



## Developing Story Writing Skills with Fourth Grade Students' Mind Mapping Method \*

Hümevra Uysal <sup>1</sup>, Sabri Sidekli <sup>2</sup>

### Abstract

The aim of this study is to develop story-writing skills by using the mind map method of fourth grade primary school students. In this respect, the study was designed as a mixed-method research in which quantitative and qualitative research is used together. Quantitative dimension of the study pre-test the post-test was designed as qualitative dimension action study with semi-experimental model. The sample of the study is composed of three classes at the fourth-grade level of two equal state schools in Menteşe district of Muğla province during the fall semester of 2016-2017 academic year. One of the three groups was chosen as the experimental group and two were selected as the control group. Studies have been made to experiment group; writing story with mind map method, to first control group; story-writing-work with homework, to second control group; the study was carried out in line with the Turkish Course curriculum. In the workshop carried out with experimental group, students were given a mind map study during 1 course, story maps and story writing studies during 1 course. The workshop lasted 10 weeks. In the workshop made with the first control group, students were asked to write stories by using the given subjects. No intervention was taken into the second control group. As a result of the study, it was concluded that the mind map method applied to the experiment group was more effective than other workshops.

### Keywords

Writing  
Story writing  
Mind map  
Story writing-work  
Mixed method

### Article Info

Received: 06.26.2019  
Accepted: 07.30.2020  
Online Published: 09.09.2020

DOI: 10.15390/EB.2020.8848

### Introduction

Individuals learn different things throughout their lives. Individuals to continue their learning; they express themselves, update their information and communicate. It is the language that is a living organism that enables them to do these things. Individuals continue their learning throughout their lives by using different areas of language. Areas where language is used (Ministry of National Education [MoNE], 2019); listening, speaking, reading and writing. Regarding these areas of language, the MoNE (1973) "Turkish Education Curriculum prepared in line with the General Objectives and Basic Principles of Turkish National Education, which is expressed in the Basic Law of National Education, numbered 1739; Emphasis was placed on the development of listening / watching, speaking, reading

\* This article is derived from Hümevra Uysal's Master's thesis entitled "Improving 4th grade students' story-writing skills with mind map technique", conducted under the supervision of Sabri Sidekli.

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and writing skills". MoNE (2019) stated that the development of language skills and language competencies of students as a prerequisite for learning, gaining personal, social and professional skills in all other areas.

Writing in the learning areas of the language is the most complex and difficult to develop skill for students. Improving writing skills will help MoNE (2019) to improve in all other areas. Writing, the process of expressing emotions, thoughts, desires and events in our minds in accordance with certain rules with symbols and putting the information structured in the mind into writing (Güneş, 2013); It is defined to produce the symbols and signs necessary to express our feelings and thoughts in accordance with the rules and legibly (Akyol, 2000). The concept of writing creates information that evokes cognitive processes and structures that work below the level of conscious thought (Galbraith & Baaijen, 2018), develops students' cognitive learning strategies (Bangert-Drowns, Hurley, & Wilkoinson, 2004), combining information in long-term memory Silva and Limongi (2019) is expressed as a troublesome process (Galbraith & Baaijen, 2018) that facilitates learning. Graham (2018) considered writing as a product of people, community goals, social practices, determined actions, tools, and people's common history.

It is the skill writing skill used to translate ideas in a language fluently in written text format and transmit them to the other party (Goldstein & Naglieri, 2011). The development of writing skill is related to repeated practices, application controls and writing about a subject that attracts the student's attention (Johnstone, Ashbaugh, & Warfield, 2002). As students' writing skills improve; It paves the way for being an individual who can meet their daily needs, continue their education, and communicate effectively with people, thanks to its advanced understanding and expression skills (Arıcı & Urgan, 2013). In the MoNE (2015) Turkish curriculum, "with the development of writing skills; It is aimed that students express their feelings, thoughts, dreams, designs and impressions, their opinions and theses on a subject in accordance with the rules of written expression, using the possibilities of language, turn writing into a habit in self-expression and develop those skills of those who have the ability to write". In addition to the applications mentioned by Johnstone et al. (2002), the ages of the students who will improve their writing skills are also important. Writing skill is a skill that should be acquired at a child's age (Kellogg, 2008). Writing is a skill, not an innate skill. It is possible to develop it because it is a skill.

In order to improve writing skills, activities that will attract the attention of students and activities are done before, during or after writing. Before writing, the subject is determined, students are asked to reveal their knowledge, mental planning is made, draft of the text is created during writing, text editing is made, and after the writing, the texts of the students are evaluated (Akyol, 2011; Güneş, 2013). In the process of gaining writing skills, teachers are taught students the basic writing rules such as planning, drafting and reviewing text, handwriting and grammar skills (Cutler & Graham, 2008).

Writing is a complex and lengthy process, which is fictionalized, arranged in the brain and converted into a written text in accordance with the rules of language. Different methods and techniques are used for students to learn this complex and long process effectively and write their writings appropriately. The vast majority of these methods and techniques are used in the pre-writing phase. Because it is necessary to reveal students' prior knowledge and students are motivated against writing. The methods and techniques to be applied to the students also enable the permanence of the learning and the quality of the writings. In the studies of Doğan and Müldür (2014), Susar Kırmızı and Beydemir (2012) and Yıldız (2015), it was revealed that the activities carried out prior to writing had a positive effect on students' writing skills. One of the methods used before writing is the mind map.

The mind map was developed by Tony Buzan in the 1960s. According to mind map Buzan and Buzan (2015), it is a visual, graphic holistic thinking tool suitable for memory, creativity, learning and all kinds of brain functions. Brinkmann (2003) defined the mind map as a powerful technique that enables the expression of thoughts in the mind and reveals the potential of the brain. Topics and themes are regularly presented (Tucker, Armstrong, & Massad, 2010); are regular, visual graphical structures in which students can explain, criticize and rearrange their thinking (Montgomery, 2005, as cited in Kan,

2012). Although mind map is generally preferred to be made individually, it is also possible to make mind map with the group. Group mind map applications eliminate students' brainstorming technique focusing on one place (Buzan & Buzan, 2015) and offer the chance to visually see the emerging ideas.

While mind mapping, there are certain rules chain and it is necessary to pay attention to these rules. While mind mapping, an A4 paper should be taken and kept parallel to the plane. Color pencils must be used. The subject can be written in the middle of the page or an image of the subject can be drawn. Connotations about the subject should be written on the branches and a relevant visual should be drawn. The branches should be drawn from the center to the outside, from the thick to the thin. In this way, a mind map is created (Buzan & Buzan, 2015).

Mind maps have many uses. Note-taking tool, learning tool, teaching tool, thought editor, information editor, revealing existing information tool etc. widely used in the way. There are studies using the mind map as a teaching tool and visual learning tool Goodnough and Woods (2002). It is also a method used in the mind map writing process. It is generally used at the pre-writing stage due to its feature of revealing information. Şahin (2016) includes scribbles, images, symbols, words, drafts, etc. that occur in the pre-writing process. He stated that the operations can be done more easily with the mind map and that it helps to eliminate confusion. Bulut (2012) advocated that the student will see the text better in the pre-writing process, determine the subject of the text, determine the subtitles, the details of the titles, and use it before writing.

Using the story map next to the mind map will allow students to have better stories. The mind map reveals their prior knowledge by providing students with unlimited thinking. The story map, on the other hand, presents the unlimited ideas of the students under the elements of the story and enables them to be molded and gathered under categories to create their stories. In this way, students' unlimited ideas are gathered under certain patterns. In this way, scattered ideas are collected together. Akyol (2011) and Sidekli (2013) emphasized the importance of using the story map before planning to write students, planning the students' stories, distinguishing important and insignificant information, drawing attention to important details, understanding the elements of the story well and visualizing the story to be written.

Writing learning area is the latest and hardest developed learning area. For this reason, the pre-writing, writing and post-writing stages should be well organized so that the students are good writers and receive good writing education. While organizing the writing processes, utilizing different methods and techniques will make the process more efficient. It should also be ensured that students enjoy this while writing. The positive attitudes of students in the writing process will also affect the quality of their writing. The activities to be held in the writing processes of the students will enable the students to write more creative and more original stories. The methods and techniques used before writing should ensure that the information required for the story is exposed. Using the mind map method in the pre-writing process will reveal students' prior knowledge through visuals and connotations, enabling them to write creativity and more original stories. Therefore, in this research, mind mapping method was used in the pre-writing stage. The aim of the research is to improve the story writing skills of primary school fourth grade students through the mind mapping method.

For the purpose of the research, answers to the following questions were sought.

1. What is the pre-application writing status of the groups according to the pretest results?
2. Is there a significant difference between the pretest results of the groups participating in the study between groups?
3. What are the post-application writing situations of the groups according to the post-test results?
4. Is there a significant difference between the pretest-posttest results of the groups?
5. Is there any significant difference between the posttest results in the comparison between the groups in the study?
6. What are the opinions of students and teachers regarding the applications?

## Method

Under this heading, information related to the research model, working group, data collection tool, data collection process and data analysis are included.

