



## THE EFFECT OF DIGITAL STORYTELLING ON ATTITUDES OF THE 7<sup>TH</sup> GRADERS AT SECONDARY SCHOOL TOWARDS STORY WRITING<sup>i</sup>

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### Abstract:

The purpose of this study was to seek into the effect of digital storytelling on the attitude towards story writing of 7th graders at secondary school. The quasi-experimental design among quantitative methods was employed and two groups were designed through simple random sampling. Since the pre-test was planned to be used before the experiment, the study was maintained with a pre-test/post-test matched control group design. The study group was composed of 35 students in Grade 7 at a private secondary school in the Central District of Kars. The study was carried out in Turkish lessons for 7th graders in the 2018-2019 education year. The experiment group consisted of the students in Class 7-A (18 students) in a private school in the Central District of Kars while the control group was of Class 7-B (17 students) in the same school. Before starting the research, permissions of the ethics committee and governorship were obtained for the scale to be used in the research. The purpose of the study and process of the study were explained in detail to the school administration and related teachers. Attitude Scale Towards Story Writing and personal information form were used as data collection tools. The data obtained was first recorded in the excel program, and then in the SPSS program. Because the data did not follow a normal distribution, Mann Whitney U-Test for intergroup analysis and Wilcoxon signed-rank test for intragroup analysis among non-parametrical statistics were used. As a result of analysis; it was found that there is a significant difference in favour of the experiment group in terms of post-test scores of attitude towards story writing among the groups after the experiment. At the same time; it was found that there is a significant difference in favor of the post-test between the pre-

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test and post-test scores of the experimental group. These findings revealed that the digital storytelling creation process contributed to the students' positive attitude towards story writing. Accordingly, it is suggested that the effects of digital storytelling at different grades of education can be investigated, different methods and techniques can be used, and digital storytelling can be included in curriculums.

**Keywords:** digital storytelling, attitude towards story writing, secondary school students, quantitative method

## 1. Introduction

Advances in the 21st century, the age of knowledge and technology, have impacted many aspects of human life; for example, daily life, arts, science, sports, food & beverages, communication, education, etc. To consider education, it is seen that the qualities of teachers who are currently active in education, skills expected from the students, education and learning environments, and educational and learning tools supported by technological advances have been restructured. To exemplify, it is one of the answers that “they should be acquainted with technology” to the question “What is the Expected Profile of a 21st Century Student?” in a study conducted by the Department of Research and Development of Education of Ministry of National Education (2011). Another example is that it is highlighted in the Turkish Course Curriculum (1st-8th grades) that technology must be effectively used in the lessons, and it is realized that the adaptability of the students to technological advances and adoption of these skills are also focused (MEB, 2019). As for competence of the same curriculum, it is seen that it is mentioned that students should have digital competence (p.3-4) as one of the skills they will need in their personal, social, academic, and work lives both nationally and internationally.

In parallel with the developing technology, it is expected that children of the 21st century should keep up with the 21st century. It is requested that developing technology should be used accurately and efficiently. They are supposed to do that not only in one course or field but also in multiple domains (MEB, 2019). It means that a student in the new system should not be confined to just learning how to read and write, and grammar in a Turkish course. Since digital storytelling contributes to both students' skills to write stories traditionally and their skills to use technology, it helps students with certain gains expected by the new curricula. Therefore, it is aimed in this study to examine the effect of digital storytelling on attitudes of the 7th graders at secondary school taking Turkish courses towards story writing.

Why is it important to use digital storytelling in the Turkish course? It is because digital storytelling is based on the traditional story writing process. The stories are present in all of the 1st-8th graders' Turkish curricula. Story writing is one of the ways for students to express themselves. However, digital storytelling is significant because the students having difficulty in writing can also express themselves with photos, pictures, music, and audio apart from a text (Foley; 2013; Vasudevan, Schultz & Bateman,

2010). This study is original since no study assessing the attitudes of the students towards story writing regarding the process of composition of a story text, which means the base of digital storytelling, is encountered in the national and international literature.

## 2. Literature Review

### 2.1. Story

The story was created through the transition from fairy tales to telling daily events and has become one of the most common literary genres, having developed since the Renaissance, especially after the 19th century (Kavcar, Ođuzkan & Aksoy, 2003). *A story is a verbal or written narration of an event, a type of prose that tells about real or designed events* (Dođan, 2005; TDK, tdk.gov.tr). It is a genre of literature that tells people's own experiences (Simmons, 2008), and events already experienced or possible to be experienced (Akbayır, 2007; Gocer, 2014; Kavcar et. al., 2003) without giving details, by pointing out place, time and person (Babacan, 2008).

If children need to be taught something, stories are one of the best ways because children become convinced of learning the targeted topic by being influenced by well-built stories (Erođlu, 2020a). However, the stories should not just be composed of a random series of events. Since stories require a certain order and discipline, it is necessary to analyse each part of the story first and then to obtain a meaningful, consistent and logical whole from these parts (Temizkan, 2014). Stories contribute to the development of children's interpretation, inference, organization, remembering, vocabulary, which develops their comprehension and expression skills (Akyol, 2006; Gocer, 2014; Temizyurek, 2003; Walsh & Blewitt, 2006). Storifying a topic improves the creativity of students, helps with permanent learning, and summarizing the lesson (Tařkaya, 2017, Ed. A. Akkaya). Thus, the stories are effective in the development of children's imagination, understanding the cause-effect relationship, and producing more practical solutions to the problems they encounter. Today, stories are recognized as an effective, meaningful, fun, and creative way to teach and improve learning. (Wang & Zhan, 2010). The current version of this is digital storytelling.

### 2.2. Digital Storytelling

Although there are many definitions of digital storytelling, they are generally gathered around the idea of combining the art of storytelling with multimedia elements such as pictures, sound, and video (Robin, 2006). Thanks to digital storytelling, students can use music, sound effects, videos, etc. to create multimedia presentations that enhance their creativity, collaborative learning, and technology use skills (Frazel, 2010). Digital storytelling is a program innovation that integrates communication, language, arts, and literacy skills with technology (Hathorn, 2005). The new generation of storytelling starts with digital storytelling, and these digital stories are created on a computer using pictures, sometimes adding music and sound files (Hett, 2012).

Digital storytelling was first created by Joe Lambert and Dana Atchley as a non-profit arts organization in Berkeley, California, in the late 1980s. In the early 1990s, the Digital Media Center was opened in San Francisco with the participation of Nina Mullen to these two names, and then the name of this institution was changed to Digital Storytelling Center (Center For Digital Storytelling-CDS) in Berkeley in 1998 (StoryCenter; Chung, 2007; Robin, 2008; Karakoyun, 2014; Yamaç, 2015; Baki, 2015).

