

# IMPLEMENTATION OF DIGITAL STORYTELLING IN THE CLASSROOM BY TEACHERS TRAINED IN A DIGITAL STORYTELLING WORKSHOP

Bulent Dogan  
University of Houston  
United States  
[bdogan@ssttx.org](mailto:bdogan@ssttx.org)

Bernard R. Robin  
University of Houston  
United States  
[brobin@uh.edu](mailto:brobin@uh.edu)

**Abstract:** This paper presents results of a research study conducted at the University of Houston, in which a group of in-service elementary, middle, and high school teachers learned to use digital storytelling through a series of summer workshops conducted by university faculty and graduate students. The study investigated the teachers' use of digital storytelling in their classrooms, what effects this use had on students, and what problems arose that prevented implementation of digital storytelling in the classroom. The study results suggested that, even though almost all of the teachers' perceptions about using digital stories in the classroom were positive immediately after the workshops, in practice, more than half of the teachers did not continue to use digital storytelling during the implementation period. Teachers who did use digital storytelling reported positive effects on student performance, an increase in 21<sup>st</sup> century skills, and increased motivation and engagement levels in their students.

## Introduction

During the past decade, new sets of skills necessary to prepare students for life and work in the digital age have become the focal point of both business and educational worlds (EnGauge, 2003). Educational environments must be adapted to meet the demands of our global economy and a dramatically different society to that encompasses 21<sup>st</sup> century skills (CEO Forum on Education and Technology, 2001). These twenty-first century skills include digital literacy, inventive thinking, effective communication and high productivity (Jakes, 2006). Specifically, educational technology can provide educators with valuable tools to teach and develop 21<sup>st</sup> century skills, a primary reason why integration of technology in education has become a major area of interest over the last decade (Partnerships for 21<sup>st</sup> Century Skills, 2002).

Digital storytelling is an educational technology tool that utilizes almost all of the skills students are expected to have in the 21<sup>st</sup> century (Jakes, 2006). Information literacy, visual literacy, being creative and taking risks, and using the latest technology to communicate effectively can all be achieved when students actively participate in the creation process of digital storytelling (Jakes & Brennan, 2005; Robin, In press).

Hull & Nelson (2005) define digital storytelling as a form of multimedia consisting of images and segments of video with background music and a voice-over narrative. In essence, digital storytelling is a process of creating a short movie that combines a script or an original story with various multimedia components, such as images, video, music and a narration, often an author's own voice.

## The Study

An ever increasing number of K-12 teachers are using digital storytelling as an innovative way of teaching content in the classroom (Weiss, Benmayor, O'Leary & Eynon, 2002). Digital storytelling has been used in the classroom for various purposes, such as to teach content to the students, to empower students by making them active researchers and storytellers, to teach writing, to meet International Society for Technology in Education (ISTE)

Technology standards, and to build communities through storytelling (Banaszewski, 2002; Salpeter, 2005; Weiss, Benmayor, O'Leary & Eynon, 2002).

There are few research studies that show how digital storytelling can be used as an effective tool in the classroom, what effects can be observed on student learning, and what kind of problems can arise in the implementation process. Given the lack of current research on effective use of digital storytelling in K-12 education, faculty and graduate students at the University of Houston initiated a series of workshops on digital storytelling and its uses in education for teachers through the Laboratory for Innovative Technology in Education (LITE). The LITE website at <http://www.coe.uh.edu/lite/> provides more information about the laboratory and its functions. LITE members responded to the rapid popularity of digital storytelling, which seemed to capture the imagination of students, teachers and faculty. LITE members tried to capitalize on the exploding interest in this technology tool by developing workshops in which participants would learn to evaluate existing digital stories and create their own. These workshops on digital storytelling were developed for elementary, middle, and high school teachers during the summer of 2005. The major goals of the workshops were to introduce educators to digital storytelling and to explore how it could be used as an effective teaching tool in their classrooms and as an effective learning tool for their students. In addition to these objectives, LITE members wanted to test, evaluate and improve their ability to teach technology skills to teachers who could then use these methods in their classrooms. The researcher took a case study approach using both qualitative and quantitative data collection methods for the study because the case study approach best fit the particular characteristics and challenges of this project.

