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How Can Primary Teachers Use Digital Resources To Enhance Reading Instruction?

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HOW CAN PRIMARY TEACHERS USE DIGITAL RESOURCES TO ENHANCE READING
INSTRUCTION?

by

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A capstone project submitted in partial fulfillment of the requirements for the degree of
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CHAPTER ONE

Introduction

Introduction

Throughout my childhood technology rapidly evolved and began to expand into a constant force in everyday life. Yet, I did not always see this evolution within school. I grew up in a small, rural town and graduated from high school in 2012. Technology became more accessible, and even a staple, throughout my day-to-day life the older I became. At the time I graduated high school, technology was highly visible and rapidly changing. However, technology's development and progression appeared to be occurring more outside of school walls. Within school, access to technology was limited and was integrated into my studies sparingly. This was also true during my college years. At this time, technology was an essential component of everyday life. However, the education program I was enrolled in included little to no formal training on how to incorporate technology into a classroom setting. When I first entered the classroom, I was not prepared to integrate technology in a purposeful or meaningful way. I continue to question how I can more effectively support and prepare my primary students with technology today. Throughout this project I am looking to answer the question, *how can primary teachers use digital resources to enhance reading instruction?*

In chapter one, I reflect on previous experiences, both personal and professional, that have motivated me to learn how to integrate digital resources. I explore what primary

teachers need to do in order to prepare students for today's rapidly changing society. I will also discuss why this project is relevant to educators, specifically primary teachers and those that teach language arts. Hicks and Turner describe how the digital age has changed the definition of literacy and educators "do not have decades to catch up to this change" (2013, p. 59). I will explain why the use of technology in early education is important. Gambrell and Morrow (2015) state, "Our students are entering an age when knowledge of technology is a necessity and not a luxury. As educators, we are obligated to prepare them for that reality" (p. 25). It has been my belief that integrating digital resources in primary classrooms provides students with experiences that are important for future education and career endeavors. In order to truly prepare students for college and career readiness, educators need to teach and reinforce a wide foundation of language and literacy skills (Minnesota Department of Education, 2020, p. 1). In today's technologically driven world, learning how to read, navigate, and interact with digital text is a necessary component of language and literacy skills.

My Education

I grew up at a unique time where, as I became older, technology also simultaneously progressed. The term technology or digital technology refers to tablets or iPads, computers or laptops, and smartphones (Lynch, 2017). Throughout elementary school, I had access to both a computer and dial-up internet at home. With each year that passed, the quality of technology available increased. Soon, I had access to Wi-Fi and

devices like iPods, laptops and tablets. Within school, my interactions and experiences with technology were pretty limited. My elementary classroom teachers utilized transparency machines or overhead projectors, machines that use light to project an enlarged image on a screen. Classroom teachers also had access to a computer lab, which held rows of desktop computers. Yet, our visits to the computer lab were few and far between. I had a keyboarding teacher who taught me the proper finger positions and helped me build typing stamina. To this day I can hear her voice in my head directing us to find a specific letter, the number of times to use that letter, and reminding us to hit the spacebar before the challenge would start again with a new letter. When I entered middle school technology's presence became more prevalent in my life outside of school. Instant messaging replaced biking to my friends' houses. Just the same, instant messaging was quickly replaced with text messaging and popular social networking sites. Technology experiences in school expanded throughout middle and high school, but not to the extent of my personal life. At this time, SMARTboards replaced overhead projectors. The computer lab was used more frequently than in the past to complete research for a project, type a paper, or put together a PowerPoint presentation. Despite the advancements in technology and how it significantly consumed my life outside of school, integration of technology did not keep pace throughout this point in my education.

The level to which technology was integrated into my education did evolve when I went to college. Its use was not a drastic change, however. The level of integration

depended heavily on the format of a course. For in person courses, I continued to utilize the internet for research, and my laptop to write papers and to create presentations. If professors allowed it, my laptop would also be used to type notes. I was exposed to some hybrid courses as well. This style of teaching incorporated technology integration at a higher level with some readings, class discussions, and exams occurring digitally. I later became an official student in the School of Education, and little did I know, there was a gap in the quality education I received.

At the time of my undergraduate education the little to no direct instruction I received on technology and its integration was, what I thought, a small gap. However, the first few years of my career would later reveal that the lack of instruction on this matter was actually a more visible crater. As I reflect upon my undergraduate experience, technology and learning how to integrate it does not stand out. I did not observe or truly learn how, as a future educator, I could coordinate technology within a classroom. I can recall discussions and lectures on best practice and how, even at the elementary level, we must prepare students to be 21st century learners. We were encouraged and taught how important it is to prepare our students for the real world, yet aspects of the real world were not incorporated into our education. I also did not observe a high level of technology integration throughout my preservice experience, or student teaching. In fact, what I observed were students receiving experiences similar to what I had been exposed to throughout my early educational years. Within the classroom I student taught, there

was one desktop computer and an overhead projector. I student taught in 2015. Many of the students I encountered were growing up with access to digital technologies at home, such as smartphones, tablets, laptops or computers, and portable gaming devices. It appeared that school and home were two very different worlds for these students.

The lack of instruction and focus on technology was a critical shortfall in my education. Experiences for preservice educators need to model how to employ technology into a classroom setting. By doing this, future educators will be more prepared to support and evolve 21st century learners. Urbani et al. (2017) defines 21st century skills as “creativity, critical thinking, communication collaboration, and IMTS (Information Media and Technology Skills)” (p. 28). The students that enter our classrooms are immersed with technology outside of school, and technology will continue to have a grasp on their world, in some capacity, for the rest of their lives.

Today’s students not only have access to digital technologies, but most can text or communicate digitally on social media platforms like “Snapchat” and “TikTok.” They are developing problem solving skills through a plethora of available apps and games such as “Roblox” and “Minecraft.” The evolution of technology has dramatically altered today’s world and the realm of education must keep up to its rapid pace. Wood and Jocius (2014) state, “We live in an age in which technology undergirds most of our daily happenings. When developing classroom activities, we must account for this ever-changing world” (p.133). Urbani et al. (2017) echo that today’s educators must “understand how to

develop, model and assess” 21st century skills (p. 29). Technology is an integral part of today’s world and it is here to stay. All educators must understand that incorporating technology truly prepares students for the real world because today’s world is driven by technology.

Classroom Experiences

I began teaching after college as a special education teacher. Early in September I received an email from a district employee I was unfamiliar with. Out of curiosity, I plugged her name into the district’s staff directory. The individual was the district’s assistive technology consultant. Her primary role in our district involved assessing students’ strengths and areas of need in relation to accessing the general curriculum. Using this information, she would determine if assistive technology could be more appropriately used to support learning. In her email, she noted that each building’s special education department would be allotted a certain number of iPads. The devices would be preloaded with various tools and resources teachers could use to assist in meeting individual student needs. This was great news. Yet, I continued to grapple with what programs to use and struggled to use the technology I had access to effectively and with a purpose.

While in this position I supported students in small group reading. The curriculum I used did not have a digital component. Furthermore, the program did not provide students with choice and evoked little to no excitement. Within this role, I also assisted

students in their classrooms. I began to observe how incredible my coworkers were in developing engaging literacy lessons that seamlessly integrated technology. I wanted to replicate this in my small groups. Through this professional experience I learned a lot about myself as an educator and decided to return to school to pursue my Master's Degree in an area I felt weak in, reading instruction.

