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GROWING READING FLUENCY: ENGAGING READERS WITH TECHNOLOGY AND TEXT

By

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ABSTRACT

The presence of technology in K-12 classrooms continues to increase. With the onset of these technological advances, a refined lens for analysis of the effectiveness of these tools is required. Web based tools necessitate a synthesis of Technological, Pedagogical and Content knowledge. Moreover, the use of technology should support the content and pedagogy linked to the objective of the lesson. This work introduces the use of VoiceThread as a promising technological tool used to encourage reading fluency. Particularly, it emphasizes the Audio-Visual benefits of interactive use of engaging text and VoiceThread to improve reading fluency via the notable practices of Repeated Reading and Readers Theater. The scope, therefore builds upon best practices in literacy instruction, the technological pedagogical and content knowledge framework, as well as application of integrating web 2.0 tools in classroom settings.

Keywords: VoiceThread, Reading Fluency, Repeated Readings, Readers Theater, Web 2.0.

INTRODUCTION

Automaticity in word recognition opens doors to acquiring depth of meaning from text. When automaticity exists, attention to decoding is minimal and the reader has the ability to assign very little attention to deciphering words and much greater attention to comprehension (Nathan & Stanovich, 1991; Samuels, 1994). For this reason, many Educators work tirelessly to attain reading fluency in young readers, as it provides a foundational element required for comprehension and future reading success. Therefore, this work presents a framework for improving reading fluency through the use of technological advances.

More specifically, with the onset of increased challenges embedded within learning standards, students are being asked to read increasingly complex text with a more magnified and meaningful lens. This intensified lens is often referred to as 'Close Reading', a careful and purposeful re-reading of text (Fisher & Frey, 2012). A reader's capacity to closely read or analyze text with a particular lens is reliant upon fluent reading of materials. It is fluency that frees the reader from depletion of cognitive space. Moreover, when decoding is automatic, attention is available for gathering meaning from all of the words within a text and their nuance and interconnections (Samuels, 1994; Allington, 2006). As a result, the demand for more fluent accurate readers has surfaced (Hicks, 2009).

Scope and the Need of the Paper

Even though technology has been widely adopted by Schools and Educators in the classroom, the need of supporting teachers to strategically use the available technologies is still urgent. The scope of this paper builds upon best practices in literacy instruction, the technological pedagogical and content knowledge framework, as well as application of integrating web 2.0 tools in classroom settings. McLaughlin, Glaab, and Carrasco (2014), noted that, many teachers were not comfortable with technology, and that, "they have not adopted new technology as an instructional tool in their classrooms" (p.9). Within their report, a Curriculum superintendent also commented, "*We used to teach technology, now we need to be able to use technology to teach*" (p.10). Therefore, the purpose of this article is to

model an implementation process of Web 2.0 tool integration and provide educators with examples of integrating VoiceThread during fluency instruction for struggling readers.

Literature Review

In this section, authors reviewed the literature related to fluency, struggling readers, best practices in fluency instruction, as well as Web 2.0 participatory learning.

Fluency

When word recognition reaches a level of automaticity, or fluency, the reader is capable of internally switching from decoding to comprehending without it being externally observable (Samuels, 1994, p. 1132). Fluency in reading involves many cognitive processes occurring at one time, and when attained, frees the reader from exhausting one's cognitive capacity. Fluency is based upon oral language skills, phonemic awareness, familiarity with letter forms, and efficient decoding skills (Pikulski & Chard, 2005, p. 517). "It is not enough to get a word right if a great deal of effort is required in doing so; automaticity frees up cognitive resources that can be devoted to text comprehension" (Hudson, Lane & Pollen, 2005, p. 704). It therefore becomes essential to emphasize the importance of accuracy that results from fluency in assuring that inaccurate interpretations of the authors message do not occur (Hudson, Lane & Pollen, 2005, p. 703).

