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" You have to invest ": Speech-language pathologists' perspectives on teaching literacy skills to students who use AAC

By

Sara E. Rendall, B.S.

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"You have to invest ": Speech-language pathologists' perspectives on teaching literacy skills to students who use AAC

By

Sara E. Rendall

The University of Wisconsin-Eau Claire, 2017
Under the Supervision of Dr. Jennifer Thistle

Literacy as it relates to students who use augmentative and alternative communication (SWUAAC) currently has limited research in the field of speech-language pathology. Research regarding this population states SWUAAC should be taught the same literacy skills (i.e., alphabetics, reading fluency, comprehension) as typically developing students. Yet, due to the complex nature of SWUAAC, attitudes of professionals, and various AAC barriers, literacy is often not taught. When SWUAAC do receive literacy instruction it is from speech-language pathologists (SLPs). Given their expertise in language, SLPs can and should play a role in literacy instruction. Identifying the perspectives SLPs have on what should be included in literacy instruction for SWUAAC, as well as their role in literacy instruction with SWUAAC is an important step towards better serving this population.

Semi-structured interviews with five SLPs were conducted. Participants were included if they currently work with SWUAAC, had a minimum three years of experience with SWUACC, and provided literacy instruction to minimum one SWUAAC recently. Interviews were transcribed, and then analyzed. Analysis was finalized when it was judged to be reliable between researcher, research assistant, and mentor.

Three themes were discovered from the analysis of interviews: literacy instruction, barriers to literacy instruction, and supports to literacy instruction. Participants described SWUAAC who were successfully learning the same literacy skills as typically developing students when provided appropriate support and instruction. However, there are barriers to be overcome. Internal barriers were noted to be less important if educators were willing to make adaptations. However, external barriers were challenging to overcome if the educators did not have the appropriate knowledge. In contrast, participants talked of the biggest supports to literacy instruction: materials, knowledge, and attitudes. These supports required educators to have positive attitudes, as well as time and willingness to learn and adapt the curriculum and materials.

Jennifer Thistle 04-26-17
Thesis Adviser (Signature) CMS Date

DEDICATION

DEDICATION

To my family,

Thank you for all your love and support during this adventure!

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TABLE OF CONTENTS

LIST OF TABLES

CHAPTER ONE: REVIEW OF LITERATURE

Background

Literacy skills provide us with the ability to communicate through text messages, emails and letters. Literacy allows us to comprehend signs, books, and news articles to stay connected to the world around us. In the age of information sharing, literacy has become a necessity. To become a successful member of society, students need to develop the conventional literacy skills to graduate high school and go on to higher education or apply for jobs (Foley & Wolter, 2010; Light & McNaughton, 2014). Conventional literacy is "the ability to read and write fluently for a variety of purposes" (Foley & Wolter, 2010, p. 35). Conventional literacy needs to be the end goal for all students; without it they are at risk for dependency on their families and the society at large (Foley & Wolter, 2010). The development of literacy skills leads to a better education, better jobs, and a better social life.

Despite the importance of literacy, students with complex communication needs (CCN) and who use augmentative and alternative communication (AAC) often do not receive adequate literacy instruction, leading to literacy rates of 10-20% (Barker, Saunders, & Brady, 2012; Kliewer & Biklen, 2001; Koppenhaver, Evans, & Yoder, 1991; Ruppar, Dymond, & Gaffney, 2011; Strum et al., 2006). People with CCN are individuals whose communication needs are not met in the traditional mode of spoken language and are those who may benefit from AAC (e.g., cerebral palsy, Down syndrome, Autism Spectrum Disorder, etc.) (Alant, Bornman, & Lloyd, 2006). AAC is a different form of communicating that may be used by individuals with CCN. It provides people of all ages the opportunity to communicate through a mode other than spoken language. AAC

allows for fuller participation in the world when spoken language is insufficient or delayed (Light & McNaughton, 2014). However, SWUAAC most often never achieve literacy skills above a second grade level, further limiting the communication and educational potential of the AAC device and user. (Koppenhaver & Yoder, 1992).

Perspectives on Literacy Education

Literacy is one of the most complex skill sets a student will encounter while in school. It can be taught in a variety of manners, however there are key ways in which educators teach literacy. There are three main perspectives related to literacy learning: developmental, whole, and balanced (Blischak, Gorman, & Lombardic, 2003; Otto, 2008).

The developmental perspective is also known as Reading Readiness. It requires students to master one stage before moving on to the next. This perspective contains four stages a student progresses through to become a competent reader. The stages are as follows: prereading/emergent reading, decoding, fluency, and reading to learn. During the prereading/emergent reading stage the student learns the relationship between letters and sounds. Students at this stage begin to sound out words. The fluency stage is when the student can read with accuracy without sounding out the words. This stage relies heavily on the student's ability to sight read most words. Finally, during the reading to learn stage, students demonstrate the ability to read texts to learn new information (Blischak et al., 2003; Otto, 2008).

The whole language perspective discusses how students learn to read and write through their daily lives. Students are taught sight words and it is assumed literacy will develop from reading these sight words. The premise is that students can generalize from

the whole words to parts of words (i.e., phonemes, morphemes, graphemes). Further, literacy instruction is based in meaningful and authentic interactions. For instance, groups of students may spend time reading the same text in unison, or they may spend time in shared reading experiences. A strong emphasis is placed on retelling and understanding texts and little emphasis is placed on the individual skills that make up literacy. It is believed students will develop literacy as a result of being exposed to the whole literacy experience (Otto, 2008).

In contrast, the balanced perspective is a combination of the developmental and whole language perspectives. Students learn literacy through both direct instruction of skills, similar to the focus of the developmental perspective, and every day experiences, similar to the focus of the whole language perspective. The balanced perspective is the main perspective used in schools today (Otto, 2008). This perspective instructs students through "the knowledge of language, the texts they encounter, and social-cultural contexts" (Otto, 2008, p.18). It combines the teaching of skills (e.g., phonics, comprehension, reading fluency, etc.) within daily school contexts and with regard to the students' cultures and experiences. A balanced perspective asks educators to address literacy in a context within and beyond the students' development. This perspective contends that students' literacy is influenced by their development as well as their environment, family, and culture (Otto, 2008).

For the purposes of the current study, the most important take away of these perspectives of instruction is their allowance for adaptations. None of the perspectives actually require oral language skills, however, when they are taken into the classroom, there is the notion that students must demonstrate their knowledge in an oral manner

(Light, McNaughton, Weyer, & Karg, 2008). Oral and verbal communication is the most common mode of communication for all people; thus, it is assumed to be needed for successful participation in school. However, when looking deeper at the perspectives described above, no student regardless of disability or challenge is singled out as being incapable of learning literacy within these perspectives. Further, despite the current trend toward the balanced perspective, this perspective is not used to teach literacy to SWUAAC. Rather, educators often justify not teaching literacy to SWUAAC using the developmental perspective, which requires a comprehensive development of oral language (Kliewer & Biklen, 2001; Foley & Wolters, 2010; Ruppar et al., 2011). Recall that this perspective requires the mastery of each skill, beginning with verbal speech and language, before moving on (Foley & Wolters, 2010; Koppenhaver &Yoder, 1992). SWUAAC will not obtain oral language to the depth of typically developing (TD) students. However, Light et al. (2008) and Light and McNaughton (2009) lay out adaptations for SWUAAC to engage in literacy instruction without using oral language, suggesting that SWUAAC could, in fact, benefit from the balanced perspective.