This study aimed to document teachers' use of digital storytelling in the classroom after attending the summer workshop at the University of Houston. Specifically, the research investigated if and how teachers incorporated digital storytelling in the classroom as well as the challenges and successes they faced in the implementation process. A survey was used to collect data in this study. The participants in the study provided information on the use of digital storytelling in the classroom and barriers they have faced when implementing digital storytelling in the classroom through responses to two surveys. Survey 1 was designed as a contextual data gathering instrument and administered right after the workshops. Survey 2 was designed as a follow up instrument administered a semester later. Interviews were also conducted to triangulate the data. Interviews provided in-depth information about certain topics which were not analyzed in detail using the survey data. In order to conduct the study, a sufficient number of subjects had to be identified. Collectively, 31 subjects were selected through an opportunity sample, made up of participants who attended the digital storytelling workshops. An opportunity sample is usually a sampling strategy selected for a case study or a series of case studies (Cohen, Manion & Morrison, 2000, p. 102).

Given the fact that digital storytelling is a relatively new educational tool and structured research on its use in K-12 education is limited, the researcher wished to garner as much data as possible. The following three general research questions were used in the study: 1. To what extent do teachers trained in the University of Houston's digital storytelling workshop integrate digital storytelling in the classroom? 2. In what ways and for what purposes have teachers used digital stories in the classroom? 3. If teachers did not choose to use digital stories, what were the barriers that prevented teachers from using digital storytelling in the classroom?

## Results

More than half of the participants indicated that they did not use digital storytelling in the classroom a semester after they participated in the digital storytelling workshop (55.5%). When the participants were asked how they used digital stories, "I created *my own* digital stories" was the most selected response (n=8, 44.5%). Other responses, such as "I used digital stories created by *others*," "I used digital stories created by *self and others*" and "I had my *students* to create their own digital stories" were selected by the same number of participants.

The general pattern from the results indicated that while the frequency of using digital stories varied for each digital story type based on who created the story, overall, digital stories created by *students* were used more frequently than other digital story types. Digital stories created by *self and others* and by *self* only were used less frequently by the participants.

The results of open-ended question "How did you and your students use digital stories in the classroom?" in Survey 2 revealed that some of the examples of the first theme, "digital stories used by students," included a video yearbook, history fair project, descriptions of field trips taken, and social and science investigation presentations. Additionally, for the second theme resulting from the analysis of the question, "teacher created stories to teach content," example uses included using digital stories as opposed to PowerPoint, highlighting a time in history, and sharing personal experiences. Three teachers were selected from the teachers who used digital storytelling in the classroom for the interviews. The analysis of these interviews showed that all of these teachers

had their students create their own stories for various reasons such as class projects or presentations with the exception of interviewee #2, who also created stories himself to share with his students.

The results of the analysis of Survey 2 and the interviews also indicated that teachers used digital storytelling not only in the classroom but also outside of the classroom and in cross-curriculum platforms with other faculty. Almost 38% of the teachers who used digital storytelling in the classroom also taught digital storytelling to faculty members in their schools; 25% of the teachers who used digital storytelling in the classroom also taught digital storytelling to family members. Results for interview question, “Was there a cross-curriculum use of digital storytelling in your school?” revealed that all of the teachers shared digital stories with other teachers in their schools. Interviewee #3 reported that an English teacher in her school implemented digital storytelling after she gave a mini-workshop on digital storytelling in the school. Interviewee #1 also exchanged digital stories for cross-curriculum purposes in her school. Since Interviewee #2 was teaching all subjects to his 5<sup>th</sup> grade students, he explained that he used digital storytelling in various subjects, such as history, science and creative writing. Interviewee #2 was one of the teachers who taught digital stories to other teachers, stating “Everybody that I have shown it to, they just loved it. Teachers and students absolutely love it. And a lot of people are using it. It is great, useable working tool”.