I embarked upon a new adventure as I returned to school. I accepted a position as a long-term substitute for a third-grade classroom teacher. This classroom had a 1:1 ratio with iPads. I was fortunate to observe this teacher for an entire day, prior to maternity leave, to get to know students and familiarize myself with their classroom rules and routines. That day, students used their iPads and a website called "Epic!" to complete their reading assignment. Students chose a text that interested them, one from a list previously created by that teacher, and read or listened to the text independently. I watched as students navigated the site and toggled effortlessly between the text and their assignment. This observation sparked a desire to learn more about digital literacy, and how I could integrate technology into future literacy lessons.

I began teaching first grade in my current district the following year. Technology did not seem to be a priority in this district, as I only had access to twelve Chromebooks. This created a 2:1 ratio within my classroom. I felt that I was back in square one. With my past experiences, I had built up a level of knowledge and confidence using iPads. I had to rethink not only how to integrate this form of technology into my new classroom,

but also how to effectively use it with a younger group of students. I wanted to incorporate this technology into my literacy block in a way that would reinforce core literacy skills. Rethinking didn't just stop with integration; I also needed to uncover what existing resources would be compatible with a laptop, rather than an iPad, and if these resources would be appropriate for first grade learners.

Digital Literacy in Primary Grades

The term literacy generally alludes to an individual's reading and writing abilities, yet when the word digital appears before it, the phrase embodies much more (Heitin, 2016, p.5). To be literate, at this moment in time, means an individual possesses the skills and tools necessary to access and evaluate information, share ideas, and make informed decisions in order to engage and thrive in a technology driven society. Gambrell and Morrow (2015) state:

As our notions of what it means to be literate change, so must our ideas of what it means to provide literacy instruction in today's classrooms. Full and active participation in 21st-century life requires much more than the acquisition of foundational skills to decipher the printed word. Rather, in order to learn effectively and live productively in the modern age, students must learn to evaluate and think critically about information sources, to organize and manage information, and to communicate and collaborate with others ... (p. 39).

Technology can also be used to individualize learning experiences. For example, I was able to individualize student learning during our literacy block with the help of different digital programs and the integration of our Chromebooks. Using the digital resource, “RazKids,” I was able to set a student's reading level and match it with their Developmental Reading Assessment (DRA) level, enabling students to read independently using the Chromebooks. This tool empowered students to practice their fluency, vocabulary, and comprehension skills. This resource also had a feature that made it possible for students to record themselves reading a passage and for me to listen to their reading at a later time. Another digital resource I utilized was “Headsprout,” an online reading program specifically designed to scaffold reading readiness competence, from phonemic awareness through beginning comprehension skills. I noticed a high level of engagement with these digital resources. This made me wonder what other digital resources were available for primary students. It also made me curious about other ways I could incorporate digital resources into my reading instruction.

Primary teachers need to integrate technology and begin to develop digital literacy skills in their classrooms. The Common Core State Standards (CCSS) advocates for the development of digital literacy skills. The Standards “lay out a vision of what it means to be a literate person in the twenty-first century” (Minnesota Department of Education, 2018, p. 4). Employing the use of digital literacy does not mean elementary educators should eliminate or abandon the use of traditional literary methods. Classroom

experiences should provide students with a healthy exposure to both print and digital literacies. Heitin (2016) confirms, “Exposing students to both print and digital reading early on in school is a way of reflecting what authentic reading looks like” (p. 8). This is also echoed throughout the CCSS. For example, Minnesota State Standard 2.1.7.7 requires second grade students to “use information gained from the illustrations and words in a print or digital text to demonstrate understanding of its characters, setting, or plot” (Minnesota Department of Education, 2018, p. 14). Instruction should provide students with an array of literacy experiences to better represent the real world.

The evolution of technology has dramatically altered today’s world and the realm of education must keep up to its rapid pace. Yet, despite technology’s extensive grasp on day-to-day life, many classrooms continue to solely employ print texts and literature responses written by hand. Bridget Dalton (Heitin, 2016), an associate professor of literacy studies at the University of Colorado at Boulder states, “It is the way people read, write, communicate, and learn in the world, so kids should be learning it from the beginning. You don't wait till they're proficient in one to do the other. It's a simultaneous development” (p. 3). As technology’s grip on society increases, it is more important than ever before that the integration of digital literacy becomes increasingly prevalent in primary classroom life.

Available Research

The research that is available for primary teachers about digital resources, technology integration, and digital literacy is growing at a rapid pace. A quick internet search for digital resources, specifically primary resources, provides an overwhelming number of suggestions and ideas. In 2015 the American Academy of Pediatrics (AAP) noted that 80,000 digital resources were tagged as educational content (Shifrin et al., 2015, p. 3). The number of available resources has only multiplied since that time. The COVID-19 pandemic has contributed to the development and growth of these resources, especially as schools have had to shift to a distance learning model. The term distance learning is defined as “instruction in which the student and instructor are in different locations” (California Department of Education, 2020). The number of available resources for K-2 educators can be overwhelming. It is tedious to sift through the plethora of resources available while also evaluating the quality of each resource. This project will be important for all educators, but especially primary teachers, as it will help break down current research, in conjunction with identifying and assessing the quality of digital literacy resources. It will provide educators with specific resources that can be implemented into primary reading instruction. This project will also emphasize how important it is for primary students to learn, develop, and apply digital literacy skills.

Technology Today

Technology is an integral part of today’s world and it is here to stay. In order to be prepared for life in a world driven by technology, students need educators to make digital

literacy an inherent component of education. Students will be expected to know how to navigate the Internet and digital devices, like a laptop, throughout their education and into adulthood. This project will help educators understand why it is important to begin to integrate digital resources at the primary level, what resources are available for young learners, and how to differentiate between high- and low-quality resources. Currently, the CCSS defines what it means for students to be college and career ready. One of the goals that the CCSS articulates is that students “use technology and digital media strategically and capably” (Minnesota Department of Education, 2018, p. 9). Encouraging the development of digital skills at the primary level will enable students to become more digitally literate as they grow. This project will help primary educators understand the relevance behind meaningful integration and how its use in instructional experiences, especially literacy, prepares students for the real world.

Summary

One quick search for K-2 digital literacy resources will pull up an overwhelming number of sites. What resources should primary teachers integrate? What does research say about digital literacy? Is its integration something that’s necessary for primary students? This capstone project will help educators answer these questions. It will also encourage educators to find resources to support the development of digital literacy skills. I began using technology in elementary school and my depth of knowledge continues to grow. Technology has been a constant force within my life. It has been used

within my personal life, throughout my education, and even in my career. College did not fully prepare me to implement technology into classroom instruction. Throughout my professional experiences, I began to see how integrating digital resources can enhance engagement and individualize student learning, while simultaneously supporting curricular goals.

While diving into research surrounding technology and education, I became overwhelmed with the amount of information that is available. This project will narrow down available research for kindergarten, first and second grade educators. It will help educators, families and students understand how important it is to develop digital skills in young learners.

In chapter two, I will provide a detailed account regarding research that focuses on technology and early education. I will also provide a deep explanation of the SAMR model. An overview of an effective reading program will also be included. In chapter three, I intend to describe my project of integrating digital resources into reading instruction and include vetted resources that are available for primary students. In the last chapter, I will summarize both my research and project, as well as provide my final conclusions.