According to Robin (2006), there are many different types of digital storytelling; however, it is possible to categorize them into three large groups: 1. Personal narrations, 2. Historic documentaries (stories expressing the dramatic events and helping us understand the past), 3. Stories are composed to inform the audience about a special concept or application or to teach that.

The following seven elements are cited as a useful starting point for getting started with digital storytelling:

- 1) Point of View: What is the writer's point of view about the topic?
- 2) A Dramatic Question: A question to be answered at the end of the story.
- 3) Emotional Content: Serious issues that come alive in a personal and powerful way.
- 4) The Gift of Your Voice: A way to personalize the story to help the audience to understand the context.
- 5) The Power of the Soundtrack: Music or other sounds that support and embellish the story.
- 6) Economy: Using just enough content to tell the story without overloading the viewer.
- 7) Pacing: it is associated with the economy but especially with how slowly or quickly it progresses (Robin, 2006).

The following six steps are suggested in the process of creating digital storytelling:

- 1) Writing the story/script: The story is written, the scripts are revised according to the suggestions, and then finalized.
- 2) The student records the story with her/his own voice.
- 3) Images related to the story are searched and found from various sources.
- 4) Sound and visuals are combined.
- 5) Transition effects and background music can be added.
- 6) Once digital storytelling is created, it is presented or shared (Barrett, 2009).

In the process of digital storytelling creation, it will make this process efficient, effective, and enjoyable to ensure the stories contain these elements and to be created by that. In this study, these elements and this process have been paid attention to.

### **2.3. Digital Storytelling Creation Tools and Software**

Equipment to help create digital storytelling in a lesson are desktops/laptops/tablet computers, audio, and video recorders, headphones, speakers, external (flash) memories, scanners, and projection devices (Baki, 2015; Demirer, 2013; Karakoyun, 2014; Qiongli, 2009, Ed. J. Hartley & K. McWilliam; Robin, 2006). Main software to be applied in digital storytelling composition is PhotoStory3, Microsoft PowerPoint, Microsoft Windows Live

Movie Maker, iMovie, Pinnacle Studio, Adobe Premiere Elements, Ulead VideoStudio, (Baki, 2015; Brenner, 2014; Bull & Kajder, 2005; Dogan, 2007; Karakoyun, 2014; Robin, 20006; Robin & McNeil, 2012).

#### **2.4. Factors Preventing Digital Storytelling Creation**

Looking into the barriers to digital storytelling creation, it is whether students have the chance to access the technology required to create digital stories. Since this is the most fundamental problem, students must have access to technology. Another problem in the process of digital storytelling creation is time. Learning technology takes time, but due to the nature of learning and teaching, any education already takes time. Learning technology takes time, but any education already takes time due to the nature of learning and teaching (Lammers, 2012). Another obstacle to digital storytelling creation is teachers' and students' lack of knowledge in using the technology. If the teacher is inadequate and does not have the necessary knowledge about using technology, the students will naturally be inadequately trained in using technology accurately and efficiently. Another obstacle to digital storytelling creation is copyright. It can be tempting for students to use visual materials or music they find online while creating digital stories. One of the most beneficial ways for students to deal with copyright issues may be to produce their own content (Robin, 2006).

#### **2.5. Using Digital Storytelling in Education**

Considering the use of digital storytelling in educational life, it is seen that the digital stories created by the teacher can be used to enrich the existing lessons in a wider unit as a way to make abstract or conceptual content more understandable to facilitate discussion on a topic (Robin, 2006). Assigning homework by the stages of digital storytelling creation or applying this process in that lesson creates interest, attention, and motivation for students. Also, when students start to search and tell their own stories, their skills of creativity also improve within the process since they learn to use the library and internet to explore rich and deep content while analysing and synthesizing a wide range of content (Robin, 2006). Students participating in the digital storytelling creation process learn to organize their ideas, ask questions, and express their thoughts, creating a comprehensive communication skill (Robin, 2006). Since the process of digital storytelling creation is an entertaining process that attracts students' attention, it also increases student motivation and their academic success (Brown, Bryan & Brown, 2005; Lammers, 2012).

#### **2.6. Using Digital Storytelling in Turkish Courses**

Digital storytelling can be used very easily in Turkish, Social Studies, Life Sciences, Art, Music, Mathematics, Science and Technology, Literature, Geography courses, or interdisciplinary studies (Demirer, 2013; Hett, 2012; Karakoyun, 2014). When we look into the use of digital storytelling in Turkish courses, it has been found that students' listening skills (Ciğerci, 2015; Türe Köse, 2019; Verdugo & Belmonte, 2007), speaking

skills (Shrosbree, 2008; Soler Pardo, 2014; Razmi, Pourali, & Nozad, 2014), reading skills (Çiftci, 2019; Şentürk Leylek, 2018) and writing skills (Çıralı, 2014; Dayan, 2017; Gündüz, 2019; Soler Pardo, 2014; Stojke, 2009; Uslu, 2019; Yamaç, 2015) are improved. Digital storytelling, which is easy to use for both writing and speaking practice, can be a good tool to motivate students to use language effectively and efficiently both inside and outside the classroom (Reinders, 2011). The effect of digital storytelling on students' story writing skills, writing anxiety, writing self-efficacy and writing attitudes in the 6th-grade Turkish course (Baki, 2015), the effect of using digital storytelling in Turkish course on academic achievement, motivation and permanence (Özerbaş & Öztürk, 2017), the effect of 4th graders' writing skills in Turkish course (Dayan & Girmen, 2018), the effect on students' literacy skills and viewpoints in learning Turkish (Yılmaz, Üstündağ, Güneş, & Çalışkan, 2017), Turkish teacher candidates' metaphorical perceptions towards digital storytelling (Erođlu, 2020b) have been investigated, and positive results have been obtained. Also, attitude is a predisposition of a mental, emotional, and behavioural reaction that an individual creates to any object, subject, or event-based on his/her experience, knowledge, feelings, and motives (İnceođlu, 2011; Baysal & Tekarslan, 2004). In this study, students' feelings, thoughts, and reactions towards creating a story/script within the scope of the Turkish course are implied.

21st-century skills are important as they are in the course curriculum and allow students to develop multiple skills in any area (Lammers, 2012; Skouge & Rao, 2009). Using digital storytelling in lessons to improve students' learning and technology skills contributes to the development of students' communication skills in that they ask for help when a problem arises, and their skills to make research and evaluate while looking for a suitable vision for the story, and visual literacy (Brown, Bryan, & Brown, 2005; Lammers, 2012; Robin, 2008; Sadik, 2008). Therefore, this study is expected to both fill the academic gap in the field and contribute to the development of digital storytelling applications, which do not date back to old times, systematically and by the requirements of the era. It is hoped that the results obtained from this study make an academic contribution to the history of digital storytelling and be included in the curriculum as an activity and implemented in the lessons.