Literacy and Typically Developing Students

The most effective literacy curriculum includes the teaching of specific literacy skills within the instructional models described above (NRP, 2000). Typically, general education teachers instruct students through repeated, explicit, and authentic instruction (Foley & Wolter, 2010; Sayeski, Gormley Budin, & Bennett, 2015; Strum et al., 2006). This instruction usually relies on oral communication as a central tenet to teaching and assessing literacy for TD students (Foorman et al., 2016; Hetzroni, 2004; Kent-Walsh & Light, 2003; Strum & Clendon, 2004). Strum and Clendon (2004) stated, "In classrooms,

language is the medium for reading, writing, and communicating. To be successful, students need language skills that support them in sharing what they know…" (p.83). For instance, classroom learning for TD students requires the language for discussion of texts, sounding out words, guided oral readings, and other oral activities for literacy learning. Literacy instruction has a history of requiring students to utilize their oral language skills (Foorman et al., 2016).

The National Reading Panel (NRP) and What Works Clearinghouse (WWC) in conjunction with Every Student Succeeds Act (ESSA) have determined specific skills that must be taught explicitly to help students become readers (ESSA, 2015; Foorman et al., 2016; NRP, 2000). The most beneficial literacy skills to be taught are alphabetics, reading fluency, and reading comprehension (ESSA, 2015; Foorman et al., 2016; NRP, 2000). These skills were determined, through a comprehensive review of research, to be the most important skills to creating strong readers.

Alphabetic skills include phonemic awareness and phonics. Phonemic awareness is the ability to manipulate phonemes or sounds within spoken language (Foorman et al., 2016; NRP, 2000). For example, phonemic awareness skills can include distinguishing rhyming words, segmenting and blending words. Phonics is learning letter-sound correspondence, and skills which relate to letter and sound knowledge. Alphabetics skills lead to better decoding, spelling, and reading fluency skills. Letter-sound correspondence refers to knowing the sounds of each letter in the alphabet and that some letters can make multiple sounds (e.g., the letter "c" can be pronounced /k/ or /s/). Alphabetics are taught, discussed, and evaluated through the oral manipulation of letters and words. On average, students are in school 180 days and of those 180 days TD students received 131.1 days of

manipulating word instruction, 57.1 of onset/rime word pattern instruction, and many days on other phonemic awareness activities and instruction (Strum et al., 2006). Although having alphabetic skills improves reading and spelling abilities, and is a strong indicator of future literacy success, it does not give students all of what they need to become literate (NRP, 2000).

Reading fluency is the ability to "read with speed, accuracy, and proper expression" (NRP, 2000, p. 3-1). The NRP emphasizes intervention strategies which develop oral reading fluency. However, reading fluency does not necessarily require oral language (Coleman-Martin, Wolff Heller, Cihak, Irvine, 2005). It can be practiced through independent reading, either silently or with a recorded story; both fluency activities require no oral language; unless the student is required to be tested in a traditional oral reading fluency manner. Despite this, TD students are often expected to learn fluency in an oral manner through guided oral, echo, or choral readings in the classroom, groups, or with partners (Coleman-Martin et al., 2005).

Fluency helps students read with ease, supports comprehension, and assists in future reading success. When a student reads with fluency, they can utilize their working memory and background knowledge to comprehend the text, rather than for pronunciation and decoding (NRP, 2000). Educators are encouraged to use repeated readings of texts as well as a wide range of texts so students can both practice words repeatedly and have access to new words (Foorman et al., 2016). In addition to various contexts for practice, Strum et al. (2006) noted that TD first grade students spend, on average, 125.8 days of the 180-day school year recognizing high frequency words, 125.2 days of oral and/or choral reading, 78.3 days of reading predictable text, 113.8 days of

guided oral reading or silent reading, and 73.4 days of re-reading books. In summary, TD students are allotted ample time and given diverse opportunities to practice and master reading fluency (Foorman et al., 2016; Strum et al., 2006).

Comprehension is closely related to fluency. Comprehension is "the process of simultaneously extracting and constructing meaning through interactions and involvement with written language" (Shanahan et al., 2010, p. 5). Comprehension requires the interaction of fluency, phonics, phonemic awareness, and the knowledge and experiences a person brings to the text. When considering the amount of time spent on instruction, Strum et al. (2006) found that TD students participated in 133.5 days of the 180-day school year answering oral comprehension questions. Further, students had 122.7 days of reading discussions, 119.5 days of using context to identify unknown words, 112 days of before reading discussions, 96.9 days of connecting the book to personal experiences, 96.3 days of finding the main idea, and 72.7 days of retelling stories. These activities relate directly to the development of comprehension skills.

In sum, Strum et al. (2006) found that alphabetics, fluency, and comprehension were all taught, practiced, and assessed on average multiple times a day, every day of the week for the 180-day school year during first grade. Furthermore, the U.S. Department of Education recommends a minimum of 90-minutes of literacy instruction every day, which TD students appear to be receiving (Spear-Swerling & Zibulsk, 2014; Strum et al., 2006). By third grade, instruction focused less on these basic skills and more on comprehension, however students still received around 70.6 days of manipulating word instruction, 57.1 of onset/rime word pattern instruction, and many days on other phonemic awareness activities and instruction (Strum et al., 2006). Additionally, students

in third grade received, on average, 109.8 days of shared reading, 81.6 days of choral reading, and many more days of other fluency related activity time (Strum et al., 2006). Finally, third grade students received 112.5 days of oral comprehension questions, 102.7 days of using the text to identify unknown words and countless other opportunities to work on comprehension skills (Strum et al., 2006). Beyond third grade it is expected students have developed the adequate literacy skills to successfully read for learning, compared to first grade learning to read. As is evident in Strum et al. (2006), students' literacy is supported through the teaching of these skills many times through various activities.

As noted above, the NRP primarily focused on identifying the skills needed to teach literacy to TD students, specifically: alphabetics, fluency, and comprehension. However, the NRP also noted that students with learning disabilities benefit from similar instruction in alphabetics, much the same way as TD students (NRP, 2000). Additionally, Card and Dodd (2006) stated that students with no speaking abilities still demonstrated letter and sound discrimination abilities, a skill directly related to alphabetics. Furthermore, Wanzek and Vaughn (2007) found numerous studies where students with other reading difficulties and disabilities demonstrated positive results from interventions for alphabetic skills. However, there was no indication by the NRP that fluency and comprehension skills could or could not be taught to students with disabilities using a similar approach to teaching TD students. Further, although the NRP has evidence to support the teaching of one critical literacy skill to students with learning disabilities, the population of students with learning disabilities doesn't encompass SWUAAC.

Literacy and SWUAAC

Although, the NRP primarily focuses on literacy instruction for TD students, there is a growing body of work which does address SWUAAC, thus creating a basis of information to begin utilizing for these students. Small group and individual case study research has shown successful teaching of alphabetics (e.g., phonemic awareness, letter-sound correspondence, decoding), fluency (e.g., vocabulary, sight word), and reading comprehension for SWUAAC (Bailey, Angell, & Stoner, 2011; Barker et al., 2012; Browder, Wakeman, Spooner, Ahlgrim-Delzell, & Algozzine, 2006; Coleman-Martin et al., 2005; Light et al., 2008; Ratcliff & Little, 1996).