CHAPTER TWO

Literature Review

Introduction

This chapter is a synthesis of both research and resources that examine education and technology, more specifically the integration of technology into literacy instruction. The existence of technology in everyday life is unarguable. Technology's presence is expanding and becoming more apparent in the classroom as educators strive to prepare students for life in today's modern world. Integration of new literacies at the primary level will enable "students to gain the skills they will need as adults" (Forzani & Leu, 2012, p. 1). The integration of technology is altering how students learn, and how students develop literacy skills. The themes that are covered in this chapter relate to my question: *how can primary teachers use digital resources to enhance literacy instruction?*

The first theme in this section describes what research defines as effective literacy instruction. Research will target elements of literacy instruction at the primary level. Understanding what research advises will be important to understand as it guides this project. The next section defines digital literacy and how its integration supports the development of 21st century skills in primary students. For the purpose of this project, 21st century skills will be defined as "creativity, critical thinking, communication, collaboration, and IMTS (Information Media and Technology Skills) (Urbani et al., 2017, p. 28). This section will also describe the need for balance between traditional and digital

literacy. This analysis is pertinent to my research topic as it outlines the importance of digital literacy and why primary teachers should employ both formats. The next section will address authentic application, define and discuss digital citizenship, and explains how the integration of digital literacy promotes personalization and differentiation. The following section will describe the SAMR Model (Puentedura, 2014) and will illustrate how this model can help teachers consider whether or not implementation is meaningful. The last portion of the literature review will examine the obstacles that impede the integration of digital resources in literacy instruction.

Effective Reading Instruction

A child's success, both in school and in the real world, is dependent on learning to read and write. This is a critical element of success (National Association for the Education of Young Children and International Reading Association, 2009, p. 1). Instruction is a pivotal factor to this success. The National Association for Education of Young Children and the International Reading Association (2009) note that "teachers must be prepared to implement varied, research-based teaching methods that will help all young children gain competence in language and literacy" (p. 1). What does an effective primary literacy model include? In their position statement, "The Act of Reading: Instructional Foundations and Policy Guidelines," the National Council of Teachers of English (2019) state that an effective literacy environment:

...immerses children in a language “bath” that includes regular opportunities to learn and use various forms of oral and written language as a means of drawing on their background knowledge in support of classroom learning and to fulfill a wide range of purposes with a variety of audiences in different (sociocultural) settings.

Effective instruction addresses several aspects. The National Reading Panel (NRP) identified five effective elements to implement in reading instruction: explicit instruction in phonemic awareness, systematic phonics instruction, guided oral reading (fluency), vocabulary instruction and comprehension (Langenburg, 2000). The NRP Report did not include writing. Gambrell and Morrow (2015) note, “...we know that writing is a core component of any literacy program and that reading and writing are mutually supportive and interactive processes” (p.43).

To be truly effective, instruction must also match and prepare students for the modern world. “As our notions of what it means to be literate change, so must our ideas of what it means to provide literacy instruction in today’s classrooms” (Gambrell & Morrow, 2015, p. 39). The National Council of Teachers of English (2019) stated that effective reading and writing instruction “must include opportunities to engage with a wide range of genres, including digital and multimodal texts.” The definition of what effective reading instruction includes must evolve to match technology’s grasp on day-to-day life. It is imperative to integrate modern technology and new literacies into

primary literacy instruction (Forzani & Leu, 2012, p. 1; Gambrell & Morrow, 2015, p. 350). With the adoption of the Common Core State Standards (CCSS), educators must focus on integrating digital literacies into classroom instruction.

Common Core State Standards

The Common Core State Standards significantly transformed education in the United States by establishing consistent standards across the country in K-12 classrooms. Calkins et al. (2012) confirm that the CCSS “represent the most sweeping reform of the K-12 curriculum that has ever occurred in this country” (p. 1). The standards, or learning goals, “outline what a student should know and be able to do at the end of each grade” (Common Core State Standards Initiative, 2021). There are learning goals for both English language arts and mathematics. These standards were designed to prepare all students for success after their K-12 education, regardless of post high school plans. Whether students decide to pursue a career or opt to work towards a college education, the knowledge and skills students gain throughout their K-12 education, as outlined by the CCSS, will prepare them for either direction (Common Core State Standards Initiative, 2021).

The adoption of the CCSS has altered learning experiences. Calkins et al. (2012) highlight that the new expectations place “much stronger emphasis on higher-level comprehension skills” (p.9). Gambrell and Morrow (2015) echo this claim and illustrate three visible changes the CCSS have made to English language arts instruction. The

CCSS place a higher emphasis on reading informational texts, higher-level thinking skills, and digital literacies (Gambrell & Morrow, 2015, p. 348). In order to support these revisions, educators must commit to developing proficiency of digital literacies throughout K-12 classrooms. Gambrell and Morrow (2015) note that “the importance of digital literacy is integrated” and not simply a separate component of learning (p.93).

Digital Literacy

Within the past decade technology has exploded, and its effect has dramatically changed the basis for how people read, write, collaborate and communicate in today’s world. When society and technology transform, literacy also evolves (National Council of Teachers of English, 2019). The realm of literacy is in a state of evolution attributed largely to the enhancements of mobile devices including cell phones, e-readers, tablets and iPads, and online websites, most notably social networking sites. The field of education has observed the effects of these advancements. With the evolution of technology, twenty-first-century experts have coined new terms “that convey the many facets of what reading and writing in the modern era entails” (Heitin, 2016, p. 6). The term digital literacy is the most notable, but experts will also use other terms such as new literacies, multiliteracies, and 21st-century literacies to describe modern day literacy (Heitin, 2016, p. 6).

The term literacy alludes to both reading and writing skills, but “when you tack on the word ‘digital’ before it, the term encompasses much, much more” (Heitin, 2016, p.

5). Both reading and writing are still at the core of what encompasses new literacies, yet so are a broader range of skills. To be literate, at this moment in time, means an individual has “the ability to find, evaluate, utilize, share, and create content using information technologies and the Internet” (Lynch, 2017). In order to be prepared for life in a world driven by technology, students need educators to make digital literacy an inherent aspect of education.

Teachers need to help prepare students for the realities of the modern world by incorporating twenty-first century literacy practices into instruction. Wood and Jocius (2014) state, “We live in an age in which technology undergirds most of our daily happenings. When developing classroom activities, we must account for this ever-changing world” (p. 133). It is imperative that classroom instruction aligns with everyday life. Students need to understand how to navigate in today’s digital world, especially as society’s grasp on technology is continually increasing. This includes young students. Forzani and Leu (2012) state that primary teachers “cannot afford a failure to integrate new literacies” as it is important for young students to understand how to use new forms of literacy. “New literacies instruction not only is necessary and appropriate for young children; it will define their future” (Forzani & Leu, 2012). It is vitally important that teachers incorporate and develop 21st-century skills as “students will need digital literacy to be successful in their personal and professional lives” (Lynch, 2017). Gambrell and Morrow (2015) agree, “Schools should begin to integrate online

experiences and new literacies instruction as soon as children begin their literacy education program” (p.350).