The analysis of the question items on “impacts” in Survey 2 yielded mean scores ranging from 3.43 to 4.17. A mean scale score close to the value of 5 indicated that the participants “strongly agreed” with the statement and a mean scale score close to the value of 1 would indicate that the participants “strongly disagreed” with the statement. Therefore, participants mostly agreed with the statements described next. “Increase in technical skills” had the highest mean among all the impacts with 4.17. In addition, the participants who used digital storytelling in the classroom also agreed that they observed “increased engagement in the subject taught” and “increase in presentation skills” among their students.

The interviewed teachers were asked “*What were the observed effects on students?*” to better understand the purposes around student outcomes by teachers who used digital storytelling in the classroom. The main themes that emerged from all interviews were increased technical skills, increased presentation skills, and increased motivational (engagement) levels of students. All of the interviewed teachers indicated that their students were more motivated to do research on a subject when the students used digital storytelling. Interviewee #1 described the increase in her students’ motivation and technical skills: “Their [students’] technical skills certainly improved magnificently, but it [digital storytelling] also generated greater interest in history or in political science. They were able to research and many times could select their own topics with my approval and so it generated a more whole interest in history and in conducting historical research.” Another effect observed by Interviewee #1 was increased levels of presentation skills with the students: “They became very poised, very confident in making presentations standing before a class and starting, “this is the beginning,” and “here is the end,” and “do you have any questions,” and being able to respond to those questions. But they became much more sophisticated.” When Interviewee #3 was asked about whether digital storytelling had an effect on skills related to researching, writing or making presentations for an audience, she stated: “I think it did because they had to write out what they were going to say. I think that that [digital storytelling] helped. We didn’t do as much research as we could have if it would’ve been a different project, but this was just for them.”

The interviewed teachers were also asked “*What do you think made students motivated about digital storytelling?*” Interviewee #1 explained why she thought that students were very motivated with the digital storytelling approach: “It is expansion of their electronic skills and also a new avenue to explore. It’s like they’re creating the new Hollywood.” According to Interviewee #2, simply getting to use computers and technology while creating digital stories was a motivating factor for his students: “They are 21<sup>st</sup> century kids and they like to do anything on the computer. It motivated them to a higher degree, I believe.” Interviewee #3 thought that creating a story about themselves and having the chance of self expression made them very motivated about the project: “I think that this is absolutely, by far, their favorite project to do. It was an inspiration for most of them; they were so inspired to create... that they got to tell a story about themselves.”

As part of the observed impacts, interviewed teachers were also asked whether they observed effects on their students’ academic performance. Two of the interviewed teachers thought that the digital storytelling strategy had an effect on students’ academic performance. When interviewee #1 was asked this question, she explained: “Yes. It [using digital storytelling] made them more excited even about coming to class.” Interviewee #2 pointed out that students really enjoyed working with digital stories; in return, it had a positive effect on their academic performance: “Especially I think that the students that may have been less than motivated about just writing a paper did see academic improvement because they actually enjoyed making the digital stories. So it became that they were more “into” it because it seemed less academic and more creative.”

Participants who didn't use digital stories in the classroom were asked about the barriers that kept them from using digital storytelling in the classroom. "Time issues" was the highest ranked barrier followed by "access to hardware." If "access to hardware" and "access to software" were to be considered in the same category as "access to technology," this combined category would be the top ranked barrier with almost 90% of participants selecting this as a barrier. Open-ended responses detailed the challenges participants experienced. Most of these responses were related to "access to technology," such as "access to software" and, in particular, limited "access to hardware." Responses revolved around students not having access to computers, outdated computers or lacking computer labs, getting to a computer lab as hardware related problems; and software not approved by the district, not having the necessary software installed in the lab computers, and not having the necessary operating system to run the software as the software related problems. Time issues were also a reported barrier for not using digital storytelling in the classroom. With so much emphasis on "state assessment testing," teachers reported there would not be enough time to integrate digital storytelling into their teaching. Given the fact that "access to hardware" was a major problem for teachers who didn't use digital stories in the classroom, one interesting finding that emerged was related to lack of computers in the classroom. Teachers tended to have students create digital stories at home in these cases. For example, interviewee #1 said "We had no computers in the class. So, everything was homework; they did all the technical work at home."

In Survey 2, the participants were also asked about their future plans to use digital storytelling if they had not used it in the implementation semester. All of these participants (n=10) indicated that they had plans to use digital stories in the future. The results also revealed that the same group would prefer letting their students create their own digital stories to learn content more than any other choices (50%), such as using digital stories created by *self and/or others* to teach content.