Struggling Readers

Stanovich (1991) is often noted for his description of the Matthew Effect, or "the rich get richer, the poor get poorer" as it relates to reading (p. 178). This theory illustrates the thinking that those who have a stronger vocabulary will read more, experience more text and encounter a wealth of new words along the way, thus furthering their reading capacity. In collaboration with Nathan, Stanovich (1991) links this portrayal of the rich getting richer to the concept of reading fluency, as well. It is asserted that the limited practice and experience with books associated with struggling readers also has dramatic effects on fluency.

In connection with the work of La Berge and Samuels (1974), Nathan and Stanovich (1991) refer to the importance of cognitive capacity of readers when seeking automaticity. Restrictions are placed on cognitive space and energy when considering unpracticed readers (Nathan & Stanovich, 1991, p. 176). Hence, unpracticed readers are limited in print rich experience, which then hinders and potentially halts their ability to read with automaticity. Nathan and Stanovich (1991) emphasize the role of a student's vocabulary, or prior knowledge and schema, as it related to fluency and encourage increased exposure to text as a way to fill gaps that may exist in the area (p. 176).

Fluency Instruction

Fluency can be taught and when it is taught adequately, it has a positive impact on overall reading achievement (Rasinski, 2003). The highly practiced Repeated Reading technique addresses the essential areas of fluency, which includes accuracy, rate and prosody. Repeated Reading has many variations (Hudson, Lane & Pullen, 2005, pp. 708). Although approaches to this pedagogical tool typically vary, Repeated Reading involves multiple readings of one passage. With each read, familiarity is attained and reading miscues are addressed via corrective feedback. As a result, with each read, fluency grows and readers build confidence.

The particular Repeated Reading model chosen for this work involves three to one minute reads of the same text, as described above. Yet, the practice differs in that, the reads are audio taped through a web based pedagogical tool known as VoiceThread. Between each read, a teacher or proficient peer reviews the Voice Thread and provides corrective feedback in efforts to clarify any errors and increases the likelihood of accuracy upon subsequent reads. This corrective feedback has proven to be a highly effective exercise when implementing repeated readings (Chard, Vaughn & Tyler, 2002). As a result, the research widely supports repeated readings as a pedagogical strategy best suited for improving reading fluency and seamless technology integration. Repeated Readings reinforces the critical roles of visual memory, phonological memory, episodic memory, and semantic memory in the fluency process (Samuels, 1994, p. 1136).

Additionally, Readers Theater is also an extensively practiced pedagogical tool for increasing student fluency

performance (Pickering, 1975). This classroom tool is more collaborative in nature, as it involves a group of young readers. During Readers Theater, a group of students interact with one another as they read a script of a familiar narrative text that has been restructured in the form of a play. Students acquire roles and recite lines found within the script. With the recurrent practice of lines from a script, repeated readings are also occurring, thus further producing increased accuracy, rate and prosody. It is the engaging and motivating qualities of Readers Theater that tend to strengthen student interest and ownership and hold great potential in improving reading accuracy and expression (Keehn, Harmon & Shoho, 2008). Readers Theater also supports fluency as much more than the simple automaticity, but fluency as reading with expression (Allington, 2006, p. 94).

Web 2.0 Participatory Learning

Over the course of the past ten years, there has been a transformation from an information-sharing intensive first generation of web use to a user-creation centered second generation, i.e. Web 2.0. O'Reilly (2004) coined the term Web 2.0 to, "explain the concept of grouping a set of design and functional characteristics for web pages" (Hew & Cheung, 2012, p. 48). Hence, web pages in this new generation invite users to participate in web activities, to create user-directed content, to share with other users, and to review or critique others' activities. Students currently attending elementary schools are born into this new web generation are known as "Digital Natives" (Prensky, 2001) or "iGeneration" (Rosen, 2010). Many researchers argue that, this group of students should be taught differently compared to their counterparts from previous generations because they demand rapid access (Jones, Ramanau, Cross, & Healing, 2010), more engagement in the learning process (Prensky, 2005), and more hands-on activities (Thompson, 2013).