In order to prepare students for the realities of the modern world, educators must incorporate twenty-first century literacy practices, blending these skills with more traditional approaches. The success of young learners in the 21st century is dependent on developing proficiency in both traditional and digital literacies (Gambrell & Morrow, 2015, p. 93). Heitin (2016) confirms, “Exposing students to both print and digital reading early on in school is a way of reflecting what authentic reading looks like” (p. 8). Instruction should provide students with an array of literacy experiences to better represent the real world. The goal is to integrate more digital texts, not replace traditional print texts. The definition of literacy must expand to reflect the “rapid changes in both literacy and technology” (Larson, 2015, p. 176). This will provide students with a better understanding of what literacy is and exactly how a reader is defined.

Too often elementary students “refer mainly to print” when the word reading is used (Heitin, 2016, p. 9). This perspective must be expanded through more authentic exposure. Gambrell and Morrow (2015) state:

Our students are entering an age when knowledge of technology is a necessity and not a luxury. As educators, we are obligated to prepare them for that reality. If, as the CCSS (2010) suggest, literacy instruction should be focused on preparing

students for college and career, then 21st-century technologies are the tools for our new and evolving trade (p.25).

Teachers can use technology to change how “print books and paper-and-pencil literature responses dominate” the definition of literacy (Wood & Jocius, 2014, p.129). Bridget Dalton (as cited in Heitin, 2016) advocates for early exposure to digital literacies. She states, “... Kids should be learning it from the beginning. You don’t wait till they’re proficient in one to do the other. It’s a simultaneous development” (Heitin, 2016). Gambrell and Morrow (2015) agree that young learners require competency in both traditional and digital literacies to achieve success in the 21st century (p. 93). Integrating digital resources into classroom instruction requires educators to teach students how to use technology appropriately. Digital citizenship is an important part of digital literacy.

Digital Citizenship. Part of using digital resources is understanding how to use them judiciously. In a joint position statement, the National Association for the Education of Young Children and Fred Rogers Center for Early Learning and Children’s Media at Saint Vincent College (2012) defined digital citizenship as the need for users to be:

...responsible digital citizens through an understanding of the use, abuse, and misuse of technology as well as the norms of appropriate, responsible, and ethical behaviors related to online rights, roles, identity, safety, security, and communication (p. 10).

For young learners, digital citizenship also includes “developing judgment ... children and adults need to be able to find and choose appropriate and valid sources, resources, tools and applications” (National Association for the Education of Young Children & Fred Rogers Center for Early Learning and Children’s Media at Saint Vincent College, 2012, p. 10).

Walters (2018) agrees that young learners must develop good digital citizenship. Walters (2018) states, “The development of good digital citizenship skills at younger ages can support students in maintaining appropriate online habits...” (p. 9). The Office of Educational Technology (2017) confirms that “increased connectivity” expands the need for students to learn how to use technology in “ways that are meaningful, productive, respectful, and safe” (p.11). All users of technology must understand both appropriate and effective uses of digital technologies (Walters, 2018, p. 14). How we integrate digital technologies matters. Developing strong digital citizenship skills is one way that the integration of digital technologies can create meaningful learning experiences.

Integrating Digital Technologies

Teachers need to be mindful of how digital technologies are employed. “... We must remember that digital devices are not magic wands... Like paper and pencils, technology is a tool, and it’s what teachers and students do with the tool that matters” (Wood & Jocius, 2014, p. 133). It is simply not enough to incorporate the use of a popular app or online game, which may focus on a foundational reading skill, and label the

practice digital literacy. According to Hale (as cited in Heitin, 2016), “Many games and apps aren’t much more than souped-up worksheets” (p.10). The proper application of digital literacy refers to much more than merely tossing technology into classroom instruction; educators must consider how applying technology transforms student learning (Hicks & Turner, 2013, p. 59).

Wood and Jocius (2014) agree that there are advantages to a “more integrated approach in which reading and writing are inextricably tied to digital tools” (p.130). The International Literacy Association (2019) describes how the multimodal abilities of digital resources, such as graphics or images, sound and animation, provide students with advantages over traditional resources (p. 4). Students are able to deepen their understanding of content through the multimodal abilities of digital resources. The International Literacy Association (2019) states:

According to the multimodal perspective, children make meaning using multiple modes (text, pictures, words, gestures, movements or production of artifacts), and all these modes complement one another as children seek to interpret their world and convey their understanding (p.4).

Wood and Jocius (2014) agree that technology “can support and enhance students’ experiences with texts during the reading process” (p. 130).

New digital literacies, such as e-books and other reading devices, can provide students with a more individualized reading experience. “Digital tools such as

text-to-speech (TTS), hyperlinked dictionaries, just-in-time vocabulary support, and enhanced e-books can increase students' volume of reading and create more strategic and self-sufficient readers" (Wood & Jocius, 2014, p. 130). When employed meaningfully, technology has the potential to transform student learning by using it to differentiate and personalize content.

Differentiation and Personalization

Employing technology as a tool to differentiate instruction demonstrates how it can transform student learning. "Differentiated instruction occurs when educators modify instruction based on the needs and interests of each individual learner" (Isaacs, 2017, p. 15). Rosen and Beck-Hill (2012) state that differentiation provides students with "different avenues to acquiring content: to processing, constructing, or making sense of ideas; and to developing teaching materials so that all the students within a classroom can learn effectively, regardless of difference in ability" (p.228). Teachers can personalize instruction with the help of technology and digital resources. Rosen and Beck-Hill (2012) confirm that with technology student learning "can be individualized or differentiated with flexibility in content to fit the interests and prior experiences of each student" (p.3).

The Office of Educational Technology (2017) agrees that technology enables educators to transform learning experiences for all learners (p. 21). The tools that digital technologies present can provide students with more learning supports than traditional formats (Office of Educational Technology, 2017, p. 22). Digital technologies, like

laptops and other mobile devices, allow educators to “customize learning experiences to align with the needs of each student” (Office of Educational Technology, 2017, p. 22).

Northrop and Killeen (2013) also saw the benefits of using technology to differentiate. Student participation in guided practice on iPad apps provided “...an opportunity to offer differentiated instruction to the students based on their specific errors and misconceptions,” (Northrop & Killeen, 2013, p. 535). The Office of Educational Technology (2017) agree that digital tools enable educators to differentiate. “Digital tools also can make it possible to modify content, such as raising or lowering the complexity level of a text” (Office of Educational Technology, 2017, p. 22). The SAMR Model (Puentedura, 2014) can be used to help guide teachers to incorporate technology in innovative ways, rather than using it just because it’s available.

The SAMR Model

The Substitution Augmentation Modification Redefinition (SAMR) Model is a four-tiered model that can assist educators when implementing technology in the classroom. The model resembles a ladder and aims to help educators as “the plethora of choices available can prove paralyzing, frequently resulting in ongoing substitutive uses of the technology that block, rather than enable, more ambitious transformative goals” (Puentedura, 2014). The term “redefinition” appears at the top of the tiers and describes the most innovative uses of technology. The levels go down to “modification,” then “augmentation,” and lastly “substitution” is at the bottom. The model “outlines a clear set

of steps that can help guide the introduction of technology in the classroom” (Puentedura, 2014).

Each tier is “defined to help educators design a meaningful and innovative learning activity” (Isaacs, 2017, p.17). Going from the bottom tier up, Substitution, the lowest tier, is where technology “acts as a direct tool substitute, with no functional change” (Puentedura, 2014). This tier is the least innovative. The next step, augmentation, is when technology is a direct substitute, but provides “functional improvement” (Puentedura, 2014). Modification is where technology redesigns the task. The top tier, redefinition, “allows for the creation of new tasks, previously inconceivable” (Puentedura, 2014). This tier transforms student learning.

