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Digital Storytelling in Education from Teachers' Perspectives

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Abstract

This study aims to reveal teachers' opinions about the use of digital storytelling in education. The study was carried out with case study from qualitative methods. The study group consists of 38 teachers participating in in-service training at the end of the spring semester of the 2018-2019 academic year and working in public schools. Data collection tools are demographic information form and semi-structured interview form created by the researcher. Firstly, teachers were trained on digital storytelling within the scope of in-service training. Within the scope of this training, the definition, history, components, types, stages of digital storytelling, the importance of its use in educational environments were explained through presentations. Then, the introduction of software that can be used for digital storytelling and demonstration of sample digital stories have been made. Finally, data collection tool was applied. The content analysis method was used in the analysis of the data. At the end of the study, teachers gave opinions such that digital storytelling provides the opportunity to teach the subject more easily, offers students the opportunity to learn by having fun, may be used to raise awareness on social issues, and the lack of technological infrastructure may be a preventive factor.

Keywords: Digital storytelling, in-service training, teacher education.

Öğretmenlerin Bakış Açısıyla Eğitimde Dijital Öyküleme

Öz

Bu çalışma, öğretmenlerin eğitimde dijital öyküleme kullanımına ilişkin görüşlerini ortaya çıkarmayı amaçlamaktadır. Çalışma nitel yöntemlerden durum çalışmasıyla gerçekleştirilmiştir. Çalışma grubu, 2018-2019 eğitim-öğretim yılı bahar dönemi sonunda devlet okullarında görev yapan ve hizmet içi eğitime katılan 38 öğretmenden oluşmaktadır. Veri toplama araçları, demografik bilgi formu ve araştırmacı tarafından oluşturulan görüşme formudur. İlk olarak öğretmenlere hizmet içi eğitim kapsamında dijital öyküleme eğitimi verilmiştir. Bu eğitim kapsamında dijital öykü anlatımının tanımı, tarihçesi, bileşenleri, türleri, aşamaları, eğitim ortamlarında kullanımının önemi sunumlar yoluyla anlatılmıştır. Sonra dijital öykü anlatımı için kullanılabilecek yazılımların tanıtımı yapılmış ve örnek dijital öyküler gösterilmiştir. Son olarak veri toplama aracı uygulanmıştır. Verilerin analizinde içerik analizi yöntemi kullanılmıştır. Araştırmanın sonunda öğretmenler, dijital öykü anlatımının konuyu daha kolay öğretme fırsatı sağladığı, öğrencilere eğlenerek öğrenme fırsatı sunabileceği, sosyal konularda farkındalık yaratmak için kullanılabileceği ve engelleyici faktör olarak ise teknolojik altyapı eksikliği ile karşılaşılabileceği gibi görüşler belirtmişlerdir.

Anahtar kelimeler: Dijital öyküleme, hizmetiçi eğitim, öğretmen eğitimi.

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1 | INTRODUCTION

Today, technology is widely used in educational environments as in all areas of life. The correct and effective integration of technology into education increases the quality of education. Technology integration is a multidimensional and dynamic process that includes many variables such as government policies, school management, teacher, student, technical infrastructure, and curriculum (Avci et al., 2019). Teachers, one of these variables, have a great responsibility in the process. In every century, teachers' qualifications are expected to update along with school, classroom design, and education-teaching strategies (Göçen et al., 2020). In today's digital age, one of these expectations is keeping up with current and new technological applications. Because teachers will include the technology in the learning-teaching process and perform the integration process (Avci et al., 2019). Some of the obstacles in integrating technology into classes are specific to teachers and these are teachers' views about technology use in education and training environments, reluctance to change, and established classroom practices (Ertmer, 1999).

Many technologies, such as augmented reality, digital storytelling, and social networks are used in classrooms. Each new digital technology is a new channel for students to acquire, search, and create information (Lion, 2017). As a result of their interviews with teachers in their study, Avci et al. (2019) concluded that one of the technologies used by teachers in the process of technology integration is digital storytelling. Digital storytelling supports technology integration in learning and teaching environments (Kocaman-Karoğlu, 2016b). It is a combination of narration art with various multimedia tools such as video, image, music, graphic (Stenhouse & Schaver, 2019). There are different classifications of digital stories in the literature. Robin (2006) divided digital storytelling into three groups; (a) Informative and instructive stories on technology, mathematics, etc. (b) personal stories that provide information about important issues in a person's life (c) historical stories that provide information about past.

