the second experimental group students read one book a week. It was seen that 55.172% of the control group students read one book a week and 27.586% read one book a month. It was determined that the percentage distributions of the first experimental and control group reading frequency rates were similar. 35.714% of the first experimental group students read fairy tales, 19.048% read comics and 19.048% read other types. 29.730% of the second experimental group students read stories, 29.730% read fairy tales and 16. 216% read comics. Among the control group, 23.684% stated that they liked reading stories, 36.842% fairy tales and 23.684% comics. It has been determined that students in the experimental and control groups like to read genres in which event-based narrations are made. 48.276% of the first experimental group students spent thirty minutes reading and 20.690% spent two hours. 56.666% of the second experimental group students spent thirty minutes reading, 20.000% spent one hour and 20.000% spent two hours. 72.414% of the control group allocated thirty minutes for writing and 24.138% one hour. When the table is examined, it is seen that approximately 50% of the students in the first experimental group and more than 50% of the students in the second experimental and control groups spend thirty minutes writing per day. It can be said that thirty minutes is not enough for proper development of students' writing skills. 31.034% of the first experimental group students preferred studying individually while 65.517% preferred studying as a group. 13.333% of the second experimental group students preferred self-study and 83.333% preferred group work. 17.241% of the control group students stated that they preferred individual work and 79.310% preferred group work. It was seen that students in the experimental and control groups preferred group work.

Application Process

The application process in the experimental groups was carried out by researchers in the second semester of the 2017-2018 academic year. The control group students, on the other hand, did their writing activities according to the Turkish Lesson Teaching Program (MEB, 2018) with their own classroom teacher. The application process in the experimental and control groups is listed in detail.

The application process in the first experimental group is as follows:

Table 5

Frequency and Percentage Distributions of the Experimental and Control Groups for the Variables

Question	Variables	1st Experimental Group		2nd Experimental Group		Control Group	
		f	%	*f*	%	*f*	%
Frequency of Reading	One Book a Week	16	55.172	23	76.666	16	55.172
	Three Books a Week	2	6.897	2	6.666	-	-
	One Book a Month	4	13.793	1	3.333	8	27.586
	Two Books a Month	3	10.345	1	3.333	4	13.793
	A Book in Two Months	-	-	1	3.333	-	-
	A Book in Four Months	4	13.793	2	6.666	1	3.448
	Total	29	100	30	100	29	100
Types of Books That You Like to Read	Story	5	11.905	11	29.730	9	23.684
	Tale	15	35.714	11	29.730	14	36.842
	Poem	2	4.762	1	2.703	-	-
	Novel	4	9.524	4	10.811	5	13.158
	Comic Book	8	19.048	6	16.216	9	23.684
	Other (action, science etc.)	8	19.048	4	10.811	1	2.632
	Total	42	100	37	100	38	100
Time for Writing in a Day	Thirty minutes	14	48.276	17	56.666	21	72.414
	One Hour	5	17.241	6	20.000	7	24.138
	Two Hours	6	20.690	6	20.000	1	3.448
	Three Hours	-	-	1	3.333	-	-
	Four Hours	2	6.897	-	-	-	-
	Five Hours and More	2	6.897	-	-	-	-
	Total	29	100	30	100	29	100
Preference Regarding Working Method	Individual Study	9	31.034	4	13.333	5	17.241
	Team Work	19	65.517	25	83.333	23	79.310
	Both of them	1	3.448	1	3.333	1	3.448
	Total	29	100	30	100	29	100