### *Research Model*

This study was designed by using mixed method in which quantitative and qualitative research methods are used together. The main reason for using mixed methodology is to reveal both quantitative and qualitative aspects of the research and to minimize the limitations of both approaches. Tashakkori and Creswell (2007) has defined the method as the researcher collecting data using the quantitative and qualitative methods and approaches in the same research, analyzing the data, integrating the findings and making forward comments. In this study, a convergent parallel pattern, which is one of the mixed research methods, was used. The reason for using a converging parallel pattern was that the data in the study were collected simultaneously, but when analyzed, separate procedures were performed.

In the quantitative dimension of the study, pre-test post-test semi-experimental research method was used. The qualitative dimension of the research was designed by the action research method. Action research has been preferred in the qualitative dimension of the research since it provides an understanding of a problem and provides solutions to the problem.

### *Study Group*

The study group consists of fourth grade students studying at two state primary schools in the Menteşe district of Muğla province during the fall semester of 2016-2017 academic year. Three teachers from these two state schools have volunteered to implement the study in their classroom. Test, Control 1 and control 2 groups were drawn between the three classes.

The methods, duration and number of students in the research groups are given in Table 1.

**Table 1.** Number of Students in Groups, Methods and Duration of the Groups

<b>Groups</b>	<b>N</b>	<b>The Method</b>	<b>Duration</b>
Experimental Group	26	Mind Map	20 course hr.
Control 1 Group	23	Homework-Writing	10 course hr.
Control 2 Group	27	Turkish Course Schedule	-

### *Data Collection Tool*

Due to the nature of the mixed method, different data collection tools are used in the research. In this study, storytelling rubric and interview forms were used.

The "Story Writing Rubric" developed by the researcher was chosen as both quantitative and qualitative data collection tool. The story writing rubric consists of 3 grades and 13 articles. These items are in the form of title, character, auxiliary character, venue, time, relevance to the subject, plot of events, sections in the text, main idea, word richness, word arts, page layout and originality.

Before the rubric was finalized, a pool of 17 items was formed. Chong (2017) in the teaching of writing, by providing a detailed description of the events of students; where, when, who, how, why, answers to questions such as the answer should be said. After this statement and the literature are scanned, in the article pool; title, characters, place, time, event order, event flow, richness of the word, authenticity, subject compatibility, main idea, spelling rules, punctuation marks, page layout, legible writing, plan, word usage and style are included. During the workshop of the item pool, it was decided that title, characters, place, time, main idea and plan items should be strictly taken into consideration. 3 experts in the field of classroom teaching have been consulted on which of the remaining items to be added. After being interviewed by 3 experts, the event was made up of 11 articles of rubric by adding the article "event plot, word richness, relevance to the subject, page layout and originality".

Rubric has been shown more than 2 different field experts for the last time. These 2 field experts suggested that the adequacy of the vocabulary article should be changed to the number of words and the addition of the vocabulary article. Because the number of words is not a complete number in the literature, three students were chosen for success level and three students were chosen for success level in the experimental group and the sufficiency of vocabulary article was created with the average of words in their stories. In the article of rhetoric, students' analogy, idioms, proverbs and so on. using status was taken into consideration. In addition, these 2 field experts mentioned that it would be useful to add the character item as well as the auxiliary character item. Rubric is made up of 13 substances.

The lowest point a student will get from a rubric is 0 and the highest point is 2. From here, a student will get the lowest "0" points from rubrics and the highest "26" points from rubrics. Rubrics "0" points are given because there is no title, time is not specified, not appropriate to the subject, such as negative statements. In addition, it was decided that it would be wrong to express a qualification such as no title with 1 point and that it would not be right to give points to something else. Therefore, it was decided that rubrics should start with 0 instead of 1 point.

After the qualification grades, scores and items of rubrics were created, 2 language experts working in Turkish education were examined and the necessary corrections were made, and the final version was given.

Structured interviews were conducted at the end of the workshop with the students of the experimental group in qualitative dimensions. In this interview, students said, "What are the aspects of writing stories using the mind map method that you like and don't like?" the question is addressed. In addition, semi-structured interviews were conducted with class teachers of experiment and control groups. What do you think about implementing classroom teachers during these interviews? How can students think about workshops? What level of success can be achieved in the students if Story writing practices are started? at the end of the three questions, the teacher was asked to test and Control 1 class teacher. While the opinions of the teachers of the experiment and control group were given, the teachers were given codes. These codes are 'DÖğrt' to the test group teacher and 'K1Öğrt' to the control group teacher.

#### *Data Collection Process*

Pre- workshop three groups have written a story on "play" to determine the level of writing. When the subject of the game was chosen, the class teachers of all groups were consulted, and three teachers were given the story on "game" when they thought that the students' readiness levels would be higher.

In the experimental group, 2 hours of mind map and 2 hours of story map were described before the workshop. The experiment group was applied for 10 weeks. During the workshop, a mind map of the subject was taken. In the next lesson, they were asked to write their stories by removing the story map of the subject. In order for the students to study the mind map in 10 weeks, they have produced a mind map for two weeks, two weeks in groups of six, two weeks in groups of four, two weeks in groups of two, and two weeks in groups of two, and finally, two weeks in individual. After a pre-interview with the class teacher, the subject will be discussed for 10 weeks and the story topics were chosen by taking into consideration the students' readiness levels.

For example, in the story-writing study on Atatürk: A pre-interview was made with the class teacher one week in advance. A week later, appropriate topics were evaluated for students to write. Because of the week of 10 November, the subject of "Atatürk" was chosen for the students. In the first lesson: Ataturk painting is affixed to the blackboard. Students were told that they would make a mind map about Ataturk. The students went to the blackboard in turn and created their mind maps about Atatürk. In one lesson, the students made mind map carefully and carefully. In the second lesson, students were asked to write a story about Ataturk by examining the mind map they created. Before writing a story, they created a story map about the story they were going to write. Each student has prepared the story map individually. Students started to write their stories after the individual story

maps they prepared. Creating a story map of students also enabled them to write their stories faster and fluently. In the second lesson, they finished their stories and handed them over to the researcher.

The stories and subjects of the experimental and control 1 groups that are written every week are given in the week of the workshop and the dates are given in Table 2.

**Table 2.** Weekly Story-Writing Topics of Experiment and Control Group 1

<b>Subject</b>	<b>Week</b>	<b>Date</b>
Bayram	1 <sup>st</sup> Week	02.11.2016
Atatürk	2 <sup>nd</sup> Week	09.11.2016
Art	3 <sup>rd</sup> Week	16.11.2016
Where we live	4 <sup>th</sup> Week	30.11.2016
Family	5 <sup>th</sup> Week	07.12.2016
Emotions	6 <sup>th</sup> Week	14.12.2016
Domestic Good	7 <sup>th</sup> Week	21.12.2016
Shopping	8 <sup>th</sup> Week	28.12.2016
New year	9 <sup>th</sup> Week	04.01.2017
Snow	10 <sup>th</sup> Week	13.01.2017

In control group 1, they were asked to give the subject of the story and write the story for 10 weeks. No preparation was made prior to writing.

In control group 2, only participated in the pre-test and post-test. Nothing was said to the classroom teacher, and he has progressed in line with the curriculum of the Ministry of National Education.

For the last test, all groups were given a story about "holiday". The most important factor in choosing a holiday subject is the separation of schools for a semester break. Due to the fact that the students feel ready to go on vacation and the readiness levels of the students will be appropriate, the holiday subject of the last story was chosen.

#### ***Data Analysis***

Before the analysis was done, 5 randomly selected 5 randomly selected individuals were assigned to the study. Dunsmuir et al. (2015) evaluated the WAM used for evaluating children's stories and found that stories were scored reliably by different rates. For this reason, it was asked to give a score to 15 students determined by 2 experts. The average of the scores given by the researcher and 2 experts was taken and the intraclass correlation coefficient was calculated. As a result of the analysis, the intraclass correlation coefficient was found to be 77 (95%GA, 56-, 91). This result indicates inter-rater compliance. Scores were found to be unbiased and reliable.

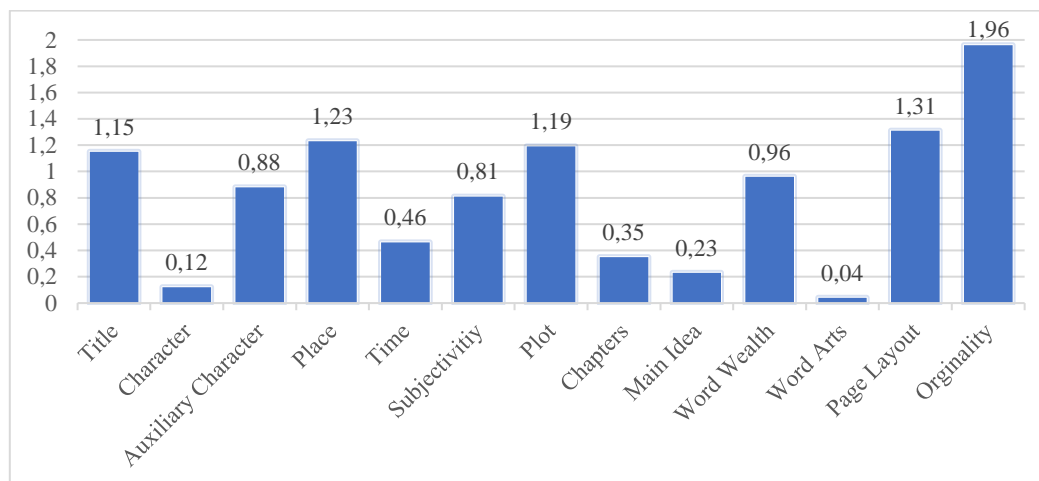
As a result of the analysis, it was determined that the data obtained were normal distribution. Therefore, in the analysis of the quantitative dimension of the research; Dependent Groups T-test (Paired Samples T-test) was performed to examine whether there was a significant difference between pre-test and post-test scores of the groups. One-way analysis of variance (ANOVA) was performed to examine the significant difference between pre-test and post-test, and Dunnett's C complementary statistical technique was used in cases with significant differences.