Israelson (2015) states that the SAMR Model provides elementary educators with “several advantages” when “seeking to select quality apps and integrate them into their literacy instruction” (p.342). Research supports that using technology that correlates to the higher levels of the SAMR Model (Puentedura, 2014) enhances student learning and achievement (Israelson, 2015, p.342). The SAMR Model (Puentedura, 2014) can also be used by educators to “... specifically name their intended level of technology use and select apps that either redesign tasks or create new, previously unimagined, learning tasks” (Israelson, 2015, p.342).

However, just because technology is available does not mean it should be employed. The International Literacy Association (2019) states that educators must

examine the why behind utilizing a digital resource (p. 6). Technology should not be integrated as an “add-on simply because the technology is available” activity, but should target the higher levels of the SAMR Model to add value to instruction (Israelson, 2015, p. 342). Rosen (2011) agrees, “the point is not to ‘teach with technology’ but to use technology to convey content more powerfully and efficiently” (p.14).

Integration Barriers

Technology is prevalent throughout today’s society. Its use is clearly visible throughout communities stretching from local businesses, factories and manufacturing sites, offices, and even household to household. Life, whether positively or negatively, is greatly affected by technology (Muhtar & Ziemke, 2015, p. 66). However, integration is not always visible within school buildings. Despite the growing presence of digital technologies “beliefs about and recommendations for how they are used in early childhood vary widely” (International Literacy Association, 2019, p. 2). Varying viewpoints are widespread even throughout individual buildings. However, this is merely one obstacle that schools face when seeking to integrate digital technologies. Experts cite additional integration barriers as: curriculum restraints and requirements, limited access to devices, attitudes and beliefs, finite knowledge and digital skills, and concerns over screen time (Hosseini, 2018, pp. 27-30; O’Neal et al., 2017, p. 193) Although this is not an exhaustive list, many of these are common obstacles that prevent students from developing 21st-century skills and accessing digital literacy.

O'Neal et al. (2017) report that integration barriers fall into two different categories, external and internal barriers (p. 194). External barriers are issues outside of an educator's control, such as a lack of resources, district or administrative support. Internal barriers are just the opposite. These barriers, like attitudes and perceptions, are more teacher centered (O'Neal et al., 2017, p. 194). Hosseini (2018) agrees with the presence of these obstacles, referring to them as first- and second-order barriers (p. 27-29).

External Barriers

Barriers that impede technology integration, but are outside of a teacher's control, are considered external or first-order barriers (Hosseini, 2018, pp. 27; O'Neal et al., 2017, p. 194). Hosseini (2018) states, "These are often district- and school-level factors that include inadequate or lack of access to digital technology resources, technical support (Miranda & Russell, 2011), teacher training, and situated professional development (Kopcha, 2012)" (p. 27). O'Neal et al. (2017) compiled an almost identical list and echo that "inadequate access to technology, unreliable computers, and low levels of technology leadership and support" hinder the integration of technology integration (p. 194-195). Administration can also impact technology's role within a building (Hosseini, 2018, p. 28). Hosseini (2018) states:

Data from a Use, Support and Effect of Instructional Technology (USEIT) study revealed that, among school-level factors examined, such as principal's beliefs

about technology, the school principal's reported use of digital technologies may significantly influence teachers' reported use of technology (Miranda & Russell, 2011, p. 28-29).

In order to better support students, administration must first support teachers. The lack of professional development is an external barrier that districts must eliminate. In order to integrate technology, educators need to cultivate and improve their own level of understanding.

Professional Development and Training. “Many elementary teachers are uncomfortable with their own technology skills, which makes them hesitant to start digital reading with students” (Heitin, 2016, p. 11). Despite the influx of new technological devices in classrooms, they often sit underused or worse, untouched. If school districts are going to expect teachers to incorporate technology into classroom instruction, then districts must provide teachers with ample professional development. Teachers not only need access to digital technologies, but they also need to know how to incorporate it into the curriculum. This was a frustration educators expressed in a focus group (O'Neal et al., 2017, p. 201). Educators in this focus group noted that “they had access to numerous computer programs and resources, but a disjointed training experience if at all” (O'Neal et al., 2017, p. 201). Teachers also noted that time was one of the constraints upon learning to use and incorporate new technology.

Cultivating a new skill set takes time to develop. In order to integrate technology effectively, educators need more time to plan and collaborate with colleagues (Hosseini, 2018, p. 28). Hosseini notes that often “team planning and collaboration time that teachers do have often has a pre-scheduled agenda and focuses primarily on the core subjects” (2018, p. 28). With the adoption of the Common Core State Standards (CCSS) and its dedication to incorporate digital technology throughout literacy and language arts standards, scholars are hopeful more teachers will be provided with quality professional development (Hutchison & Colwell, 2015, p. 4). External barriers have proven to be hurdles educators must overcome in order to integrate digital technologies effectively. Yet, despite conquering these external hurdles, additional barriers continue to exist.

Internal Barriers

Barriers that interfere with technology integration, but are more teacher related, are considered internal or second-order barriers. Teacher related barriers are considered to be “attitudes toward computers or perceived technology skills” (Hosseini, 2018, p. 27; O’Neal et al., 2017, p. 194). The influence these internal barriers have on educators is considerable. O’Neal et al. confirm that “internal barriers play a significant role in computer integration” (2017, p. 195). Hosseini explains teachers’ decision-making is rooted in their pedagogical beliefs (2018, p. 29). Thus, the attitudes and beliefs teachers hold about technology greatly impact the level to which technology is integrated into classroom instruction. There are additional internal barriers that impact integrational.

O'Neal et al. (2017) confirm that readiness for computer integration and computer proficiency are additional internal barriers (p. 195). Hosseini echoes that knowledge and skills impact an educator's ability to effectively incorporate digital technologies (2018, p. 36). For example, a case study with veteran elementary teachers who were considered "beginners in computer use" demonstrated the educators were "less likely to integrate computers in their instructional practices if they lacked or had limited basic computer knowledge and skills" (Hosseini, 2017, p. 36). Participants noted that "their limited or lack of computer knowledge and skills also contributed to lack of confidence and comfort" (Hosseini, 2017, p. 36). Barriers to technology integration exist, even with its demonstrated need. Yet, an influx of time spent with digital technologies presents a different drawback, screen time.

Screen Time

Students today are growing up with digital devices. Today's students are, what the American Academy of Pediatrics (AAP), call "digital natives" (Shifrin et al., 2015, p. 3). Many students are growing up with digital technologies at home, such as smartphones, tablets, laptops or computers, and portable gaming devices like the Nintendo Switch. These tools have changed how "families manage their daily lives and seek out entertainment..." (National Association for the Education of Young Children, 2012, p. 2). There are concerns, especially for young children, about screen time consumption.

In 2012 the AAP and the White House Task Force on Childhood Obesity created screen time guidelines for children. For children ages two through five years old, the report encouraged limited use of screen time. Children in this age group should be restricted to fewer than two hours per day (National Association for the Education of Young Children, 2012, p. 3). The International Literacy Association (2019) states:

However, in 2016, the American Academy of Pediatrics revised its guidelines to account for the abundance of new digital media. The AAP now emphasizes the importance of selecting digital media that are developmentally appropriate, with high-quality content. The AAP also emphasizes social interaction as an essential component of children's screen time, a goal that is accomplished by having adults play or view along with children (p. 2-3).