The problem statement of this research has been determined as follows: "How does it explain the effect of digital storytelling on the 7th graders' attitudes towards story writing?"

The subproblems are as follows;

- a) Is there a significant difference between pre-test and post-test scores of the students' attitude towards story writing in the experimental group in which digital storytelling was applied?
- b) Is there a significant difference between post-test scores of the students' attitude towards story writing in the experimental group in which digital storytelling was applied and the ones in the control group in which it was not applied?

### 3. Methodology

The quantitative research method was employed in this study in which the effect of digital storytelling on the attitudes of 7th graders at secondary school towards story writing was investigated. A quasi-experimental design, which aims to determine the cause-effect relationship between variables, was used as a research design. In the quasi-experimental paired design, two of the ready groups are aimed to be matched over certain variables, and the matched groups are randomly assigned to the operation groups (Büyüköztürk, Çakmak, Akgün, Karadeniz & Demirel, 2012). Accordingly, the groups in this study were determined by simple random/random sampling, and each study group was given an equal probability of being selected. Since the pre-test was to be used before the experiment, the study continued with the pre-test / post-test paired control group pattern, and the data were collected.

#### 3.1. Study Group

The study group consists of 35 7th graders from a private secondary school affiliated with the Central District of Kars. The research was carried out in the 7th-grade Turkish course in the spring semester of the academic year 2018-2019. Before the study was started, the permission of the Ethics Committee and Governorship was obtained for the scales to be used in the research, and the aim and process of the study were explained to the school administration, Turkish language teacher, and Technology and Design course teacher (Robotic Coding).

Class 7-A (18 students) of a private school affiliated to the Central District of Kars province became the experimental group while Class 7-B (17 students) became the control group. The gender distribution of the groups is indicated in Table 1.

The reason why 7th graders at secondary school got involved in the study is that students have fully acquired the ability to create a story script consistency with the Turkish course curriculum and also a certain technology literacy that allows them to use the photoStory3 program in line with the Informatics course curriculum.

**Table 1:** Gender Distribution of the Students in both Control and Experimental Groups

Gender	Experimental Group		Control Group	
	N	Percentage (%)	N	Percentage (%)
Female	9	50.0	9	52.90
Male	9	50.0	8	47.10
Total	18	100	17	100

As indicated in Table 1, there are 9 girls (50%) and 9 boys (50%) in the experimental group while there are 9 girls (52.90%) and 8 boys (47.10%) in the control group. It is important for the objectivity of the study that the group and gender distribution ratios are approximate to each other. It is displayed in Table 2 whether the students in the experimental and control groups have an internet connection in their houses.

**Table 2:** Status of Having In-house Internet Connection  
 of the Experimental and Control Group Students

	Experimental Group		Control Group	
	N	Percentage (%)	N	Percentage (%)
Yes	18	100	17	100
No	0	0	0	0
Total	18	100	17	100

As indicated in Table 2, it is seen that all of the students in the experimental group and the control group have internet connection in their houses. It is shown in Table 3 whether the students in the experimental and control groups have a computer in their houses.

**Table 3:** Status of Having a Computer in the Houses  
 of the Experiment and Control Group Students

	Experimental Group		Control Group	
	N	Percentage (%)	N	Percentage (%)
Yes	18	100	17	100
No	0	0	0	0
Total	18	100	17	100

As indicated in Table 3, it is seen that all of the experimental and control group students have computers at home. Likewise, the students added the information that all of them had smartphones in their houses in their personal information form. Since the research was conducted in a school where families with a certain socio-economic level send their children, it is thought that all of them have an internet connection, smart mobile phones, and computers in their houses.

The pre-test scores of the experimental and control group students are as follows. In the examination of a normal distribution, it was determined that the scale scores did not prove a normal distribution. Accordingly, the Mann Whitney U test, one of the nonparametric tests, was used for pre-test scores. Table 4 indicates the results of the Mann Whitney U test conducted to determine whether the difference between pre-test score averages of the experimental and control groups' attitudes towards story writing is significant or not.

**Table 4:** Pre-Test Scores of Experimental and Control Groups' Attitude towards Story Writing

	Group	N	Median (Min-Max)	Mann-Whitney U	p
Scale	Experimental	18	2.46 (1.25-4.08)	149.5	0.908
	Control	17	2.42 (1.13-3.63)		
Interest	Experimental	18	2.25 (1.17-4.83)	141	0.691
	Control	17	2.17 (1.00-3.83)		
Benefit	Experimental	18	2.12 (1.00-4.25)	148	0.867
	Control	17	2.00 (1.00-4.75)		
Emotion	Experimental	18	2.34 (1.00-5.00)	136.5	0.582
	Control	17	3.00 (1.00-5.00)		
Appreciation	Experimental	18	2.00 (1.00-4.00)	116	0.213

Process	Control	17	1.67 (1.00-4.33)	143	0.740
	Experimental	18	2.70 (1.00-4.60)		
Content	Control	17	2.80 (1.00-3.80)	122	0.303
	Experimental	18	2.00 (1.00-4.67)		
	Control	17	3.00 (1.00-4.33)		

Upon examination of Table 4, it is seen that there is no statistically significant difference between the pre-test scores of attitude scale towards story writing and its sub-dimensions belonging to the experimental and control groups ( $p > 0.05$ ). Therefore, it is possible to say that the experimental and control group students are two identical groups in terms of pre-test results based on digital storytelling and that the education planned to be provided will objectively reveal the expected differences in the experimental group.

### 3.2. Data Collection Tool

In this study, an Attitude Scale Towards Story Writing and a personal information form were used.

Attitude Scale Towards Story Writing was developed by Eroğlu (2019). The study was conducted with 441 7th graders from two state secondary schools in the Central District of Kars. 212 of the students were female while 229 of them were male. The study was carried out in the fall semester of the academic year 2018-2019. It is a 5-point- Likert-type scale consisting of 6 factors (interest, benefit, emotion, appreciation, process, and content) and 24 items. The total amount of variance of the scale with 24 items and 6 sub-factors is 57.151. The highest factor loading value of the scale is .812 while the lowest value is .431. Compliance index values of the structure of the scale are  $\chi^2/df = 1.780$ , TLI= 0.932, CFI= 0.941, RMSEA= 0.042 and SRMR= 0.041. As for the reliability of the scale, the Cronbach's Alpha value of all 24 items for internal consistency is .896.