Teaching alphabetics to SWUAAC. Of the three most critical NRP skill areas, alphabetics has the most recent research for SWUAAC. This is promising since the NRP found alphabetics to be the best predictor for developing proficient literacy. Alphabetics, as defined by the NRP includes phonemic awareness and phonics. A number of studies demonstrate successful alphabetics instruction to a small population of SWUAAC (Bailey et al., 2011; Barker et al., 2012; Coleman-Martin et al., 2005; Light et al., 2008). Most studies included populations between the ages of two and 16 (Bailey et al., 2011; Coleman-Martin et al., 2005; Light et al., 2008) but one study included a 23-year-old (Barker et al., 2012). The 23-year-old student had an intellectual disability which put her at a mental age of an elementary student (Barker et al., 2012). The diagnoses of participants ranged from genetic disorders (i.e., Down syndrome, Rhett's syndrome), intellectual and developmental disabilities, Autism Spectrum Disorder (ASD), traumatic brain injury (TBI), and cleft palate, however, the most common diagnosis across studies

was cerebral palsy (CP). All students used various forms of AAC (i.e., speech generating devices (SGD), sign language, picture communication boards, etc.).

General phonemic awareness skills (i.e., phoneme blending, manipulating letters and words, etc.) were taught in eight studies summarized in a synthesis of the research (Barker et al., 2012). These studies used direct instruction to teach the skills. Many of the studies taught multiple skills during the same study. Specifically, two of the 8 studies successfully taught sound matching to develop the understanding that words are made up of sounds. Four studies taught phoneme blending, where students matched a written target word to the picture. This activity required the student to sound out the words in their head. Six studies taught letter-sound knowledge, where participants matched letters to their spoken sounds. Likewise, six studies taught word segmentation skills. Five articles instructed students on word identification. From this synthesis, Barker et al. (2012) concluded SWUAAC could learn many of the phonemic awareness skills TD students learn.

Several studies have instructed SWUAAC on letter-sound correspondence (Bailey et al., 2011; Barker et al., 2012; Light et al., 2008). Bailey and colleagues focused on students between the ages of 12 and 15, with one participant with DS, and three with ASD. Light et al. (2008) taught students between the ages of 8 and 9 with CP and cognitive delays. Barker et al. (2012) noted six studies with successful letter-sound teaching to students of a variety of ages and disabilities. All studies focused on direct instruction of a few letters, across multiple weeks. Apart from one study (Bailey et al., 2011), interventions took place in quiet rooms with minimal distractions. Bailey et al (2011) provided direct instruction in the participants' classroom. This intervention

location did not appear to negatively affect the students' abilities to learn letter-sound correspondence. All three studies found improved letter-sound matching skills post-intervention. It is critical to note that although the students were successful in learning letter-sound correspondence, instruction was far limited compared to the amount of instruction TD students receive. Specifically, instruction was limited to 10 to 30 minute sessions over the course of a few months (Bailey et al., 2011; Barker et al., 2012). Light et al. (2008) taught their student for the longest amount of time at 16 months and a total of 55 hours, however they noted the time spent with their student was not enough to develop proficient literacy.

Decoding is the student's ability to apply their knowledge of letter-sound correspondence to words during reading. However, students will no longer solely rely on this skill and begin developing proficient sight reading skills (Foley & Wolter, 2010). Three studies showed successful teaching of decoding skills. First, Barker et al. (2012) reviewed eight studies which described successful literacy teaching, of which five articles demonstrated decoding skills. Tasks used printed words and pictures or printed words and spoken words as the means of assessing success. For example, Barker et al. (2012) describe this scenario; the presenter would show the word *diz* and ask, "does the word spell cat?", and "does the word spell diz?" The student would answer "yes" or "no" via AAC. These studies instructed students on everyday words and non-words. Coleman-Martin et al. (2005) provided instruction to three junior high students who were non-verbal with ASD, CP, and TBI. Participants were successfully taught decoding by sounding out words in their heads. The intervention strategies took place over the course of 22, 23, and 43 sessions. Light et al. (2008) discussed an eight-year-old who

communicated using an SGD, sign language, and gestures. The student could decode single words which related to her previously taught letter-sounds. She acquired 60 new words and could identify them with 90% accuracy through sight word recognition and decoding (Light et al., 2008). These studies show decoding skills can be effectively taught to SWUAAC.

In conclusion alphabetics are the skills of phonemic awareness, letter-sound correspondence and decoding. SWUAAC are often not instructed on these critical skills (Hetzroni, 2004; Strum et al., 2006), and when they are, the skills are still not taught to the depth TD students receive (Ruppar et al., 2011). However, multiple studies have demonstrated nonverbal students could learn letter and sound discrimination abilities in addition to other alphabetic skills (Bailey et al., 2011; Barker et al., 2012; Coleman-Martin et al., 2005; Light et al., 2008). From these studies, we can see that success with alphabetics is possible for SWUAAC. However, even with the unmistakable achievements in these studies, it is unknown if SWUAAC are receiving alphabetics instruction outside of research studies.

Teaching reading fluency to SWUAAC. Reading fluency is an important literacy skill because once it is achieved, students can focus on comprehension of texts, rather than the mechanics of reading (NRP, 2000; Foorman et al., 2016). However, for SWUAAC, oral fluency isn't possible. Nonetheless, fluency can be aided through vocabulary and sight word instruction (Foorman et al., 2016). Having an extensive vocabulary and the ability to easily sight read allows for the focus to be on comprehension of texts. However, for many SWUAAC their vocabulary selection on their AAC device is not sufficient (Strum & Clendon, 2004) and the vocabulary

instruction they receive focuses on activities of daily living, not educational curriculum (Ruppar et al., 2011). A few recent studies have described teaching SWUAAC reading fluency (Browder et al., 2006; Light et al., 2008; Ratcliff & Little, 1996).

In a synthesis of 128 research studies examining reading instruction for individuals with severe cognitive disabilities, Browder et al. (2006) judged that there has been sufficient research completed on teaching vocabulary and sight words to this population. In fact, it appeared to be the only literacy instruction SWUAAC were receiving (Browder et al., 2006). Many of the studies focused on functional sight word instruction (e.g., stop, fire, exit, help, etc.). However, functional sight words do not necessarily indicate that SWUAAC are receiving the reading fluency instruction to develop proficient literacy.

Ratcliff and Little (1996) and Light et al. (2008) each described single case studies of early elementary aged students with minimal literacy experience. Both students used multiple modes of communication (i.e., SGD, gestures, vocalizations, etc.). Ratcliff and Little's (1996) intervention took place for 45 minutes over 14 sessions and targeted kindergarten curriculum sight words. Prior to intervention the student knew six out of 15 sight words; post intervention the student knew all 15 words. Light et al.'s (2008) intervention took place twice weekly for 30 minutes over 16 months. The student learned 60 new words and could identify them with 90% accuracy (Light et al., 2008). In both studies, the students demonstrated increased performance around reading fluency within a less than ideal time frame when comparing the amount of instruction TD student receive. These studies imply SWUAAC could potentially be learning literacy skills within the general education classroom with a few adaptations (Strum et al., 2006).

