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Research Article

# Digital Storytelling Overview: The Benefits of Digital Storytelling in Gifted Education

Dijital Hikâye Anlatımına Genel Bakış:
Özel Yeteneklilerin Eğitimindeki Faydaları

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## Abstract
Digital storytelling is a learner-centered teaching method with a lot of promise to help students develop 21st-century skills and improve learning outcomes throughout the curriculum. The present article starts with a brief introduction of digital storytelling. Then, it explains the influence of digital storytelling on learning settings and existing uses of digital storytelling, as well as a discussion of some of the benefits of digital storytelling for both teachers and students. Additionally, the convenience of digital storyteling in gifted education was discussed for educators who would like to utilize from digital storytelling as an educational endeavor. Finally, the relevant studies were stated to show if the digital storytelling technique is effective in gifted education.
**Keywords:** digital storytelling, gifted education, instructional technologies

## Öz
Dijital hikâye anlatımı, öğrencilerin yirmi birinci yüzyıl becerilerini geliştirmelerine ve aldıkları eğitim müfredatı boyunca öğrenme çıktılarını iyileştirmelerine yardımcı olmayı vaat eden, öğrenciyi merkeze alan bir öğretim yöntemidir. Bu makalede, ilk olarak dijital hikâye anlatımını kısaca tanımını yapılmış, sonrasında ise dijital hikâye anlatımının öğrenme ortamları ve mevcut dijital hikâye anlatımı kullanımları üzerindeki etkisini açıklamıştır. Ayrıca dijital hikâye anlatımının hem öğretmenler hem de öğrenciler için bazı faydaları tartışılmıştır. Buna ek olarak, dijital hikâye anlatımından eğitim amaçlı yararlanmak isteyen eğitimciler için özel yetenekliler eğitiminde dijital hikâye anlatımı yönteminin uygunluğu tartışılmıştır. Son olarak, dijital hikâye anlatımı tekniğinin özel yeteneklilerin eğitiminde etkili olup olmadığını ortaya koyan alanyazındaki ilgili çalışmalara yer verilmiştir.
**Anahtar kelimeler:** dijital hikâye anlatımı, özel yeteneklilerin eğitimi, eğitim teknolojileri

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## 0. Introduction

Storytelling is the ability to tell stories. It is a very simple, but also a very powerful method in sharing and transferring knowledge (Tong et al. 2018), in improving teaching methods, communication and critical thinking skills (Moradi & Chen 2019). Storytelling is thinking without borders, with original thinking and reasoning in different ways. It requires the use of imagination and intuition, and critical and divergent thinking. In spite of the fact that storytelling was once connected only with verbal expression, the art of storytelling has evolved and taken on numerous forms, including digital form, as a result of technological advancements (Castañeda 2013). It today encompasses a wide range of inscription techniques like singing, writing, acting and filming through the use of technology (Niemi, Niu & Vivitsou 2019: 104; Ohler 2013). This technology integrated storytelling method is called digital storytelling (DST).

Educational specialists like school managers and administrators need to have a deeper understanding of the value of technology and the types of technical support required to provide meaningful learning experiences at schools (Ostashewski & Reid 2013). It is because technology enriched learning tools facilitates students' learning considerably (Niemi et al. 2019: 108). DST could be a useful educational tool for combining digital media with creative teaching and learning approaches and to engage students in higher-order thinking and deeper learning (Smeda, Dakich & Sharda 2010). For that reason, the current study aims to present digital storytelling as an instructional tool in order to fully understand its potential in learning. In this context, the current study explores the educational benefits of digital storytelling for students' learning and skills development and gives an overview of existing uses of digital storytelling. Also, it gives the probable benefits of the use of DST in gifted education and the results of the recent studies are explained.