In the analysis of the qualitative dimension of the research; The mean scores of each group were determined and their levels were determined. Levels; the undeveloped level (0 - 0.70), improved level (0.71 - 1.40), advanced level (1.41 - 2.00). The structured interviews with the experimental group students, the semi-structured interviews with the experimental group teacher and the control group 1 teacher were also interpreted by the content analysis method.

## Results

Findings of the research are presented below, respectively.

In Figure 1, the stories of the students in the experiment Group written in the preliminary test were evaluated according to the materials in rubrics and the pre-test scores obtained from the materials in rubrics were given.



**Figure 1.** Average of Pre-Test Scores Obtained by the Experiment Group in All Items

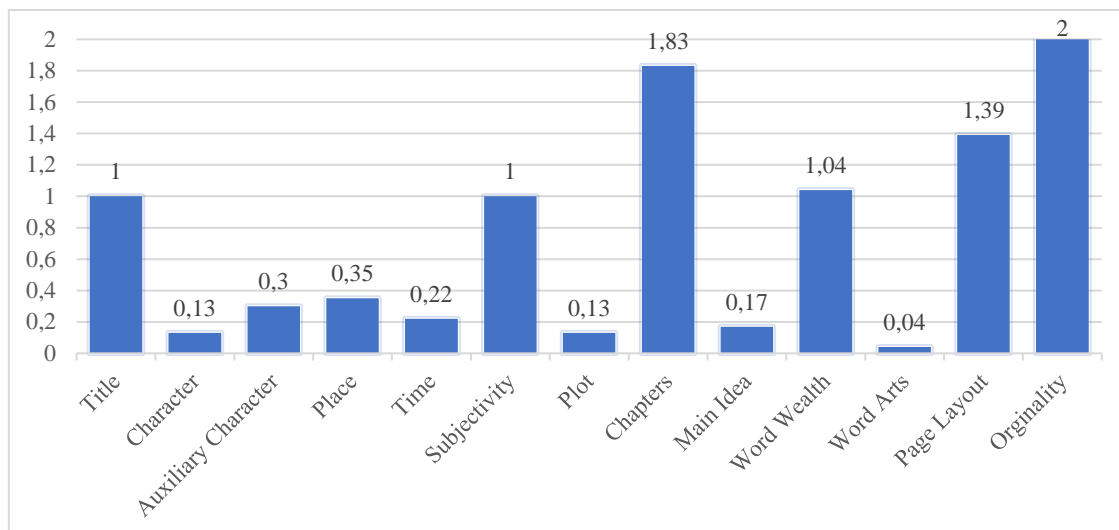
When Figure 1 is examined, the mean score of the experimental group for twelve items is averaged. Character, time, the text in the text, the main idea and the level of the art of prominent items (0 - 0,70); title, auxiliary characters, space, subject compatibility, plot structure, word richness and page layout items are at an acceptable level (0,70 - 1,40) and the originality item was reached at an advanced level (1,41 - 2,00).

Below is the story of a student in the experimental group that she wrote in the pre-test.

### *My Game Day*

*I woke up early in the morning and headed to the village. I played with my animals in the village. Ali and Ayşe are here. My friends and I played games and jumped rope. We had dinner at night. I played with my animals again at night. My friends and I went for a ride. I saw a lot of interesting stuff out there. We went to the zoo and looked at a lot of things, and then we came home, and we played marbles at home. My friends went home, and I'm so bored. I played football with my mom, and I went home early in the morning. I've been playing with my friends all day and I love my family so much.*

The pre-test scores of the students in control group were evaluated according to the materials in rubrics and the pre-test scores obtained from all materials in rubrics were shown in Figure 2.



**Figure 2.** Average of Pre-Test Scores Obtained by Control 1 Group in All Items

When Figure 2 is examined, the mean score of the control group for twelve items was averaged. Character, auxiliary characters, space, time, subjectivity, plot, main ideas and level of promises were at an undeveloped level (0 - 0.70); it was concluded that the title, word richness, and page layout were at an improved level (0.71 - 1.40) and that the text in the text and the originality item was at an advanced level (1.41 - 2.00).

Below is the story of a student in the control 1 group that she wrote in the pre-test.

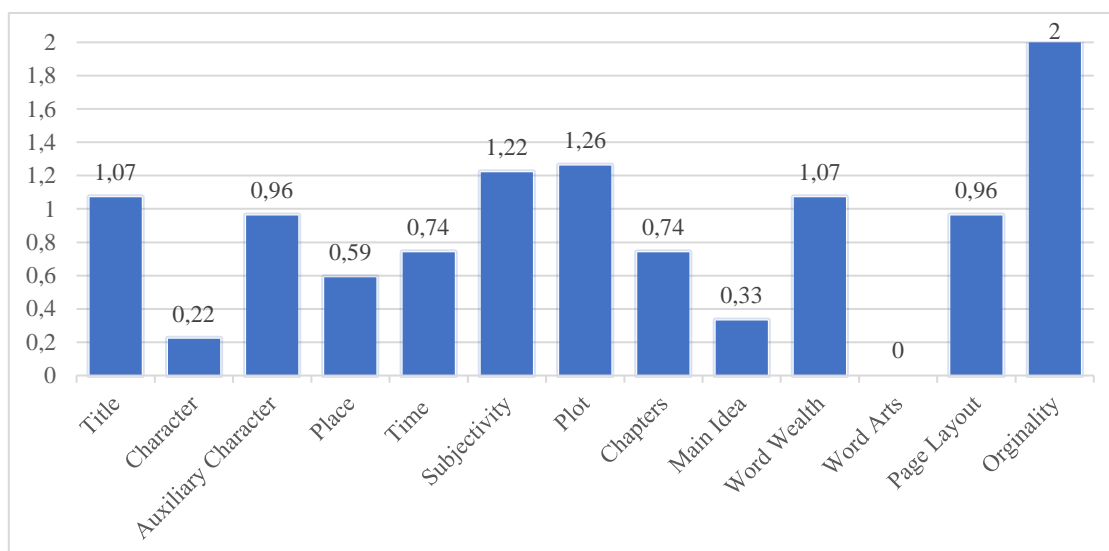
#### Games

*What is the game like? We play every game. There is no game we don't like. I like all the games. I think everyone should like to play games.*

*Games are very nice and funny. My favorite game is dodgeball. All the games are good. We always play; hide and seek, blindman's buff, tag. I really like the games. Do you think all games can be loved? I think you should love all the games. I like playing games with adults. I really like to play blindman's buff. There are lots of games. Which one am I going to count? Everybody should play all the games. I think everybody should play games. We have a mind game. I play every game. Sometimes by fits and starts. There are some rules in each game, you have to comply. Some people don't like the game, sometimes we play at school, maybe everyday by fits and starts. While complying with the rules of the game, I think every game. Don't need away from the game immediately if a mistake has been made, let's give another chance. Let's not despise our friend, maybe our friend will be sad. Then let him/her be happy, after all, he or she is playing too. Some of them break their friends. You should love all the games. Please, love all the games. Please, play all the games. I like games. Normally everybody loves games, please love the games.*

The stories of the students in the control 2 group were evaluated according to the items in the rubric and the average of the pre-test scores taken from all items in the rubric were given in Figure 3.





**Figure 3.** Average of Pre-Test Scores Obtained by Control 2 Group in All Items

Figure 3 shows the average score of control group 2 for twelve items. It was concluded that levels of character, place, main idea and rhetoric were at an undeveloped level (0 – 0,70); title, auxiliary characters, time, relevance to the subject, event plot, sections in the text, word richness and Page Layout were at an improved level (0,71 – 1,40) and the substance of originality was at an advanced level (1,41 – 2,00).

Below is the story of a student in the control 2 group that she wrote in the pre-test.