General education classrooms are better equipped to be teaching typical literacy to TD students, but also those with the capacity to learn typical literacy, which can include SWUAAC.

The studies described by Browder et al. (2006), Light et al. (2008), and Ratcliff and Little (1996) show that SWUAAC can successful learn literacy skills which enhance reading fluency (e.g., vocabulary and sight words). It is important to note, however, that SWUAAC will often only receive instruction on this skill, as illustrated by the large number of studies that focused on vocabulary and functional sight word instruction (Browder at al., 2006). Although vocabulary and sight word instruction is a step towards proficient literacy, there are other skills which, when taught in combination, will foster conventional literacy. It is critical to examine if this focus on vocabulary and sight word recognition continues, or if SWUAAC have begun to receive broader instruction that supports reading fluency.

Teaching comprehension to SWUAAC. Comprehension is the ultimate purpose of teaching all students literacy. Being able to comprehend a variety of texts allows for full participation in education, employment, and the community. Additionally, comprehension is the concluding critical component of literacy according to the NRP (2000). Comprehension instruction was taught in 23 of the 128 studies included in Browder et al's (2006) synthesis. Ten studies taught comprehension skills to individuals with moderate intellectual impairments, four taught individuals with severe intellectual impairments, and nine taught comprehension skills to individuals with other diagnoses (e.g., developmental delay and ASD). Eleven of these 23 studies had strong effect sizes. Despite this relatively large number of studies, comprehension was primarily taught using

sight words during purposeful activities and by matching words to pictures (Browder et al., 2006). Although comprehension of sight words is important, there is much more to comprehension than single words (e.g., story grammar, main idea, plot line, story retell, and inferences).

Despite the success of teaching comprehension of sight words, or any of the other critical components as reviewed above, successful literacy instruction for any student should include explicit instruction on all literacy skills rather than one skill in isolation (Blischak et al., 2003). Browder et al. (2006) stated, "Students who perform better on comprehension tasks also demonstrate better decoding skills, global language skills and oral reading fluency" (p. 401), demonstrating the reciprocal nature of literacy instruction. Comprehension is the final goal of teaching literacy to all students, yet research suggests that instruction has been limited to single word comprehension (Browder et al., 2006). Given the increased focus on literacy in all schools, as a result of common core state standards and ESSA (2015), it is possible that educators' viewpoints have changed since the Browder et al. (2006) study. Therefore, it is important to identify current practices in teaching comprehension to SWUAAC.

Barriers to literacy instruction. In addition to teaching literacy skills, to best serve SWUAACs' literacy instruction, the barriers which hinder the students are a critical piece of the puzzle. Barriers are the internal and external factors which hinder the literacy education of SWUAAC. Internal barriers include the student's cognition, vision, hearing, fine and gross motor skills (Light & McNaughton, 2009). Educators and parents cannot control these factors, so we must adapt instruction to accommodate these factors as we teach SWUAAC literacy. External barriers are within the realm of educators' control.

These factors include limited access and exposure to literacy, challenges programming devices and technology, educators' attitudes and low expectations, and a lack of understanding of literacy and SWUAAC (Dahlgren Sandberg, Smith, & Larsson, 2010; Foley & Wolter, 2010; Kliewer & Biklen, 2001; Koppenhaver & Yoder, 1993; Koppenhaver, 2000; Ruppar et al., 2011; Strum et al., 2006).

Historically, SWUAAC have not been given the same opportunities and instruction in to engage in activities which teach literacy skills as TD students (Dahlgren Sandberg et al., 2010; Foley & Wolter, 2010; Koppenhaver, 2000; Koppenhaver & Yoder, 1992; Light & McNaughton, 2009; Strum et al., 2006). Yet, there is clear evidence that all students learn literacy through repeated, explicit, and constant exposure (Foley & Wolter, 2010; Foorman et al., 2016; Hetzroni, 2004; Machalicek et al., 2010; Strum et al., 2006). In a study of 28 children with cerebral palsy and no cognitive deficits, Dahlgren Sandberg et al. (2010) found most reading difficulties for SWUAAC appear to be related to "experiential and instructional deficits" (p. 201). In a typical elementary classroom, students are given ample and consistent opportunities to practice various components of literacy throughout the day, however, these opportunities are not often given to SWUAAC (Koppenhaver, 2000; Strum et al., 2006). Compared to TD students who receive upwards of two hours of literacy instruction per day, SWUAAC receive 15 to 30 minutes of instruction per day (Foley & Wolters, 2010; Koppenhaver & Yoder, 1993; Strum et al., 2006). When students do receive literacy instruction the focus is often on functional words and sentences in isolation (e.g., "I need help", "Bathroom"). An additional limit to literacy exposure is the vocabulary available on a student's device.

Successful vocabulary and sight word instruction may be predicated on access to the vocabulary on the AAC device (Browder et al., 2006; Strum & Clendon, 2004).

Furthermore, lack of experiences with literacy is often due to educators' difficulty programing devices, creating communication boards, and adapting activities to allow SWUAAC to fully participate (Erickson, Koppenhaver, Yoder, & Nance, 1997; Gómez Taibo, Vieiro Iglesias, Sotillo Méndez, & Salvador González Raposo, 2009; Light et al., 2008; Light & McNaughton, 2012). Oftentimes, the educators surrounding SWUAAC do not believe in teaching literacy skills to this population due to the complexity of their capabilities concomitant to their disorders (Foley & Wolters, 2010; Kliewer & Biklen, 2001; Koppenhaver & Yoder, 1993; Ruppar et al., 2011). SWUAAC are hindered by the negative attitudes of teachers, paraprofessionals, and support staff (Foley & Wolter, 2010; Strum et al., 2006). As stated by Strum et al. (2006), the most troubling barrier to literacy access is the "lack of understanding of core literacy activities in the continuum of literacy development and the purpose of these activities" for SWUAAC (p. 21). Educators do not see the benefit of teaching literacy to students with CCN due to the complexities and the difficulties with AAC (Erickson et al., 1997; Kliewer & Biklen, 2001; Koppenhaver & Yoder, 1993; Zangari, 2012). The complexities within this population of students does indeed make educating and testing their knowledge more challenging, however with appropriate modifications and adaptations they can learn literacy skills (Dahlgren Sandberg et al., 2010; Foley & Wolter, 2010; Koppenhaver, 2000; Light et al., 2008; Ruppar et al., 2011; Strum et al., 2006).

Experiences with literacy. The barriers hindering SWUAAC often lead to negative experiences when learning to read (Erickson et al., 1997; Kliewer & Biklen,

2001; Koppenhaver et al., 1991; Ruppar et al., 2011). SWUAAC have individual and personal challenges related to why they use AAC, and they have challenges associated with their environment, educators, and exposure to literacy (Koppenhaver et al., 1991). Koppenhaver et al. (1991) conducted a retrospective study with 22 literate adults with physical and speech deficits who use AAC. Participants were asked to reflect on their literacy experiences (i.e., instruction, frequency of instruction, activities, adaptations, etc.) at home and school. The participants noted they had frequent opportunities to participate in literacy related activities, and had high expectations placed upon them from teachers, parents, and themselves. However, many of the participants also noted they had negative and frustrating experiences related to literacy at school. For example, many participants said their main interactions about literacy were with a teacher, not peers. This further isolated them from social normative experiences in the classroom and peer interactions are what makes learning fun (Koppenhaver et al., 1991).

