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Technological Based Interventions Impact on Phonemic Awareness Growth

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TECHNOLOGY BASED INTERVENTIONS IMPACT ON PHONEMIC AWARENESS

GROWTH

By,

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A capstone project submitted in partial fulfillment of the requirements for the degree of
Master of Arts in Teaching.

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CHAPTER 1

Introduction

Overview

Entering my second year of teaching Kindergarten, I am feeling many emotions. Excitement because it is a new year and I get to meet new students and families. I also feel nervous for those exact same reasons. But one emotion, that I have felt since starting my journey into education is a sense of unease. This unease stems from the strong desire to make sure my students succeed, but being a new teacher, I tend to always wonder if I can be ultimately successful with this task. The area I want my students to succeed in the most is the area of literacy, and I also have other experiences with literacy from working as a Reading Corps tutor for two years and being a paraprofessional in a first grade classroom that have shown me that literacy can be one of the trickier parts of being a teacher.

Working with Kindergarten students also adds to the unease, because it is up to the educator to establish so much of the foundation of many different skills needed to navigate school. Social emotional learning, math skills, school routines, and many others are expected to be taught to these beginning students. I feel rather comfortable with this aspect of teaching, but literacy is the one thing that I want to strive to be better at. Literacy skills taught at the beginning of Kindergarten are a large indicators of reading success by the end of the school year. Items such as phonemic awareness and phonics are essential to the Kindergarten reader. The importance of these items has left me with the burning question: *What impact do technology based interventions have on a student's phonemic awareness growth?* In this chapter, I will

discuss what drew me to this question by sharing my own journey with literacy and education. This will lead me to explain my interest in this topic and what I hope to come from this endeavor.

Early Years (Birth to Elementary)

I was born in the state of Washington, but I ultimately grew up in the state of Texas. I was fortunate enough that my parents both had good enough jobs for my sister and me to grow up in a middle class, suburban, white neighborhood. From a very early age, my parents always read books to my sister and myself. My father always pushed my sister and me to be successful because we were two African-American girls growing up in a predominantly white neighborhood and we also attended a predominantly white school. He instilled in us that we would always have to work twice as hard as our peers simply because of the color of our skin.

As I previously mentioned, my parents always read to us, and when we were old enough to start reading on our own, they always made sure to have books around for us to read. Reading and books became a big part of my life from an early age. I do not necessarily remember how I was taught to read in school by my various teachers, but I feel as if it came relatively easily to me because of the gift my parents had given me before I was formally schooled. I remember being able to read at least two grade levels ahead of my grade, so when I was in third grade, I could read books at the fifth grade level. I remember going to the library in school and feeling so ecstatic to be able to not only read books at my age level, but being able to go to a section that was supposed to be for older students to explore those books brought me so much joy.

Later Years (Secondary and Beyond)

This love of books continued into my later years of life. Even when things at home were not going well, I could count on books to provide some sort of escape or respite from what was

going on. As I entered older grades, I was fortunate enough to be in the Gifted and Talented program, and eventually went on to take pre advanced placement or Pre-AP classes, and then AP classes. The desire my dad instilled in me from my earlier years to succeed and be on par with, if not better than, my white classmates was still present. I tried my best in all of my classes, and always received good grades. As I mentioned, I still loved reading, but I was not always a fan of the books I was assigned to read in my English classes. I completed my work in those classes, but struggled with really interacting with the reading as I did when I was able to read at my own leisure. Being required to read texts always put a damper on my excitement to read them. I look forward to discovering the various parts of a book at my own pace. Placing time constraints and page lengths on required texts stresses me out, and creates a barrier where I have a harder time accessing the information. This is something that has continued into my adult life.

I often fell back on reading when basketball, family, and school obligations became overwhelming. When I moved to Minnesota for college, I still relied on reading when I had the time. Not only was I in a new state, exposed to some of the coldest weather I have ever had the misfortune to walk around in, but I also was really far away from my family and all alone for the first time in my life. Books were an easy source of joy because they reminded me of home and my childhood. I was able to adjust and eventually graduated from a great university with honors. My parents were very proud of me, and I was proud of myself. The ideals that were instilled in me, brought me far from the little girl in Texas, but I felt prepared to move on to the next part of my life.

After graduation, I joined AmeriCorps and became a tutor for ReadingCorps. This was the first time that I was able to work with students in the realm of literacy. As mentioned above, I

have had a love of reading from an early age and with ReadingCorps, I was in a position to work with students in grades first to fourth who were in need of some additional help to get them back on track with the grade level expectations. Entering this job, I did not know these students views towards reading, but I can imagine that if there is a task that is hard, then it may not be viewed in a positive way. For example, I was working with a student this year on a writing sheet that was for a letter that was not in their name. They were unfamiliar with the different strokes and when things got hard, they broke down and had a hard time calming down in order to accept help and attempt the work.

Within my first few weeks of working with students of various ages, I was drawn to my memories of reading from an early age. The positive experiences my parents shared with me and then the continued positive experiences I had on my own. As I reflected, I kept thinking to myself, "How do I make it so that these students can have their own positive experiences with books and reading?" That became my daily goal as I worked with students on reading different passages, helped them with comprehension, working on fluency, and other components of reading. As I got to know my students and learn their interests, I sought out passages that would engage them. I tried to add in fun incentives such as playing paper football. I only had twenty minutes with each student, so I had to make sure it counted. We would work hard for ten to fifteen minutes on our various tasks for the day, and I would always strive to play paper football or just have a quick conversation with them.