Adults, especially parents, are important role models for children. Experts note that "sound time management practices fostering life balance" should be visible for young children (Shifrin et al., 2015, p. 4). Educators should also practice modeling this balance because the use of digital media can create both positive and negative effects (Shifrin et al., 2015, p. 4).

With technology's role in our day-to-day life evolving, especially in recent years, the amount of screen time individuals experience continues to increase. Not only does the duration of daily screen time matter, but the value of these experiences do, too. The

International Literacy Association (ILA) notes that "... meaningful use of digital resources yielded significantly greater benefit to important literacy outcomes for young children than use of traditional resources only" (2019, p. 4). The quality of the digital media employed matters. The Mayo Clinic has linked obesity, irregular sleep schedules and shorter duration of sleep, behavior problems, loss of social skills, violence, and less time for play to poor, or low quality, screen time (Mayo Clinic, 2019). In echoing those concerns, especially the impact screen time has on sleep, The American Academy of Pediatrics (2015) states:

Because the light from screen media disrupts melatonin secretion, using screens before bedtime and keeping them in the bedroom overnight may delay sleep onset; shorten sleep duration; and interfere with achieving deep, restful sleep. Sleep deprivation is strongly associated with obesity and poor academic performance. Digital media use's correlation with poor sleep reinforces many AAP media policy recommendations to avoid technology at bedtime and throughout the night (Shifrin et al., 2015, p. 5).

In addition to adverse effects on sleep, large volumes of screen time create the potential for overuse. The AAP also warns about "potentially addictive behaviors related to Internet use and gaming" (Shifrin et al., 2015, p. 5).

Educators need to be mindful of this information. The International Literacy Association (ILA) reiterates that purposeful integration of "high-quality digital

resources” is important for “preparing all young children for long-term academic success” (2019, p. 4). However, it can be difficult to identify a high-quality resource versus a low-quality one. One thing that makes this difficult is the sheer number of resources that are available. Muhtaris and Ziemke (2015) state, “There’s a lot of clutter out there: you don’t need sixty-seven applications ... Find a few tools that kids can use diversely...” (p.37). Guidelines have been designed to use when considering the quality of a digital resource. The International Literacy Association (ILA) has crafted a guideline that defines elements of high-quality digital resources:

- a. Align with curricular and learning goals
- b. Afford opportunities not otherwise provided by traditional resources
- c. Convey accurate content
- d. Contain few, if any features that distract from the content
- e. Contain no ads or commercialized or politicized messages
- f. Support creativity, imagination, and collaboration (2019, p. 6).

Educators for children through age eight need to “make informed, intentional, and appropriate choices” about the integration of technology and digital resources (National Association for the Education of Young Children, 2012, p. 11). Guidelines, like the one above, should be used to pinpoint high-quality digital resources, and to avoid the exchange of “passive screen time” for meaningful activities or ones that involve play

(Mayo Clinic, 2019). Educators must ensure the application of technology is grounded in principles of quality instruction (Muhtaris & Ziemke, 2015, p.29).

Summary

In this literature review, I began by discussing what research defines as effective literacy instruction. Experts outline six elements that support the development of literacy skills in primary settings. Instruction should include: phonemic awareness, systematic phonics instruction, guided oral reading (fluency), vocabulary instruction, comprehension, and writing (Gambrell & Morrow, 2015, p.43; Langenburg, 2000). I also defined digital literacy and discussed how the integration of digital resources develops 21st-century skills; skills that are needed to thrive in today's modern world. The definition of literacy has expanded to include more than printed books, and paper and pencil experiences. I described what digital literacies or new literacies look like and how meaningful integration can help support differentiated instruction and learning activities. I also discussed the SAMR model (Puentedura, 2014) and how this model can support educators in planning and implementing technology in meaningful ways. Technology should not be employed solely because there is access to technology.

I then went into the barriers that districts, schools, classrooms and educators are facing when implementing digital literacies. Research describes how screen time, preservice and a lack of professional development restrict the use of digital technologies in classroom instruction. The next chapter will discuss a website dedicated to helping

primary teachers use digital resources to enhance literacy instruction. Chapter Three will describe the research approach that will guide the website and project. This chapter will also outline my website.

CHAPTER THREE

Project Design

Introduction

This chapter provides an outline of the website that was designed to help answer my research question: *how can primary teachers use digital resources to enhance literacy instruction?*

This chapter explains the research methods used to guide the creation of this website. Next, it provides both a description and rationale of the website's framework. Chapter three will also discuss the setting, targeted audience, project outline, and finally, a brief introduction to chapter four.

Design and Approach

This section will discuss the design of my project and the approach I used to create a website that will support the integration of digital resources into primary literacy instruction. My project design and its content were guided by previous research, the Common Core State Standards (CCSS), and the SAMR Model (Puentedura, 2014). The CCSS are a set of academic standards for kindergarten through 12th grade students. There are learning goals for both literacy and mathematics. The standards, or learning goals, "outline what a student should know and be able to do at the end of each grade" (Common Core State Standards Initiative, 2021). The SAMR (Substitution Augmentation Modification Redefinition) Model, as previously described, can provide guidance to educators on the integration and use of technology.

Rationale

Creswell and Creswell (2018) describe qualitative research as “an approach for exploring and understanding” and one that “involves emerging questions and procedures ... and the researcher making interpretations of the meaning of the data” (p.4). I used research to guide my project. I was also advised by the CCSS and the SAMR Model (Puentedura, 2014) in the evaluations and explanations of content included on my website.

Project Approach

The project design was crafted by findings from my literature review and used to develop a website that provides educators with vetted digital resources. This website will support K-2 teachers using digital resources to enhance literacy instruction. This project addresses the need for a thorough evaluation of digital resources developed for primary students, and the need for more research and resources that focus on young learners.

Project Description

My capstone project is a website that will provide inspiration, resources, and ideas for how primary teachers use digital resources to enhance literacy instruction. This website will benefit primary teachers by providing a space to learn about resources, potentially new resources, that will support young students. In addition to learning about specific digital resources, this website will also deepen educators’ knowledge of the CCSS and highlight how technology impacts and supports student learning. I used the research that was discussed in chapter two to guide the information and resources that are presented on the website.

The website will list different language art skills and digital resources that can be employed to increase understanding, provide additional practice or show understanding of that skill area or concept. The website describes each digital resource, provides a SAMR Model

(Puentedura, 2014) grade, and identifies the specific CCSS that each resource supports. The goal of this project is to provide a useful resource that primary teachers can use to gain inspiration and help with technological integration.

Rationale

The website highlights digital resources that educators can use to support the development of 21st century skills, in addition to deepening understanding of grade level standards. Using the SAMR model (Puentedura, 2014) and the CCSS, allows educators to reflect on the value of each resource and analyze how specific resources can positively impact students ability to grasp grade level learning goals.

Technology is constantly evolving and new resources are developed on a weekly basis. A website enables me to update and add to the site as new research and resources become available. The information found on this website will be up to date and relevant to users. The creation of a website enables many people to easily use, view, and return to the information. This website will be intended for primary teachers who teach English language arts and are looking to integrate digital resources in meaningful ways.