Despite evidence that having SWUAAC in the general education classroom allows for greater learning of general education content and participation with peers (Ruppar et al., 2011), many SWUAAC end up in segregated classrooms and do not receive the same lessons as TD students. For instance, a qualitative study by Kliewer and Biklen (2001) found SWUAAC infrequently received direct literacy instruction in school. Also, when they did receive literacy instruction, it was limited to sight words. Further, Erickson et al. (1997) discovered when students do receive literacy instruction it is later than their TD peers. One participant only had access to the whole alphabet for the first time when he was in 4th grade (Erickson et al., 1997). It is likely that these practices

contribute to the literacy rates of 10-20% in SWUAAC (Barker et al., 2012; Koppenhaver et al., 1991; Ruppar et al., 2011).

SLPs' role in literacy instruction

For TD students, literacy instruction is provided by their general education teacher. As previously stated they receive frequent and constant instruction of literacy skills, however, SWUAAC are often placed in segregated classrooms with special education teachers (Ruppar et al., 2011). Special education teachers are trained to work with complex populations who required specialized curriculum. However, special education teachers do not necessarily have the skills or time to create the literacy curriculum specifically for SWUAAC (Ruppar et al., 2011). Additionally, the focus in these classrooms is life-skill based curriculum, not the same education TD students receive (Barker et al., 2012; Koppenhaver et al., 1991; Ruppar et al., 2011; Strum et al., 2006). Life-skill based curriculum is a relevant curriculum choice to assist students in special education with the skills needed to have a more independent life. This curriculum focuses on job skills, and activities of daily living. This means only sight words are often taught. However, literacy is a life skill that would open the doors to more opportunities for SWUAAC and there is evidence to support that SWUAAC can learn literacy skills (Bailey, Angell, & Stoner, 2011; Barker, Saunders, & Brady, 2012; Browder, Wakeman, Spooner, Ahlgrim-Delzell, & Algozzine, 2006; Coleman-Martin et al., 2005; Light et al., 2008; Ratcliff & Little, 1996). Yet, SWUAAC are still not being taught by teachers, who are trained to teach literacy (i.e., general education teachers, reading specialists). For SWUAAC, a team approach is often required to assist in reaching their educational goals. Plus, a team approach is typically already in place for other areas of service delivery for

SWUAAC (ASHA, 2004; Ehren & Ehren, 2001; Kent-Walsh & Light, 2003; Mirenda, 2014; Swengel & Marquette, 1997). Thus, relying solely on the special education teacher to have the skills and time to create specialized literacy curriculum for all their complex students is impossible.Therefore, SLPs need to become a part of the literacy instruction and intervention for SWUAAC (Wilson, McNeill, & Gillon, 2015).

SLPs have a strong knowledge in language and AAC. AAC is a complex and frequently changing area which requires a team member who is up-to-date on the latest best practices. An SLP's background knowledge in AAC should be reason enough for including them in the education and literacy instruction for SWUAAC. Furthermore, SLPs have applicable knowledge in the area of language; including language development and acquisition, syntax, phonology, morphology, semantics, and pragmatics. These language skills lay the foundation for literacy development. Knowledge as it relates to spoken language translates into literacy which is written language. There is a reciprocal relationship between spoken and written language (i.e., literacy). This indicates SLPs need to be playing a role in the development of SWUAACs' literacy skills (ASHA, 2010; Squires, Gillam, & Reutzel, 2013).

Additionally, per the American Speech-Language-Hearing Association (ASHA), SLPs in schools are involved in the "prevention, assessment, intervention, and program design efforts that are integrated within a school" (ASHA, 2010, Range of Roles and Responsibilities, para.1). This means SLPs should support all aspects of their student's learning. Traditionally, this has included the speech (i.e., phonology and articulation) and language (i.e., social, expressive and receptive language) aspects of communication. Literacy is not an area often thought to be within the scope of practice for SLPs (ASHA,

2010; Ehren & Ehren, 2001; Ehren, Murza & Malani, 2012). However, literacy is written language and thus should be considered within the scope of communication that SLPs support since language is an SLPs area of expertise. Additionally, as stated by ASHA (2001),

> The connections between spoken and written language are well established in that (a) spoken language provides the foundation for the development of reading and writing; (b) spoken and written language have a reciprocal relationship, such that each builds on the other to result in general language and literacy competence, starting early and continuing through childhood into adulthood; (c) children with spoken language problems frequently have difficulty learning to read and write, and children with reading and writing problems frequently have difficulty with spoken language ; and (d) instruction in spoken language can result in growth in written language, and instruction in written language can result in growth in spoken language (Position Statement, para. 2).

Currently the role of teaching literacy is placed primarily on the general and/or special education teachers' shoulders (Wilson, McNeill, & Gillon, 2015). For SWUAAC and the complexities that come with their devices, diagnoses and challenges, literacy instruction is often limited. Wilson et al. (2015) found that most SLPs and teachers believe that teachers were the main instructors of literacy to all students. However, neither group appeared to be giving reliable literacy instruction to SWUAAC. Given SLPs' knowledge of communication and the reciprocal nature of spoken and written language, it seems logical that SLPs should be involved in the instruction of literacy by direct instruction, consultation, and/or adaptation of materials for SWUAAC, however previous research suggests they typically play a limited role (Light et al., 2008; Wilson et al., 2015).

Conclusion

The literacy skills being taught to TD students allow for literary independence, however SWUAAC do not have the same access to adequate evidence-based literacy instruction (Koppenhaver & Yoder, 1993; Kent-Walsh & Light, 2003; Machalicek et al., 2010). This inadequacy is leading to a literacy rate of only 10-20% of adults who use AAC (Barker et al., 2012; Foley & Wolter, 2010; Strum et al., 2006). This percentage is far too small in the modern era where literacy is one of our greatest commodities.

Research has proven that educators are successful at teaching literacy to TD students but, when presented with SWUAAC, literacy instruction diminishes or is related to functional vocabulary. SWUAAC can learn literacy skills (Bailey et al., 2011; Barker et al., 2012; Browder et al., 2006; Coleman-Martin et al., 2005; Light et al., 2008; Machalicek et al., 2010; Ratcliff & Little, 1996). Despite this evidence of successful teaching of critical literacy skills, there are many barriers SWUAAC face when presented with learning literacy and the educational experiences they face are not always positive (Koppenhaver et al., 1991). Additionally, the method of literacy instruction to SWUAAC is not wholly different than that to TD students. Planning and edits to adapt the curriculum and activities to make them accessible for non-oral responding is required, nevertheless making changes to activities should not be the barrier preventing SWUAAC literacy (Light et al., 2008; Light & McNaughton, 2009). SWUAAC deserve to be taught literacy. They deserve to practice all the components to become literate the same as TD students.