## Conclusions

In conclusion, even though almost all of the teachers' perceptions about using digital stories in the classroom were very positive immediately after the workshops, in practice, more than half of the teachers in the follow up study didn't use digital storytelling during the implementation period at all. This was an unexpected result because teachers, for various reasons, did not use digital stories as much as they had predicted.

Although teachers in this study thought they would use digital stories primarily to teach content in the classroom and perhaps let their students create their own digital stories, in reality, digital stories were used as much by the students as by the teachers. This result suggests that despite the fact that digital storytelling is a powerful tool to convey desired information about a topic or a subject area by the teachers; in practice it is also a very powerful tool that has positive impact on students and their performance.

The teachers who used digital storytelling in the classroom with their students reported that they observed increases in certain skills such as technical skills, presentation skills, research skills, organizational skills, and writing skills with their students. It is noted in the literature that when students actively participate in the creation process of digital storytelling, they most notably develop certain 21<sup>st</sup> century skills (Howell & Howell, 2003; Jakes, 2006; Robin, In press), and this study substantiated that concept. Among these skills, technical skills reportedly increased more than other skills. This can be explained by the process of creating digital stories, although teachers also reported that there was an increase in students' media literacy skills. Overall, the teachers reported that digital storytelling in general, had a positive effect on the 21<sup>st</sup> century skills of their students.

Another important effect observed by teachers was increased motivation and engagement levels in their students. Teachers believed that creating digital stories increased their students' motivation and engagement levels. The findings from this study supported the idea of the "director's chair effect" as well as "being able to express themselves" and "simply being able to use computers" as to why digital storytelling effectively captivates and motivates students (Banaszewski, 2005; Paull, 2002). Furthermore, the findings from this study, specifically the increase in students' motivation and engagement levels were expected results as they were also reported in the literature (Salpeter, 2005). Moreover, the positive impact on special groups of students reported by the participants is consistent with the literature regarding similar populations (Salpeter, 2005). Finally, the results of the study also suggest that digital storytelling has a very broad range of application beyond the classroom such as collaborative cross-curriculum platforms.

In terms of barriers, "time issues" was reported as the biggest barrier by both the teachers surveyed after the training and teachers who used digital storytelling in the classroom. Another major problem was "access to technology." The results were in line with the problems faced by users of educational technology tools in the classroom as noted in the review of literature. These results suggest that if educational administrators want teachers to successfully implement digital storytelling in the classroom, basics needs, such as more support from the school

administration in terms of access to technology and general administrative support or encouragement for these types of activities, must first be met. After securing these basics from the school administration to create an environment conducive to implementing digital storytelling in the classroom, training on technology in general and digital storytelling specifically would be essential, as a preponderance of literature indicates that more proficient users of technology are more likely to integrate technology in the classroom. In addition to this fact, teacher professional development programs that specifically concentrate on strategies for effective use of technology in instruction are considered very important for engaging students in appropriate technology-based learning experiences (Sivin-Kachala, 2000).

Since digital storytelling is a relatively new educational technology tool, more instruction on how to use digital storytelling in the classroom will be necessary for teachers. On-going technical or curriculum support for teachers on how to use digital stories effectively in the classroom will dramatically increase the chance of its usage in the classroom by teachers and students. "On-going process and continuing technical support," one of the barriers reported by the teachers in this study, plays an important role in teachers' implementation of new technology tools into their instruction. The availability of quality technical and instructional support for teachers is considered a requirement for the successful integration of technology into the classroom (Bhatt, 2005; Ronnkvist, Dexter & Anderson, 2000). Support from the administration, both providing proper "access to technology" and the necessary "training" and "continuing technical support" should also include allowing teachers to have enough time to explore digital storytelling and its uses in the classroom.

Another aspect of the challenges with time includes not having enough time to practice digital storytelling in the classroom because of the time spent on the preparations for state assessments. In the current statewide assessment-driven educational system, "time issues" in general would be one of the biggest challenges for teachers, who have, unfortunately, very little control over this reality. Therefore, if teachers are to implement digital storytelling successfully, they should also be given enough time to explore and practice use of digital storytelling in the classroom after being properly trained.