After these experiences, I became excited for the twenty minutes I would spend with each of the students on my caseload, and I got the sense that they were equally as excited. It was great to see all of the growth they made day by day and week by week. Anytime a student was able to

exit ReadingCorps, I was met with a mixture of emotions. I was sad to see them go, but I was excited that they had learned the skills they needed and it also meant I would be able to work with a new student and make new connections. I was able to continue this for two years at the same school. I was able to learn so many ways to engage with students and collaborate with teachers, which I thought I may have had a hard time succeeding at. But each of these experiences and the exposure to working with literacy in such a way that led me to go back to school in order to get my license to teach.

Teaching Kindergarten

This year, I will be entering my second year of teaching Kindergarten. My first year of teaching was quite the whirlwind. I took the advice that I learned from my professors in regards to classroom management, building relationships with students and families, and being the best educator I could and entered into my first year of teaching. Even with the experiences I had in graduate school and with student teaching, I was still surprised by the first day of school. I was really comfortable working with students in small groups or individually as I did with ReadingCorps, but it was quite different being in charge of eighteen individuals at one time. Luckily, I had a great team and support system. But I struggled the most with teaching literacy to my students.

Since they are so young, kindergartners need a strong foundation of various skills so that they can progress to reading. In my class there was whole group instruction, small group instruction, centers focused on literacy, worksheets, websites and applications for literacy, and many other parts in rotation in order to help these students grow. Even with all of these components, there were some students who were not making the same growth as their peers in

my class and in the grade as a whole. In order to try and provide more for my students, I reached out to some reading specialists for ways that I could improve my instruction so that I could be of more service to my students.

I am happy to say that all of my students made growth and I was very happy with the data that was gathered at the end of the year in regards to my student's literacy growth. I was also happy to see each and every student change and grow over the year and I was happy with the relationships I built with each of them and each of their families. I hope I can have a similar experience with my upcoming class. As the new year draws closer, I am left thinking about what reading or instruction is like in the beginning of the year.

One of the biggest components that students need to grasp in order to start decoding words is phonemic awareness. I want to be more intentional with how I teach phonemic awareness to my students. One of the ways I want to supplement my instruction is with a technology based intervention that will allow my students to be active in their own education. The use of this intervention will allow me the opportunity to compare the growth from last years class to my incoming students and will help to answer my burning question: *How can teachers decide what is a useful literacy supplement for their students?*

Summary

There have been many components that led to my desire to focus on phonemic awareness growth with my upcoming class. The love for books that my parents instilled in me from an early age and that continued love and fascination as I moved through my formal schooling. Working with ReadingCorps post college helped give me a push to focusing on the instruction of literacy skills and also how to build and maintain relationships with students. It also helped me realize

that I wanted to be a classroom teacher. I was lucky enough to land a job teaching kindergarten and it would allow me the opportunity to focus on the question of potential phonemic awareness growth.

In chapter 2, I will look at literary evidence that explains what a kindergarten reader is, the different types of interventions, and the benefits and problems of using technology in the classroom. The first part, what is a kindergarten reader, is important because it sets the stage for what instruction pertains to in this classroom of young learners. Chapter 3 talks about the process for creating my project. Chapter 4 will share my thoughts, learnings, and future implications for my project.

CHAPTER 2

Literature Review

Introduction

There has always been a push for the literacy rates of students to increase. Programs such as Reading Corps and literacy coaches in schools lean towards this notion that there could be more done to help students gain the necessary tools to become better readers as they progress through school. Reading Corps looks to help students learn to read and they place tutors in settings where there are young readers and tutors work with students one on one to work on various literacy activities that is necessary to help students grow (Administrator, 2017). If students are fortunate, they can be introduced to these skills in preschool. For others, and the vast majority of students, their foundation starts to be built in kindergarten. These differences occur if the family decides to enroll their student into a preschool program or not. This literature review explored the development of the kindergarten reader, looked at different classroom interventions, and explored the use of technology in a classroom in order to answer: *What impact do technology based interventions have on a student's phonemic awareness growth?*

Development of the Kindergarten Reader

This section will explain what a reader looks like in the beginning of kindergarten and what changes they go through in order to become a more confident reader. Literacy in the early years of school differ greatly from the later years of school. It is often said that students are learning to read up until second grade, and from third grade on, they are reading to learn. There will be a discussion of the progression from phonemic awareness, phonics and lastly to reading. In early years of schooling, students need to learn various components of literacy such as letter

names, letter sounds, how to write letters, how letters can be represented in words, all the way to various parts of writing and how it is completed. Once they enter grade three, it is expected that students can synthesize everything they learned in their earlier years in order to obtain and explain new information. It is very important to know what each of these items are so that teachers can effectively instruct their students. This section will also focus on the effects that preschool have on the abovementioned progression and what are some effective strategies for reading readiness.

What is a Kindergarten Reader?