The above review of literature describes successful literacy instruction to SWUAAC. This review represents the research focusing on literacy and SWUAAC and

highlights a paucity of evidence-based literacy instruction for this population. However, the research suggests SWUAAC are not receiving literacy instruction due to low expectations and barriers. Moreover, SLPs' role in literacy instruction for SWUAAC may vary depending on many factors (e.g., the student's needs, the SLP's knowledge). Therefore, the aim of the current study was to identify current practices, instruction, and perspectives of SLPs in regards to literacy for SWUAAC. This exploratory, qualitative study sought to describe barriers and supports to literacy instruction for SWUAAC.

CHAPTER TWO: METHODOLOGY

Design

A qualitative semi-structured interview methodology was used for this study. Qualitative research methods are used when the goal of the study is to learn about a little-known phenomenon (Yin, 2011). Further, semi-structured interviews allow for more in-depth information when studying heterogeneous populations, such as SWUAAC (Orlikoff, Schiavetti & Metz, 2015; Yin, 2011). Additionally, the interview methodology was appropriate due to the small population of SLPs who directly work with SWUAAC. Individual interviews conducted over Skype phone calls were the most accessible for participants and allowed for them to be from across the United States of America and from other countries.

Participants

Participants were five pediatric-focused SLPs from throughout the United States of America and New Zealand. This population was chosen for two reasons: (a) SLPs have knowledge in the areas of AAC and language acquisition, and (b) literacy instruction is within the scope of practice of SLPs. Therefore, the researcher was interested in describing their perspectives and general involvement in the instruction of literacy for this infrequently studied population of SWUAAC. SLPs were included if they (a) currently worked with SWUAAC, (b) had at least 3 years of experience working with SWUACC, and (c) had provided literacy instruction to at least one SWUAAC in the past year. SLPs who had no experiences with SWUAAC were excluded. Participants were recruited through a forum posting on ASHA Special Interest Group 12 (SIG-12), and professional contacts of the researchers.

Six SLPs responded to the call for participants on ASHA SIG-12 and through

professional contacts; however, only five returned their consent and demographic information within the deadline. The participants were all given pseudonyms to protect their identities and will be used throughout this study. All five participants who responded fit the requirements to participate in the study (see Table 1). During the interviews, participants were asked seven questions with several follow up questions to discuss their perspectives on literacy instruction for SWUAAC (see Appendix B).

Table 1. Demographic information for SLP participants

	Participants				
	Anne	Beth	Cate	Dana	Elle
Place of residence	Massachusetts	California	North Carolina	New Zealand	Wisconsin
Education level	Masters	Masters (3rd year PhD)	PhD	PhD	Masters
Work setting	Public school	Public school	Private practice	Private practice	Public school
Years of experience	12	5	17	10	10
Current caseload	11	50	15	60	22
SWUAAC on caseload	7	9	11	20	2

Anne, Beth, and Elle worked in public schools within the United States. Of those three, Elle worked with early childhood students ages 3 to 4 in a preschool classroom setting with a special education teacher. The other two, Anne and Beth, worked in schools with elementary age students and also spent time collaborating with special education teachers and administrators. Anne was also a part of her district's AAC evaluation team and spent time educating other SLPs and teachers in the district and discussing how to work with SWUAAC. Beth worked with students who have moderate to severe ASD and was the primary person providing literacy instruction for her students.

Cate and Dana both worked for private practices focusing on AAC and pediatrics.

Cate worked with patients ages 3 through 56, but the majority of her clients were school aged. She provided services in the children's homes as well as in a clinical setting. According to Cate, parents recruited her to see their children because the school district in the area was resistant to high tech AAC and teaching literacy skills. Dana was a United States citizen, who received her clinical training in the U.S. She had been working in a private practice in New Zealand for the last several years. However, she also goes into the schools to work with her SWUAAC. Her caseload included clients ages 3 through 36. Similar to Cate, Dana was often hired privately because most schools in the area were not teaching literacy to SWUAAC.

Data Collection

Individual semi-structured phone interviews were used to obtain information from the SLPs. Participants were contacted initially via SIG-12 and email. Upon receiving the first contact email, participants received the consent form and were informed that participation was voluntary. Once consent was obtained, participants received a demographics questionnaire gathering basic information regarding their education, work experience, and a general description of their SWUAAC (see Appendix A). After the completion of the demographic questionnaire, participants were contacted via email to set up a time for interviewing, and then interviewed via Skype by the researcher. Skype was used to allow for additional privacy and confidentiality as Skype-to-Skype calls are encrypted. Interviews ranged in duration from 27 to 90 minutes, and were recorded for analysis.

Questions for the interviews were developed through themes found in the review of literature and with consideration of the pilot study. See Appendix B for the interview

guide. SLPs were asked specific questions to begin, however there was flexibility in the order and time for additional follow up questions.

Interview Question Development

The final interview questions were developed through a review of the literature, feedback from the thesis committee, and reflection on information gathered via a pilot study. The pilot study interview questions were based on the literature review that revealed gaps in our knowledge about SLPs' amount of involvement in literacy instruction, as well as successes and barriers to teaching SWUAAC. The pilot study was completed to determine how well the interview questions addressed the overarching research questions (i.e., identifying current practices, instruction, and perspectives of SLPs in regards to literacy for SWUAAC, and describe barriers and supports to literacy instruction for SWUAAC).

Pilot study. The pilot study was conducted with two participants prior to official data collection with the final five participants. Pilot participant 1 had a master's degree in SLP, 18 years of experience in a large metropolitan school district in Minnesota, and worked directly with 16 middle school SWUAAC in the past year. However, this participant would not have been included in this study because she had not taught literacy to her SWUAAC. She did note that half of her students had a reading and writing book in their classroom, however, due to the complexities of her students she does not target literacy skills. When further prompted, participant 1 said she did teach the following literacy skills to her students: vocabulary, sentence construction, and the use of symbolated books. Participant 1 stated, "if parents don't advocate for literacy, I won't target it."

Pilot participant 2 was an SLP doctoral candidate in Pennsylvania, with 4 years of clinical experience in the schools. This participant taught literacy to 15 middle and high school SWUAAC in the past 7 years. During this teaching, she focused her interventions on letter-sounds, decoding, sight words, spelling, phonemic awareness skills, and writing. She noted the SLP's role in teaching literacy is to support the teachers by modifying materials, providing additional intervention, and consulting with the teachers, however, she reported frequently being the first person to have taught literacy to SWUAAC. Participant 2 said she taught literacy directly to students about 20% of their time together, but she also considered the indirect consultation with teachers about literacy to be critical to the SWUAAC success.

Interview questions. As a result of the pilot study results, interview questions were refined to better align with the research questions and to encourage participants to share more in-depth descriptions of their SWUAAC and literacy instruction. For example, 'Describe how you are teaching literacy skills' was the pilot study question which developed into the four-prong interview question, 'We've been talking about your specific students; I would like to broaden it out...Describe the role special education teachers play in literacy instruction for your SWUAAC? What attitudes do they have related to teaching literacy to SWUAAC? What is missing or in place regarding their role? Describe the role SLPs' play in literacy instruction.'

Additional probes were added to help participants discuss the literacy skills being taught and to further speak to the barriers and support to literacy instruction for SWUAAC. See Appendix B for the interview guide.