- It was determined randomly that the Co-Op Co-Op technique would be applied to the first experimental group.
- A total of ten groups of three were formed from the first experimental group, as small groups provide an advantage in terms of increasing interaction between students and adherence to the roles of students in the group. Due to the class size of 29, one group consists of two people.
- Groups were formed in a heterogeneous structure, taking into account the success of students in Turkish lessons, together with the classroom teacher.
- Practice days and hours are agreed on with the classroom teacher.
- Writing topics were selected according to themes that the classroom teacher will cover in the 4th grade Turkish textbook. When the study began, it was continued from the current topic the class was covering. Activities and writing topics were created from the texts entitled "My Beautiful Country Turkey", "Our Values" and "Fine Arts".
- The first experimental group was informed about the Co-Op Co-Op technique and a three-hour pre-application was undertaken so students could better understand the technique.
- Before the written expression study, activities aimed at improving related skills were carried out with the groups. Word activities, common mistakes in word writing, parts of the story, continuation of the given sentence in a significant way, punctuation and writing properties for names were all reviewed with groups.
- Before writing a narrative text, students were informed and a task sheet was prepared before each writing activity. Student progress was ensured to be in accordance with the stages of the technique in the process.
- In each written expression activity, task sheets were created for ten different writing exercises related to the text in the Turkish textbook. These task sheets were randomly distributed to the groups during the application.
- Depending on the subject and activities in the written expression study, the time allocated for each writing activity varied between three and six hours.
- Name badges, including group number and role in the group, were prepared for all students in the groups to be worn throughout the study. On the back of the card was a description of the role. Thus, it was attempted to ensure that students understood their responsibilities in the group.
- In the first five written expression exercises, a task was defined on the badges of the students to adapt slowly to the group process and the group. During this period, students were asked to wear their badges in a different way for each written expression exercise. After the sixth exercise, the number of tasks on the badges was increased and the students were asked to change badges.
- In each written expression exercise, a task sheet including the tasks expected from the groups and instructions on what to do in the process, and a twenty-item evaluation form showing how the written expression exercises were scored, were prepared and distributed to the groups.
- In the task sheet, each part of the written expression work was defined as a different task, and an individual writing paper was prepared for each part. Each group member made the distribution of these sections in the task sheet himself. Only the groups were asked to perform these tasks in each written expression exercise, alternating within the group.
- Groups described their characters, place, time, plot, etc. on the given topics. They discussed the elements in the group and decided on their. They then were asked to write the elements of the story on individual writing papers in harmony with each other.
- The fourth task from the task sheet was to turn each part written on individual writing papers into a story to form a whole. Group members must come together again, evaluate individual writing papers and then write their stories on the presentation paper.
- After the written expression activities, each group presented the text they wrote to the class. Texts were evaluated by the students in the class and the researcher.
- Next, "Let's Evaluate Ourselves" and "Let's Evaluate Our Group" forms were distributed to the students in order to evaluate themselves and the other members of their group. Through these forms, students were asked to be aware of the process, to know the roles expected from them in the group and to describe what they could and could not do.
- Texts written by the groups were evaluated each week with a 20-item evaluation form prepared on the basis of the items in the 6+1 AWES. At the end of the evaluation, +3 points were added to groups that scored 90 and above, and three star symbols were attached to the paper.
- After the evaluation process was completed, the scores of the groups and the situations that require more attention were explained. Afterwards, the groups were given a written expression exercise and an evaluation form showing the scores they got from each item and the groups were asked to examine them.
- A total of 48 hours of practice was carried out with the groups, apart from the pre-application. A total of twelve writing activities were performed with the first experimental group by the end of the study.
- Upon completion of the study, the average of twelve writing activities was taken and a ranking was made from the group with the highest score to the lowest score. Group averages were shared with the first experimental group. The students were thanked for their participation in the study and glittery colored pencils were handed out. In addition, the group that finished the application in the first place was rewarded with a small gift.
- Post-tests were carried out after the application.