Personal information form was composed by the researchers. It is a form that includes information such as the gender of the experimental and control group students and whether they have a computer, smart mobile phone, and the internet at home. The statement explaining that the personal information of the students will not be shared with anyone, and the information they are asked to write will only be used for this study is available in the instructions in the first part of the form. An e-mail address is also written for students who are curious about the result of the study. The instruction was also read out to the students. Students who wanted to ask questions were given the right to speak.

### 3.3. Collection and Analysis of the Data

The data were obtained from the Attitude Scale Towards Writing Stories. The scale was applied to the experimental and control groups before the experimental procedure, and to two groups after that. Thus, the data were obtained. The data obtained were first recorded in the excel program and then in the SPSS 20.0 package program.

Since the study group consisted of 35 students in total (18 students in the experimental group, 17 students in the control group), it was first analysed whether the data proved a normal distribution or not. When analysing quantitative data, parametric

statistics are used for data with a normal distribution, and nonparametric statistics are used for data that do not prove a normal distribution. Since the study group of this research consisted of 35 students, the data did not indicate a normal distribution. In parallel with that, nonparametric statistics were used in this study. Mann Whitney U-Test, one of the non-parametric statistics, was used to analyse whether there was a difference between the pre-test scores of the experimental and control group students and whether there was a difference between the post-test scores of the experimental and control group students. Mann Whitney U-Test is used when the distribution of scores does not meet the assumption of normality in experimental studies with few subjects where unrelated measurements are present (Büyüköztürk, 2014). Mann Whitney U-Test is accepted as the equivalent of t-test in nonparametric analyses (Büyüköztürk, 2014; Can, 2014; Çepni, 2014; Taşpınar, 2017).

To analyse whether there is a significant difference between the pre-test and post-test scores of the experimental group students, the Wilcoxon signed-rank test, one of the non-parametric statistics, was used. The Wilcoxon signed-rank test is used in social sciences in-group studies with few subjects (Büyüköztürk, 2014; Can, 2014; Çepni, 2014). Moreover, since the scale scores do not prove normal distribution in this study, the median (minimum-maximum) is provided instead of the arithmetic mean.

### **3.4. Experimental Process**

After the decree of the Ethics Committee and the permissions of the Governorship were received, the implementation process started in the spring term of the academic year 2018-2019. The study was conducted in a private secondary school affiliated with the Central District of Kars. It has been an essential criterion that the school should have the technological tools and equipment required to create a digital story. In the first week, the school principal was interviewed, and the aim and application process of the research were explained to her in detail. In the second week, the researchers met the teachers, and explained them the study to. In the third week, classrooms and computer laboratories of 7th graders were examined. It was noted that the smart boards worked, the teachers' and students' computers in the laboratory operated, and there were headsets in the school. Since there was no PhotoStory3 program on computers, the program was installed on the computers with the help of the robotic coding course teacher. In the fourth week, Story Writing Anxiety Scale was applied to the experimental and control group students simultaneously on Wednesday. During the practice hours overlapping with Turkish and Mathematics lessons, the relevant teachers helped the researchers. The control group was not intervened during this period. The relevant teacher conducted Turkish lessons by the current curriculum until the end of the process. In the fifth week, a seminar on digital storytelling and the PhotoStory3 program was given to the experimental group students by the researcher. The students watched a sample digital story in the classroom. The students were asked to bring a flash / USB memory the following week. In the sixth week, they were asked to create a text to write a story about a place they visited or wondered about among the places they learnt in the scope of the lesson. This text was to consist of

a maximum of 400 words. While the students were creating their texts, the researcher uploaded the presentations about digital storytelling and the PhotoStory3 program to their memory sticks. Thus, the students were able to rewatch the presentations at home. The texts of the students who started to create texts in the classroom were assessed in the classroom, and they had the chance to make corrections thanks to the feedback. In the seventh week, they were required to collect visuals about their stories. They were taken to the computer laboratories to do that. Photographs and pictures related to their stories were collected from the websites that provide free usage. They were asked to save the collected photographs and pictures in the files they created on the computer and to upload them to their own flash memory. This, therefore, helped them back up the visuals. They were told that they could also draw pictures regarding their stories and collect images through their personal or parents' mobile phones, and cameras. However, none of the students preferred that. All of them preferred to collect the visuals on the internet. In the eighth week, a flow chart was distributed to the students. They were asked to note in this flowchart which visuals they would use on which slide in their stories, what they would dub on which slide, what effects, and music they would like to use. They were reminded that they had to create their stories in a 3-5 minute length, and they needed to calculate how many seconds each slide should pause for. During the creation of the flow charts, the researcher constantly checked the students walking around them and helped the students who asked for help. They were requested to bring their flow charts the following week. In the ninth week, the students were asked to open PhotoStory3 on their computers in the computer lab. Headsets were distributed to the students. It was ensured that they started to create their digital stories by what was there on the first page of their flow charts, which means the sentence/s, visuals, effects they wanted to add on the first slide. The students were reminded that they could dub the texts on the slides, change the font sizes and colours, make changes on the visuals, use the effects they like, and finally create the music in the instruments and tones they wanted. They were enabled to save the story they created. In the tenth week, it was provided that they could complete the missing parts of their digital stories and make the necessary corrections as they wished and finalize their digital stories. In the eleventh week, the students were encouraged to share their own digital stories in the classroom. Digital stories were watched starting with the volunteering students. The Turkish teacher also joined that. The students who wanted to speak about the digital stories were encouraged to share their opinions. In the twelfth week, Story Writing Anxiety Scale was applied to the experimental and control group students simultaneously on Wednesday. Teachers of the relevant lesson, whose lessons overlapped with the application time, helped the researchers.

Furthermore, the students were enabled to create their digital stories in consideration of the six-stage story-making process suggested by Robin (2006) in the introduction. Again, they were enabled to create their digital stories according to the seven elements suggested by Robin (2006) in the introduction.

### 3.5. PhotoStory3 Program Used during the Application Process

PhotoStory3 is one of the most preferred programs used to create digital stories (Sadik, 2008). It is a free-of-charge program for Windows users. Through this program, you can add photos and write over a text about a picture, make formal changes on the text, use filters for photos, add transition effects, dub the text of each slide before moving on to the next slide, and finally, the ready music can be uploaded or the person can create his own music. One of the reasons why this program is preferred is that it is free, and the other is that it contains all the elements that will be used to create a digital story. Thus, it is easier to create a digital story with a single program, and it is thought that students' anxiety will decrease, and they will not find the process difficult.

## 4. Findings

In this section, the findings of the collected and analysed data are given in tables. The findings are ranked according to the research sub-problems.

### 4.1 Findings Regarding the First Sub-problem

The results of the Wilcoxon signed-ranks test showing whether there is a significant difference between pre-test and post-test scores of the experimental group's attitude towards story writing are indicated in Table 5.