  Phonemic awareness. Even before students step into a classroom, they have already started to learn the necessary skills to become a reader. Snow, Burns, & Griffin (1998) stated that one of the most important conditions for learning literacy is determined by a child's health and the function of their sensory organs. The window for learning language is very brief, so it is of the utmost importance that a child be healthy. From birth, children are being exposed to words, sounds, and language from all types of sources around them. As they grow, the connections to the sounds and words start to take on different meanings as they begin to hit different developmental milestones. Dahmer (2010) wrote that students who have already been exposed to phonemes, or the sounds in words, through the first years of life will be able to make connections between those sounds as they are purposefully taught what phonemes and sounds are in school.

  As mentioned above, students have started to become exposed to phonemes, or the sounds in words, from an early age. Snider (1997) stated that phonemic awareness is the necessary bridge that connects the spoken language that kids are exposed to from birth to understanding the "squiggles" on a page when it is time for them to read. It is crucial to

understand what is meant by the term phonemic awareness, as many people make the mistake of using it synonymously with the term phonological awareness. Shanahan (2005) defined phonemic awareness as the "ability to hear and manipulate the individual sounds within words," (p.6) which would be difficult for a child to do if their sensory organs were not healthy. On the other hand, Shanahan (2005) defined phonological awareness as "the sensitivity to the phonological or sound structure of words," and phonological awareness is an umbrella term that contains phenomena such as understanding syllables on top of phonemic awareness (p.7). Phonemic awareness relies heavily on a child's sense of hearing and speech as they are presented words and sounds orally and they are expected to be able to say each individual phoneme that they hear.

     Phonics. Without phonemic awareness, it would be very hard for children to learn their phonics which is yet another crucial skill for students to develop in order to become readers. Phonics can be defined as the instructional choices an educator employs in order to help students form connections between the sounds and the letters in order to help decode words within text (Shanahan, 2005, p.6; Snow, Burns, & Griffin, 1998, p.52). It was very common in the past for teachers to rely on teaching phonics without phonemic awareness, and as a result, many students struggled to make the connection between phonemes (sounds) and graphemes, or letters. The issue of the importance of phonics has been constantly changing over the last 3 decades as well. According to Morris (2015), phonics went from being taught on a whole word level in the 1980s to being less emphasized in the 1990s, to being mandated that intense and implicit phonics instruction be introduced in classrooms in order to lessen early reading failure in students. Shanahan (2005) stated that phonics consisted of "...the teaching of letter sounds, how complex

spelling patterns are pronounced, and how to use this information to decode or sound out words,"

(p.11). Snow,

Burns, & Griffin (1998) asserted the importance of phonemic awareness to phonics:

> To the extent that children lack such phonemic awareness, they are unable to internalize
>
> usefully their phonics lessons. The resulting symptoms include difficulties in sounding
>
> and blending new words, in retaining words from one encounter to the next, and in
>
> learning to spell. (p.55)

Morris (2015) stated that there are at least three things that are necessary for a teacher to

be able to efficiently teach phonics to their students. First, a teacher must grasp that phonics exist

on a continuum and they must understand the content for each part. Second, the teacher must

have the knowledge to know where their student needs to be met on the continuum and lastly, the

teacher must have a method for teaching spelling patterns and letter sounds to their students. The

continuum for phonics instruction consists of beginning consonants, short vowels, consonant

clusters, one syllable vowel patterns and others (Morris, 2015).

In order for a teacher to have a better grasp of phonics instruction, it should be

mentioned that there are two different types of phonics instruction: analytic phonics and

synthetic phonics. Kreskey (2012) defined analytic phonics as an approach that starts with the

whole word where students then study how the different parts of the words combine to create a

word. For example, students may look at different word chunks such as, *-at,* and then add

different beginning sounds in order to create different words like , *c-at, b-at,* and *r-at.* On the

other hand Kreskey (2012) stated that:

Synthetic phonics involves the development of phonemic awareness as the beginning point for instruction. As part of the decoding process, the reader learns 44 phonemes, the smallest units of sound, and their related graphemes, the written symbols that represent the phonemes. (p.25)

A student must understand that each letter in a word has a sound and that the sounds can be put together for them to create a word or help decode what a word is. Good readers use both analytic and synthetic phonics in order to start reading.

Reading. Once a student has started to understand the various components of phonemic awareness and phonics, they may start to make a change to beginning reading. It would be very hard for a student to become an early reader without those crucial pieces that were mentioned above. Having a base of phonemic awareness and phonics can help students to start to grow skills in items such as fluency, which is an important skill for readers to have. Shanahan (2005) stated that fluency instruction benefits students in many areas such as decoding, word recognition, and reading achievement in general. Snow, Burns, & Morris (1998) suggested that students are at some point in their schooling supposed to start "real reading," where they read text they don't know and make some connections to it (p.42). Without the base of phonemic awareness and phonics instruction, it may be hard for students to make this jump to reading.

Effects of preschool. Callaghan and Madelaine (2012) suggested that students who are a part of an intentional phonemic awareness instruction in preschool are less likely to encounter reading difficulties later in schooling than their peers who did not have access to this early intervention. Chapman (2010) expressed that students who come in behind their peers in kindergarten will have a harder time closing any achievement gaps as they go through school.

With facts such as these, it is apparent that preschool has an impact on success in kindergarten and with reading. Snow, Burns, & Griffin (1998) suggested that preschool accomplishments such as letter names, interest in literacy, phonological awareness, and working with peers can help contribute to later academic achievement. Callaghan and Madelaine (2012) also posited that disregarding socioeconomic status and race, students who have "poor literacy skills" when kindergarten starts are more likely to later have "poor reading skills" when they enter first grade (p.13). This also supports the notion that students should be placed in preschool programs with beginning literacy instruction so that students can have a better opportunity for equal footing going forward.