Data Analyses

Interviews were recorded and transcribed verbatim. Transcripts were first broken down into *thought units*. Thought units are the smallest unit of meaningful data which expresses a specific idea (Hatfield & Weider-Hatfield, 1978). An open coding scheme was created by transposing the thought units into codes on a three-column table in a Microsoft Xcel document (Tracy, 2013; Yin, 2011). Column one contained the participant's thought units. Next, column two contained the level one open codes related to the corresponding thought unit. The level one open codes were identified based on general predominant themes found throughout the interview transcripts and related to the overarching themes of the SLPs' provision of literacy instruction to SWUAAC. Finally, column three contained the final level of coding, which was more specific and further defined the level one themes into subthemes. See Table 2 for examples.

Three individuals analyzed and coded the transcripts. The researcher coded and analyzed 100% of the interview transcripts with open and level 2 codes. The research mentor coded 80% of transcripts with open and level 2 codes. And finally, a research assistant was assigned to code 60% of the interviews with level one codes. The research assistant was an undergraduate Communication Sciences and Disorders major at the University of Wisconsin, Eau Claire, who volunteered to help with this project. She was trained to code thought units using the level one open codes created by the researcher and research mentor. Coding between the researcher, mentor, and research assistant was compared for reliability of 80% or greater. Reliability was averaged to be 90% between the three individuals analyzing after three rounds of coding and recoding.

CHAPTER THREE: RESULTS

All participants had a passion for AAC and had spent time developing their professional opinions, staying current on the best practices, and going to courses regarding literacy and AAC. During the interviews, participants were asked to discuss their SWUAACs' literacy skills, and what has helped and hindered their students achieve these skills (see Appendix B for interview guide). Three major themes emerged from their responses to the interview questions: literacy instruction, barriers to literacy instruction, and supports to literacy instruction for SWUAAC. Within the stated themes, subthemes were noted within each, which further characterized what the participants discussed (see Table 2).

Table 2. Summary of coding themes and subthemes and examples from participants

Themes	Subthemes	Examples
1. Literacy Instruction	1.1 Skills	They [the students] are doing sight words, I mean they are doing early decoding skills. They have all their letter sound correspondence, they can combine words, they can make CVC's.
	1.2 Curriculum	None of it's planned. None of it's organized. None of it's their curriculum anymore. It's just how to I keep the whole class entertained.
	1.3 Service delivery	My role is more direct service, and then I do consultation, but I see children directly. The inclusion facilitator in most schools is more of a consultative model, but I do have in a few schools, those inclusion facilitators have begun to put some direct service on IEPs.
	1.4 Time	She's receiving every day for a large amount of that day, she's doing literacy work. And we were trying to really get it up to what the ... I don't know if it was Karen Erickson, or the four blocks I talked about, like the two hours.
2. Barriers to instruction	2.1 Internal	He has autism, there is no question. I think he has a concomitant seizure disorder, and he has just recently been having more overt seizures.
	2.2 Knowledge	I just think it varies depending on the person, where they studied, maybe in the experiences they've had early in their career, and also who their team members are.
	2.3 Attitudes	The buy-in can be hard, and sometimes I feel like everything else but literacy is important in a child's school day, like they have to go to PE, and they have to do that, and they have to do this, and they have to do.
	2.4 Time	I think it's really hard in that eight to 12 to have that kind of quiet small group instruction to really go deep, I think, with some of that language stuff. You have to make it fun, but you can't always ... Sometimes you need time that's just dedicated to that literacy piece.
	2.5 Materials	Overall, having met the head of the assistive technology team they are resistant to trying to get higher tech.
3. Supports to instruction	3.1 Materials	Our department, we get plenty of money for things like that. So that's usually not an issue
	3.2 Knowledge	A group of us, we started researching more about AAC in literacy and what's out there from Karen Erickson, and Penn State. I went to the ATIA conference last year, just for my being on the SIG 12 for ASHA and I'm on the QIAT list serve, so I'm just like seeing a lot of chatter about AAC and literacy so we put together a presentation
	3.3 Attitudes	Teachers have been very receptive. A lot of times they'll have a student in their class who either they have an AAC or they may be really hard to understand or whatever, and they've always, the general ed teachers, have always been very open to any type of help.

Theme 1: Perspectives on Literacy Instruction

Participants were asked to discuss their SWUAAC's literacy skills. Participants expressed four subthemes: skills, curriculum, service delivery, and time spent on literacy with SWUAAC. See Table 2 for examples.

Literacy skills. All of the participants discussed the literacy skills they or other educators have been teaching to SWUAAC. Participants focused mainly on skills relating to the NRP which include (a) alphabetics, (b) reading fluency, and (c) comprehension. Anne, Cate, and Dana also talked about writing. Additionally, participants discussed emergent and early literacy skills such as print awareness and book knowledge.

Alphabetics was the most commonly discussed skill noted by all participants. Alphabetics is also the skill that the NRP stated is the best predictor of future reading success (NRP, 2000). For example, Cate discussed the early literacy skills which include many of the alphabetic and phonemic awareness skills. She stated,

> We have a little guy who's three and he is on a trach and he has a Passy-Muir Valve but he got very limited success with that right now. So he's getting going with AAC. So, what we do is we embed early literacy, beginning literacy instruction beginning at age three in the classroom. We start out with print awareness, book awareness and letter recognition, beginning sounds.

Along the same lines Beth said,

> They are doing CVCs they are doing sight words, I mean they are doing early decoding skills. They have all of their letter sound correspondence, they can combine words, they can make CVCs. We are right now just at the word level.

Participants also discussed how oftentimes these basic skills are not taught in higher grades or levels when the SWUAAC need them the most. As Dana noted:

> They have these national standards that all the kids in high school have to work towards…there's not a lot of space of, 'Oh, whoops, you stumbled on one of your letter sound correspondences,' and nobody seems to be willing to work on that.

SWUAAC require the basics skills of literacy to be successful when it comes to literacy.

Reading fluency is another skill that was discussed by participants and considered critical by the NRP. Participants discussed reading fluency using the traditional definition of the skill: "read with speed, accuracy, and proper expression" (NRP, 2000, p. 3-1). This skill was known to the participants to be important for literacy success, however, not to be the only focus of literacy instruction. Specifically, Anne said,

> We're not so much thinking about reading fluency. I mean, we're thinking about reading fluency, but we're not, I think, looking at it from an investment standpoint, as some of the other more typical kids are measured, because it doesn't always give us the same information.

Furthermore, when the reading fluency was discussed by participants, it was noted as impossible for SWUAAC to learn due to the students' limited verbal, oral language skills. Additionally, participants discussed how for all students there is too much importance placed on reading fluency compared to other literacy skills. Dana noted, "Reading out loud is only useful for doing probes to try to assess where things are." However, participants did discuss vocabulary and sight words, which are skills to support internal reading fluency.

Comprehension was the final significant NRP skill discussed by participants. This skill was noted as the end literacy goal for many of the SWUAAC. Comprehension allows for all students to fully analyze and interact with literacy, which opens the door to future educational, vocational, and professional opportunities. Anne stated, "We're talking about reading comprehension, depending on what their level is. Can they talk about the actions in the pictures? Can they answer WH questions? Like sequencing of the story." Furthermore, Dana noted "I end up doing something like a guided reading or

shared reading kind of thing, and then model words, and then at the end we write some words up on the board like 'What did you remember?" The participants want SWUAAC to have the same comprehension skills as TD students.