As the results of this study show, student motivation from participating in digital storytelling might be explained by the "director's chair effect," the chance for self expression, and simply the opportunity to use computers in education (Banaszewski, 2005; Paull, 2002). However, it is the belief of the authors that digital storytelling has the potential to be a powerful educational teaching tool or strategy in K-12 education if it is used effectively in the classroom. Similar to other educational technology tools, the successful implementation of digital storytelling will depend on various factors, such as access to technology, proper training of the user, and on-going technical support.

## References

- Banaszewski, M. T. (2002). *Digital storytelling finds its place in the classroom*, Multimedia Schools 9 no:1 32-5 (Ja/F 2002).
- Banaszewski, M. T. (2005). *Digital storytelling: Supporting digital literacy in grades 4 – 12*. Master's thesis, Georgia Institute of Technology. Retrieved January 15, 2008 from [http://techszewski.blogs.com/techszewski/files/TBanaszewski\\_DS\\_thesis.pdf](http://techszewski.blogs.com/techszewski/files/TBanaszewski_DS_thesis.pdf)
- Bhatt, G. D. (2005). *Assessing the impact of IT-driven education in K–12 schools*. Report prepared for IBM Center for The Business of Government. Retrieved January 15, 2008 from <http://www.businessofgovernment.org/pdfs/BhattReport.pdf>
- CEO Forum on Education and Technology. (2001). *Key building blocks for student achievement in the 21st century: Assessment, alignment, accountability, access, analysis*. Washington, D.C. Retrieved January 15, 2008 from <http://www.ceoforum.org/downloads/report4.pdf>

Cohen, L., Manion, L., & Morrison, K. (2000). *Research Methods in Education*. London: Routledge Falmer.

Retrieved October 16, 2006, from Questia database: <http://www.questia.com/PM.qst?a=o&d=103778307>

EnGauge (2003). *Literacy in the digital age*. Retrieved on January 15, 2008 from [www.ncrel.org/engauge/skills/basiclit.htm](http://www.ncrel.org/engauge/skills/basiclit.htm)

Howell & Howell (2003) What is your digital story? *Library Media Connection, Oct2003, Vol. 22 Issue 2*, p40, 2p.

Jakes, D.S., & Brennan, J. (2005). Capturing stories, capturing lives: An Introduction to digital storytelling. Retrieved January 15, 2008 from <http://bookstoread.com/etp/earle.pdf>

Hull, G. A., & Nelson, M. E. (2005). Locating the semiotic power of multimodality written communication. *Research in the Teaching of English, 22*(2), pp. 224-261.

Jakes, D., (2006). Standards-Proof Your digital storytelling Efforts. *TechLearning, March 2006*. Retrieved January 15, 2007 from <http://www.techlearning.com/story/showArticle.jhtml?articleID=180204072>

Partnership for 21st Century Skills. (2004). *Learning for the 21st Century*. Washington, DC. Retrieved January 15, 2008 from [http://www.21stcenturyskills.org/downloads/P21\\_Report.pdf](http://www.21stcenturyskills.org/downloads/P21_Report.pdf)

Paull, C. N. (2002). Self-perceptions and social connections: Empowerment through digital storytelling in Adult Education. *Dissertation Abstracts International*. (UMI No. 3063630)

Robin, B., (In press.) The effective uses of digital storytelling as a teaching and learning tool. *Handbook of Research on Teaching Literacy through the Communicative and Visual Arts, second volume*. Lawrence Erlbaum Associates.

Salpeter, J. (2005). *Telling tales with technology*, *Technology & Learning* 25 no7 18, 20, 22, 24 F 2005

Sivin-Kachala, J., & Bialo, E. (2000). *2000 research report on the effectiveness of technology in schools* (7th ed.). Washington, DC: Software and Information Industry Association. Retrieved January 15, 2008 from <http://www.siiia.net/estore/ref-00-summary.pdf>

Weiss, Benmayor, O'Leary & Eynon, (2002). Digital Technologies and Pedagogies, *Social Justice* 29 no4 153-67.