Snow et al., (1998, p.61) created a table that shows some of the early literacy skills that students can acquire if they attend preschool. It stated:

FIGURE 1. Developmental Accomplishments of Literacy Acquisition. Adapted from 'Preventing Reading Difficulties in Young Children;' by C.E. Snow, M.S. Burns, and P. Griffin, 1998, Washington DC: National Academy Press.

Birth to Three-Year-Old Accomplishments

- Recognizes specific books by cover.

- Pretends to read books.

- Understands that books are handled in particular ways.

- Enters into a book-sharing routine with primary caregivers.

- Vocalization play in crib gives way to enjoyment of rhyming language, nonsense word play, etc.

- Labels objects in books.

- Looks at picture in book and realizes it is a symbol for the real object.

- Listens to stories.

- Requests/commands adult to read or write.

- May begin attending to specific print such as letters in names.

- Uses increasingly purposive scribbling.

- Occasionally seems to distinguish between drawing and writing.

- Produces some letter-like forms and scribbles with some features of English writing.

Three- to Four-Year-Old Accomplishments

- Knows that alphabet letters are a special category of visual graphics that can be individually names.

- Recognizes local environmental print.

- Knows that it is the print that is read in stories.

- Understands that different texts forms are used for different functions of print (e.g., list for groceries).

- Pays attention to separable and repeating sounds in language (e.g., Peter, Peter, Pumpkin Eater, Peter Eater).

- Uses new vocabulary and grammatical constructions in own speech.

- Understands and follows oral directions.

- Is sensitive to some sequences of events in stories.

- Shows an interest in books and reading.

- When being read a story, connects information and events to life experiences.

- Questions and comments demonstrate understanding of literal meaning of story being told.

- Displays reading and writing attempts, calling attention to self: "Look at my story."

- Can identify 10 alphabet letters, especially those from own name.

- "Writes" (scribbles) message as part of playful activity.

- May begin to attend to beginning or rhyming sound in salient words.

Students making any gains such as these will be at an advantage when they enter the formal schooling year of kindergarten. Introducing children to these skills in a preschool setting will greatly boost their adjustment to kindergarten. They will be able to make more growth, and if teachers are aware of these items, then they may be able to catch those students who are at risk for reading difficulties and provide them the necessary interventions. Some of those interventions will be discussed next.

Reading Interventions

Students come into school with a basic understanding of phonemes as they are exposed to oral language from birth. Intentional classroom instruction is crucial for students to create connections to what they know to new information. Leveled Literacy Instruction, or LLI, is a small group intervention that focuses on phonological awareness to help students reach grade

level competency. Path to Reading Excellence in School Sites (PRESS) is determined to increase literacy achievement in grades K-5 through various intervention strategies. Kindergarten Peer-Assisted Learning Strategies (K-PALS) is an intervention teachers can use to encompass the achievement levels of different students. Teachers can also use technology as an added way to engage their students and implement more exposure to interventions for students.

How are They Important to Reading Growth?

  Effects on growth. Simmons et al., (2011) stated that there are different types of interventions such as early reading interventions and typical practice interventions, or TPI, that were implemented 30 minutes a day 5 days a week for students who were discovered to be at a reading risk. The early reading interventions, or ERI, are a part of the response to intervention, or RTI, process. RTI is a multitiered system that understands the importance of preventative interventions that supplement instruction in an effort to extend learning opportunities for students who score below universal benchmarks (Simmons et al., 2011).

  Shanahan (2005) and Simmons et al., (2011) both suggested that interventions need to address the needs of struggling readers and focus on areas such as phonemic awareness, phonics, oral reading fluency, vocabulary, and reading comprehension. It was also noted that skills taught earlier in these interventions like phonemic awareness, letter-sound relationships (Simmons et al., 2011). Classes were randomly assigned to an ERI group or a TPI group and both conditions showed that the growth of at risk students were accelerated (Simmons et al., 2011). These findings go on to support the necessity of early intervention and the impact they have students growth.

Leading Interventions

Leveled Literacy Intervention. Irene Fountas and Gay Su Pinnell authored the program of Leveled Literacy Intervention, or LLI, on the premise that it is important to intervene early in a student's learning of literacy in the hopes of helping students achieve grade level competency (as cited in Burton-Archie, 2014, p. 24; What Works Clearinghouse, 2017).Burton-Archie (2014) stated:

> Supplemental, daily, 30-minute lessons administered to groups of three students; fast-paced, early writing and deep comprehension strategies; attention to systematic phonics and fluency, using high interest text; and assessment, progress monitoring, and record keeping, are key characteristics of the LLI system. (p.24)

The program is implemented for about twelve to eighteen weeks within the classroom (What Works Clearinghouse, 2017). LLI can also be used in grades kindergarten up until second grade which is called LLI Primary Systems and there is a program for third and fourth grade called LLI Intermediate Systems (What Works Clearinghouse, 2017). Students are grouped together based on their reading levels, follow lessons go on a two day rotation. Day one students read texts, both nonfiction and fiction, and on day two they write about the texts from the previous day (Burton-Archie, 2014). Students are given the opportunity to work on some of the key components of reading instruction as determined by The National Reading Panel which include, phonemic awareness, phonics, fluency, and comprehension (Burton-Archie, 2014; Shanahan, 2005).