#### *Hide and Seek*

*Pınar was a very smart girl. When Pınar at school, her friends Şeyma and Murat ask her to play a game. Pınar replied to Şeyma and Murat; "Okay, let's play.". Pınar, Şeyma and Murat started to think about what they are going to play. Pınar said; "Let's play Hide and Seek.", Murat said; "Let's play football.". Şeyma said; "Football is a game for boys.". Pınar said; "Games are unisex. Games are not for only girls or only boys." That's why they decided to play hide and seek. They started to play hide and seek. When they were playing hide and seek, Şeyma fell down. Pınar and Murat asked her; "Anything happened?". Şeyma said that; "My knee hurts". They took Şeyma to the teacher. The teacher did first-aid to Şeyma. When Şeyma's knee was OK, they started to play the game again. Şeyma didn't leave the game in spite of falling. She'd been playing slow and careful.*

ANOVA test was performed to determine the levels of the groups prior to workshop and to determine statistical differences between the groups. The results of the analysis are given in Table 3. In addition, the comparison of the pre-test scores of the groups obtained from the materials mentioned in rubrics was also shown in Figure 3.

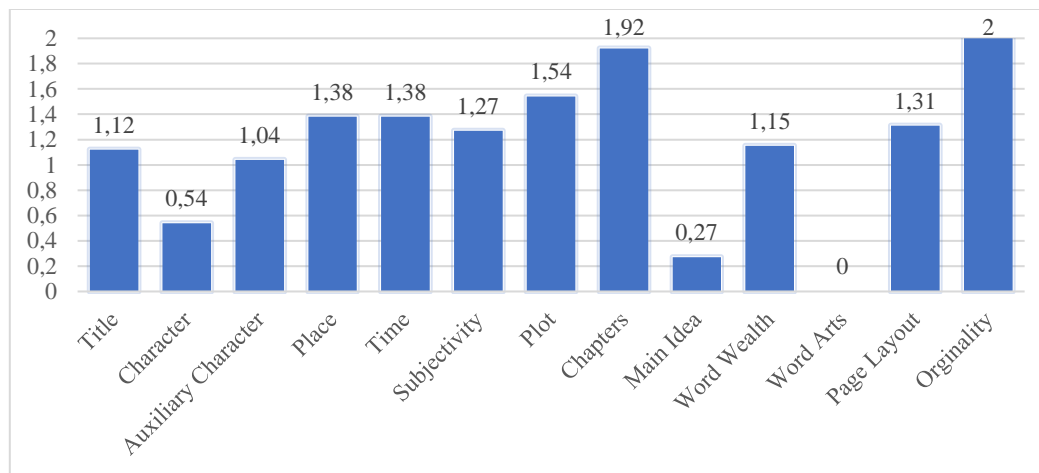
**Table 3.** Comparison of Pre-Test Results by Groups of Students

Source of Variance	Sum of Squares	sd	Average of Squares	F	p	Significant Difference
Between Groups	,19	2	,09	2,41	,10	
In group	2,85	73	,04			-
Total	3,04	75				

When Table 3 is examined, in the group consisting of 76 students from three different fourth grade, the mean scores of the levels of story writing skills of the groups formed according to their classes were compared with one-way analysis of variance for the unrelated samples in order to test whether there was any difference between the levels of story writing skill before the workshop. The average of the students in the experimental group ( $\bar{X}_{\text{experiment}} = ,82$ ), the mean of the students in the control group 1

( $\bar{X}_{\text{control1}} = ,74$ ), the average of the students in the control group 2 ( $\bar{X}_{\text{control2}} = ,86$ ) made Dunnett C multiple comparison test as a result of statistically significant no difference was found [ $F_{(2-75)} = 2.41, p <,05$ ].

The last test scores of the students in the experiment group were evaluated according to the materials in rubrics and the post-test scores obtained from all materials in rubrics were determined in Figure 4.



**Figure 4.** Average of the Post-Test Scores Obtained by the Experiment Group in All Items

Figure 4 shows the mean scores of the test group for twelve items. It has been concluded that the level of the character, main idea and rhetoric materials is at an undeveloped level (0 – 0,70); title, auxiliary characters, space, time, relevance to the subject, word richness and page layout materials are at an improved level (0,71 – 1,40); and the plot of events, sections in the text and article of origin is at an advanced level (1,41 – 2,00).

Below is the story of a student in the experimental group that she wrote in the post-test.

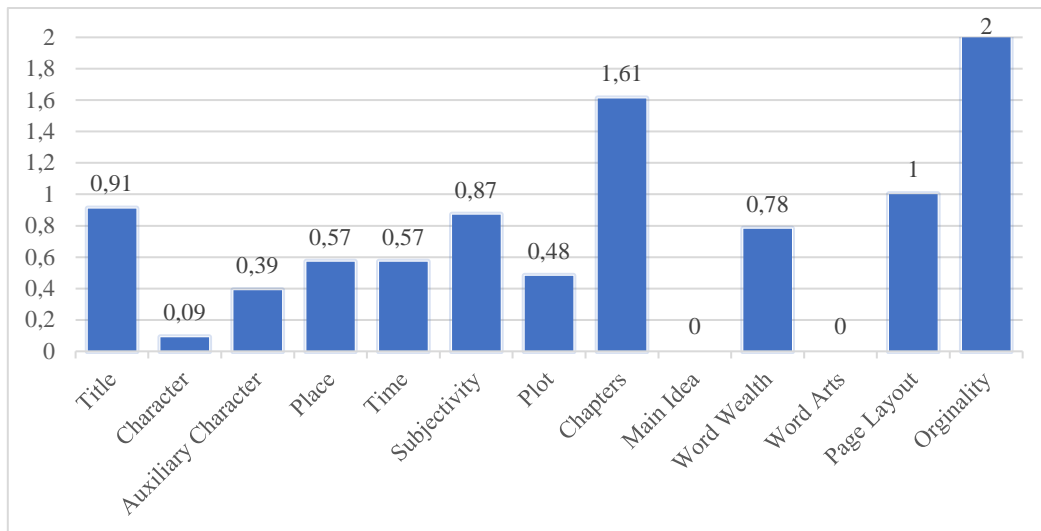
#### *My Vacation*

*It was an end of the vacation. My name is Yıldız by the way. I was born in 7 July 2007. We are in June 30 now. My sister Hilal, me, my mom and my dad are going to prepare already the place, cake and decoration for my birthday.*

*First of all, we went to set up the place. My birthday was supposed to be at the Yıldız Café. After that, we went to the bakery and bought the cake which is perfect. We paid 1150 Turkish Lira for all. We arrived at home. My friend Beronica called me. Beronica was Greek. Her birthday was August 27th. Her birthday was to be held in Greece. On the 25th of the month, she invited us to take the plane. It's been a long time since my birthday.*

*It was that day at last. Beronica's family and my family had boarded the plane. The plane has landed. We arrived at the airport. We got our bags. We went to their house in Greece. We celebrated Beronica's birthday. Five days later, we flew back to Izmir. It was my favorite vacation. Because I've been to a new place and we've been celebrating birthdays.*

The stories of the students in control 1 Group written in the post-test were evaluated according to the materials in rubrics and the mean of the items were stated in Figure 5.



**Figure 5.** Average of the Post-Test Scores of Control 1 Group in All Items

When Figure 5 is examined, the mean score of the control group for twelve items was averaged. Character, auxiliary characters, space, time, subjectivity, plot, main ideas and level of promises were at an undeveloped level (0 - 0.70); it was concluded that the headings, word richness and page layout items were at an improved level (0.71 - 1.40) and the text in the text and the originality item was at an advanced level (1,41 - 2,00).

Below is the story of a student in the control 1 group that she wrote in the post-test.

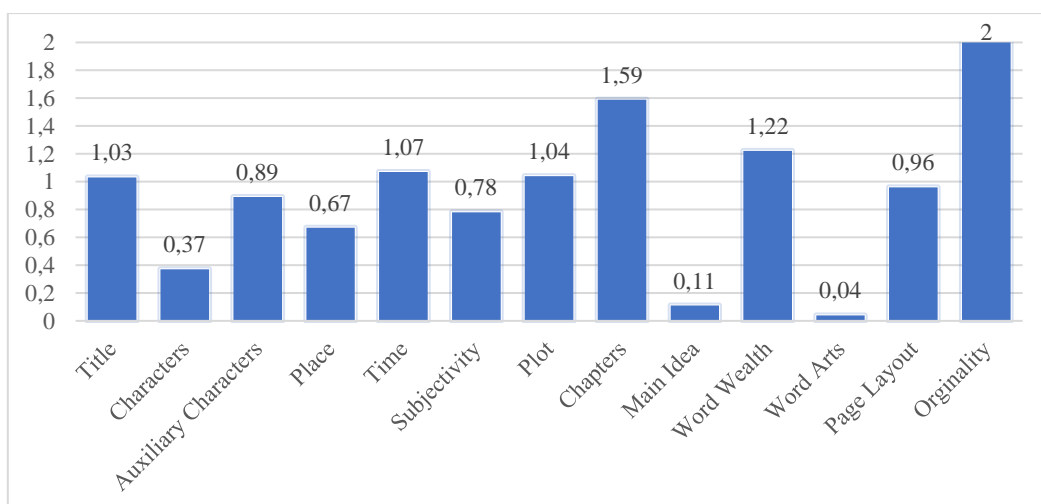
#### *Holiday*

*I really want the holidays to come. Then I'll do what I planned. And I'll tell you about them.*

*I'm going to stay at my moms for four days when I get started. Then I'll study for two days. My grandmother stays with us for two days. Then we'll always have a tour. I'll take anything I want. And I won't have homework. My mom going to put me on a skateboard course at the semester. I'll go to course. And I think I'll take certificate of appreciation the last day of school. We'll go to dad's village. We'll buy shoes. We'll do anything.*

*Then I'll have a lot of fun.*

The stories of the students in control 2 Group written in the post-test were evaluated according to the materials in rubrics and scored according to the materials in rubrics. The score averages of Control 2 Group are shown in Figure 6.