Web 2.0 tools and their social multimedia functions attract schools and educators and promote investigation of the social connections that students could establish with such tools. With the aim to understand the conceptualization of digital literacies, Shin (2014) conducted a case study of a second-grade struggling readers, particularly, English language learners, in a United states urban school using Web 2.0 tools. The researcher found that Web 2.0 tools enabled the student to construct new social relations in their learning environments. The struggling readers in this United states urban school, "established a critical view of linguistic choices, demonstrating emergent knowledge of the interpersonal function of texts and the interrelation between interpersonal and experiential functions" (p. 68).

Web 2.0 tools could be used to engage struggling readers, and the tools can be integrated into differentiation of teaching and learning. Web 2.0 tools have multimedia functions, i.e. a Web 2.0 learning tool could possibly combine audio, visual, and video into one platform, which gives teachers opportunities to integrate the tool into various learning activities. Vasinda and McLeod (2011) conducted a mixed methods study on struggling second and third graders' reading comprehension after a 10-week Readers Theater podcasting project. They found that three major elements of a Web 2.0 tool has enhanced student reading achievement in the following areas: Awareness of a wider audience, Authenticity of reading and the social nature of learning. Another important aspect of using a Web 2.0 tool in reaching out to struggling readers is the fact that it allows users to permanently store learning artifacts, so that students' performances can be conveniently retrieved for later listening and evaluation. This has the potential to further encourage teachers to utilize Web 2.0 tools for differentiation of teaching and learning. Lightle (2011) pointed out that teachers could use Web 2.0 tools to allow students at different levels to demonstrate their different academic levels, so that teachers can provide different scaffolding strategies to targeted student groups.

Furthermore, Web 2.0 tools forged a platform where participatory learning takes place formally and informally, and provides students with more rigorous learning opportunities (Albion, 2008). Students are no longer the audience within a class lecture, instead, they participate in the process of learning by creating artifacts and reflecting on learning experiences through technology. As a result, teachers now employ their knowledge in content and pedagogy (Shulman, 1987), and also knowledge of technology to support those two. This integration of

technological innovation has the potential to enhance student learning, including reading fluency.

VoiceThread and Learning

As a cloud-based Web 2.0 tool, VoiceThread (www.voicethread.com) provides users with the ability to integrate multi-forms of media materials. It allows users to upload visuals, record audio, provide text or audio comment or feedback, share with the public, and to store the artifacts in a cloud space. First introduced in 2007, VoiceThread has attracted attention from users alike. More recently, in the past three years, researchers interested in investigating Web 2.0 participatory tools have begun examining the affordances of VoiceThread for various types of learners, such as those learners in online environments (Ibrahim, & Watts, 2014; Kidd, 2013) and inclusive learning environments serving students with special needs (Brunvand & Byrd, 2011; Lintner, 2013).

The VoiceThread feature of integrating visual and audio together offers two-way communication between the reader and writer in the general education K-12 environment (Fisher & Frey, 2014). This ability allow students to connect visual cues with audio recordings and allow teachers to design participatory student-led reading activities so that students can practice reading fluency in various ways. This paper presents a series of steps for implementing the cloud-based audio-visual interactive Web 2.0 tool, VoiceThread, to attain reading fluency.

Implementation Framework

Scholars, researchers and policy-makers maintain high hopes for the 21st century skills and creativity technology would bring to classrooms. However, in reality, there are factors affecting technology integration in learning and teaching. Linking VoiceThread and Repeated Readings requires the selection of a high interest, engaging text at an independent reading level. After acquiring familiarity with the text and a very basic understanding of the text, three separate one minute reads of the text occur. Each read takes place for 1 minute. These three reads are recorded via the audio component of VoiceThread. Between each read, the VoiceThread recording is reviewed by the student and teacher. At that time, the teacher or assistant provides corrective feedback for the student in efforts to clarify any miscues during the student read. The process is repeated for the second and third reads, as well. Upon the close of the repeated reading cycle, images and artistic interpretations of the text are sketched within the visual element of VoiceThread. These publishable threads can then be shared as evidence of implementation of reading fluency standards, tracked for ongoing fluency progress and/or celebrated with parents and peers.