The research process for the second experimental group is as follows:

- It was determined by random assignment that the STAD technique would be applied to the second experimental group.
- A total of ten groups of three were formed from the students of the second experimental group.
- Groups were formed in a heterogeneous structure together with the classroom teacher.
- Practice days and hours were agreed on with the classroom teacher.
- Writing topics were then selected from the themes of "My Beautiful Country Turkey", "Our Values" and "Fine Arts" in the 4th grade Turkish textbook, respectively.
- The second experimental group was informed about the STAD technique and a three-hour pre-application was carried out.
- Depending on the subject and activities in the written expression study, the time allocated for each writing activity varied between three and six hours.
- Before each written expression exercise, students were informed about the chosen topic for writing skills and short activities were held with the groups. Studies such as watching videos, interpreting the visual, class discussion about the subject, and let's talk (word activity) were carried out.
- Name badges were prepared for all students in the groups to wear during the study period. Group numbers and the name of the role in the group were given on the front of the cards and the definition of the role on the back. An effort was made to ensure that students understood and adopted their roles in the group.
- In the first five written expression exercises, a task was defined on the badges of the students to acclimate them to the group process and the group. During this period, students were asked to wear their name badges in a different way for each written expression exercise. After the sixth written expression exercise, the number of tasks on the badges was increased and the students were asked to change their badges.
- A form was prepared and distributed for the groups on the points to be considered, story writing activities and the use of time.
- The researcher gave worksheets to all group members after each written expression study with the groups. In this worksheet, activities such as common mistakes in spelling, parts of the story, continuation of the given sentence in a significant way, punctuation and writing properties for names were included.
- After group members completed the activity sheets individually, they got together with group members and evaluated each other's activities.
- Incorrect activities from the worksheet were corrected and incomplete activities were completed. The students helped each other on what they should pay attention to in their writing activities.
- After these studies, the subject of writing was explained to the groups and the students were informed about the points they should pay attention to during the writing process.
- Before each story writing exercise, the evaluation form used in the scoring of the written expression studies was distributed to the groups and the groups were asked to examine them.
- A "writing plan paper" for planning and worksheets for writing their stories were distributed to the students.
- After the writing process, "Let's Evaluate Ourselves" and "Let's Evaluate Our Group" forms were used for students to evaluate themselves and other members of the group. Through these forms, students were asked to be aware of the process, to know the roles expected from them in the group and to describe what they could and could not do.
- In the experimental group, where STAD were applied, each student wrote the written expression work himself. Three written expression exercises in each group were scored according to the evaluation form, and the group scores were obtained by taking the average of these scores.
- As a result of the evaluation of the written expression work, when all three students in the group scored 80 and above, +3 points were added to each student and a star was attached to their paper.
- Students who scored 90 or more in the written expression study were asked to read their story to their friends and the students in the class were asked to share their thoughts about the story.
- At the end of the evaluation, group averages were shared with the class. Afterwards, a written expression exercise and an evaluation form showing scores from each item were distributed to the groups. The groups were then asked to examine these forms and evaluate them among themselves.
- A total of 48 hours of study were carried out with the second experimental group, not including the pre-application. A total of twelve writing activities were carried out with the second experimental group at the end of the application.
- The average of twelve writing activities was taken. In the application, a ranking was made from the group with the highest score to the lowest score. Group averages were shared with the second experimental group. The students were thanked for their participation in the study and glittery colored pencils were distributed. In addition, the group that finished the application in first place was rewarded with a small gift.
- Post-tests were carried out after the application.

The application process in the control group is as follows:

- Writing studies were carried out according to the activities suggested in the Turkish textbook.
- Generally, individual writing studies were carried out.
- Writing topics were then selected from the themes of "My Beautiful Country Turkey", "Our Values" and "Fine Arts" in the 4th grade Turkish textbook, respectively.
- About two hours per week are allocated for the writing process.
- At the end of the process, post-tests were carried out.

Data Analysis

The quantitative data were transferred to the computer environment with the help of the SPSS. In the analysis, the Shapiro-Wilk test was used to determine whether the pre-test post-test total scores of the groups showed normal distribution. A significance value greater than .05 in this test indicates that the group is normally distributed (Mcleod, 2019). In Table 6, Shapiro-Wilk Test results regarding the pre-test post-test total scores obtained by the experimental and control groups from the scales are given.

It was determined that the pre-test post-test total scores of the experimental and control groups from the scales showed a normal distribution (McLeod, 2019). Since the total scores of the groups from the scales showed a normal distribution, a one-factor analysis of variance (ANOVA) was used in the comparison between groups. The Bonferroni test, which is one of the Post Hoc tests, was used as variances were homogeneously distributed in the determination of where there was a significant difference between groups (Kayri, 2009).