**Figure 6.** Average of the Last Test Scores of the Control 2 Group in All Items

Figure 6 shows the average score of control group 2 for twelve items. It was concluded that the level of the character, the main idea and the arts of the place was at an undeveloped level (0 – 0,70); title, auxiliary characters, time, appropriateness to the subject, event plot, word richness and page layout materials were at an advanced level (0,71 – 1,40); sections in the text and the substance of origin was at an advanced level (1,41 – 2,0).

Below is the story of a student in the control 2 group that she wrote in the post-test.

#### *Vacation*

*I was so excited that day. Because I was going to the sea. I was going fishing. Sometimes I'd get under the sea and see new fish or sea snakes. I've been dreaming all along. The journey was finally over. I couldn't believe my eyes when I got there. We stayed there for a week or two, then I played ball at sea, I caught fish, I ate fish, I read interesting stories. It was winter when we got home. The holiday is over. Schools started.*

A comparison of the skill levels of story writing before and after the workshop of the experimental group was made. The t-test was used to compare the variables before and after the workshop. The results of the analysis are given in Table 4.

**Table 4.** Comparison of Pre-Test and Post-Test Scores of the Experimental Group

<b>Computation</b>	<b>N</b>	<b><math>\bar{X}</math></b>	<b>S</b>	<b>sd</b>	<b>t</b>	<b>p</b>
Pre-Test	26	,82	,22	25	-6,47	,00
Post-Test	26	1,15	,21			

In a class of 26 students who investigated the effect of using mind map on the development of story writing skills, t-test was performed for the related samples to determine whether there was a significant difference between the averages of the stories printed with the mind map and before and after the story writing practice. As a result of the analyses, a significant difference was found between the average of the story scores printed ( $\bar{X}_{\text{pre-test}} = 82$ ) and the average of the story scores printed after the workshop ( $\bar{X}_{\text{post-test}} = 1,15$ ) before workshop [ $t_{(25)} = -6,47$ ,  $p < ,05$ ].

A comparison of the levels of story writing skills before and after the activities of the control group was performed. To make a comparison before and after the activity, dependent groups t-test analysis was performed. The analysis result is given in Table 5.

**Table 5.** Comparison of Pre-Test and Post-Test Scores of the Control 1 Group

<b>Computation</b>	<b>N</b>	<b><math>\bar{X}</math></b>	<b>S</b>	<b>sd</b>	<b>t</b>	<b>p</b>
Pre-test	23	,74	,14	22	,65	,52
Post-Test	23	,71	,22			

In a class of 23 students whose story writing studies were conducted on a weekly basis, a t-test was performed to determine whether there was a significant difference between the mean scores of the stories that were printed before and after the story writing practice. As a result of the analyses, there was no significant difference between the average of the story scores printed ( $\bar{X}_{\text{pre-test}} = 74$ ) and the average of the printed story scores ( $\bar{X}_{\text{post-test}} = 71$ ) before the workshop [ $t_{(22)} = ,65$   $p > ,05$ ].

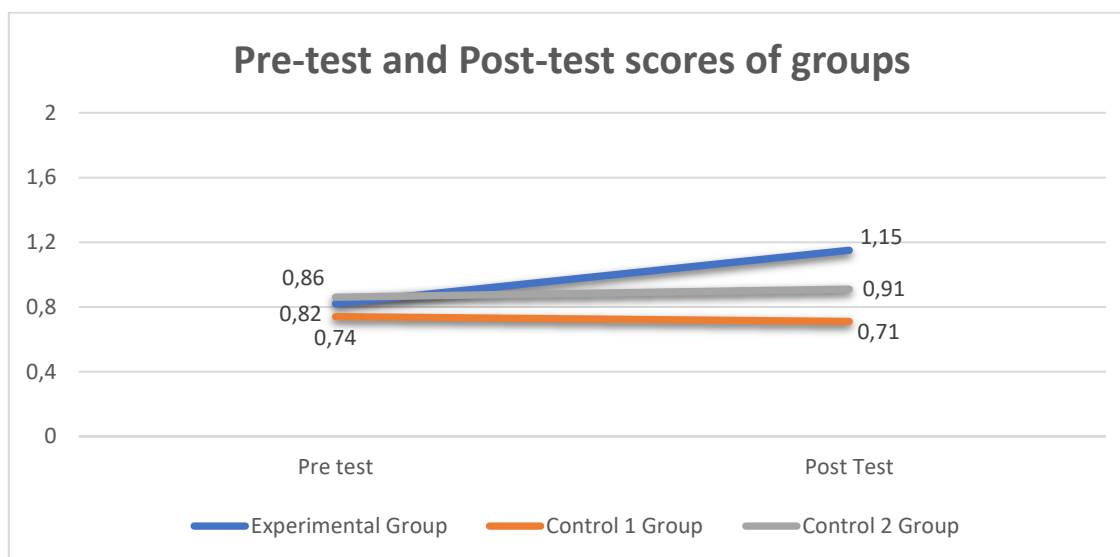
A comparison of the levels of story writing skill before and after the lessons made according to the Turkish Course Curriculum was carried out. In order to make a comparison before and after lessons, dependent groups t-test analysis was performed. The result of the analysis is given in Table 6.

**Table 6.** Comparison of Pre-Test and Post-Test Scores of Control 2 Group

Computation	N	$\bar{X}$	S	sd	t	p
Pre-test	27	,86	,21	26	-1,00	,33
Post-Test	27	,91	,23			

In a class of 27 students whose effects on the development of story writing skills were investigated, a t-test was performed to determine whether there was a significant difference between the mean scores of the stories that were printed for the pre-test and post-test without interfering to the class teacher's lessons. As a result of the analyses, there was no significant difference between the average of the printed story scores for the pre-test ( $\bar{X}_{\text{pre-test}} = 86$ ) and the average of the story scores printed after the workshop ( $\bar{X}_{\text{post-test}} = 91$ ) [ $t_{(27)} = -1.00$ ,  $p > ,05$ ].

The level of the pre-test levels of all groups and the level of the post-test levels are shown in Figure 7, thanks to the workshop, effectiveness and lessons performed.

**Figure 7.** Comparison of Pre-Test and Post-Test Scores of Groups

When the pre-test and post-test scores of three groups were examined, the mean score of control 2 groups was higher than the scores of other groups. Among the results, the mean scores of the groups were close to each other. When we look at the post-test scores of the groups, the average of the test scores of the groups was found to be more than the average of the other groups. While the test group was second in the pre-test scores, it was first in the post-test scores by passing the other groups. Although there was a significant increase in the experimental group, there was little change in the mean score of Control 1 and Control 2 groups.

Anova analysis was performed to see the progress of all groups in the post-test and to check whether there were any differences between them. The results of the analysis are given in Table 7.

**Table 7.** Comparison of the Post-Test Results of All Groups

Source of Variance	Sum of Squares	sd	Average of Squares	F	p	Significant Difference
Between Groups	2,37	2	1,19	24,32	,00	Experiment-Control 1
In Group	3,56	73	,05			Experiment-Control 2
Total	5,94	75				Control 2-Control 1

In the group consisting of 76 students from three different fourth grades, the mean scores of the levels of story-writing skills of the groups formed according to their classes were compared with one-way analysis of variance for the unrelated samples in order to test whether there was a difference between the story writing skill levels before the workshop. The mean of the students ( $\bar{X}_{\text{experiment}} = 1.15$ ),

the mean of the students in the control group 1 ( $\bar{X}_{\text{control1}} = 71$ ), the mean of the students in the control 2 group ( $\bar{X}_{\text{control2}} = 91$ ) was statistically significant difference between at least two of the students. [ $F_{(2-75)} = 24,32, p < .05$ ]. As a result of the Dunnett C multiple comparison test, significant difference was found in favor of the experimental group between the experimental and control 1 groups, in favor of the experimental group and between the control 1 and control 2 groups in favor of the control group.

At the end of the workshop, the opinions of the students in the experimental group were taken. The opinions taken from the students are grouped under certain headings and given in Table 8 in the form of frequency.

