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Benefits of Tablet Technology to Improve Literacy Learning

Student's Name

University of Maryland University College

As the digital world continues to evolve and develop new technologies, teaching practices must expand to support skills necessary to develop 21st century learners. According to Wartella and Jennings, “every new technology provides the potential to both transform the education environment and upset the status quo in the classroom (as cited in Blackwell, 2013). When implemented purposefully, technology has the possibility to create richer learning experiences for students. There is evidence to support the positive influence tablet technology has on learning outcomes. Tablet computers can be used anywhere, at any time to enhance instruction. In addition, tablet technologies are significantly less expensive than other mobile devices, such as laptop computers. With the increasing popularity of tablet devices, this technology should be considered a necessary tool to enhance classroom instruction, particularly to support primary students with the development of literacy skills. Tablet devices have the capability of strengthening literacy skills for young students, transforming the way learners consume, comprehend, and interact with digital texts (Ruetschlin Schugar, Smith, & Schugar, 2013).

Tablet computers have the potential to improve literacy instruction for primary students, specifically students in second grade, by transforming the way students consume information. According to a two year, qualitative study in which students were observed using tablet technology to perform literacy tasks in multiple parts of the world, including Canada, United States, and Australia, literacy learning was enhanced through the representation of information. The authors of the study found that tablet technology provides students with multimodal experiences, integrating visual, auditory, and textual information using videos, images, sound, and text (Gallagher et al., 2015). Further, Ruetschlin Schugar, Smith, and Schugar (2013) argue these multimodal experiences have immense benefits for differentiating instruction, highlighting

the features of sound, animations, videos, and narrations. Tablets can also be used to enhance how students typically consume information in the classroom, making information more accessible. For example, tablet computers can be used like many other classroom tools, such as white boards, markers, chart paper, magnetic letters, etc. (Beschorner & Hutchison, 2013). This is particularly beneficial for students in second grade as they develop emerging skills in literacy, such as word work and other foundational skills. As students consume information in new ways using tablet technology, teachers should model and monitor how students access information, as students may become easily distracted by the engaging features. Despite this possible limitation, this multimodal approach to learning new information supports students of all learning styles, as opposed to solely using print-based materials. Students consume information in new ways, unimaginable without the technology.

In addition to transforming the way students consume information, tablet technology improves students' ability to utilize comprehension strategies while reading. In Auer's (2014) research, she presents findings from a case study designed to determine the extent of using tablets to support reading comprehension strategies for students learning a foreign language. Auer collected research through students' logs, researcher's notes, and semi-structured interviews. Her results of the study indicate that the technology supports students' use of cognitive and metacognitive processes by using the embedded reading strategies through the features on the tablet. Auer (2014) states, "of special interest was the metacognitive strategy of raising awareness of reading strategies" (p. 632). As students use tablet technology for literacy learning, they have the potential to become more aware of reading strategies to support comprehension due to modeling and supportive features embedded in the technology. For instance, in Auer's (2014) study, students used features to identify the meaning of unknown

words, to extract information from illustrations and photographs, and to identify the main topic of a text. These strategies support student understanding as they develop literacy skills in a new language. While this study highlights the benefits of a tablet's features to support comprehension, the study only reflects data collected from seven students in a foreign language class. Further research is needed to determine a larger impact on literacy learning. Regardless, the study examines the potential these features may have on future learning.

Furthermore, Ruetschlin, Smith, and Schugar (2013) discuss the benefits of using tablet devices to support comprehension skills including inferring, predicting, retelling/summarizing, and comprehension monitoring. According to Verhallen, Bus, and deJong, the multimedia features allow students to use video, sounds, and music to make inferences about characters' actions and feelings; however, they argue in some cases this may hinder a student's working memory (as cited in Ruetschlin, Smith, & Schugar, 2013). As noted previously, tablet technology allows for differentiation of literacy instruction. The features supporting comprehension skills should be utilized designedly to help students access instruction and develop literacy skills, meaning not all features will benefit all students in the same manner. For example, the multimedia features to support inferencing would be an asset to the instructional program for a student with developmental and social disabilities; however, may not be necessary to support all learners. The multimodal features can also support students with self-monitoring as they develop strategies for vocabulary development. In addition to online dictionaries and glossaries, the sound and animations can aid students in understanding the meaning of new words. Once again, this should be monitored and used purposefully, as students may over-rely on the feature while reading (Ruetschlin, Smith, & Schugar, 2013). While Ruetschlin, Smith, and Schugar (2013) argue the benefits of comprehension strategies, they claim "not all strategies are transferable

between different types of texts. For example, strategies such as coding and previewing texts are difficult or impossible to do in many interactive picture e-books” (p. 619). While this statement is true, literacy programs should incorporate a variety of text structures for students, both print and electronic, to support a diverse group of learners as they develop reading comprehension skills necessary to navigate 21st century skills.

While tablet devices transform how students consume and comprehend text, this technology also has a significant impact on the way students interact with text material as they develop literacy skills. The interactions that occur while students access literacy instruction on a tablet differs immensely from interactions that occur with print-based resources. Tablet technology requires a set of physical, technical skills necessary to operate the functions of the device. In Simpson and Walsh’s (2013) study, they sought to “investigate the cognitive and interactional processes that take place when the students read digital texts on a touch pad and to understand the processes used to render hybrid, multimodal ‘texts’ meaningful” (p. 148). The researchers collected classroom observations during literacy programs one day a week for three terms. They observed students researching, reading, and designing digital texts. The results indicate that the physical skills necessary to access information on the tablet did not occur in isolation, but were integral to the literacy and learning which occurred. Students used visual and tactile movements quickly to access information. The study suggests touch is an important aspect in the meaning making process when learning literacy skills on an interactive device. This physical component of the tablet supports exploratory learning for students (Simpson & Walsh, 2013). The touch interaction on the device supports students’ literacy skills, as each movement on the screen is purposeful and suggests an understanding of the material on the screen. Beschoner and Hutchison’s (2013) state children use their knowledge of situational print to

move easily from one feature to another, indicating an understanding of the meaning of the images and print on the screen. Their work with students in early childhood imply that these skills are developed at a very young age, making this device suitable for a second-grade classroom. Both articles review the benefits of the touch screen feature as students interact with literacy material; however, they do not show a direct connection to if there is an increase in student performance in literacy. While data to support students' improved progress in literacy are lacking, the articles prove the interactive nature of tablet technology supports students' ability to make meaning of information accessed.

There are considerable benefits of using tablet devices to support literacy instruction for students in second grade classrooms; however, teacher attitudes and philosophies must be considered to ensure tablet devices are utilized to their full potential to support learning. Educators play an integral role in the effectiveness of using tablet technology. Due to the possible limitations of using tablets in the classroom, such as distractibility and over reliance on supportive aids, teachers must plan, model, and monitor students as they participate in tablet interactions. Ruetschlin Schugar, Smith, and Schugar (2013) claim, "teachers need stronger support for effective integration of technology into classroom teaching and learning" (p. 617). Likewise, Blackwell (2013) argues teacher attitudes about technology can stand in the way of student-centered practices. Clearly teacher training and support is needed to fully integrate the transformative benefits of tablet technology into the classroom.

With proper teacher training, recognizing the limitations, and exploring the advantages, tablet technology has the possibility to transform student learning in literacy. Using tablet devices is an accessible, cost-efficient way to expose students to digital literacy experiences, ultimately improving the way students consume, comprehend, and interact with text. This

technology is especially beneficial for students developing emerging skills in literacy, particularly second graders as they encounter modern ways of accessing information and learning.

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