## 1. The Use of Digital Storytelling in Education

DST is the process of using stories and digital media for personal expression by combining art (design), verbal, and written literacies (Ohler 2013) and utilizing from the expressive media such as blogs, podcasts and social media (Loveless, Sullivan, Dredger & Burns 2017: 156). It revolves around a selected topic. In education, students do their research in previously selected topic, choose the most important point of view, search for appropriate images to suit the topic, find appropriate music to match the topic, and summarize the accumulated knowledge into a brief story. While students are creating their own digital stories, they try not to omit important points so that the topic can be understood easily (Bakar 2019).

Students start writing their digital stories by asking questions and organizing their opinions. They voice their thoughts through their narratives at the end of the process (Di Blas 2016; Robin 2008). This process encourages students to activate their imaginations and enables them to see the whole structure of the story through visualization, identification of their mistakes and organization of their thoughts (Xu, Park & Baek 2011). Also, that process provides students with various conveniences such as time saving, physical comfort, legibility, reduction of spelling and punctuation problems, easy archiving and page layout (Tüzel & Tok 2012).

Another important benefit of DST is that it allows students to use technology as designers, become active participants in the creative process (Bedir Erişti 2016). The creation of digital

stories encourages students to go beyond the role of consumers of the information and become producers of media, and therefore the culture, too. This process contributes to the formation of cultural capital among students. Essentially, digital storytelling invites students to combine technology, performance, and personal experiences (Loveless et al. 2017: 156). Thus, it allows students to organize educational messages and participate in cross-cultural communication through sophisticated multimedia (Alameen 2011; Kozdras, Joseph & Kozdras 2015).

In addition, being part of a creation process allow students to create in their own original language (Bedir Erişti 2016). Also, their classmates' stories may help them develop new perspectives on topics and obtain a better understanding of a phenomenon (Niemi et al. 2014) and students comprehend narrative texts more easily than informative texts (Temizkan 2011). It is believed that digital stories, which are a multidimensional learning-teaching tool transforming the story-writing process into a more enjoyable process and it is promising to contribute the acquisition of new and original perspectives in learning (Baki & Feyzioğlu 2017). Students are encouraged to comprehend academic concepts and to convey their views, opinions, and thoughts via the use of DST (Al-Shaye 2021; Dupain & Maguire 2005).

## 2. The Educational Benefits of Digital Storytelling

Digital storytelling (DST) is a dynamic and powerful pedagogical strategy that relies on learner-centered methods (Kearney 2009; Smeda, Dakich & Sharda 2014) helping both teachers and students to satisfy the demands and expectations of 21st century abilities (Baki & Feyzioğlu 2017; Jenkins, Purushotma, Weigel, Clinton & Robinson et al. 2009; Robin 2008). Designing and implementing DTS offers autonomous and tailored learning opportunities by allowing learners to share their experiences, thoughts, and to assess their own progress regularly (Kim, Coenraad & Park 2021; Van Gils 2005). Learner-centered methods on investigating and addressing a selected topic allow students to cooperate, to build critical thinking skills and to concentrate on their ideas (Krajcik & Blumenfeld 2006). Students' control of their own learning boost their self-esteem and confidence (Miller 2009; Robin & Mcneil 2019). Later on, improved self-esteem and confidence is transmitted to students' work lives (Ohler 2013) allowing them to utilize their knowledge and abilities in work settings (Clarke & Mile 2003).

DST is also an effecient teaching tool for teachers. It does not require much preparetion of teacher, it is inexpensive and has high instructional capacity (Gürsoy 2021). Incorporating DST method into the curriculum provides variety in the classroom setting, gives chance to personalize learning experiences, encourages students to engage in learning process actively rather than being passive receivers of information. Students who write their own story about a subject take part in high-level cognitive activities such as synthesis-evaluation which would provide more permanent learning (Turgut & Kışla 2015). Retaining new information and understanding difficult material bridge between existing knowledge and new material (McLellan 2006; Niemi & Multisilta 2016; Robin 2008; Van Gils 2005).