Similarly, the technological, pedagogical and content benefits of VoiceThread can also be found when working to improve reading fluency through Readers Theater. Here, students are placed into cooperative groups ranging in size from two to six learners. Once groups have been established, the teacher assigns a familiar, engaging text in the form of a play script at an independent reading level appropriate for each group. Many of these scripts can be easily acquired through a quick web search and then leveled for appropriate readability and content. Students are then provided with time to practice their roles individually, followed by their lines together as a group. Once reading fluency related to the script has been accomplished, students then begin recording their Readers Theater performance onto the audio component of VoiceThread. Students record each scene of the script and then replay the audio as a route for self-monitoring growth in accuracy, and prosody. The teacher also assists through brief formative assessment and the provision of corrective feedback, as well as ongoing positive reinforcement. Upon completion of the script, each cooperative group collaboratively sketches each scene from the script and uploads these images into the visual component of the VoiceThread tool. These Readers Theater presentations are then published as evidence of fluent reading, ongoing student collaboration and engagement, and as exciting documentation of continued reading growth.

Future Studies and Conclusion

With the rise of more demanding academic standards and expectations for students to read text with automaticity as to allow for close reading and further analysis of text, fluent reading has become even more critical. Additionally, as schools continue to acquire the latest technological

advancements, the synthesis of technology, pedagogy and content must be underscored and modeled for today's educators. VoiceThread, and its participatory elements, provide a bright view of all of the opportunities awaiting for educators and students who opt to utilize technology as a tool for improved teaching and learning. Access to VoiceThread and the potential to incorporate this tool in practical, realistic and achievement centered ways holds great promise.

The future research based on this work is intended to present and highlight the benefits of maintaining an asset, rather than deficit approach when working with struggling readers facing the challenges that typically surround urban school systems. With this in mind, utilizing all that a student already holds as assets, in this study, their knowledge of technology and presentation of familiar and engaging text, will be underscored. The results of this future study aim to promote the use of Web 2.0 technology and engaging text in the everyday classroom as tools for growing reading fluency. It is this reading fluency that will begin to uncover the components of the VoiceThread tool that encourages successful reading fluency and unlock access to text in a manner that is required for success in meeting close reading tasks.

References

[1]. Albion, P. R. (2008). "Web 2.0 in teacher education: Two imperatives for action". *Computers in the Schools*, Vol. 25(3-4), pp. 181-198.

[2]. Allington, R. L. (2006). "Fluency: Still Waiting After All These Years. In Samuels, S. J. & Farstrup, A. E. (Eds.)" What Research Has to Say About Fluency Instruction (pp. 94-105). Newark, DE: International Reading Association.

[3]. Brunvand, S., & Byrd, S. (2011). "Using VoiceThread to promote learning engagement and success for all students". *Teaching Exceptional Children*, Vol. 43(4), pp. 28-37.

[4]. Chard, D. J., Vaughn, S. & Tyler, B. J. (2002). "A Synthesis of Research on Effective Interventions for Building Reading Fluency with Elementary Students with Learning Disabilities". Journal of Learning Disabilities, Vol. 35(5), pp.386-406.

[5]. Fisher, D., & Frey, N. (2014). "Speaking and Listening in Content Area Learning". *The Reading Teacher*, Vol. 68(1), pp. 64-69. doi: 10.1002/trtr.1296

[6]. Fisher, D., & Frey, N. (2012). "Close reading in elementary schools". *The Reading Teacher*, Vol. 66(3), pp. 179-188.

[7]. Hew, K. F., & Cheung, W. S. (2013). Use of Web 2.0 technologies in K-12 and higher education: The search for evidence-based practice. *Educational Research Review*, Vol. 9, pp. 47-64.

[8]. Hicks, C. (2009). "A Lesson on Reading Fluency Learned from the Tortoise and the Hare". *The Reading Teacher,* Vol. 63(4), pp. 319-323.