Results

The descriptive statistic results regarding the pre-test post-test total score averages of the 6+1 AWES, WOSRS and the WMS of the experimental and control groups regarding the sub-problems of the research are given.

In Table 7, the descriptive analysis results of the pretest post-test mean scores of the experimental and control groups from the scales are seen.

In Table 7, 6+1 AWES pre-test mean scores of the groups were 21.000 for the first experimental group, 21.800 for the second experimental group and 20.448 for the control group. The post-test mean scores of the groups were 22.329 for the first experimental group, 23.267 for the second experimental group and 20.517 for the control group. When the written expression pre-test and post-test mean scores of the experimental and control groups were evaluated, it was seen that the average of the written expression score of the second experimental group increased by two points. There was no increase in the written expression mean score of the control group. From the table, the WOSRS pre-test mean scores of groups were 48.482 for the first experimental group, 47.767 for the second experimental group and 49.241 for the control group. It was seen that the pre-test mean scores of the experimental and control groups are close to each other. The post-test mean scores of the groups were 49.103 for the first experimental group, 48.100 for the second experimental group and 44.035 for the control group. No increase was determined in the self-regulation post-test mean scores of the experimental groups for writing. However, there was a five-point decrease in the post-test mean score of the control group. From the Table, the WMS pre-test mean scores of groups were 83.241 for the first experimental group, 84.233 for the second experimental group and 85.759 for the control group. It was seen that the pre-test mean scores of the experimental and control groups are close to each other. The post-test mean score of the groups was 80.724 for the first experimental group, for the second experimental group 82.733 and 74.586 for the control group. When the post-test mean scores of the experimental groups were evaluated, a decrease of two points was determined while in the control group, a decrease of nine points was found. The results of the one-way analysis of variance regarding pre-test mean scores of the experimental and control groups from the scales are presented in Table 4. The results of the one-way analysis of variance regarding

Table 6

Shapiro-Wilk Test Results Regarding the Pre-Test Post-Test Total Scores of the Experimental and Control Groups from the Scales

Group	Test	N	6+1 AWES	WOSRS	WMS
			Sig.	Sig.	Sig.
1st Experimental	Pre-test	29	.070	.270	.201
	Post-test		.430	.293	.288
2nd Experimental	Pre-test	30	.591	.191	.246
	Post-test		.308	.414	.393
Control	Pre-test	29	.133	.108	.276
	Post-test		.545	.280	.320

the post-test mean scores of the experimental and control groups from the scales are given in Table 8.

From Table 8, no significant difference was found between the experimental and control groups post-test mean scores for written expression [$F_{(2, 85)}$ = 1.554, p > .05] and writing motivation [$F_{(2, 85)}$ = 2.728, p > .05]. A significant difference was found between the self-regulation skills post-test mean scores of the experimental and control groups for writing, $F_{(2, 85)}$ = 8.874, p < .05. The "Bonferroni test" was made from Post Hoc Tests to determine the difference between the groups' self-regulation score averages and the data are given in Table 9.

When Table 9 is examined, the WOSRS post-test scores of the first experimental and control groups were found to be significant in favor of the experimental group (.001 < .05). When the table is analyzed, the difference between the post-test score of the WOSRS from the second experiment group, in which the STAD technique was applied and the post-test score of the control group are applied is significant in favor of the second experiment group (.006 < .05). This situation can be interpreted as showing that the two-cooperative learning technique improves self-regulation skill positively. In the control group, a decrease of 11.19 points was determined in the total score type.