Kindergarten Peer Assisted Learning Strategies. This is a program that started out as a supplemental intervention plan for students in second grade up to sixth grade. Many teachers were seeing growth in their students' reading ability, so they adapted the program in order for it

also be used in kindergarten. Kindergarten Peer Assisted Learning Strategies, or K-PALS, is modeled very much in the same fashion as the original PALS program (Fuchs et al., 2001). PALS and K-PALS were created to help accommodate a wide range of diverse learners in a classroom. The students are in more control of their learning as they work in pairs and the teacher is given the freedom to walk around the class and provide support to students as needed. The program is designed to be implemented three times a week for a period of about 20 minutes.

Fuchs et al., (2001) designed this program to have two roles: coach and reader. When starting the program, the teacher plays the role of the coach and the students are the reader. This allows for the students to have a model of the roles, so that when they go to work in their pairs, they know what is expected of them. Student pairs are formed very intentionally, with the "highest-performing student in reading with the lowest-performing student; the second highest student with the next to last," and so on until all the kids are paired together. (Fuchs et al., 2001, p. 78). Students work on a lesson page after the group introduction, and go through it four times so that each student has the chance to be the coach two times and the reader two times.

In K-PALS, students learn a very specific phrase for providing corrections to their peers, which allows for immediate feedback during the lesson page and also makes sure that the students are attending to their partners during the activities. The activities that are in K-PALS consist of sound play activities that incorporate activities like rhyming, isolating beginning and ending sounds, blending and segmenting words (Fuchs et al., 2001).There are also sound and words activities which deal with sounds and words. Students have to say the sounds of letters and then have to read sight words, decodable words, and read simple sentences. This program works to help students with and without disabilities be able to improve their literacy skills.

Technology-based interventions. There are numerous technology based interventions that teachers have access to in order to support instruction in the classroom. One such intervention is called Headsprout. Headsprout is an internet based reading program that was created for students in kindergarten through second grade who are not reading at the moment or who are at the beginning stages of learning to read (Kreskey, 2012). Headsprout consists of animated episodes that help students improve on phonemic awareness, phonics, fluency, comprehension and vocabulary. The episodes are twenty minutes and there are eighty of them in total (What Works Clearinghouse, 2009). This is an adaptive program as it provides insight for students if they do not choose the correct answer when they are working on a program. What Works Clearinghouse (2009) posited that this allows for children to move at their own pace and Headsprout provides engaging activities to ensure that students are retaining what they are learning.

Kreskey (2012) mentioned that Headsprout is another RTI, Tier 2 intervention for students at risk of reading failure. What Works Clearinghouse (2009) found that the Headsprout program had a positive effect in helping students improve their knowledge of print and it helped increase their oral language as well. The print knowledge students are exposed to include reading from left to right, subject verb agreement and print mechanics like the importance of capitalization (The Read Generation, 2004). Students will eventually be exposed to around 5000 words and 84 Headsprout sound elements in the first 30 hours of instruction (Kreskey, 2012). This program also gives teachers the chance to use resources that the students have been exposed to during the internet program that helps reinforce what they are learning in Headsprout (What

Works Clearinghouse, 2009). According to The Read Generation (2004), Headsprout is divided into two parts: Part I Reading Basics and Part II Reading Independence.

Using Technology in the Classroom

There are so many types of interventions out there, and with technology always changing and becoming more prominent in the 21st century, it is important to look at how technology can be used in the classroom. Technology can have many positive effects in the realm of supplementing instruction and also providing an engaging tool for students. On the other hand, there can be issues that arise with technology because of the access and internet infrastructure. These ideas will be explored in the following paragraphs.

Benefits of technology in the classroom. We are living in a time when technology is readily available no matter where you look. Most people carry around smartphones, iPads, tablets, computers, and other electronic devices are advertised or located in many places everywhere we go, it would only make sense that technology would start to transition to the classroom. Harmon (2012) decided to use iPads in their classroom, and noted that the use of the iPads engaged the students in a way that was not seen before and provided students the opportunity to feel as if they were in control of their learning. Fink (2018) stated that iPads can provide new and engaging ways for specific literacy skills to be targeted. This provides the teacher with a number of tools that can supplement classroom activities. McClanahan, Williams, Kennedy, and Tate (as cited in Ragner Adano, 2019, p.7) believed that an iPad provided many benefits due to the visual and hands-on modalities it provided and it allowed the student engage in learning in ways that would not be possible with typical classroom instruction.

Saine (2012) noted that when students are exposed to digital literary activities, they do not see the activities as school work, but as new and exciting tools for learning. They also found that students were able to internalize lifelong skills when exposed to various technology devices in school (Saine, 2012). Fink (2018) mentioned that many apps on the iPad is that is connected reading, writing, listening, and speaking in a natural way within the app. Students were able to more meaningfully engage with their work as they can manipulate items in a way that cannot be done in the absence of technology.