Furthermore, integrating visual images with written text improves and accelerates student understanding (Robin 2006). By increasing students' interest, attention and motivation, it can help teachers manage classroom, make abstract concepts tangible and the activities in the instructional procedure offers in-depth and long-term learning opportunities and comprehension for students (Bakar 2019; Demirbaş & Şahin 2020; Sarıtepeci 2021). DST

also ensures effective participation of students during the learning process (Robin 2006). Much of the literature supports that students enjoyed producing their own digital stories, at the same time, they were interested in their schoolwork (Tobin & Blanton 2014). They showed more willingness to work hard (Dupain & Maguire 2005) and improved their grades by creating longer, more complex digital stories (Campbell 2012).

Teacher-created digital stories can also be used to supplement the lessons within a bigger unit, to promote debate about a story's themes, to make abstract or complex subject more comprehensible (Robin 2006), and to address significant challenges in novel ways (Ohler 2013). Nevertheless, teachers who want to introduce DST into their courses should keep in mind that it may take multiple efforts for students to exhibit technological skills and a comprehension of their chosen topic. So, incorporating DST might require a significant amount of time. Students will require time to learn what is expected of them when using DST, as they will with any new educational technique (Robin 2006).

### 3. Which Skills of the Students Improved After Digital Stroytelling Application?

Digital storytelling was found to be effective universally in all areas of learning from early childhood to higher education levels (Robin 2006; Wang & Zhan 2012). It is because DST is very easy to adapt across a wide range of disciplines, and it has a lot of promise to improve learning outcomes in general (Sarıtepeci 2021). DST was utilized as a teaching tool in multiple disciplines such as native and foreign language education (e.g., Peñalver & Urbieta 2021; Çoban, Gülşen & Bayhan 2019; Yang & Wu 2012), history and geography education (Marshall 2021; High 2021), math education (e.g., İnan 2015; Robin 2006; dos Santos Silva, Sobrinho & Valentim 2019), physics, chemistry, and biology education (e.g., Kotluk and Kocakaya 2016; Yılmaz & Sığirtmaç 2020). While learning, DST can improve students' cognitive, emotional and pscyhomotor abilities since it engage three senses which are touching, hearing and listening (Van Gils 2005; Demirbaş & Şahin 2020).

Collaboration is a major component of the DST teaching technique (Robin 2008). Students work in small circles to find and evaluate material, as well as to build a shared understanding and digital story (Di Blas 2016). That's why, they do require additional cooperation skills, networking possibilities, and instructor assistance in knowledge generation and digital capabilities to create digital stories (Niemi et al. 2014; Niemi & Multisilta 2016). As students collaborate to develop and produce digital stories, they may become more aware of their own knowledge and experiences that they may reflect on and share these with others. Students improve their ability to communicate their ideas and listen to their classmates' and teachers' points of view (Wu & Chen 2020). As a result of this practice, their communication skills, social skills and emotional intelligence were found to improve (Di Blas 2016; Ribeiro 2016; Robin 2006; Robin 2008; Schmoelz 2018; Smeda et al. 2014; Verdugo & Belmonte 2007).

The most noticible benefit of DST was seen in langugage learning (Anderson, Chung & Macleroy, 2018; Çoban et al. 2019; Robin and Mcneil 2019; Sukovic 2014), in listening (Verdugo & Belmonte 2007), writing and reading abilities (Campbell 2012; Miller 2009; Smeda et al. 2014; Vinogradova, Linville & Bickel 2011; Xu & Ahn 2011). Several studies revealed that digital stories were more effective in improving students' story-writing skills than the story-writing studies in existing programs (Baki & Feyzioğlu 2017; Warren & Dondlinger 2008). Similarly, the studies of Robin and McNeil (2012), Oskoz and Elola (2016) and Balaman (2018) all proved that digital stories improve story writing skills. Students improved

their story writing skills in terms of choosing the suitable words for the content, organizing the relationships between words, connecting and ordering sentences, and editing the text, forming paragraph and creating the last version of a text (Ballast, Stephens & Radcliffe 2008; Gregory & Steelman 2009; Kervin & Mantei 2011; Oskoz & Elola 2016). DST is also believed to improve writing skills by transferring the writing process to the digital environment and brings story writing skills together with today's technology (Gregory & Steelman 2009).