Conclusion, Discussion, and Suggestions

In this study, the effect of collaborative learning techniques on students written expression, self-regulation and writing motivation was investigated. When the findings obtained from the sub-problem of the research were examined, no significant difference was found between the written expression post-test mean scores of the experimental and control groups. The post-test mean score of the second experimental group, in which the STAD technique was applied, increased by two points, but this increase was not significant. When the results of the research in the literature, in which cooperative learning techniques were applied in the development of written expression skills, were examined, it was determined that there was either a significant difference in the post-test mean scores of the experimental and control groups at different grade levels, or not. Michael (2002) observed the collaborative writing processes of fifth-grade students throughout one year. It was determined that the written expression skills of the students in the collaborative texts improved. In a study

Table 7

Descriptive Analysis Results of the Pre-Test Post-Test Mean Scores of the Experimental and Control Groups from the Scales

			Pre-Test		Post-Test	
Scales	Group	*N*	*M*	*sd*	*M*	*sd*
6+1 AWES	1st Experimental	29	21.000	4.811	22.329	6.282
	2nd Experimental	30	21.800	5.744	23.267	6.097
	Control	29	20.448	6.069	20.517	5.920
WOSRS	1st Experimental	29	48.482	4.845	49.103	5.473
	2nd Experimental	30	47.767	4.591	48.100	4.413
	Control	29	49.241	4.381	44.035	4.641
WMS	1st Experimental	29	83.241	14.865	80.724	18.024
	2nd Experimental	30	84.233	12.272	82.733	12.060
	Control	29	85.759	14.599	74.586	10.592

Table 8

One-Way Analysis of Variance Results of the Post-Test Mean Scores of the Experimental and Control Groups from the Scales

Scale	Source of Variance	Total of Squares	*sd*	Average of Squares	*F*	*p*	Significant Difference
6+1 AWES	Between Groups	115.655	2	57.828	1.554	.217	
	Within Groups	3163.936	85	37.223			
	Total	3279.591	87				
WOSRS	Between Groups	418.918	2	209.459	8.874	.001	1st Experimental-Control, 2nd Experimental-Control
	Within Groups	2006.355	85	23.604			
	Total	2425.273	87				
WMS	Between Groups	1056.169	2	528.085	2.728	0.71	
	Within Groups	16454.694	85	193.585			
	Total	17510.864	87				

* p < .05

Table 9

Bonferroni Test Results of the Experimental and Control Groups for Writing Self-Regulation Scale Post-Test Mean Scores

	Group	Difference Between Arithmetic Mean	Standard Error	*p*
1st Experimental	2nd Experimental	1.00	1.27	1.000
	Control	5.07*	1.28	.001
2nd Experimental	1st Experimental	-1.00	1.27	1.000
	Control	4.07*	1.27	.006
Control	1st Experimental	-5.07*	1.28	.001
	2nd Experimental	-4.07*	1.27	.006

* p<.05

in which Rapp (1991) used the combined cooperative reading and composition technique, a difference was found in favor of the experimental groups in the development of the vocabulary of the fourth-grade students in primary school. In their study, Ghaith and Yaghi (1998) used STAD from cooperative learning techniques in teaching the rules of English as a second language to fourth, fifth and sixth-grade students. As a result of the research, no significant difference was found between the language achievements of the experimental and control groups. This result is in line with the research findings.

When the research findings were examined, a significant difference was found between the post-test mean score of the WOSRS of the experimental groups and the post-test mean score of the control group. It is seen that both the Co-Op Co-Op and STAD technique improve students' self-regulation skills for writing. When the Personal Information Form used in the research is examined, it is seen that 72.414% of the control group students allots thirty minutes in a day for writing. This rate is lower in the experimental groups (48.276% and 56.666%). Experimental groups participated in activities aimed at improving writing skills. In addition, students were informed about strategies for self-regulation in the writing process, these strategies were included in one step of the cooperative learning techniques and an environment was prepared for them to apply these strategies. When the national literature was examined, no studies were found in which these techniques were used in the development of self-regulation skills of primary school fourth-grade students in Turkish lessons. However, there are studies in which different collaborative learning techniques were applied at different grade levels in the development of self-regulation skills. Dönmez and Gündoğdu (2018) examined the use of the split-joining technique in seventh-grade Turkish lessons on the self-regulation skills of the students. As a result of the research, it was determined that there was a significant difference between the self-regulation skills of the experimental and control groups in favor of the experimental group. Festas et al. (2015) found that the students in the experimental group produced longer and more qualified work in which eighth-grade students who had received writing training with the self-regulation-based strategy development model provided collaborative writing. Güvenç (2010) stated that supporting collaborative learning techniques in the classroom with lesson diaries positively affects self-regulated learning. Uygun (2012) stated that students in the experimental group who received training on self-regulation skills wrote more qualified narrative and informative texts compared to students in the control group. In the study, there is a statistically significant difference in the experimental group students' attitudes towards writing and self-regulation skills compared to the control group. When the results of these studies are examined, it is seen that they are similar to our research findings. According to these results, it can be said that cooperative learning techniques improve students' self-regulation skills.

