The Benefits of Digital Storytelling

for Students with Disabilities

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Abstract

Twenty-first century classrooms are currently facing a difficult transitional period as students’ lifestyles are becoming acclimated to technology and social networking. Instruction needs to be developed to take the educational mindset of these “digital natives” into consideration. With the availability of powerful instructional tools and a growing teacher population that is as familiar with technology as the students are, education has begun to incorporate Web 2.0 tools to create more engaging and interactive learning. One of the most versatile tools is digital storytelling. Digital storytelling can be used as both an evaluative method or an instructional method and allows students to think and learn in familiar digital environments to develop more concrete thoughts and understandings. This method lends itself particularly well to students with learning disabilities, who often struggle with those very attributes. Many classrooms have already seen the effectiveness of digital storytelling, but there is little research on how it would assist students with learning disabilities. This paper surveys the many facets of digital storytelling, provides an insight as to how students with learning disabilities could benefit from such a method, and suggests potential scenarios for future research.

The Benefits of Storytelling for Students with Disabilities

Twenty-first century classrooms are currently facing a difficult transitional period. Winn (cited in Ertmer & Newby, 2013) stated “Children raised with the computer think differently from the rest of us. They develop hypertext mind. They leap around. It’s as though their cognitive structures were parallel, not sequential” (p. 66-67). Though computer performance has advanced into faster, smaller, and even handheld devices, any progressive district or university would be remiss to rely solely on the computer alone. “Growing up with unprecedented access to technology has changed the way young people, ‘digital natives,’ communicate, interact, process information, and learn” (Dreon, Kerper & Landis, 2011. p. 4). The current trend toward a more informal method of learning could be a passing phase; Reiser (2012) chronicled the many decades that introduced new technology into education, which went on to supplant one another as the next one was presented. The key difference now is that, as stated above, learners, and young teachers alike, consume information differently. Born with a device in hand, the current student and emerging teacher populations are hard-wired to digital networks, where the device acts as the medium used to access those networks. “The increasing use of social media to share knowledge and skills serves as another example of the burgeoning reliance on the use of informal methods to improve learning and performance” (Reiser, 2012. p. 27). The abundance of Web 2.0 applications and networks have now taken the spotlight and significantly influence the way in which learning occurs in the twenty-first century. These are the new technology tools that have embedded themselves into our culture and are slowly making their way into classrooms as “digital natives” are beginning to facilitate learning by discovering new and effective implementation.

Of the many new tools available, digital storytelling has been taking on an increased interest. Digital storytelling is a creative method to present information that involves the use of various forms of digital media, such as video footage, photographs, audio clips, and music, which are then arranged in video editing software to create a compelling and engaging digital film. Digital storytelling has served as quite the chameleon; not only can it be used as an effective presentation tool for students to view and revisit, but it can also be used as an alternative evaluation method for students who either want to embark on a creative project or to visually arrange their thoughts in a digital space to better represent what they have to say. The flexibility that digital storytelling affords makes it a great method for students with disabilities, who struggle with content as the education system places emphasis on an inclusionary learning environment (Brown, 2013). This paper will suggest how digital storytelling can be used as both instructional and evaluative methods to increase the performance of students with disabilities.

**Literature Review**

 Research for this paper was conducted with the initial thought that storytelling would be primarily used as a presentation method. After reading various articles discussing the benefits digital storytelling can offer as an evaluative method, the focus of the paper was expanded to include this interesting perspective. Articles regarding a general overview of students with disabilities using technology to enhance their learning were also searched in order to support a more complete understanding of how storytelling could better benefit that population.

 In *Digital storytelling revisited: An educator’s use of an innovative literacy practice*, Shelby-Caffey, Ubeda and Jenkins (2014) begin by describing the necessity of twenty-first century technologies and skills in the classroom. They then go on to explain how a teacher who was awarded a technology grant changed her methods for teaching fifth graders. Armed with an intelligent white board, video cameras, creative production software, and a new computer, the teacher developed a new set of lesson plans revolving around the creation of a short film based on a novel that was read in class. The students were tasked with drawing images from the novel, creating scripts, filming, editing video, and collaborating with classmates to develop the short film. The final project was displayed for all of the students’ parents. Results from this method of teaching displayed higher levels of motivation, engagement and personal expression from students who frequently had a difficult time with reading comprehension.