**Table 8.** Test Group Students' Views on the Study

Student Opinions	Student	f
I like the working.	DÖ1, DÖ2, DÖ4, DÖ5, DÖ6, DÖ7, DÖ9, DÖ10, DÖ12, DÖ13, DÖ14, DÖ15, DÖ16, DÖ18, DÖ20, DÖ22, DÖ23, DÖ24, DÖ25, DÖ26	20
I didn't like the working.	DÖ3	1
It was a funny working.	DÖ1, DÖ11, DÖ19, DÖ20,	4
It is developing and reviving the imagination.	DÖ1, DÖ4, DÖ7, DÖ8, DÖ15, DÖ17, DÖ19	7
It makes the writing easier and we write better stories.	DÖ8, DÖ19, DÖ21	3
It was a tiring work.	DÖ19	1
It allows us to reveal our knowledge.	DÖ1, DÖ15	2
It was hard to find the main idea in the story map.	DÖ7, DÖ17	2
It would have been nice if we had some activities in the garden.	DÖ3, DÖ13, DÖ21, DÖ23	4
Let's do this work again in the second semester.	DÖ1, DÖ8, DÖ10, DÖ11, DÖ13, DÖ20, DÖ21, DÖ22, DÖ24	9

When Table 8 is examined, it was stated that twenty students liked the study and they were satisfied with the study, but one student did not like the study. Four students wrote the story with a mind map, and four students wrote that they developed their imagination and that two students were effective in revealing the information. The two students stated that it was difficult to find the main idea that the students were asked to tell in the story maps made before writing the story. The four students stated that it would be better if there was an activity in the garden and that nine students wanted to be in the second term.

DÖğrt: He stated his opinions as "...Students liked the mind map workshop. This app was loved by the students ... I think the students improved their creativity. I think it would be more effective to do this kind of studies in the 2nd and 3rd grades. Mind map workshop can be used in different lessons..." in written form. In addition to his written statement, the teacher of the classroom stated that he was pleased with the work throughout the activities and the study, that the students did this study with pleasure, and that the students did not like to write stories before the study, except for a few students in the classroom. He said that the students loved the story after the workshop. He added that he can also practice the mind map in different lessons.

K1Öğrt: "He said that he was bored with the class homework story writing. They always asked when it would end. They do not want to write when there is no activity. Sometimes they want to determine the subject themselves. Sometimes they do not want to write the subject because they do not determine the subject themselves and they get bored..." stated it verbally.

## Discussion, Conclusion and Suggestions

As a result of comparing the pretest and posttest points of the experimental group, a significant difference was found between the pretest and posttest of the group in favor of the posttest. The average of the experimental group in the posttest increased by 34 percent. With the mind map method applied to the experimental group, story writing activities improved students' story writing skills positively. Tağa (2013) as a result of seventh grade students had done with the mind map with story writing activities also found an improvement in the positive direction. This study and Tağa (2013) study show that the mind mapping method improves story writing skills. Kurniawan, Rahmawati, Faihatunnisa, Paramita, and Khodriyah (2020) conducted an experimental study with students in the "English Speaking Class" method of collaborative mind mapping. As a result of this study, they determined that students' written expression skills developed positively. Lutfia (2020) used the mind mapping method to increase the writing success of 10 grade students and reached the conclusion that the students' writing success increased as a result of his study. It can be said that the mind mapping method creates a positive development on the written expression skills of the students regardless of their grade level.

In addition to the mind map, the use of the story map also had a positive effect on students' story writing. Because the story map was also used to determine the elements of the story after the mind map method and helped students improve their writing skills. Hart (2020) used the story mapping method to improve the written expression skills of students with attention deficit and concluded that there was an increase in the written expression skills of students with attention deficit. Akyol (1999) stated that texts can be taught more effectively with the story map method. Sidekli (2013) used the story map to improve the story writing skills of undergraduate students, and as a result of his research, students observed a positive increase in their story writing skills. Ibnian (2010) used the story map to develop the short story writing skills of tenth grade students and as a result observed that students wrote better short stories.

Different methods and techniques applied before and during writing are to attract the attention of the student and enable them to write a better story. Not only mind map method or story map, but also different methods improve students' story writing and writing skills. Duran (2010), the creative writing approach affects the written expression skills positively, Erdoğan (2016) improved the writing skills of the elementary teacher candidates using collaborative writing activities and increased their attitudes towards writing positively. Conroy, Marchand, and Webster (2009) prepared "Writer's Workshop Program" to improve the creativity and writing skills of primary school students and applied it to primary school students. As a result of the application, the writing skill levels of the students, whose writing skill levels were 55%, increased to 72% after the application. Researches carried out by researchers and applying any method while writing from this study reveals that it affects their writing skills positively. For this reason, teachers should use methods and techniques to improve their story writing and writing skills.

As a result of comparison of pretest and posttest scores of control 1 group, no significant difference was found between pretest and posttest. It was revealed that the story writing activities given to the control 1 group as homework were not effective in developing the story writing skills of the students. In fact, it was found as a result of the analyzes that the students in the control group 1 were lower than the pretest average. The reason why the pretest is higher than the post-test scores may be that the students are bored to print the stories given as homework without any activity before writing, or it may be due to the students writing the stories they wrote with homework, just to do their homework and the negative effects of the homework. The lack of a pre-writing activity study that students can have fun was also effective in reducing students' posttest scores.

There was no significant difference between the control 2 pretest and posttest scores. This revealed that the Turkish curriculum did not significantly improve students' story writing skills. There was no statistically significant difference between pretest and post-test in story writing studies conducted according to Turkish Curriculum, but the posttest average of the control 2 group was found to be higher than the pretest average of 04.

A significant difference was found between the experimental group and the control 1 group. Mind mapping method is more effective than writing stories as homework in developing story writing skills. In the pre-writing stage, mind mapping method was used, which allows students to relax, prepare, and reveal their knowledge again, which enabled students to improve their writing skills. However, in the control group 1, the subject of writing a specific story was given to the students as homework. Students should not have developed their writing skills because there was no activity before writing and students regarded their story writing activities as homework.

A significant difference was found between the experimental group and the control 2 group. It was concluded that the story writing activities carried out with the mind map method in story writing skills were more effective than the story writing activities conducted according to the Turkish Curriculum. In the mind mapping study conducted with the experimental group, students are motivated to write stories. In addition, students' preliminary information and creativity are revealed with the mind map. Story writing activities based on the Turkish curriculum also improve writing skills. But this is not as effective as the mind map. In this development, the freeing of the mind map was also effective. In the writing activities carried out according to the Turkish Curriculum, the student performs writing practice by following the instructions given by the teacher. Since this restricts the student, it has less impact than the mind map. Doğan and Müldür (2014), Maden and Durukan (2010), Peker and Adıgüzel (2020), Susar Kırmızı and Beydemir (2012), Yıldız (2015) used different method when researches are analyzed, to develop writing skills in experimental groups. They ensured that the control groups continued according to the Turkish Curriculum. As a result of the above-mentioned studies, they found a significant difference in favor of the experimental group. Based on the above-mentioned studies and this study, it is concluded that any method to be used in teaching writing will be more effective than writing activities carried out according to the Turkish Curriculum.

There was a significant difference between the control 2 group and the control 1 group. It was concluded that story writing activities conducted according to the Turkish curriculum are more effective than homework story writing activities. According to the Turkish Curriculum; The writing activities are better than homework writing activities, the topic of homework writing activities is certain and there are no pre-writing activities. This caused students to limit themselves. But according to the Turkish curriculum, there is no limit for teachers and students in activities. Class teachers carried out the writing process as they wanted. These studies by classroom teachers were more effective than homework.

Considering all groups, it is concluded that the study with the experimental group improves students' writing skills more than others and writing stories as homework is not effective in gaining students any writing skills.

Students' opinions about the application were taken. It was seen that the students stated positive opinions about the practice in general. In general, students liked and used expressions such as fun. The approach of students with a positive approach to the practice of mind mapping is due to the features of mind maps such as painting and not limiting students and offering freedom to students. Tağa (2013) reached the conclusion that the students found this application enjoyable and enjoyable as a result of the mind map study they did with the seventh grade. Yaşar (2006) stated in his study that there is a positive development in the attitudes of students using the mind mapping technique towards the course. Research shows that students enjoy doing mind mapping and the mind mapping method positively affects students' attitudes towards the lesson. Brinkmann (2003) stated that teachers who use mind mapping technique in mathematics lessons can make lessons more fun and effective. When the opinions of the teachers were examined, they expressed a positive opinion against the teacher of the



experiment group against the application of the mind map. The teacher of the Control 1 group expressed negative opinions against the story writing practice with homework. The reason for the negative attitude of the teacher in the Control 1 group was due to the negative attitudes of the students towards writing homework, and that the students were forced to write stories.

In the study of Denny (2008) with university students, writing was compulsorily written to the students and as a result of this research, an improvement was revealed. It has been observed that any study performed by Denny (2008) does not affect the student negatively. However, it was revealed that the story writing process with homework done with the fourth grades did not improve the students' story writing skills and there was a decrease in the scores they received from the "Story Writing Rubric". One of the reasons for this may be the fact that students' course and homework loads are higher in the fourth grade compared to other grade levels. Providing students with school assignments as well as school assignments caused children to have negative thoughts against this activity. In addition, limiting students to a single subject has prevented them from producing products that will reveal their creativity and imagination.

Following suggestions were made in line with the results obtained in the research.