Cons of technology in the classroom. For every argument for the implementation of technology in the classroom, there are just as many hurdles that need to be addressed. Roepke (2017) discovered that both teachers and students need to be educated in the use of technology. If there is not proper education, apps and technology can waste class time and students may be at a risk to learn information in the wrong way (Northrop & Killeen, 2013). It is very easy to misuse technology and it can have negative impacts to class activities. It is important to note that some schools decide to be exclusive with certain technologies such as deciding to use only tablets or use only laptops and computers. This discourages flexibility in thinking for both teachers and students (Ropeke, 2017). Students who only get used to using iPads or tablets may struggle when using computers as they are exposed to new concepts such as a keyboard, which helps to foster a new skill that may not necessarily be taught when using tablets. Programs can also have different interfaces on tablets and computers, so it is important to understand how different technologies can be effectively used for students. Northrop and Killeen (2013) also noted that some of the animated images in different applications can be overly distracting and as a result, students may forget to attend to items such as important details from the story. They also mentioned that just

because a student is familiar with technology, does not mean that they will automatically be able

to comprehend and attend to any literacy content in the applications (Northrop & Killeen, 2013).

In order for technology to be useful in any setting, it is important to have access to the

internet. Roepke (2017) estimated that over sixty percent of schools do not have the proper

internet infrastructure. Without this, learning through technology based applications can be

stalled and can prove more frustrating than anything. Some other obstacles that may be

encountered such as "app features with embedded external web links and pop-up

banners/advertisements and those that stalled without Internet access," (Fink, 2018, p. 31).

Using technology wisely in class. Agner Radano (2019) discovered that teachers had a

wide range of perceptions when it came to using technology in a kindergarten classroom.

Responses included ideas such as: students attention is kept longer when using technology; and

our world today has progressed to having lots of exposure to technology, so it is better to teach

students how to use it earlier (Agner Radano, 2019, p.32). It should also be noted that teachers

who are newer to the field of teaching are more likely to introduce technology based centers in

their classrooms compared to those who have been teaching ten or more years. As previously

mentioned, teachers feel that technology can be used to increase student engagement (Harmon,

2012; Fink, 2018;), but at the same time there can be some obstacles to overcome if not taught

properly.

In order to get the most out of technology in a class setting, there are a few methods for

making a seamless transition. One such model is coined the SAMR (substitution, augmentation,

modification, redefinition) model that was created by Dr. Robert Puentadura (Fink, 2018). This

was created with the hopes that teachers would move upwards to redefinition in order to make

technology more transformative. Substitution is when technology is used as a direct substitute for a more traditional one. For example, in a kindergarten classroom, instead of reading a physical copy of a book, you use the digital version instead. Augmentation is when technology is directly substituted, but it has an improved functionality than a regular resource. In the example of using digital books, the characters could each have unique voices that may have not been heard when reading the physical copy. Modification is where you start to change the design of the lesson and outcomes. So now you may be able to ask students more in depth questions about the emotions of the characters in the story because they can hear the unique voices. Lastly there is redefinition where a teacher can create new tasks that would not be achievable had technology been introduced in the lesson. Continuing the earlier example, students can work in groups to create digital character maps about individual characters and use items such as video or voice recording to enhance their overall experience (H. L., 2017)

Northrop and Killeen (2013) mentioned another implementation of technology by following the gradual release of responsibility. First, teachers should teach the targeted skill without using technology. Second, teachers should explain and model an app to help with targeted skills. Next, there should be guided practice where the teacher makes sure the student understands both the application and the targeted skill. Last, students are ready to use the app during independent work time. These four steps help shift students from a teacher-centered learning to a student-centered focus. No matter which of these implementation models you choose to use, you should be able to help students achieve greater growth with any literary skills they encounter.

Conclusion

In this chapter, themes were explored that related to the research question: *What impact do technology based interventions have on student's phonemic awareness growth?* The themes included the development of the kindergarten reader, what kinds of reading interventions are being employed right now, and the use of technology in the classroom. Kindergarten readers learn skills for reading on a continuum. The research suggested that most students are exposed to sounds and words from a very young age which gets them ready to be explicitly taught what phonemes are and how they can be manipulated between words. When students have started to grasp what phonemes are, they move into learning about phonics and making explicit connections between the sounds in words and the letters they correspond to. This is a crucial step as it is very important in order for students to start reading. When students start to read, they must rely on what they learned about phonemic awareness and phonics to be successful.

There are also many important reading interventions such as LLI, K-PALS, and technology based interventions like HeadSprout, that teachers can use to supplement their instruction and help students make growth in their literacy skills. The next chapter will be focused primarily on HeadSprout to see what impact, if any, is made on a kindergarten student's phonemic awareness growth. The focus on technology is due to the fact that we currently live in a society where technology is constantly being made available to us, and it is even more true for the students of today. These students will navigate life with technology being a large part of their lives when they are growing up, so it is ideal to expose them to how to properly use technology at a young age.

There are many pros and cons when it comes to using technology in the classroom. Chapter 3 will focus on these benefits and challenges in relation to the technology based

intervention of HeadSprout and its potential impact on student's phonemic awareness growth. The methodology of implementing HeadSprout and monitoring student use and growth will also be discussed in the next chapter in preparation for the data to be collected.