Setting and Audience

This Capstone Project is intended to reach and support educators who are interested in integrating digital resources into their classroom instruction. The website will be available online, and will be easily accessible for any individual to use. This site has been crafted with primary teachers in mind. However, teachers at other grade levels and content areas can also use the relevant information on this website. This website was designed with the hope that educators will

use it as a motivational platform and be inspired to take the resources presented into their classrooms, or adapt the content to meet the needs of their students.

The goal is to produce a well-crafted website that is relevant for educators, especially educators that teach primary students. This website will guide teachers in integrating digital resources and provide a deeper understanding of how each resource can transform instruction based on the SAMR model (Puentedura, 2014). It will also be useful for teachers who may not yet be comfortable with technology or are in need of new ways to integrate it, and educators just entering this profession.

The website will include different sections. The sections have been designed with research guiding it, and are aspects of an effective reading model. Each page on the website includes information about a particular resource and it gives my scoring for the SAMR Model (Puentedura, 2014), in addition to the CCSS that it correlates to. I also discuss both the SAMR Model (Puentedura, 2014) and the CCSS further to provide a better understanding of each component of this project.

Project Outline

Main Page

Main Idea: This page will provide an overview of the materials and resources found on the website.

- Rationale for the website
- What can be found on the website

SAMR Model

- Describes and outlines each tier of the SAMR Model (Puentedura, 2014)

Common Core

Main Idea: This portion of the website will highlight how the Common Core State Standards (CCSS) supports the development of digital literacy skills and technology integration. It will also focus on career and college readiness.

- Outline the Common Core State Standards (CCSS)
- Define college and career readiness
- Describe 21st century literacy instruction
- Highlight specific Minnesota K-2 standards that support digital literacy skills

Pre-Reading Skills

Main Idea: The development of strong phonemic or phonological awareness is an important building block in learning to read. Students also need to acquire phonics and decoding skills. These pre-reading skills are crucial for primary students. Students need these skills in order to read independently and comprehend what they read. Resources that target these pre-reading skills will be included on this page.

- Headsprout
- IXL Language Arts
- Teach Your Monster To Read
- ABCya!
- Lalilo

Reading: Comprehension

Main Idea: Meaningful digital resources that allow teachers to differentiate instruction and students to increase comprehension will be included on this page.

- RAZ-Kids
- Epic!
- IXL Language Arts (Comprehension)
- Freckle

R: Redefinition

Main Idea: Redefinition enables students to demonstrate their knowledge in a way that uses creation, critical thinking, collaboration and communication. These activities transform how students can share their understanding.

- Video
- Photos
- Seesaw
- ExplainEverything
- Padlet

Summary

This chapter began by describing the rationale, audience, and setting for this website outlining how primary teachers can use digital resources to enhance literacy instruction. This website will hopefully encourage primary teachers to integrate technology, partnering it with curriculum, in a way that redefines its present role; a substitution for paper and pencil activities. I decided to create a website to advocate for more purposeful integration of technology and digital resources, in addition to expanding my knowledge of resources and research. With technology and digital resources continuing to evolve, this information will need to progress simultaneously. This website enables me to keep up with research, maintaining it as needed. This site will also be

easily accessible and a place where educators and other individuals will be able to learn about some digital resources available for students.

An outline of my website is also present within this chapter. The opening page includes the rationale behind this website, and what this site will encompass. The additional sections are divided by reading topics, sharing resources and tools that can be integrated.

Chapter four will examine conclusions that I have made and any new perspectives that I have developed after crafting this project. I will discuss experiences I had throughout this project in addition to new learnings.

CHAPTER FOUR

Reflection/Conclusion

Introduction

I have created a website to answer my research question: *how can primary teachers use digital resources to enhance literacy instruction?* This section will provide discussion surrounding the creation of my website. The first portion will provide context to my capstone project. I will share major takeaways I came across throughout my research and website creation. This section will also review the research that guided and influenced this process, and discuss the implications and limitations of my website. The next section will include recommendations for future research. The last portion will focus on the future of my website, what additions I would like to include, and how I will share this resource with others.

Project Background

The creation of this project was sparked from one question: *how can primary teachers use digital resources to enhance literacy instruction?* I created a website that teachers could refer to for inspiration, resources, and a rationale for integrating digital resources into instruction. The goal of this website was to help primary teachers locate quality digital resources that could be used to support the learning goals of the Common Core State Standards (CCSS).

I included a description, which outlined the cost of each resource and assigned a level, using the SAMR Model (Puentedura, 2014), that classified how the resource can impact, transform and support student learning. I also included the CCSS that each resource connects to, targets, and supports.

Learnings

Throughout the course of this capstone process I came across many new learnings as a researcher, writer, and learner. This project encouraged me to think more deeply about how to use technology to enhance instruction, especially in the area of literacy. The research used in my literature review helped me understand how leaders in the field of education feel about the use of technology in primary classrooms and how the need to acquire twenty-first century skills has shifted our idea of what literacy involves. The literature review provided research-based information that I used to support my rationale for integration.

The research that influenced this capstone process the most were the Common Core State Standards. When reviewing resources, I started by looking for connections to the Common Core and what standards, if any, a resource aimed to support. To enhance literacy instruction, I felt that the resources educators integrate must align to the CCSS. This ensures that the experiences students have with content are developing both the knowledge and skills they need to acquire by the end of the year. As a researcher, I found that this led me to new resources that I have not used before. I have never used Lalilo, for example, but through this research lens was able to uncover an engaging resource with a detailed description of the standards it partially or fully aligns to. By exploring a large number of language arts resources, I came to understand that digital resources can engage students in literacy experiences, but that does not necessarily mean that the experiences support student learning goals. As a learner, this process enhanced my understanding of the Common Core.

The SAMR Model (Puentedura, 2014) encouraged me to consider the meaning behind integrating technology. Technology impacts student learning. By employing the SAMR Model (Puentedura, 2014) I was able to consider how implementing technology influences student

learning. As a learner, this model made me more conscious of technology integration. It also highlighted that incorporating technology simply because it's available does not mean a learning opportunity is enhanced. The SAMR Model (Puentedura, 2014) affected me most as a learner.

Incorporating the model into my project challenged me. I used the SAMR Model (Puentedura, 2014) to grade each resource. At the beginning of this project, I struggled putting each resource into one specific tier. Further research made me modify this portion of the project and view the tiers more as a sliding scale. The resources included in this project have different features that make each unique. However, a user may not use all of the features at once. For example, using an e-book as a direct replacement for a physical book is considered substitution. A reader could use the technology to find more engaging text or read about a specific topic of interest. This same resource may have the ability to read to a user. This provides a level of functional improvement, which enhances the experience. With this feature, the grade or tier changes to augmentation. Incorporating a sliding scale enables educators to better understand the impact a specific resource could have on student learning.

I also grew as a writer throughout this project. At times, I found writing each chapter to be difficult. I found myself constantly rereading and revising work, never quite satisfied with how I represented learnings and research. The sheer amount of research available on technology integration was wonderful, but also overwhelming. I wanted to ensure I was representing the most up to date information throughout this project. Citations, while very important, were time consuming, especially as I began citing media. All challenges aside, I am thankful for the growth I made as both a researcher and writer.