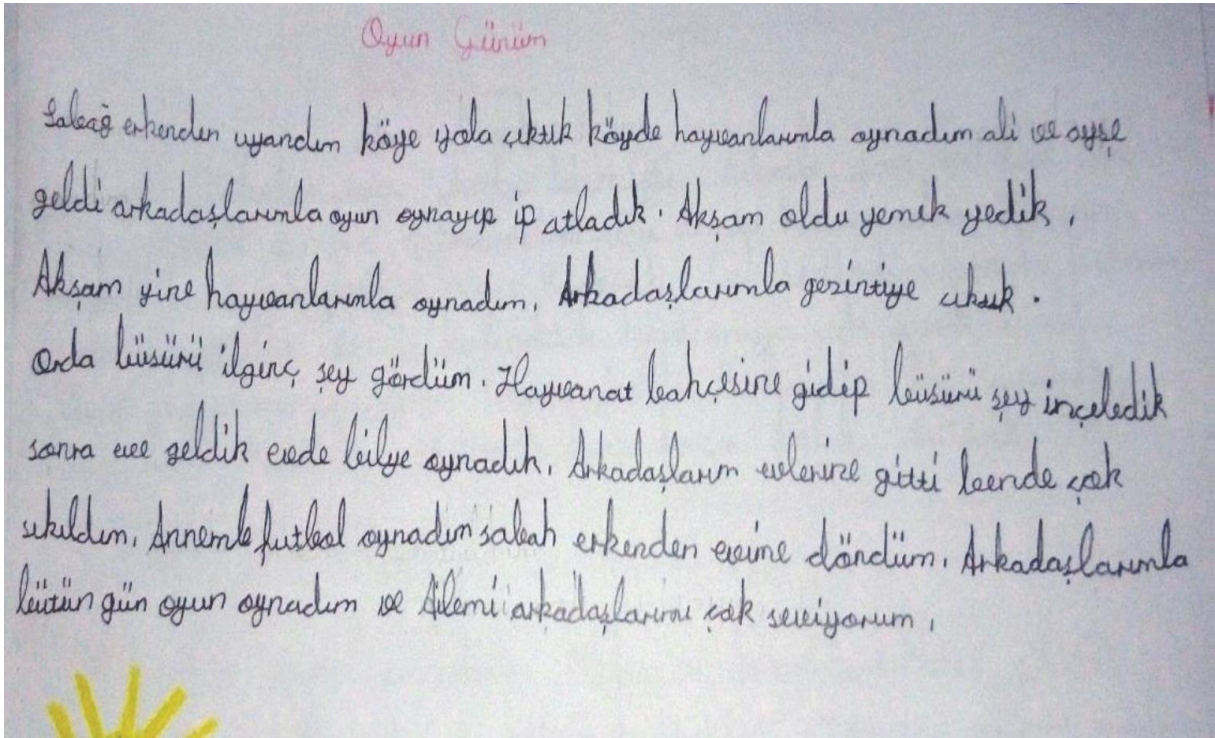
- Different methods can be used from the mind map before writing.
- Pre-writing studies can be diversified to make students ready to write.
- Different types of text can be printed with the mind mapping method.
- Students' writing disposition can also be analyzed with pretest and posttests.
- After writing, students can be provided with feedback and better stories.

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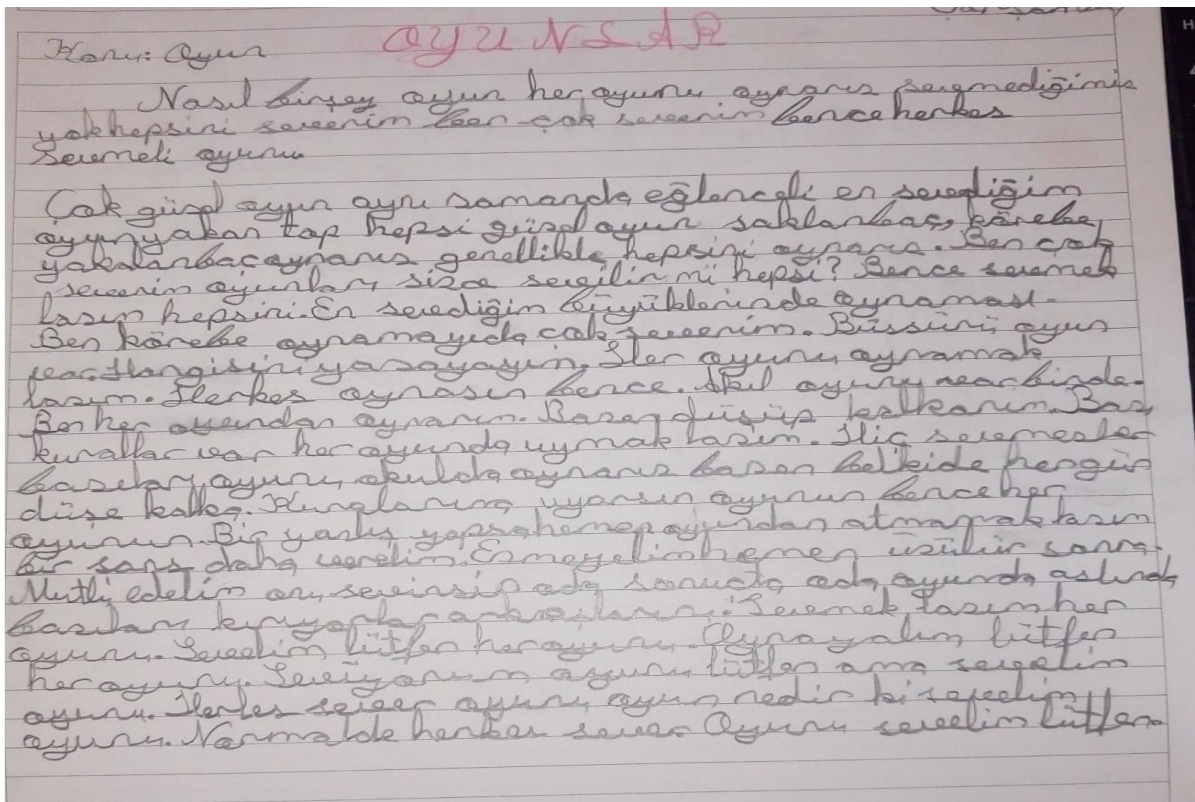
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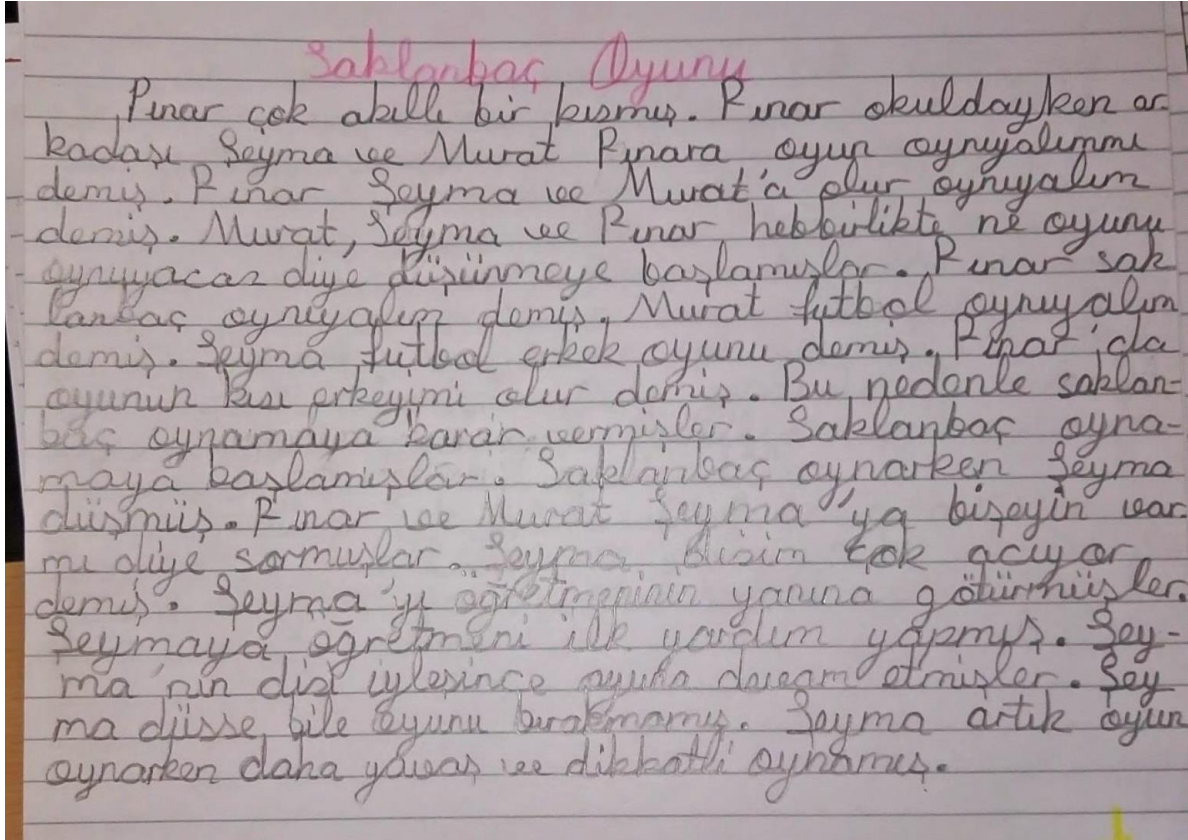
### Appendix 1. Students' Story Examples