**Table 5:** Findings of the Differences Between Pre Test and Post Test Scores of Attitude Scale of the Experimental Group Students towards Story Writing and its Sub-Dimensions

	Pre-test	Post-test	Wilcoxon	p
Scale	2.46 (1.25-4.08)	4.63 (3.75-4.79)	3.724	0.000**
Interest	2.25 (1.17-4.83)	4.67 (3.83-5)	3.623	0.000**
Benefit	2.13 (1-4.25)	4.38 (3-5)	3.628	0.000**
Emotion	2.33 (1-5)	4.67 (4-5)	3.633	0.000**
Appreciation	2 (1-4)	4.67 (3-5)	3.738	0.000**
Process	2.7 (1-4.6)	4.5 (3.8-5)	3.623	0.000**
Content	2 (1-4.67)	4.5 (3.33-5)	3.643	0.000**

On examination of Table 5, it is seen that there is a significant difference between the pre-test and post-test scores of the attitude scale of the experimental group students towards story writing ( $p < 0.01$ ). For the overall scale, it is seen that the median value of the experimental group increased from 2.46 to 4.63. At the same time, there are significant differences between pre-test and post-test scores in all sub-dimensions of the experimental group's attitude towards story writing ( $p < 0.01$ ). When the median values of the experimental group's test results are examined, it is seen that the post-test results significantly increased in all sub-dimensions of the attitude towards story writing. It can be interpreted that digital storytelling has a positive effect on students' attitudes towards story writing.

## 4.2 Findings Regarding the Secondary Sub-problem

After the experimental procedure, the Mann-Whitney U test was implemented to see the comparative state of the post-test scores of the experimental group and the control group, that is, whether there is a difference between the post-test scores between the groups. The Mann-Whitney U test results showing whether there is a significant difference between the post-test scores of the attitude scale of the experimental and control groups towards story writing are indicated in Table 6.

**Table 6:** Findings of the Differences Between Groups  
 in the Post-Test Scores of the Attitude Scale Towards Story Writing

	Group	Post-test	Mann-Whitney U	p
Scale	Experimental	4.63 (3.75-4.79)	61.5	0.002*
	Control	3.58 (1.38-4.75)		
Interest	Experimental	4.67 (3.83-5)	37.5	0.000**
	Control	3.5 (1-4,67)		
Benefit	Experimental	4.38 (3-5)	73.5	0.008*
	Control	3.75 (1.5-5)		
Emotion	Experimental	4.67 (4-5)	59.5	0.002*
	Control	3.33 (1-5)		
Appreciation	Experimental	4.67 (3-5)	75.5	0.008*
	Control	4 (1-5)		
Process	Experimental	4.5 (3.8-5)	72.5	0.008*
	Control	3.8 (1-5)		
Content	Experimental	4.5 (3.33-5)	95.5	0.054
	Control	4 (1.33-5)		

When Table 6 is examined, it is seen that there is a significant difference between the post-test scores of the experimental and control groups' attitudes towards writing stories ( $p < 0.05$ ). It is apparent that the post-test scores of the experimental group are higher than the post-test scores of the control group in terms of the overall scale and sub-dimensions such as interest, benefit, emotion, and process, and the experimental group students' attitudes towards story writing are higher. In the content sub-dimension, it is noticed that there is no significant difference although post-test scores of the experimental group are higher. It can be said that this finding is associated with the fact that the experimental and control group students prepared an activity regarding the same subject.

## 5. Conclusion and Discussion

In this part of the study, the results of digital storytelling related to the attitudes of 7th graders at secondary school towards story writing are mentioned. These results were compared with similar and relevant studies in the literature. Also, the main suggestions have been made based on the results obtained. However, although some studies on the subject of the research have been reached, no study dealing with one-to-one comparison is encountered in the literature. Accordingly, discussions are made by establishing links

with the results of the research that evaluate different dimensions of digital storytelling and are considered to be similar.

The first sub-problem of the study is "Is there a significant difference between the pre-test and post-test scores of the students' attitude in the experimental group in which digital storytelling was applied?". A significant difference in favour of the post-test was found between the pre-test and post-test scores of the students in the experimental group in which digital storytelling was applied. This result shows that digital storytelling has a significant effect on attitude towards story writing. This result is in parallel with the significant effect of digital storytelling on writing attitude and writing performance in the literature (Balaman Uçar, 2016; Ballast, Stephens & Radcliffe, 2008; Çıralı, 2014; Dayan, 2017; Dayan & Girmen, 2018; Foley, 2013; Gider, 2019, Gündüz, 2019; Polater, 2019; Skinner & Hagood, 2008; Stojke, 2009; Uslu, 2019; Yamaç, 2015; Yamaç & Ulusoy, 2016; Yılmaz, Üstündağ, Güneş & Çalışkan, 2017).

The second sub-problem of the study is "Is there a significant difference between the post-test scores of the attitude towards writing stories of the experimental group students in which digital storytelling was applied and the control group students in which digital storytelling was not applied?". There is a significant difference in favour of the experimental group between the attitude post-test scores of the students in the experimental group in which digital storytelling was applied and the ones in the control group in which it was not applied. This result shows that digital storytelling has a significant effect on attitude towards story writing.

Social media platforms where students interact in the 21st century are the areas where they can express themselves and which are important to them. As digital stories also enable students to express themselves by combining both text and multimedia tools, they have a significant impact on students' attitudes towards story writing. For, technologies encourage students to become writers and producers rather than just readers and consumers; therefore, digital stories are one of the methods of doing that. (Campbell, 2012; Lankshear & Knobel, 2006; Ohler, 2006; Simpson, 2011; Vasudevan, Schultz & Bateman, 2010; Yamaç, 2015).

Another reason for the students in the experimental group to have positive thoughts about writing stories is that they fill the flow chart within the digital story creation process. A flowchart is a draft scenario plan that provides a preview of components such as text, visual, sound, music, and effects of digital storytelling. Although students perceive it as an extra step, it gives them the chance to correct missing and incorrect places because it is a final review stage before creating digital stories (Jakes & Brennan, 2005; Kajder, 2004; Kearney, 2011; Ohler, 2006; Robin, 2006; Robin, 2008; Sadik, 2008). Studies have also revealed that the flow chart enables students to elaborate their stories and create better stories by giving them a chance to make more corrections (Bogard & McMackin 2012; Sylvester & Greenidge, 2009; Stojke, 2009).

Digital storytelling motivates 21st-century students more to write stories as they add both a visual and aural dimension to the traditional story-writing process (Simpson, 2011). The technology used in almost every field, especially mobile phones and

computers, considerably attracts the attention of children of this age. In addition to writing traditional stories, making their stories more dimensional in the computer environment, which attracts their attention, has a significant effect on students' attitudes towards story writing.