CHAPTER 3

Introduction

As stated in Chapter 2, technology in the classroom can have many benefits and some problems, but children today are exposed to more technology than ever before. Therefore it is up to teachers to help their students navigate technology so that they do not fall behind in this digital age. This chapter will focus mainly on the analysis of two different technology based interventions, which helped to create an online literacy tool for teachers to use to determine the effectiveness of web or application based literacy tools. The analysis of these programs will help to answer the research question: *What impact do technology based interventions have on a student's phonemic awareness growth?*

The programs that were analyzed were HeadSprout and Teach Your Monster to Read. Headsprout is an internet based reading program that was created for students in kindergarten through second grade who are not reading at the moment or who are at the beginning stages of learning to read (Kreskey, 2012). Teacher Your Monster to Read is a free computer program that has three different games that introduce the children to reading from pre-kindergarten to kindergarten ages. It teaches kids about letter names and sounds and helps them advance to reading sentences ("About the Game," n.d.).

The chapter will describe the audience and setting so as to help the reader understand where the project was created. Finally, the description of the project and the timeline of creation will be explored before going into the chapter conclusion.

Audience and Setting

This project, an online literacy tool, is intended to be used as a way for educators of kindergarten students to determine if various websites or applications are useful in supplementing literacy instruction. It will allow them to discern between supplemental programs they may find effective for reinforcing phonemic awareness skills taught during the school day. The tool is also able to be adapted as different needs are needed throughout the year or in different settings.

The project was created in a Midwestern, suburban, elementary school. The tool was used to help eighteen to twenty-five 5 and 6 year olds at the kindergarten grade level. The demographics of the school site that these participants attend include: 74% free and reduced lunch, 19.4% english language learners, 11.2% enrolled in special education, and 1.2% homeless students (Minnesota Report Card, 2019). The school serves 500 students from grades Kindergarten through 4th grade. School population includes 16.4% Hispanic or Latino, 0.8% American Indian or Alaska Native, 7.4% Asian, 36.8% Black or African-American, 33.8% White, and 4.8% two or more races.

Project Description

The goal of this project was to create a tool that would help teachers discern if an online literacy application or website would be an effective tool for their students. The tool was created based on the exploration of the websites Headsprout and Teach Your Monster to Read. Knowing that kindergarten readers progress through a variety of stages, phonemic awareness skills, phonics skills, to eventually reading; the tool mainly focused on the beginning stages of

phonemic awareness. These skills are fundamental if kindergarten students are expected to be reading by the end of the school year.

The phonemic awareness skills that were added to the tool included letter names, letter sounds, beginning sound isolation, ending isolation, blending, segmenting, listening and speaking. These items were picked because these are the items that the author's students are focused on learning in class. Therefore it would be necessary for a supplemental tool to have these items in order to be an effective literacy support. The use of letter names, letter sounds, listening, and speaking were featured in the HeadSprout game when the teacher explored the website for its usefulness. Listening and speaking are an important part of helping students discern letter sounds and also parts of words. Speaking is a great tool for a teacher to provide any support for how students are pronouncing words or sounds.

The second component of the literacy tool focused on developmental tasks. This was included in the tool because it is important to know that five and six year olds have a relatively short attention span, so it is necessary for any supplemental tool address this obstacle. The developmental tasks that were decided to be useful for a web based tool included: quick activities, creative animations, incentives, built in accountability, high chances for success, and providing feedback. Quick activities addresses the issue of a short attention span. Creative animations provide an opportunity for engagement for the student. In HeadSprout, the students are learning about a variety of aliens and get to watch them travel different worlds as the student progresses through their levels. In Teach Your Monster to Read, the student creates a monster and plays games in order to help various leaders on different islands.

The timeline for the project will unfold over the course of the Capstone class. Initial work will be done to explore the literacy applications moving next into determining the desirable items that would be needed to help support phonemic awareness growth. The teacher explored HeadSprout and Teach Your Monster to Read over two school weeks in November. While the games were explored, the teacher took notes of what was evidenced in the former game and then created the online literacy tool for helping teachers determine if websites would meet the needs of their students. The project was presented on November 19, 2019 to the Capstone Project class.

Conclusion

This chapter focused on the setting of the school, the project description, and the timeline for implementation. The author kept in mind the many components of phonemic awareness when they created an online literacy tool for teachers to determine if a supplemental website or application is beneficial for their students. After the tool was created, it came down to looking at both above mentioned websites to see if they met the criteria on the literacy tool for the teacher to introduce to their class. In the next chapter, I will talk about the process of creating the tool, revisit the literature review, and talk about implications for the future and any problems I faced with implementation.

CHAPTER 4

Introduction

This paper has addressed my research question, *What impact do technology based interventions have on a student's phonemic awareness growth?* This paper has started out with my personal background of what has been my journey with literacy, and why it was my focus in creating my project. I was going to originally write a thesis, but was able to come up with an idea in order to create a project. The chapter that followed focused on my review of some literature. I took a look at the development of the kindergarten reader, what some various interventions were that may be used in schools, and the use of technology in the classroom. Chapter three focused on my project's description entering chapter four to talk about what I learned and gained from my project. This chapter will focus on the process in which I came up with my project, revisit the literature review, and talk about any limitations and future implications.

The Process

The journey of this project has been a long one. Through the process of working in education in various degrees over the last few years, I have always been drawn back to the idea of teaching literacy. There are so many components to working with and teaching literacy, especially when it comes to kindergarten learners. Typical kindergarten readers go through a process that starts with phonemic awareness, progresses to phonics, and ends with them knowing how to read. As a first year teacher last year, it took me a while to grasp what this learning process looked like. I was, and still am, very fortunate to have coworkers who were more than willing to assist me in any way I needed.