[9]. Hudson, R. F., Lane, H. B., & Pullen, P.C. (2005). "Reading fluency assessment and instruction: What, why, and how?" *The Reading Teacher*, Vol. 58(8), pp. 702-713.

[10]. Jones, C., Ramanau, R., Cross, S., & Healing, G. (2010). "Net generation or digital natives: is there a distinct new generation entering university?". *Computers & Education*, Vol. 54(3), pp. 722-732.

[11]. Keehn, S., Harmon, J., & Shoho, A. (2008). "A Study of Readers Theater in Eighth Grade: Issues of Fluency, Comprehension and Vocabulary". *Reading & Writing Quarterly*, Vol. 24, pp. 334-365.

[12]. Kidd, J. (2013, March). "Evaluating VoiceThread for online content delivery and student interaction: Effects on classroom community". In *Society for Information Technology & Teacher Education International Conference.* No. 1, pp. 2158-2162).

[13]. Lightle, K. (2011). "Differentiate Teaching and Learning with Web 2.0 Tools". *Middle Ground*, Vol. 14(3), pp. 8.

[14]. Lintner, T. (2013). "Digital resources in the social studies classroom for students with learning disabilities". *Digital Social Studies,* 61.

[15]. McLaughlin, M., Glaab, L., & Carrasco, I. H. (2014). "Implementing Common Core State Stuandards in California: A report from the field". Retrieved from http://www.edpolicyinca.org/sites/default/files/PACE%20CCSS%20McLaughlin.pdf

[16]. Nathan, R. G. & Stanovich, K. E. (1991). "The Causes and Consequences of Differences in Reading Fluency".

Theory into Practice, Vol. 30(3), pp. 176-183.

[17]. Ibrahim, M., & Watts, A. (2014, March). "Examining the Effect of using VoiceThread and Educreations on Preservice Teachers' Self Efficacy and Learning Outcome in Online Course". In *Society for Information Technology & Teacher Education International Conference*. Vol. 2014, No. 1, pp. 554-560).

[18]. Pickering, J. V. (1975). "Readers Theatre". Encino, CA: Dickenson.

[19]. Pikulski, J. J., & Chard, D. J. (2005). "Fluency: Bridge between decoding and comprehension". *The Reading Teacher,* Vol. 58, pp. 510–519.

[20]. Prenksy, M. (2001). "Digital Natives", Digital Immigrants. *On the Horizon*, Vol. 9(5), pp. 1-6.

[21]. Prensky, M. (2005). "Computer games and learning: Digital game-based learning". *Handbook of computer game studies,* Vol. 18, pp. 97-122.

[22]. Rasinski, T.V. (2003). "The Fluent Reader: Oral reading strategies for building word recognition, fluency and comprehension". New York: Scholastic.

[23]. Rosen, L. D. (2010). "Rewired: Understanding the iGeneration and the way they learn". Macmillan.

[24]. Samuels, S. J. (1997). "The Method of Repeated Readings. *The Reading Teacher,* Vol. 50(5), pp. 376-381.

[25]. Samuels, S. J. (1994). "Toward a Theory of Automatic Information Processing in Reading, Revisited". In Rudell, R. B., Ruddell, M. R. & Singer, H. (Eds.), *Theoretical Models and Processes of Reading* (pp. 1127-1148). Newark, DE: International Reading Association.

[26]. Shin, D. S. (2014). "Web 2.0 tools and academic literacy development in a US urban school: a case study of a second-grade English language learner". *Language and Education*, Vol. 28(1), pp. 68-85.

[27]. Shulman, L. (1987). "Knowledge and Teaching: Foundations of the New Reform". *Harvard Educational Review*, Vol. 57(1), pp. 1-21.

[28]. Thompson, P. (2013). "The digital natives as learners: Technology use patterns and approaches to learning". *Computers & Education*, Vol. 65, pp. 12-33.

[29]. Vasinda, S. and McLeod, J. (2011), "Extending Readers Theatre: A Powerful and Purposeful Match With Podcasting". *The Reading Teacher,* Vol. 64, pp. 486–497. doi: 10.1598/RT.64.7.2

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