 Noticing a similar lack of motivation in her class, Charlene Tackvic, an elementary educator, provided her perspective on digital storytelling in her article, *Digital storytelling: using technology to spark creativity* (2012). She had noticed students struggling to present their thoughts in a coherent or explanatory manner when confronted with a blank sheet of paper. Through a professional development workshop, Tackvic discovered some Web 2.0 tools that allowed students to use a vast library of images and sounds to create a digital story. Her hopes were to build her students’ confidence in writing by allowing them to visually arrange stories using these online tools. The students’ eagerness to develop the stories was rooted in the tool’s ability to inspire creativity by viewing images that matched the words they couldn’t express. Tackvic deemed her introduction of storytelling a success by the performance of her students’ writing abilities as well as their newly obtained knowledge of twenty-first century skills.

 Dreon, Kerper and Landis (2011) wrote about a different approach to digital storytelling, one in which the teacher created videos as an alternative method to teach his students, in the article *Digital storytelling: a tool for teaching and learning in the YouTube generation*. This article recognized the mindset of a modern student, who is committed to a digital lifestyle and has grown accustomed to learning and sharing through means of social media. Knowing this, Dreon, Kerper and Landis (2011) argue that teachers should be mindful to include these new methods of teaching and technology to keep “content and connections relevant to students’ lives to bring meaning and purpose to instruction in all content areas” (p. 7). The teacher who was highlighted, a “digital native” himself, created a series of mathematics videos that not only included the lesson, but also had recurring characters, were humorous, and all told a story. These elements are what brought the instruction to the students’ attention and kept them listening. The videos’ availability on YouTube also allowed students who didn’t quite comprehend the lessons initially to revisit them anytime and anywhere.

 New technology tools that are available to students via the internet through both desktop and mobile devices were further discussed with a focus of students with disabilities in Brown’s (2013) article *Mathematics, secondary students with disabilities, and Web 2.0 technologies*. Here, Brown (2013) surveys current technologies that are generally available in most math classrooms, like calculators and computer algebra systems, but states that “they just might not be enough to engage and motivate today’s mathematics generation” (p. 55). She continues to outline the positive effects that Web 2.0 technologies offer to students with disabilities, including presenting content in various multimedia formats that could potentially be better understood by those students.

 With all of the new learning opportunities available, Greer, Crutchfield and Woods (2013) provide a cautionary piece about the effectiveness of the multimedia principles that are in action for students with learning disabilities. They outline the basics of working memory, cognitive load theory, and the cognitive theory of multimedia learning and how students with learning disabilities differ in their abilities to process information under these concepts. They continue by pinning the students’ limitations against five common multimedia principles. Their observations leave a significant amount of open questions, but the synthesis of their research direct thought to logical outcomes that advise careful selection of multimedia principles. This leaves one to wonder, while the general practice of creating digital stories for instruction may be effective for most students, would it be beneficial for students with disabilities? Conversely, could the way in which they process information be better suited to creating a digital story over writing a report for class? A study conducted by Scruggs, Mastropieri, Bakken, and Brigham explored the effectiveness of such activity- and inquiry-based instruction twenty years earlier in 1993. They found that “students with learning disabilities may benefit approximately equally to their normally achieving peers from activity-based…teaching, given that the instruction is oriented to their level of prior knowledge and academic abilities” (Scruggs, Mastropieri, Bakkan & Bringham, 1993. p. 10). Knowing this, could the same assumptions be made for multimedia learning, specifically digital storytelling tools?

**Synthesis**

The integration of technology to everyday life has altered the way in which instructors need to approach the modern student. “[What’s changed] is the type of learning experiences educators and instructional designers need to create in order to ensure that…learning designs take advantage of the affordances of current tools to engage learners in ways that best meet their needs” (Ertmer & Newby, 2013. p. 69). While digital tools could be considered another trend, what differs in the current situation from those of the past is that the current generation of learners have adapted informal approaches of learning. With that change at the forefront of Generation Z learning, an adjustment in instructional methodologies to accompany the modern mindset needs to occur. Remember back to the introduction of this paper, where Reiser is quoted discussing “informal methods to improve learning and performance” (2012, p. 27). Inherently informal and already structured into the ways in which modern students consume information, digital storytelling would seamlessly integrate into the classroom.