This capstone process encouraged me to grow as a teacher, researcher, writer, and learner. Throughout this experience I not only learned new skills, but also enhanced my understanding of topics I had prior knowledge of. This project increased my ability to research information and apply knowledge in a professional manner. More importantly, it increased my level of confidence with technology and encouraged me to stay curious.

Literature

The research included in chapter two influenced the content and resources available on my website. When I first considered the idea of designing a website, I envisioned a site with resources I had previous experience implementing, sites I informally observed other professionals utilizing, along with resources recommended by other educators. This experience quickly made me realize that identifying and locating resources supported only part of my research question. There are numerous resources available, but which resources enhance literacy instruction? Through this process I came to the conclusion that, before I share information with the world of education, credible research is needed to support the resources on my website.

The most substantial influence on my project were the Common Core State Standards. For a resource to enhance literacy instruction, I felt that it needed to be standards based. This ensures that the interactions students have with content are developing both the knowledge and skills students need to acquire by the end of a particular grade level. Identifying digital resources that correlate to the CCSS enables educators, and other education professionals, to design experiences that target grade level learning goals. With the CCSS as a guide, I was able to distinguish which resources truly enhance language arts instruction at the primary level.

While “Epic!,” a diverse digital library, does not pinpoint specific Common Core State Standards, I included it on my website because its content and features support language arts instruction. The site offers readers access to more than 40,000 high-quality texts that feature subjects such as science, engineering, and mathematics (Epic! Creations Inc., n.d.). Research also suggests that e-books increase student motivation and engagement, and are beneficial in building vocabulary skills (Isaacs, 2017, p. 57). The site also features content that supports the informational text requirements stated in K-5 standards. For students in grades K-5, “fulfilling the standards requires a 50-50 balance between informational and literary reading” (Common Core State Standards Initiative, 2021). The content available on “Epic!” aligns with the requirements of the CCSS. The site also allows educators to create their own comprehension quizzes for each text. This would enable educators to target specific standards, while also engaging students in diverse content.

The SAMR Model (Puentedura, 2014) also influenced my project. The inclusion of this model was important as it encourages educators to consider why a digital resource is being employed. The model also helps educators think about how technology impacts and supports student learning. The International Literacy Association (2019) states that educators must examine the why behind utilizing a digital resource (p. 6). The SAMR Model (Puentedura, 2014) can be used for just that.

The research included in my literature review had a major impact on the development of my project. I used the research to create a website that will provide primary teachers with inspiration, specific standards-based resources, and a rationale for integrating these technologies into language arts instruction.

Implications and Limitations

This resource could lead to higher levels of digital integration in school settings. Educators, administrators, and other education professionals could use this website to gather inspiration, resources, and a rationale for integrating digital resources into language arts instruction. Professionals in the field of education could also use the information from this website to further educate themselves on the SAMR Model (Puentedura, 2014), learning how digital resources impact, support, and transform student learning. This resource also provides an opportunity to learn more about the CCSS, and how technology has been woven into student learning goals.

There are limitations associated with this project. All of the resources described in this project require a laptop or a smart device. The resources on the website are compatible with laptops, and require access to an internet browser. Utilizing the resources requires Internet or Wi-Fi access. Most of the resources also have some level of cost associated with their use. Teachers and schools may be limited on the resources that they are able to provide classrooms. The cost of both devices and digital resources are limitations of this project.

The use of digital devices and resources may impact technology policies within a school district. A school may decide to update their policies or take extra precautions to protect themselves, and personal student information, before allowing access to digital resources. Schools may also need to create a protection plan that families may opt in or out of in case devices experience significant damages.

It is my hope that this website drives positive change in school buildings, and provides all educators, regardless of seniority status, a higher sense of confidence when integrating

technology. While this resource targets primary teachers, content can be adapted to support students at any grade level. This website will provide educators with specific digital resources that support standards-based learning and enhance literacy instruction.

Future Research

Further research will benefit this project. In the future, I envision vetting additional standards-based resources and adding the information to the website. Under the pre-reading resource page, I would like to expand the resources that support letter name and sound recognition. Highlighting resources that support this particular skill area would be beneficial for kindergarten and first grade teachers. With the addition of resources, this portion of the site could be reorganized by pre-reading skills. By doing this, teachers could locate resources that pinpoint a specific foundational skill more quickly. Furthermore, I would like to expand the website's language arts content focus and provide resources that support writing.

I would also love to expand the curricular focus of the website. Including digital resources that support standards in math, science, and social studies would enable this website to be more multifaceted and support additional student needs. Widening the curricular focus of this website would also support additional educators. With each current and future resource added to this website I would like to expand the information that is provided to encompass drawbacks or limitations with each resource. Information might include how user friendly the site is, if experiences fully or partially align with standards, and how student data is presented to the teacher.

One recommendation based on this resource would be for educators to use and consider the SAMR Model (Puentedura, 2014) before integrating a digital resource. The use of this model

would enable more purposeful applications of technology. It would also warrant the design of more strategic implementations. With the use of the SAMR Model (Puentedura, 2014) educators will need to consider how technology will impact student learning. This will have an influence on the depth of knowledge a lesson or activity achieves as well. Educators will be encouraged to consider how students will engage with, create and share content using technology. This would result in the development of both high-order thinking and twenty-first century skills that students will need in order to thrive in today's modern world.

Another recommendation based on this resource would be for educators to evaluate a digital tool prior to its use. I hope that this site will encourage educators to analyze how a resource supports the understanding of a particular standard or benchmark prior to integrating it. Integration of quality, standards-based resources will result in higher levels of student performance as more opportunities to practice a specific standard are provided. In order to meet the standards by the end of the year, educators must design purposeful interactions with content.

These recommendations for future research and use will help educators best meet the needs of each student. The design of this website has a number of benefits. One of the biggest benefits of designing this website is the ability to update content as new research and resources become available. The content itself is a benefit. The information available on this website will support many students, as well as teachers, and additional school professionals. Yet another benefit of this website is the ease of which it is to communicate information and recommendations with other professionals.

Communication

This website will be a great way for me to share and communicate what I have learned throughout this process. While this site will be available through internet search engines, I also plan on sharing this site with colleagues and individuals I started this journey with. This would be a great way to start dialogue with other professionals in this field and learn about the resources they are integrating. This professional dialogue would enable me to continue to evolve the research and content available on my website.

The research, results, and resources that I gathered throughout this project will guide the implementation of technology and resources in my language arts curriculum. The research will also support the integration of technology in other content areas, such as writing. Students will benefit from the information and resources uncovered in this project. Implementation will support students by expanding their understanding of language and literacy skills, while also promoting the development of responsible digital citizenship, goals that are core components of the Common Core State Standards (Minnesota Department of Education, 2020, p. 1). Students also benefit from the SAMR Model (Puentedura, 2014), as it encourages me to examine why I am utilizing a digital resource and how its use impacts student learning.

I am optimistic that this website will create positive change on the profession, fellow educators, administration, and students. This process has taught me a lot and has made me even more confident to integrate digital resources. I have learned more about the Common Core State Standards and how digital text, platforms and content are becoming more interlaced in the English Language Arts standards. As this project has demonstrated, technology can be used to enhance literacy instruction. Students need to be prepared for the realities of the modern world,

especially as society's grasp on technology continually increases. Preparation for navigating in a digital world begins with our primary students.

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