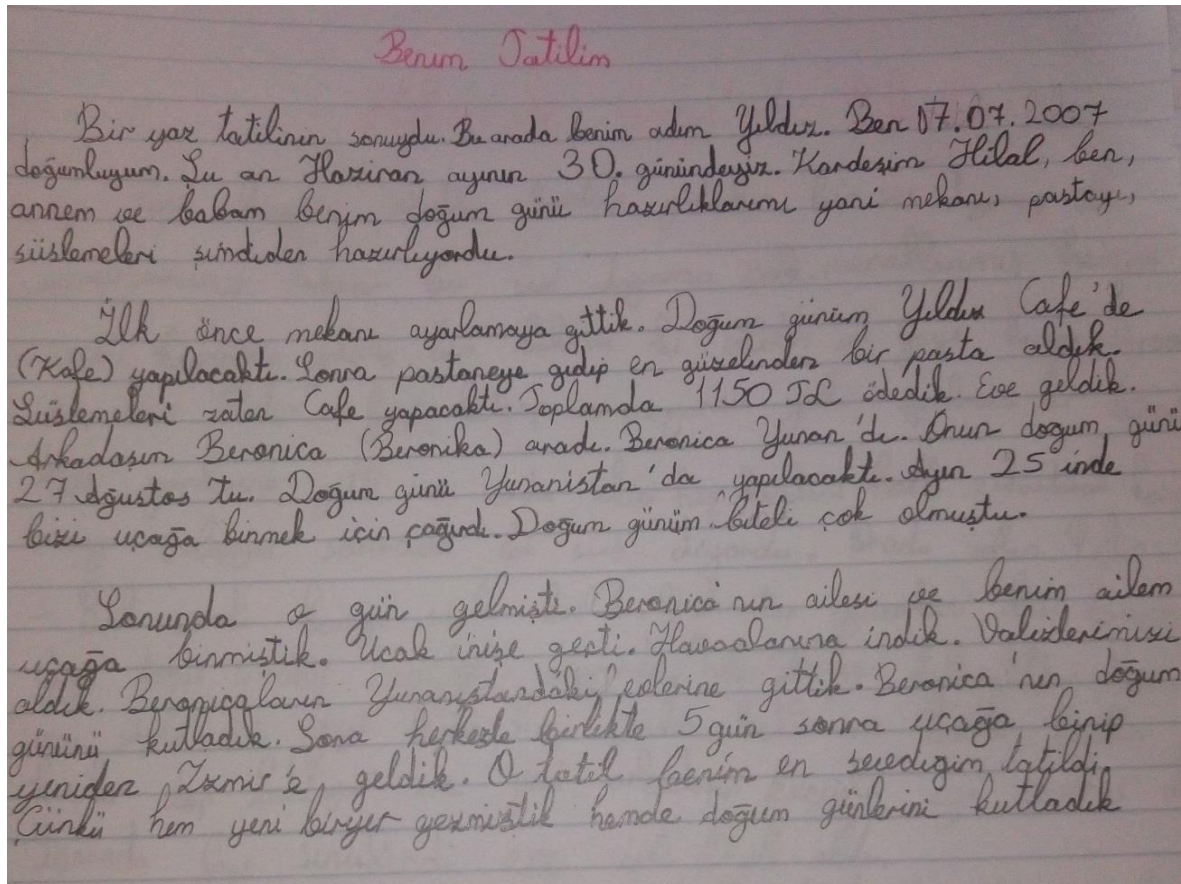
Picture 1. Example of a story belonging to a student in the experiment group



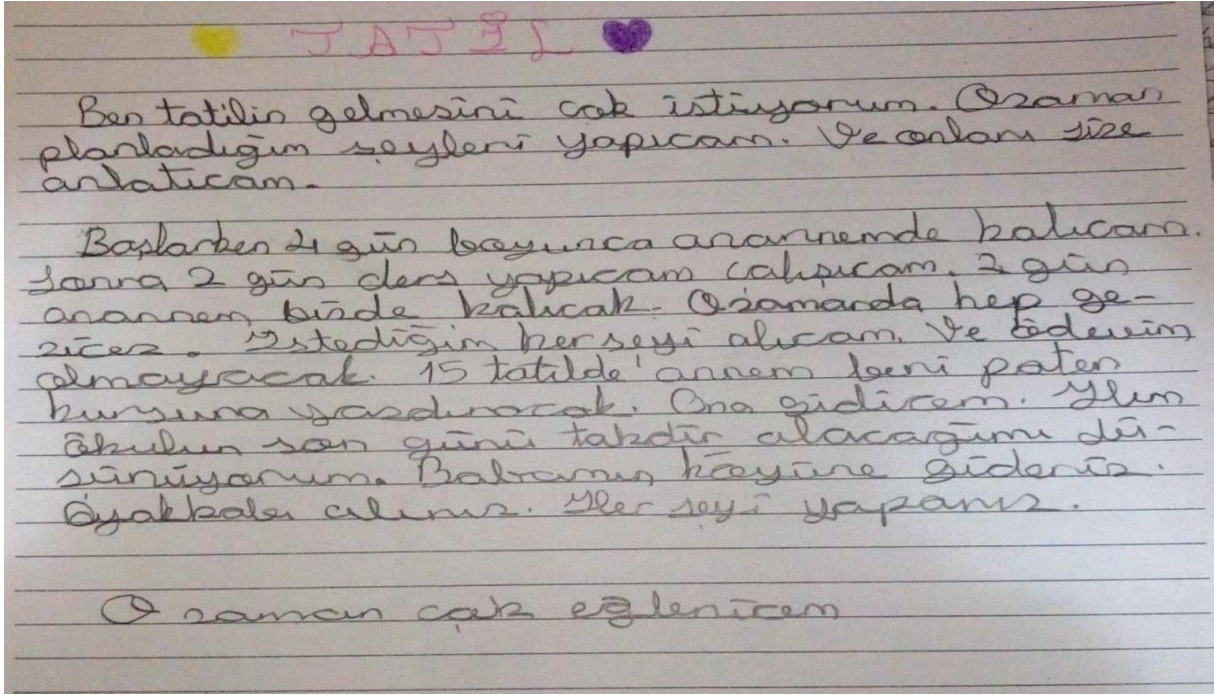
Picture 2. Example of a story belonging to a student in the control 1 group



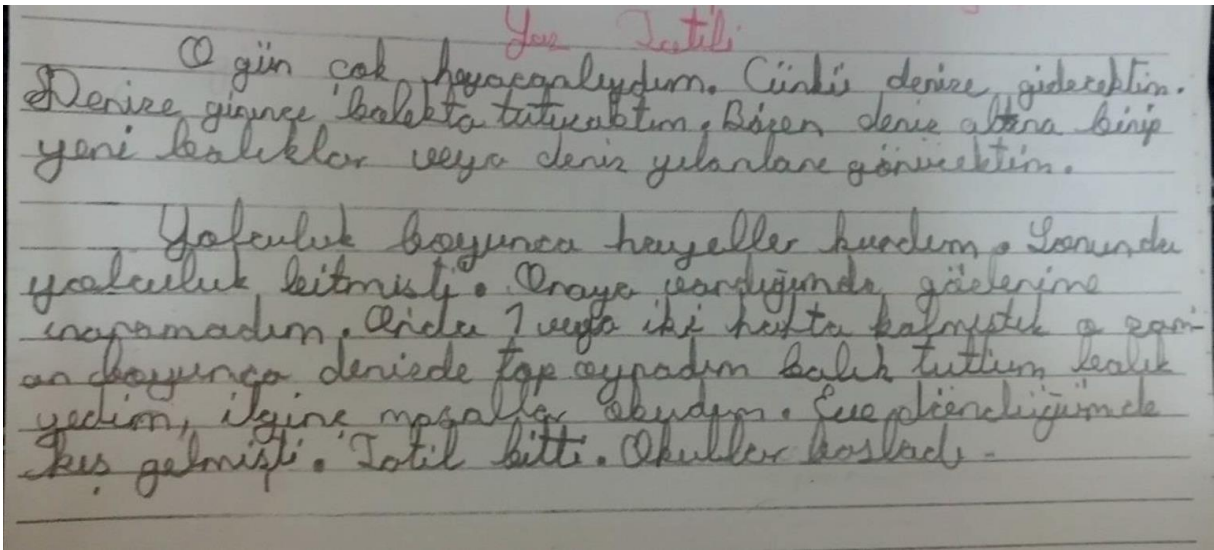
Picture 3. Example of a story belonging to a student in the control 2 group



Picture 4. Example of a story belonging to a student in the experiment group



Picture 5. Example of a story belonging to a student in the control 1 group



Picture 6. Example of a story belonging to a student in the control 2 group