Additionally, a large number of studies assesing the impact of DST on education reported improvements in a variety of areas, including affective-learning motivation (e.g., Coutinho 2010; Hung, Hwang & Huang 2012; Miller 2009; Sarıtepeci & Durak 2016; Sadık 2008; Şimşek, Usluel, Sarıca & Tekeli 2018; Tatlı & Aksoy 2017; Yamaç 2015), self-confidence, (e.g., Campbell 2012; Hung et al. 2012; Robin & Mcneil 2019), critical thinking, particularly in the areas of comprehending and assessing (e.g., Gözen & Cırık 2017; Kurudayıoğlu & Bal 2014; Yang & Wu 2012), searching skills (e.g., Sarıtepeci 2021; Robin & Mcneil 2019), conceptual understanding (e.g., Brace, Finkelstein & Sealy 2016), sense of accomplisment (e.g., Sukovic 2014), academic skill and performance (e.g., Yıldız Durak 2018), technological-ICT skills (e.g., Lin, Thang, Jaafar & Zabidi 2013; Robin & Mcneil 2019; Sarıtepeci 2021; Smeda et al. 2014), creativity (e.g., Burke & Kafai 2010; Çoban et al. 2019; Tunç & Karadağ 2013; Wu & Yang 2008), problem-solving skills (e.g., Çoban et al. 2019; Dinçer & Yılmaz 2019; Gözen & Cırık 2017; Hung et al. 2012; Kurudayıoğlu & Bal 2014; Ulum & Yalman 2018), and lastly, social development (e.g., Çoban et al. 2019; Robin & Mcneil 2019).

## 4. Digital Storytelling Application in Gifted Education

Gifted students have higher cognitive capacities than their peers and need extensive teaching opportunities that cannot be provided through regular programs. They need to be supported by different educational programs apart from the normal curriculum (Clark 2002; Levent & Bakioğlu 2013) and they require intellectual challenge in the classroom to stay engaged in the material presented (Van Tassel-Baska & Brown 2007). It is not possible to meet the educational needs of students who show extraordinary differences in normal schools, under normal conditions, and with the programs, tools, equipment and personnel prepared for normal students. Therefore, specially trained personnel, specially prepared programs, special tools and equipment and appropriate educational environments are required for gifted students. It is of strategic importance for society to enable gifted individuals to develop their innate extraordinary potentials and to reveal their best capacities (Levent & Bakioğlu 2013).

According to Renzulli (1988), one of the problems with general education is teaching the same subject to everyone at the same time and at the same rate. When students are taught based on their learning needs, some of the most astonishing and genuine scientific, literary, artistic, and creative outputs are produced. The design of activities that prioritize the development of in-depth reasoning, high-level thinking skills and creativity of gifted students is of great importance. The digital storytelling method, which is defined as an effective teaching method that combines individuals' problem-solving skills with their creativity, develops high-level thinking skills and supports project production is an effective teaching method. It has a fictional structure on the development of such skills (Çoban et al. 2019). Teachers may use digital storytelling to target the needs and interests of gifted students while also providing a venue for them to be challenged on a regular basis (Keiler 2010).

In learning processes, gifted students have high creativity, developed problem-solving abilities and have positive perceptions about the use of technology. Integrating technology into education programme helps to enrich the educational environment by offering different alternatives for these students. Today, many students have the internet access and student having an access to the internet can access the information from very different sources, rather than merely relying on teahers and textbooks. This access allows students to advance their knowledge which result in higher student productivity (Knobel & Shaughnessy 2002). The use of information technologies with gifted students who are suitable for individual teaching techniques allows students to progress at their own pace and level (Alkan 2019). In gifted education, providing suitable educational environments and providing an education that matches their educational needs play an important role in the transformation of their potential into performance.