Digital storytelling is a technology-based and innovative method that allows individuals to create meaningful narratives with the help of technological tools (Karabatak & Şengür, 2019). Digital storytelling, which strives to integrate the experiences of individuals with technology and transfer them to the future, can be expressed as supporting verbal expression with auditory and visual elements (Baki & Feyzioğlu, 2017). As it contains both audiovisual elements, it has positive effects on learning. Digital storytelling is an educational tool that combines digital media with innovative learning and teaching practices, which facilitates the implementation of the constructivist approach (Smeda et al., 2014).

Digital storytelling, which has an understanding of the constructivist approach by living and learning, is a dynamic and powerful tool with various advantages (Baki & Feyzioğlu, 2017). The use of digital storytelling in an educational environment allows students and educators to improve their ability to collect information, solve problems and work with the team (Yuksel Arslan et al., 2016). It provides students with a suitable learning environment in terms of motivation, collaboration, reflective thinking, communication, and technical skill development (Smeda et al., 2014). It also helps teachers overcome the obstacles to using technology efficiently in their classrooms and allows them to create content with student contributions (Robin, 2008). Smeda et al. (2014) stated that digital narration is a powerful tool to create more attractive and exciting learning environments, in addition to integrating teaching messages with learning activities. The literature reveals that digital storytelling increased students' 21st-century skills, language skills, academic achievements, technological skills, attitudes, motivation, problem-solving skills, and participation in the lesson (Baki & Feyzioğlu, 2017; Del-Moral-Pérez et al., 2019; Gömleksiz & Pullu, 2017; Kocaman-Karoglu, 2016a; Niemi et al., 2014; Özüdoğru & Çakır, 2020; Smeda et al., 2014).

Teacher, student and environment are important for the successful use of digital storytelling in classrooms. Göçen et al. (2020) determined that teachers' expectations from 21st-century classes were technological equipment, access to technology, innovative teachers, and innovative learning approaches. In addition, while teachers expected the students to be more productive, active, and have the 21st-century

skills, teachers stated that they needed to learn technological content and applications, how to integrate technology into classes, and the use of technological tools.

Although teachers are expected to effectively integrate new technologies into classes, there are those who resist innovation. There are also computer teachers who depend on traditional computer learning methods and do not want to change (Lion, 2017). Dursun and Saracaloğlu (2016) concluded that information and communication technologies teachers have some deficiencies in the competence of teaching skills that will require an application, other branch teachers are not willing to use information and communication technology, and teachers express that they mostly used ready-made materials on the Internet. Dağ (2016) stated that the attempts to improve the technological competences of teachers in Turkey do not meet the requirements of the information age, and in-service training for their professional development do not support lifelong learning.

This study aims to reveal the opinions of information and communication technologies teachers regarding the use of digital storytelling for educational purposes by providing in-service training. With the pre-service training of teachers, it is not completely possible for them to provide education that is suitable for the needs of the age and the needs of the learner. For this reason, in-service training is extremely important. It is expected that information and communication technologies teachers will dominate technology-related innovations and guide other teachers. In addition, it is important that students use technology for educational purposes and have experience of creating products with technology starting from primary education. This is closely related to having role model teachers. For these reasons, it is important for such teachers to effectively integrate current and new technologies into classrooms. Based on this reason, in this study, the opinions about the effects of this method in case of applying digital storytelling training to these teachers in the classroom were revealed. Information and communication technologies teachers' views as technologically field experts on the application of digital storytelling are valuable. Based on this purpose, the research problem expressed as follows:

What are the opinions of teachers about the use of digital storytelling in educational environments?

2 | Method

Research Model

Case study was used in this research. Case study is a qualitative approach where it collects in-depth information, describes a situation and reveals the themes of the situation, using multiple sources of information to bring in-depth understanding of the real life, current system, or a situation in a particular time (Creswell, 2013). The case is the use of digital storytelling by information and communication technologies teachers in classrooms in this study.

Participants

The study was carried out at the end of the spring semester of the 2018-2019 academic year with 38 teachers who worked in public schools in a city in the Central Anatolia Region and participated in in-service training. The data regarding the demographic information of the participants are given in Table 1.