When the WMS post-test mean scores of the experimental and control groups were examined, no significant difference was found in favor of the experimental group. In available literature, research findings examining the effect of cooperative learning techniques on the writing motivation of primary school students are limited. In his research, Canıtezer (2014) examined the relationship between the writing motivation of eighth-grade students and their level of written expression skills and found a positive correlation between the writing skill and the dimensions of "confidence, interest, imagination, effort". Also, a negative correlation with the reluctance dimension was noted. When students' reluctance towards writing increases, writing skills decrease. It was stated that while the dimensions of trust, interest, imagination and effort increased, writing skills also increased. Tanrıverdi (2019) determined that teaching via the STAD technique, which is one of the cooperative learning method techniques in Turkish lessons, did not show a significant increase in favor of the experimental group on the attitudes of the second year primary school students towards the Turkish lesson. In the study, a decrease of 11.19 points was determined in the writing motivation scale post-test mean score of the control group. This decrease may be due to a failure to allocate sufficient time to pre-, post-writing and post-writing activities, not diversifying these activities, giving too little information to students about strategies in writing texts, different practices for

writing texts and too little group work in writing. In the research, activities were prepared for experimental groups in order to support the pre-writing process related to the topics selected from the texts in the Turkish textbook, in which both individual and group work was performed. For example, the game "Tell me" was played for the development of vocabulary and "Working papers" for the writing process were prepared. The use of a smart board was encouraged to support students' thoughts on writing during the writing process, it was encouraged that groups help each other and immediate feedback was given to the groups during the writing process. Such practices in the classroom environment will enable students to feel more ready in the writing process, to be confident about writing and to make more of an effort. There are various explanations in the literature about the effect of writing activities in schools on motivation. Barry (1997) stated that people cannot write without thinking, each person's way of thinking is different and it is right to prepare different environments so that students can generate ideas and be motivated to write. Teachers creating writing environments in the classroom where students feel motivated affects the writing desires of the students. When teachers fail to use activities and strategies that support the writing processes, the student's motivation to write is reduced. Factors such as the limited time allocated to writing for the development of writing, the writing activity only aimed at understanding the text in the textbook, and the absence of new writing topics based on the text also affect the motivation to write. Asser and Poom-Valickis (2002) found in the article "Learning to Write" that students' writing motivation was low because technical information about writing was always given at school and the compositions that were asked to be written were far from original. He drew attention to the studies carried out before, during and after writing and stated that the motivation of the students would increase when these studies were performed. He also stated that with group work, a constructive and supportive environment can be provided during writing. With in-class writing groups, students can find new ideas and useful thoughts that support the topic. Students correct their work by giving feedback to each other during the writing process. In this way, they make more original and higher quality writing works. Albayrak (2006) also stated that collaborative learning techniques stated that by motivating the students to participate in the lesson, they increased their interest and the lesson became fun with the applied techniques. Since some of the cooperative learning techniques allow students to move in the classroom, a lesson is provided in harmony with the active world of the students and students are not limited to their teammates but can also share with all of their classmates.

In the study, the effects of Co-Op Co-Op and STAD techniques on students' narrative writing skills were examined. The effects of these techniques on the ability to write informative texts and poems can be investigated in future research.

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