The text creation phase is one of the most important stages of digital storytelling (Xu, Park & Baek 2011). No matter how much technology is included in digital storytelling, digital stories will always benefit from the traditional dimension of reading and writing (Ohler, 2006; Lankshear & Knobel, 2006). The creation of digital storytelling is based on the presentation of that as a whole by combining the text with sound, image, music, and effects after the writing stage. The more solid the story text, namely the basement of the digital storytelling, is, the more impressive the visuals, music, effects, and sound will be. Therefore, knowing that children of the 21st century will create a story text at the very beginning of the digital storytelling creation process and then design their stories with multimedia elements that attract their attention creates a significant difference in students' attitudes towards story writing.

Smeda, Dakich, and Sharda found in a study conducted in 2012 that digital stories are effective and efficient tools to be used in educational settings, have the power to attract children, and are consistent with a constructivist approach. Similarly, Chan, Churchill, and Chiu (2017) highlighted in their study that digital stories improve students' digital literacy; therefore, it is an appropriate technique to be added in curricula. Digital storytelling that will contribute to the development of these skills and make students enjoy the process should be included in the curricula focusing on 21st-century skills. Other researchers working in this field have also stated that digital storytelling should be included in the curricula because they allow students to develop multiple skills (Butler, 2007; Copeland & Miskelly, 2010; Di Blas, Garzotto, Paolini, & Sabiescu, 2009; Lammers, 2012; Reinders, 2011; Skouge & Rao, 2009). Additionally, various studies have been conducted to prove the pedagogical benefits of digital storytelling. It has been proved that it has such benefits as the development of students' sense of responsibility with digital storytelling, deep learning-thinking skills, increase in motivation towards the lesson, development of video creation and editing skills, development of story writing skills (Matthews, 2014; Sadik, 2008; Smeda, Dakich & Sharda, 2012; Stewart & Gachago, 2016).

Furthermore, since this research was conducted by the researchers from the very beginning to the end of the process, it was adhered to Barrett's (2009) suggestion of a six-stage story-making process. Attention was paid to the fact that seven elements that Robin (2006) considered should be present in digital stories that exist in the students' digital stories. However, there were students who had difficulty in the pacing, the last element. They had trouble in calculating how many seconds each slide would last. These problems were noticed in the flowchart stage created to detect such kind of problems. These problems were minimized with the corrections made by the researcher during the flowchart creation phase. Also, since there was no finding that made a significant difference in terms of gender in the obtained data, it was not included in the findings or

conclusion section. Likewise, since all of the students in the experimental and control groups had computers, smartphones, and internet at their homes, no significant finding emerged as a variable.

In short, it is revealed that the digital storytelling creation process has contributed to the students' positive attitude towards story writing thanks to this study.

## 6. Suggestions

Suggestions based on research results;

- 1) In this study, it was studied with 7th graders at secondary school, and it was found that digital storytelling had a significant effect on the 7th graders' attitudes towards story writing. The effects of digital storytelling on the attitude towards story writing can be investigated at different levels and classes of education to reach more comprehensive results of the subject and thus compare its outputs in multiple dimensions.
- 2) In this study, it is revealed by the quantitative method that digital storytelling has a significant effect on the attitude towards story writing. More detailed or more generalizable research can be conducted through different methods and techniques.
- 3) It is revealed that the digital storytelling making process has developed a positive attitude towards writing stories for the students. Considering that story is available as a genre in all levels of the Turkish course curriculum (1st-8th grades) and digital competence is mentioned in the program, digital storytelling can be included in the curriculum.

## Declaration of Conflicting Interests

The authors declare no potential conflicts of interest statement publication of this article.

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## References

- Akbayır, S. (2007). *Eđitim fakülteleri için cümle ve metin bilgisi* (Improved 5th Edition). Ankara: Pegem Akademi.
- Akyol, H. (2006). *Yeni programa uygun Türkçe öğretim yöntemleri*. Ankara: Kök Yayıncılık.
- Babacan, M. (2008). *Yazılı ve sözlü anlatım (kompozisyon bilgileri)* (Improved 2nd Edition). İstanbul: 3F Yayınevi.

- Baki. Y. (2015). *Dijital öykülerin altıncı sınıf öğrencilerinin yazma sürecine etkisi* ((Ph.D. thesis). Accessed from YÖK Thesis Center (No: 389155).
- Balaman Uçar, S. (2016). *The impact of digital storytelling on English as a foreign language learners' writing skills* (Ph.D. thesis). Accessed from YÖK Thesis Center (No: 435230).
- Ballast, K., Stephens, L., & Radcliffe, R. (2008). The effects of digital storytelling on sixth grade students' writing and their attitudes about writing. *Proceedings of Society for Information Technology and Teacher Education International Conference 2008* (pp. 875-879).
- Barrett, H. (2009). *Creating your digital story: a sequence of activities how to create simple digital stories*. <http://electronicportfolios.org/digistory/howto.html>
- Baysal, A. C., & Tekarslan E. (2004). *Davranış bilimleri*. (Improved 4th Edition). İstanbul: Avcıol Basım Yayın.
- Bogard, J. M., & McMackin, M. C. (2012). Combining traditional and new literacies in a 21st-century writing workshop. *The Reading Teacher*, 65(5), 313-323.
- Brenner, K. (2014). Digital stories: A 21st-century communication tool for the English language classroom. *English Teaching Forum*, 52(1), 22-29.
- Brown, J., Bryan, J., & Brown, T. (2005). Twenty-first century literacy and technology in K-8 classrooms. *Innovate: Journal of Online Education*, 1(3).
- Bull, G., & Kajder, S. (2005). Digital storytelling in the language arts classroom. *Learning & Leading with Technology*, 32(4), 46-49.
- Butler, J. W. (2007). *Teachers' attitudes toward computers after receiving training in low-threshold digital storytelling applications*. (PhD thesis). University of Houston, USA.
- Büyüköztürk, Ş. (2014). *Sosyal bilimleri için veri analizi el kitabı* (Improved 19th Edition). Ankara: Pegem Akademi.
- Büyüköztürk, Ş., Çakmak, E.K., Akgün, Ö.E., Karadeniz Ş., & Demirel, F. (2012). *Bilimsel araştırma yöntemleri*. (Improved 11th Edition). Ankara: Pegem Akademi.
- Campbell, T. (2012). Digital storytelling in an elementary classroom: Going beyond entertainment. *Procedia - Social and Behavioral Sciences*, 69, 385-393.
- Can, A. (2014). *SPSS ile bilimsel araştırma sürecinde nicel veri analizi* (3rd Edition). Ankara: Pegem Akademi.
- Chan, B. S. K., Churchill, D., & Chiu, T. F. K. (2017). Digital literacy learning in higher education through digital storytelling approach. *Journal of International Education Research*, 13(1), 1-16.
- Chung, S. K. (2007). Art education technology: digital storytelling. *Art Education*, 60(2), 17-22.
- Ciğerci, F. M. (2015). *İlkokul dördüncü sınıf Türkçe dersinde dinleme becerilerinin geliştirilmesinde dijital hikâyelerin kullanılması* (Master thesis). Accessed from YÖK Thesis Center (No: 415878).
- Copeland, S., & Miskelly, C. (2010, June). Making time for storytelling; the challenges of community building and activism in a rural locale. *International Journal of Media, Technology and Life Long Learning*, 6(2), 192-207.