Table 1. Distribution of Participants by Demographic Information

Gender	N	%
Female	10	26.3
Male	28	73.6
Total	38	100
Seniority	N	%
3-10 year	11	28.9
11-14 year	17	44.7
15-17 year	10	26.3
Total	38	100
Awareness of the method	N	%
Yes	31	81.6
No	7	18,4
Total	38	100
Using the method	N	%
Yes	16	42.1
No	22	57.9
Total	38	100
Willingness to use the method	N	%
Yes	35	92.1
No	3	7.9
Total	38	100
Level of self-efficacy to use the method	N	%
Very insufficient	0	0
Insufficient	4	10.5
Moderately sufficient	10	26.3
Sufficient	19	50
Very sufficient	5	13.2
Total	38	100

As can be seen in Table 1, the vast majority of the participants were male. The seniority of the participants varies between 3 and 17 years. Seven participants have not heard of the digital storytelling method before. 22 participants stated that they did not use the digital storytelling method before. Only three participants were reluctant to use the digital storytelling method. Most of the teachers feel sufficient about using the digital storytelling method.

Data Collection

Within the scope of in-service training, information and communication technologies teachers were trained on digital storytelling at the end of the 2018-2019 academic year. The definition, history, components, types, stages of digital storytelling, the importance of its use in educational environments were explained through presentations. Then, the introduction of software that can be used for digital storytelling and demonstration of sample digital stories have been made. Finally, a form consisting of demographic information form and open-ended questions were applied on a voluntary basis to information and communication technologies teachers who participated in in-service training. The demographic information form consists of six questions. Additionally, four open-ended questions were asked. While designing the form, the opinions of two experts from the field of computer and instructional technology education and one from the language field taken, and corrections were made. In order to test whether there are any questions that are not clear, the form was applied to an information and communication technologies teachers who uses the method of digital storytelling. After a few changes, the form was finalized. Following the demographic information form, the form includes open-ended questions about the effects of using the digital storytelling method for the teacher, the effects for the student, the factors that will prevent the use of the method, if any, and what the purposes of the method may be. The form was applied voluntarily, and the response time was on average 20 minutes.

Data Analysis

The data were analyzed by the content analysis method. Firstly, the data were transcribed. Teachers' opinions were coded as T1, T2, etc. For the reliability of the analysis, the consensus among the coders was calculated. After coding by two encoders, similarities and differences were compared. Then the coding table was created. The consensus of encoders was calculated by the formula of Miles and Huberman (1994). The value was calculated as 90.6%. Miles and Huberman (1994) stated that 80% similarity is reliable.

3 | Findings

When the data were analyzed, the findings were collected under four themes. These are teachers, students, barrier factors and usage purposes.

The Theme of Teacher

The theme of teacher expresses the effect of the use of digital storytelling in education on teachers according to teachers' views. The effects of using digital storytelling in the educational environment were gathered under two sub-themes and 16 code. Frequency refers to the number of teachers for code.

Table 2. Sub-themes, Codes and Frequencies of the Teacher Theme

Sub-theme	Code	Frequency
Course process	Teaching the subject more easily	11
	Attract attention	8
	Taking time	7
	Attracting interest	6
	Activating the student	6
	Providing permanent learning	5
	Increasing motivation	4
	Appeals to multiple sense organs	3
	Providing fun learning	3
	Explanation by a different method	3
	Providing effective learning	2
	Summarizing the subject	2
	Imagination development	1
	Provide a summary	1
Technical	Infrastructure requirement	2
	Media usage skill	1
	Software finding difficulty	1

As can be seen in Table 2, digital storytelling has sub-themes in terms of lesson process and technical aspects for the teacher. Teaching the subject more easily (11) and attract attention (8) codes were the most stated effects of digital storytelling on the course process. The infrastructural requirement (2) code was the most stated effect by teachers in terms of technic. Sample teacher views on the effects of digital storytelling for teachers are given below.

T1: "It will enable the subject to be taught more easily by attracting the attention of the students in the classroom."

T7: "I think I will be less tired while lecturing. Students will be more motivated to the lesson and they will appeal to more sensory organs and understand the lesson better."

T15: "…Internet connection weakness and poor-quality computers take extra time."

T35: "I think it will be easy for the teacher to attract the student's attention and achieve the targeted subject objectives."

The Theme of STUDENT

The theme of students expresses the effect of the use of digital storytelling in education on students according to teachers' views. The effects of the use of digital storytelling in the educational environment for the student were gathered under three sub-themes and 13 codes.