Renzulli (1988) suggests that activities for gifted children should focus on higher-order thinking abilities and employ less organized instructional methods. In that vain, majority of gifted students prefer less structured and more autonomous learning experiences. However, some gifted students prefer more organized learning experiences like lectures and computer-assisted training. The educators should always evaluate each student as a unique individual and utilize from a variety of instructional methods so that students can acquire an appreciation for other methods, or at the very least they would develop meta-cognitive abilities necessary to capitalize from the best method for them (Knobel & Shaughnessy 2002). Story writing is a high-level skill that allows the use and regulation of certain high-level mental skills (Sadık 2008; Yamaç 2015). In this context, it has been determined in the relevant literature that digital stories would have a positive effect on gifted students' education.

The use of activities that prioritize in-depth reasoning, high-level thinking skills and creativity in the education of gifted students has great importance. Furthermore, digital storytelling is a useful technique for students to improve their technical abilities and information literacy that sudents have the option of selecting the talent they would like to concentrate on and improve (Smeda et al. 2014). Thus, technology helps to enrich the educational environment by offering different alternatives for these students. That's why, it is necessary to prepare a differentiated and enriched education environment where gifted students have the option of selecting the talent they would like to concentrate on and improve (Smeda et al. 2014).

Digital stories have features such as increasing motivation, enriching teaching, creativity, problem-solving skills, increasing communication and social skills (Coutinho 2010). These features of DST seems to attract the attention of gifted students because they show parallelism with the characteristics of gifted students (Alkan 2019; Çoban, et al. 2019). In that line, gifted students expressed their excitement to actively participate in DST design process and to work on their own products and their interest in the teaching process, their self-confidence, problem-solving skills, creativity, communication and social skills were increased after the application of the method (Bedir Erişti 2016; Çoban et al. 2019). The gifted students expressed positive statements about their experiences with DST such as enjoyable, exciting, interesting, different that gifted students were satisfied with the application (Alkan 2019). Compared to traditional writing teaching, digital storytelling applications showed significant improvements in gifted students' writing skills and language development (Gider 2019). So, it can be asserted that DST approach is an effective teaching tool making learning experience

more effective for gifted students. Also, the process gives gifted students a chance to discover their competences and interest areas (Bedir Erişti 2016).

Despite there is an increased interest in digital storytelling as a teaching tool, studies investigating the method of digital storytelling in gifted education is still lacking. Many current approaches to digital text creation in the classroom fail to acknowledge the crucial role of digital storytelling abilities. As a result, many approaches to digital media production in the classroom fail to produce effective digital stories (Smeda et al. 2010). That's why, there is a need for an overall framework to generate digital stories to help educators utilize effectively from its pedagogical benefits. This framework should take into account the requirements and capacities of gifted learners at various stages of learning, i.e., learners from elementary school to university (Smeda et al. 2010). The information presented in this study is likely to lead future research in DST use in gifted education in order to create richer and more productive learning environments.

## 5. Conclusion

The necessary technological equipment is now available in many schools around the world, nevertheless, the DST as a teaching tool is still underutilized in both gifted and nongifted students' education. While technology has been deemed necessary in many aspects of the curriculum, 21st century skills have become a major item on educational systems' agendas all across the world (Binkley et al. 2012). Digital storytelling has yet to be completely recognized as a viable tool for improving students' learning skills and reaching 21st century learning outcomes. The process of creating digital stories has been shown to help students organize and express their ideas, improve reading comprehension, and foster the development and formation of sociocultural identities and some other critical skills. Also, by sharing their own digital stories, students can contribute to the development of a learning community and positive classroom environment. As a teaching strategy, digital storytelling has been used by educators at all levels to empower and enrich traditional teaching methods and more effectively engage learners of all ages (Robin & Mcneil 2019). Finally, DST assists students in becoming better communicators in the developing global society with which they engage by utilizing a range of information literacy skills as well as an understanding of various countries and cultures (Keiler 2010). There is no denying that there is still a lot to learn about using digital storytelling as a teaching and learning tool. As more educators learn about it and discover ways to include it into their classroom activities, the better outcomes will be observed in field of gifted and non-gifted students' education. New investigations will undoubtedly bring more insights and understanding into how DST may engage, inform, and enlighten future generations of students and educators.

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