- Çepni, S. (2014). *Araştırma ve proje çalışmalarına giriş* (Improved 7th Edition). Trabzon: Celepler Matbaacılık.
- Çıralı, H. (2014). *Dijital hikâye anlatımının görsel bellek ve yazma becerisi üzerine etkisi* (Master thesis). Accessed from YÖK Thesis Center (No: 378556).
- Çiftci, M. (2019). *Dijital hikâyelerin ilkökul ikinci sınıf öğrencilerinin okuma becerileri üzerindeki etkisi* (Master thesis). Accessed from YÖK Thesis Center (No: 568287).
- Dayan, G. (2017). *İlkökul öğrencilerinin Türkçe dersinde dijital öyküleme çalışmaları* (Master thesis). Accessed from YÖK Thesis Center (No: 482129).
- Dayan, G., & Girmen, P. (2018). Türkçe eğitimi yazma sürecinde: dijital öyküleme. *Journal of Qualitative Research in Education – JOQRE*, 6(3), 207–228.
- Demirer, V. (2013). *İlköğretimde e-öyküleme kullanımı ve etkileri* (Ph.D. thesis). Accessed from YÖK Thesis Center (No: 328704).
- Di Blas, N., Garzotto, F., Paolini, P., & Sabiescu, A. (2009). Digital storytelling as a whole-class learning activity: Lessons from a three-years project. *In Interactive Storytelling* (pp. 14-25). Springer Berlin Heidelberg.
- Dogan, B. (2007). *Implementation of digital storytelling in the classroom by teachers trained in a digital storytelling workshop* (Ph.D. thesis). University of Houston, USA.
- Dođan, D. M. (2005). *Büyük Türkçe sözlük*. İstanbul: Pınar Yayınları.
- Erođlu, A. (2020a). A validity and reliability study of story writing anxiety scale. *Sakarya University Journal of Education*, 10(1). 120-135.
- Erođlu, A. (2020b). Türkçe öğretmeni adaylarının dijital hikâyeye yönelik metaforik algıları. *RumeliDE Dil ve Edebiyat Araştırmaları Dergisi*, 18, 49-60.
- Erođlu, A. (2019). Hikâye yazmaya yönelik tutum ölçeğinin geçerlik ve güvenirlik çalışması. *Turkish Studies Educational Sciences*, 14(6), 3111-3124.
- Foley, M. L. (2013). *Digital storytelling in primary-grade classrooms* (Ph.D. thesis). Arizona State University, Pheonix.
- Frazel, M. (2010). Digital Storytelling: Guide For Educators. Eugene, OR: International Society for Technology in Education (ISTE). <http://www.iste.org/images/excerpts/digsto-excerpt.pdf>
- Gider, B. (2019). *Bireysel ve işbirlikli dijital öyküleme uygulamalarının üstün zekalı öğrencilerin yazma performansına ve dil gelişimine etkisi* (Master thesis). Accessed from YÖK Thesis Center (No: 555861).
- Göçer, A. (2014). *Yazma Eğitimi - yazma uğraşı yazı nasıl yazılır? nasıl yazar olunur?* Ankara: Pegem Akademi.
- Gündüz (Dola), N. (2019). *Dijital öykü yazarlığının çeşitli değişkenlere göre incelenmesi* (Master thesis). Accessed from YÖK Thesis Center (No: 570395).
- Hathorn, P. P. (2005). Using digital storytelling as a literacy tool for the inner city middle school youth. *The Charter Schools Resource Journal*, 1(1), 32-38.
- Hett, K. (2012). Technology-supported literacy in the classroom: using audiobooks and digital storytelling to enhance literacy instruction. *Illinois Reading Council Journal*, 40(3), 3-13.
- İnceođlu, M. (2011). *Tutum, algı, iletişim*. (6th Edition). Ankara: Siyasal Kitapevi.

- Jakes, D. S., & Brennan, J. (2005). *Capturing stories, capturing lives: an introduction to digital storytelling*. [http://www.jakesonline.org/dst\\_techforum.pdf](http://www.jakesonline.org/dst_techforum.pdf)
- Kajder, S. B. (2004). Enter here: Personal narrative and digital storytelling. *The English Journal*, 93(3), 64-68.
- Karakoyun, F. (2014). *Çevrimiçi ortamda oluşturulan dijital öyküleme etkinliklerine ilişkin öğretmen adayları ve ilköğretim öğrencilerinin görüşlerinin incelenmesi* (Ph.D. thesis). Accessed from YÖK Thesis Center (No: 361705).
- Kavcar, C., Oğuzkan F., & Aksoy, Ö. (2003). *Yazılı ve sözlü anlatım* (3rd Edition). Ankara: Anı Yayıncılık.
- Kearney, M. (2011). A learning design for student-generated digital storytelling. *Learning, Media and Technology*, 36(2), 169-188.
- Lammers, W. P. (2012). *Digital storytelling : building 21st century literacy skills in the secondary classroom* (Master thesis). University of Northern Iowa.
- Lankshear, C., & Knobel, M. (2006). *New literacies: Everyday practices and classroom learning*. (2nd Edition). Maidenhead and New York: Open University Press.
- Matthews, J. (2014). Voices from the heart: The use of digital storytelling in education. *Community Practitioner*, 87(1), 28-30.
- MEB. (2019). *Türkçe dersi öğretim programı (ilkokul ve ortaokul 1, 2, 3, 4, 5, 6, 7 ve 8. sınıflar)* MEB: Ankara.
- Millî Eğitim Bakanlığı Eğitimi Araştırma ve Geliştirme Dairesi Başkanlığı, EARGED. (2011). *MEB 21. yüzyıl öğrenci profili*. Ankara: Eğitimi Araştırma ve Geliştirme Dairesi Başkanlığı.
- Ohler, J. (2006). The world of digital storytelling. *Educational leadership*, 63(4), 44-47.
- Özerbaş, M. A. ve Öztürk, Y. (2017). Türkçe dersinde dijital hikâye kullanımının akademik başarı, motivasyon ve kalıcılık üzerinde etkisi. *TÜBAV Bilim*, 10(2), 102-110.
- Qiongli, W. (2009). Commercialization and digital storytelling in China. (Ed. J. Hartley & K. McWilliam). *Story Circle Digital Storytelling Around the World*. (ss. 239-244). USA: Blackwell Publishing.
- Polater, C. (2019). *İlkokul dördüncü sınıfta dijital öykü yöntemiyle değerler eğitimi* (Master thesis). Accessed from YÖK Thesis Center (No: 568604).
- Razmi, M., Purali, S., & Nozad, S. (2014). Digital storytelling in EFL classroom (oral presentation of the story): a pathway to improve oral production. *Procedia-Social and Behavioral Sciences*, 98, 1541-1544.
- Reinders, H. (2011). Digital storytelling in the foreign language classroom. *ELTWO Journal*, 3, 1-9.
- Robin, B. R. (2006). The educational uses of digital storytelling. in society for information. *Technology & Teacher Education International Conference*. <http://digitalstorytelling.coe.uh.edu/articles/Educ-Uses-DS.pdf>.
- Robin, B. R. (2008). Digital storytelling: a powerful technology tool for the 21st century classroom. *Theory Into Practice*, 47, 220-228.