Table 3. Sub-themes, Codes and Frequencies of the Student Theme

Sub-theme	Code	Frequency
Motivation	Learning with fun	11
	Attracting interest	10
	Ease of learning	8
	Attract attention	3
Course Process	Appeals to multiple sense organs	7
	Permanent learning	6
	Increasing participation	4
	Different method opportunities	2
	Educational use of technology	2
	Embodiment	2
Skill	Developing thinking skills	2
	Developing creativity skills	2
	Developing technological skills	1

As can be seen in Table 3, according to the opinions of the teachers, digital storytelling has the motivation, course process, and skill sub-themes for the student. Learning with fun (11), was the most addressed code in the motivation sub-theme. Appeals to multiple sense organs (6) were the most addressed code in the course process sub-theme. Developing thinking skills (2) was the most addressed code in the skill sub-theme. Sample teacher views on the effects of digital narration for students are given below.

T5: "Improves student's thinking skills. Maybe a good opportunity for creativity ..."

T10: "It will increase the student's interest in the lesson. It will make the lesson fun. Participation in the lesson will increase in proportion to these."

T13: "It will provide learning with fun and permanent learning. It will make learning complex topics simpler."

T37: "...It addresses multiple sensory organs, so learning becomes easier."

The Theme of Barrier Factors

The theme of the barrier factors refers to the factors that may hinder the use of digital storytelling in education according to teachers' views. The factors that will affect the application of digital storytelling in the educational environment are gathered under two sub-themes and 11 codes.

Table 4. Sub-themes, Codes and Frequencies of the Barrier Factors Theme

Sub-theme	Code	Frequency
Technical	Technological infrastructure inadequacy	11
	Classes not equipped	10
	Internet problems	6
	Computer problems	5
	Students' ability to use software	4
	Software paid	3
	Technical problems	2
	Software limitation	2
Curriculum	Lack of time	7
	Not to suit every subject	5
	Not suitable for a crowded class	2

As can be seen in Table 4, according to the teachers' opinions, the factors that may prevent the application of digital storytelling in education were gathered under the technical and curriculum sub-themes. Technological infrastructure inadequacy (11) was the most addressed code in the technical sub-theme. Lack of time (7) was the most addressed code in the curriculum sub-theme. Sample teacher views on the factors that may prevent the application of digital narration are given below.

T7: "There may be technical problems. Old computers or taking time while doing can make the lesson boring."

T19: "Videos may not be understood if there is a problem in the audio system. It may not be suitable in crowded classes. Students sitting in the back rows may not hear or see."

T22: "The inadequacies of the information and communication technologies classes of schools and the lack of infrastructure can negatively affect the use of digital storytelling."

T37: "… It will be time consuming if done with students."

The Theme of Usage Purposes

The theme of usage purposes expresses the opinions of the teachers about the purposes that digital storytelling can be used in education. The purposes of digital storytelling in the educational environment were gathered under three sub-themes and 15 codes.

Table 5. Sub-themes, Codes and Frequencies of the Usage Purposes Theme

Sub-theme	Code	Frequency
Motivation	Attract interest	6
	Making it fun	5
	Attract attention	4
	Imagination development	3
Supporting the course process	Teaching complex topics	5
	Providing permanent learning	5
	Presenting audiovisual material	3
	Giving preliminary information	3
	Activating the student	3
	Giving the main idea	2
	Summarizing the subject	2
	Embodiment	2
Awareness-raising	Social issues	7
	Values education	5
	Behavioral education	3

As can be seen in Table 5, according to the teachers' opinions, the purposes of digital storytelling in the educational environment were gathered under motivation, supporting the course process, and teaching social issues sub-themes. Attract interest (6) was the most addressed code in the motivation sub-theme. Teaching of complex topics (5) and providing permanent learning (5) were the most addressed codes in supporting the course process sub-theme. Social issues (7) were the most addressed code in the awareness-raising sub-theme. Sample teacher views on the use of digital narration in educational environments are given below.

T1: "Can be used to attract the student's interest almost in any subject. It will also be effective as it has visual and audio elements in terms of more permanent learning."

T22: "…It can be used to increase the retention of intangible concepts by concretizing them."

T35: "Digital storytelling can be used in the parts of the information technology subjects in the curriculum that are relevant to social life issues."

T37: "…It addresses multiple sensory organs, so learning becomes easier."