 Growing up within the same generation and culture, students with learning disabilities experience technology in the same way as any other student. They develop the same schemas around technology and use the same social networks and devices. Brown discusses students’ tech abilities by stating,

Today’s ‘web natives’ are adept at accessing any and everything on their handheld devices and computers. The students who resist traditional pencil and paper ways of doing [course work] will be motivated to use these technologies that they are already good at…Technology encourages students to become active learners with a quest for knowledge and to assume responsibility for that learning. (2013, p. 55-56)

Teaching students in an environment that they are familiar and comfortable with should potentially provide better results. However, choosing a digital tool to invite them into that environment is what needs to be carefully considered. “Because most students with learning disabilities have difficulty learning from reading and workbook assignments, and benefit from concrete examples, activity-based…instruction may be preferable to textbook-based instruction” (Scruggs et al., 1993. p. 3). Greer et al. provide another few points to consider,

Learning disability research indicates that these students have problem with recall, retrieval of verbal information and updating—signaling an even greater need for attention to instructional designs that enhance germane cognitive loads. Learning disability research [also] indicates that, if task demands are limited, students with learning disabilities learn as well as their non-disabled peers [and] that students with learning disabilities benefit when content is divided into small instructional chunks. (2013, p. 46-47)

While Greet et al. (2013) do caution that some multimedia principles may not be well suited to students with learning disabilities, they provide only assumptions based upon their synthesis. All of the statements above are enough to support the claim that digital storytelling can be an effective tool for these students.

 As an evaluative tool for students with disabilities, digital storytelling hits on all of the concepts that have been presented. It allows students to present their ideas in a non-verbal manner and arrange thoughts in a workspace both visually and audibly without having to tax their working memory in search of an answer on a blank sheet of paper. During Tackvic’s study, she asked students why writing stories in a digital environment was easier and “repeatedly got the same response: students loved having digital images to use when planning and writing…they were looking at thousands of images—images that helped with the creative process” (2012. p. 427). By sequencing their thoughts visually, digital storytelling could potentially help form stronger connections to content and their coursework, while at the same time creating an activity-based form of evaluation and further motivate them to want to work in a familiar digital environment. It’s an activity that “[draws] on students’ writing skills, organizational abilities, and creativity” (Dreon et al., 2011. p. 9), and removes some of their cognitive load, allowing them to perform at a level equal to their peers.

 Digital storytelling is also a great tool for instructors to use.

The medium…offers tremendous opportunities for teachers to engage [with] students. By integrating visual images with written text, digital stories can be used to enhance and accelerate student comprehension. For example, when using digital storytelling with middle and high school students, [it was] found that digital stories helped struggling readers envision text and offered a platform for visually communicating meaning. (Dreon et al., 2011. p. 5)

While the authors were discussing the average student, it’s important to note that the struggles that were described are also the prevalent difficulties that students with learning disabilities face when being taught. If made available online, the videos would also have the advantage of repeated viewings, allowing students the ability to self-pace their instruction or refresh their memory on the lesson at any time, even during homework. These videos can be broken into more manageable pieces of information, coinciding with what Greer et al. (2013, p. 47) had claimed. Greer et al. (2013) also discuss the benefits of explicit instruction for students with learning disabilities and offer their thoughts that well designed worked samples in a digital environment could be appropriate for those students (p. 46). Digital storytelling in an accessible online format is an excellent platform for providing this type of instruction. By incorporating worked samples into engaging digital stories, students, again, have a self-paced reference and are learning in a familiar environment. Instructors benefit by using a proven method with the freedom to be creative and make the content relatable through the story portion. They can then utilize their class time with the students to concentrate on individual assistance or engage students in other learning methods to compliment the digital story.

**Future Research**

Since there is little information on digital storytelling specifically for students with disabilities, further research could be conducted to examine its effectiveness for the population. One study could center around a text-heavy class, such as a history or literature class. Students with disabilities would be given a mobile tablet computer to take home and access Web 2.0 tools for storytelling to complete a visual report on a topic. Allowing the students to bring the device home not only allows them extra time to explore the tool’s features and develop a story outside of the classroom, but it also takes their economic situation into consideration by lending them technology that they may not be able to afford. Of course, this study is dependent on funding to provide access to an online storytelling tool and the tablet computers, but it is certainly achievable for a small class through grants or even district funding.

 A larger and more in-depth study could involve two sets of students with learning disabilities who are taught the same content through different instructional methods. The first group of students would be taught in a standard classroom setting in which the teacher would present information as they would in a typical inclusion class. The second grouping of students would be taught through a series of digital stories made accessible in an online video service, like YouTube. The digital stories would incorporate multimedia principles and deliver the content through storytelling. The success of the studies would be based on an evaluation of the students, in a method that the instructor sees fit; either through the storytelling tools that were mentioned above or through a standard exam. The study could be expanded by experimenting with different multimedia principles in each video to find which one is most effective for students with learning disabilities.

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