- Robin, B. R., & McNeil, S. G. (2012). What educators should know about teaching digital storytelling. *Digital Education Review*, 22, 37-51.
- Sadik, A. (2008). Digital storytelling: a meaningful technology-integrated approach for engaged student learning. *Educational Technology Research and Development*, 56(4), 487-506.
- Shrosbree, M. (2008). Digital video in the language classroom. *The JALT CALL Journal*, 4(1), 75-84.
- Simmons, A. (2008). *Hikâyenin gücü*. (Trans. Gökçesu Tamer). İstanbul: MediaCat Kitapları.
- Simpson, T. (2011). A motivation to write: Stepping it up digital storytelling. [http://tammisimpsonportfolio.weebly.com/uploads/1/0/8/2/10829844/te848\\_digital\\_story\\_research\\_paper.pdf](http://tammisimpsonportfolio.weebly.com/uploads/1/0/8/2/10829844/te848_digital_story_research_paper.pdf).
- Skinner, E. ve Hagood, M. (2008). Developing literate identities with English language learners through digital storytelling. *The Reading Matrix*, 8(2), 12-38.
- Skouge, J. R., & Rao, K. (2009). Digital storytelling in teacher education: Creating transformations through narrative. *Educational Perspectives*, 42(1-2), 54-60.
- Smeda, N., Dakich, E., & Sharda, N. (2012). Transforming Pedagogies Through Digital Storytelling: Framework and Methodology. 206-211.
- Soler Pardo, B. (2014). Digital storytelling: a case study of the creation, and narration of a story by EFL learners. *Digital Education Review*, 26, 74-84.
- Stewart, K., & Gachago, D. (2016). Being human today: A digital storytelling pedagogy for transcontinental border crossing. *British Journal of Educational Technology*, 47(3), 528-542.
- Stojke, A. E. (2009). *Digital storytelling as a tool for revision* (Ph.D. thesis). Oakland University.
- StoryCenter (11.10.2017). <https://www.storycenter.org/>
- Sylvester, R., & Greenidge, W. (2009). Digital storytelling: extending the potential for struggling writers. *Reading Teacher*, 63( 4), 284-295.
- Şentürk Leylek, B. (2018). *İlkokul üçüncü sınıf öğrencilerinin okuma becerilerinin gelişiminde ve okumaya yönelik tutumlarında dijital hikayelerin etkisi* (Ph.D. thesis). Accessed from YÖK Thesis Center (No: 534932).
- Taşkaya, S. M. (2017). Dil ve edebiyat öğretimi yöntemleri. A. Akkaya (Ed.), *Dil ve Edebiyat Öğretimi* (ss. 99-198). Ankara: Asos Yayınları.
- Taşpınar, M. (2017). *Sosyal bilimlerde SPSS uygulamalı nicel veri analizi*. Ankara: Pegem Akademi.
- TDK (WEB). Web: <http://www.tdk.gov.tr/>
- Temizkan, M. (2014). *Yaratıcı yazma süreci (hikâye yazma)*. Ankara: Pegem Akademi.
- Temizyürek, F. (2003). Türkçe öğretiminde çocuk edebiyatının önemi. *Türklük Bilimi Araştırmaları*, 13, 161-167.
- Türe Köse, H. B. (2019). *Okul öncesi dönem çocuklarında dijital hikâye anlatımının dinleme becerilerine etkisi* (Master thesis). Accessed from YÖK Thesis Center (No: 536853).

- Uslu, A. (2019). *İřbirlikli dijital hikaye anlatımının ilkokul 4. sınıf öğrencilerinin yaratıcı yazma ve sosyal duygusal öğrenme becerilerine etkisi* (Master thesis). Accessed from YÖK Thesis Center (No: 557640).
- Vasudevan, L., Schultz, K., & Bateman, J. (2010). Rethinking composing in a digital age: Authoring literate identities through multimodal storytelling. *Written Communication*, 27(4), 442-468.
- Verdugo, D. R., & Belmonte, I. A. (2007). Using digital stories to improve listening comprehension with Spanish young learners of English. *Language Learning & Technology*, 11(1), 87-101.
- Xu, Y., Park, H., & Baek, Y. (2011). A new approach toward digital storytelling: an activity focused on writing selfefficacy in a virtual learning environment. *Journal of Educational Technology & Society*, 14(4), 181-191.
- Walsh, B., & Blewitt, P. (2006). The effect of questioning style during story book reading on novel vocabulary acquisition of preschoolers. *Early Childhood Education Journal*, 33(4), 273-278.
- Wang, S., & Zhan, H. (2010). Enhancing teaching and learning with digital storytelling. *International Journal of Information and Communication Technology Education*, 6(2), 76-87.
- Yamaç, A. (2015). *İlkokul üçüncü sınıf öğrencilerinin yazma becerilerinin gelişiminde dijital hikâyelerin etkisi* (Ph.D. thesis). Accessed from YÖK Thesis Center (No: 397437).
- Yamaç, A., & Ulusoy, M. (2016). The effect of digital storytelling in improving the third graders' writing skills. *International Electronic Journal of Elementary Education*, 9(1), 59-86.
- Yılmaz, Y., Üstündağ, M. T., & Güneş, E. (2017). Öğretim materyali olarak dijital hikâye geliştirme aşamalarının ve araçlarının incelenmesi. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi*, 17(3), 1621-1640.

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