4 | Discussion & Conclusion

This section presents the results relating to the use of digital storytelling in educational environments for teachers and students, the factors that will prevent their use in the classroom, and the purposes of use. The first result of the study is regarding the effects of using digital storytelling in the educational environment for the teacher. The teachers reported that easy teaching and attracting attention as an effect of digital storytelling on the course process. In technical terms, they stated that there is a need for infrastructure. The second result of the study is regarding the effect of digital storytelling on the student. The teachers stated that digital storytelling provides motivation and fun learning for students. In terms of the course process, they stated that digital storytelling appeals to multiple senses organs for students. In terms of skill development, some teachers state that digital storytelling develops students' technological skills in addition to their thinking and creativity skills. The third result of the research is regarding the elements that may prevent the application of digital storytelling in classrooms. The teachers stated that the lack of technological infrastructure and the lack of equipped classes are technical obstacles. Also, there might be time deficiencies in terms of the curriculum. The fourth result of the study is regarding the purposes of using digital storytelling in educational environments. The teachers stated that digital storytelling may be used to attract interest to the lesson in terms of motivation, to teach complex subjects in order to support the course process, and to awareness-raising on social issues.

As digital storytelling becomes one of the major study topics in the education field, there are studies with similar results to this study in the literature. From the studies examining the teachers' views on this method; Supporting 21st-century skills (Yuksel et al., 2011), supporting active participation (Dogan & Robin, 2009; Kocaman-Karoğlu, 2016b; Yuksel et al., 2011), providing motivation (Dogan & Robin, 2009; Yuksel et al., 2011; Yuksel Arslan et al., 2016), ensuring concrete experiences (Kabaran et al., 2019; Kocaman-Karoğlu, 2016b), attracting attention (Kabaran et al., 2019); attracting interest (Niemi et al., 2014), improving thinking skills (Kabaran et al., 2019) and contributing to technological development (Del-Moral-Pérez et al., 2019; Dogan & Robin, 2009; Kocaman-Karoğlu, 2016b; Smeda et al., 2014; Yuksel Arslan et al. 2016) are some of the supportive study results. Also, Yuksel Arslan et al. (2016) stated that digital storytelling is a driving force for change. This result is similar to the view that it provides an opportunity to teach a different method in this research. In addition, Dogan and Robin (2009) stated that teachers also increase their presentation skills, research skills, organizational skills, and writing skills. In their studies, Niemi et al. (2014) and Del-Moral-Pérez et al. (2019) stated that the participant teachers are of the opinion that digital storytelling enhances communication and interaction.

In this study, it is noteworthy that teachers have mostly positive opinions about the use of digital storytelling in educational environments. It is important to give teachers, who have a significant role in technology integration, the opportunity to experience such technologies and to evaluate their views as practitioners in educational environments. But teachers stated the lack of time and equipment as negative views. Ertmer (1999) stated that if the teachers do not have sufficient equipment, time, education, or support, meaningful technology integration will be difficult. Problems arising from the lack of theoretical and technological knowledge (Kocaman-Karoğlu, 2016b; Niemi et al., 2014) and time problems (Dogan & Robin, 2009; Kabaran et al., 2019; Niemi et al., 2014) are similar to the results of this study. Similarly, in their study Kabaran et al. (2019) stated that participant teachers are of the opinion that there might be problems due to the students' lack of technical or software competencies.

Teachers' experiences and opinions regarding the use of technology are important in terms of increasing the quality in educational environments. In order to create constructivist learning environments, it might be beneficial to use methods that will enable teachers and students to create content. Technological behavior and technology use of teachers have a profound effect on students (Lion, 2017). Information and communication technologies teachers will be an example and guide for the use of new digital technologies to their schools and environments. Information and communication technologies teachers play a significant role in starting the use of the new digital education environment in schools.

RECOMMENDATIONS

As information and communication technologies teachers can look at the digital storytelling method both technologically and pedagogically, this study is important because it contains the opinions of information and communication technologies teachers about the use of the digital storytelling method in education. Workshops might be organized by including larger teacher groups, school administrators, different branch teachers, students, and parents.

The results of the study reveal that participant teachers are of the opinion that there are technological infrastructure deficiencies and classes are not technically equipped. Projects might be carried out in cooperation with universities and the Ministry of National Education to improve the infrastructure and technological competences of schools.

Another result of the study is that there might be problems in applying the method due to students' lack of technological or software skills. It was also noted by participants that the curriculum development concerns and methods were time-consuming. The number of technology-related courses may be increased in curriculums to improve students' competencies. In other courses, the content and duration of the course may be arranged considering the technology will be integrated.

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