Snider (1997) stated that phonemic awareness is the necessary bridge that connects the spoken language that kids are exposed to from birth to understanding the "squiggles" on a page when it is time for them to read. Students who often struggle with reading and writing have not had the chance to develop their phonemic awareness skills which provides them a solid base for future reading. As I mentioned in chapter 1, through being a Reading Corps tutor, paraprofessional and now a classroom teacher, I have found teaching literacy to be tricky. It can also be hard to find supplemental activities that are both engaging and supporting classroom instruction.

Last year, my class used the program call Raz-Kids, which is part of the same program as HeadSprout. While it is a good program, it has the students listen to a story, read the story on their own, and then answer questions. For the beginning of kindergarten, it is not developmentally appropriate web based literacy tool. It bypasses the phonemic awareness and phonics skills and goes right to reading. When I heard that my school was going to get HeadSprout, I was excited to explore the application to see if it was useful for my class. That is what inspired me to create an online literacy tool to gauge the effectiveness of a couple of online literacy support systems.

Developing the tool allowed me the chance to view the games from both the perspective of an educator and also from the perspective of a student. It was much easier to look at web based activities from the perspective of an educator, as I am one. Trying to switch my brain over to seeing the game from the student's perspective was much harder. I kept thinking that the pacing was too slow and there were too many breaks, but I had to remind myself that I was thinking from the perspective of an adult. So I had to challenge myself to see it from their

perspective. It did help to watch the students play, and see their smiling faces. The students have been very engaged with the lessons and I am able to see them making gains each day. I have seen many items from the literacy tool on the various episodes they are playing. It has so far proven to be a useful tool for my students. In the next section, I will revisit the literature review and focus on the items that were considered while creating my project.

Literature Review Revisited

Thinking back on my literature review, I am reminded of a quote that mentioned having healthy sensory organs because even before students step into a classroom, they have already started to learn the necessary skills to become a reader. Snow, Burns, & Griffin (1998) stated that one of the most important conditions for learning literacy is determined by a child's health and the function of their sensory organs. This is extremely important as a large part of our language is spoken. If students are to learn the names and sounds of letters, it is a benefit if they have healthy sensory organs. The effect of HeadSprout would be smaller if students ears did not work properly. Another sensory organ that is important are the eyes, as they help us see and when students start to read and write, it is their eyes that they are using. This is something that would be taken into account when looking into an online literacy tool for teachers to use in order to help support their students.

Saine (2012) noted that when students are exposed to digital literary activities, they do not see the activities as school work, but as new and exciting tools for learning. This is something that weighed on my mind while creating my digital tool. As I stated in my literature review, we are entering into a digital age and our students are being introduced to technology

from an early age. Since most students see these items are fun and exciting tools for learning, it was important that I include the creative animations and quick tasks on my tool.

Implications/Limitations

As a result of this capstone, teachers will have an academic tool that will help them decide if various websites or applications will be beneficial for their students to supplement literacy instruction. The teacher will have to do some work and exploring on their own before introducing the tool, but through this process, it gives the teacher the chance to see what the students will be working on. I am sure many teachers have been guilty of downloading an application or using a website based off the review of others without exploring for themselves. Using this tool will help to address this issue and put some more responsibility on the teacher to be engaged in the process of learning just as their students will potentially be.

The tool was also designed to be simple in appearance with the hopes that educators find it easy to approach and use. From a personal standpoint, I often get discouraged if things seem too daunting. I know in my professional life, there are some items that we have been requested to use or implement in class, and I have found it difficult to get my head around it. It goes to support something that I said earlier in my paper, that if a task is perceived to be difficult, then it will be viewed in a negative light.

Thinking of potential limitations of my project, it is only focused on the beginning stages of literacy. Therefore it excludes educators who do not in some way work with younger readers. The tool also only focuses on items that I found pertinent to my class, so a different teacher in a different school and setting may not want to focus on the same phonemic awareness components of early literacy as me. I only focused on two websites and there are so many out there. Some

could also say that the time I spent on the games did not allow me the chance to get an accurate picture of the support tools.

Looking Towards the Future

Looking towards the future I could extend this project and look into other online tools in different subject areas. I could adapt the tool to focus on early math concepts, or even look to focus on challenge and extension activities components for my students. There are students at many levels coming into schools and classrooms, and it is the job of the teacher to meet the student where they are and push them as needed to make steady growth. It would also be nice to sit down and collaborate with other educators who focus on specific subject areas, such as literacy specialists, math coaches, physical education teachers, art teachers, and so on and so forth. Through this collaboration, a database could be created of the various websites that teachers have explored in order for other educators to see if various tools would be beneficial to them. It would be a great tool to facilitate professional discussions about the validity and importance of supplemental tools. There is a world of websites and applications out there waiting to be explored and introduced to both teachers and students alike.

Conclusion

In this chapter, I looked at and discussed what my academic journey was for creating my online literacy tool. I recall the process for my project, revisit the literature review to make new connections to the information, I touched on the implications and limitations of this project, while finally looking towards the future for what else could be done with the project. This journey has been one of stress and hard work but as I near the end of my journey, I am left with a

sense of pride and respect. I will say that I often had a closed mind as I do with starting many

new tasks, but my mind has been opened to new ideas and I am happy that I have the opportunity

to have an impact on student's and fellow educators lives.

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