Finally, *writing* was discussed by three participants as a component of their literacy instruction. Often, SWUAAC require adaptive writing technologies. Participants noted using applications such as Co:Writer, a word prediction software to support writing. Participants also focused on the content of writing and not the mechanics or spelling rules. Dana said, "She actually has no idea how to write. I get her started, and she'll go from scribbling to, actually, she wasn't even scribbling. She was doing things like 'lillki' for like. She actually knew a lot." This allowed students to focus on developing their messages and creating unique content.

Literacy curriculum. Discussion regarding curriculum was noted throughout the interviews. Anne discussed Koppenhaver and Erickson's (2007) adaptation of the Four Blocks Literacy Framework (Cunningham, Hall, & Defee, 1991). Initially developed for TD students, Koppenhaver and Erickson adapted it to help educators teach literacy to students with significant cognitive disabilities. It provides ideas and activities to support literacy for complex students, such as SWUAAC. Anne, Cate, Dana, and Elle also discussed how they do not like most curriculums because they do not fully address the literacy needs of SWUAAC.

The consensus from participants was that curriculums do not allow for the variety and range the spectrum of adaptations needed by SWUAAC required in a curriculum to successfully learn literacy. Furthermore, Anne noted that curriculums oftentimes focus on only specific portions of literacy whereas her SWUAAC require a more balanced

approach. For example, she said, "I was finding that some of my students were kind of being under served in the area of literacy, and really focusing on sight words, like the Edmark program." Anne saw how SWUAAC weren't achieving their full potential with curriculums. But she saw the benefits of a balanced literacy approach and stated, "a very balanced literacy approach, and this is a girl with Dravet syndrome. She's making gains, she learned all her letter sounds, she's beginning to blend, so it's been really exciting."

Service delivery for literacy. All participants talked about the service delivery model they have implemented with SWUAAC in their work settings. All five participants used direct instruction of literacy skills to their SWUAAC. They all also noted they incorporate literacy into every therapy activity they do with all students. Anne and Beth noted they consulted and collaborated with special education teachers, administrators, and paraprofessionals on literacy instruction for SWUAAC. They both worked at schools which strongly supported their missions to bring literacy to SWUAAC, which allowed for further collaboration and consultation. These two participants also spent time teaching others how to implement, adapt and modify literacy material for the SWUAAC. For example, Anne said:

> A lot of the students that I work with have one to one aids, para professionals, or behavior therapists. So, I would say even though they're not the ones designing the curriculum or the instructional materials, but often times they're the ones delivering the instruction.

Dana, a private practice SLP, frequently went into schools and taught literacy to whole classrooms, supporting a collaborative and consultative model. She said, "If it's just me and the kids we'll never get the staffing, but if I take on the entire class the staff normally will hang out. They're starting to get it." Beth, Dana, and Elle all stated they provide

instruction to the whole classroom as well as to students individually. Anne and Cate shared they teach students in small groups or one-on-one.

Time spent on literacy instruction. Participants had a difficult time quantifying the amount of time SWUAAC had for literacy instruction. However, all participants reported that they include functional literacy into each therapy session. Anne described including the most literacy instruction for SWUAAC at 1.5 hours per day of direct literacy instruction across her caseload. She stated,

> Yeah, it [instruction time] depends. Now that we've kind of really put the spot light on it, I think it's higher than it was. Like in a case like that girl [with Dravet Syndrome], she's receiving every day for a large amount of that day, she's doing literacy work. And we were trying to really get it up to the two hours. Then in other schools, that's not as much, but I'd like to say they're getting it every day, but I don't know the amount of time.

In addition to including direct literacy instruction in all sessions, Beth reported, "Consulting time is at least an hour, and hour and a half a week. And then outside work time is probably another couple of hours a week." Elle discussed how her students receive about 40 minutes a day of literacy instruction between their preschool classroom and her services. The other two participants did not put a number on the amount of time for literacy they or others have for SWUAAC.

Theme 2: Barriers to Literacy Instruction

The second theme discussed by participants was barriers. Participants identified barriers to literacy instruction. One main internal barrier was discussed, while other barriers were external and included time, knowledge, materials, attitudes.

Internal Barriers to Literacy Instruction. Participants all described a variety of capabilities of their SWUAAC. The most commonly reported disorder by participants was ASD; which was reported by all five participants. Participants also noted rare

disorders and diagnoses such as Lennox-Gestaut Syndrome and Dravet Syndrome (see Table 3). Furthermore, participants noted their SWUAAC had a variety of motor and cognitive challenges which required different AAC access methods (direct selection, switches, scanning, eye gaze, etc.) and devices. Participants discussed using high tech devices such as iPads with communication applications, SGDs, and dedicated devices. They also noted low tech systems including Pragmatic Organization Dynamic Display (PODD) and communication books. Furthermore, participants discussed how SWUAAC need to have a foundational knowledge of language to learn and develop literacy. But with their given disabilities and challenges, SWUAAC often do not have the opportunities to develop the foundation language.

Table 3. Disorders and diagnoses of SWUAAC

Participants	Disorders and diagnoses
1	Autism Spectrum Disorder, Rett Syndrome, Dravet Syndrome
2	Moderate to severe Autism Spectrum Disorder
3	Athetoid Cerebral Palsy, Cerebral Palsy, Lennox-Gestaut Syndrome, Selective Mutism, Spinal Muscular Atrophy, Autism Spectrum Disorder, Angelman Syndrome, Dysarthria, and Apraxia of Speech
4	Autism Spectrum Disorder, Down Syndrome, Apraxia, Cerebral Palsy, unknown diagnosis
5	Autism Spectrum Disorder, genetic disorders, specific developmental disorder

External Barriers to Literacy Instruction. Four external barrier subthemes were revealed throughout the interviews with participants: (a) knowledge, (b) attitudes, (c) time, and (d) materials.

The *knowledge* external barrier encompasses the educational background of professionals who teach SWUAAC and the instruction they provide for SWUAAC This subtheme was the most discussed of all the external barriers. Within this barrier, the most common challenge was the lack of foundational knowledge special education teachers

and paraprofessionals receive during training related to literacy and complex students.

Beth noted,

> They don't know how to attack it [literacy]. They do their best. Again, special education teachers are so akin to us as SLPs so they make a difference, but they don't have the tools…special education teachers are not taught how to deal with non-verbal children.

Anne had a similar outlook,

> I just think it varies depending on the person, where they studied, maybe in the experiences they've had early in their career, and also who their team's members are. The buildings I see some school buildings that I go in that maybe the special educator has an attitude that they believe the child can learn, but then they're not supported by the principal or the other staff in the building doesn't have that belief. So, it's hard to be the only one to fight against that.

Furthermore, Elle noted this common misconception regarding AAC,

> I feel like people think AAC is only for kids who are really limited cognitively. I think that there's a tendency to choose AAC devices that are too simple. And then you have to teach the child, they outgrow it, then you have to teach them a new device and they outgrow it. And you have to teach them a new device as opposed to maybe aiming high, simplifying that device for a while, but letting them stay on. Choosing a complex enough device that they can use it for a while. And then the other thing, is it's only for making choices. As opposed to commenting and telling jokes, being silly or being negative. It's for all of those things. I think that people can get hung up and using it as too much of a choice board.

Having devices that are too simple also limits the SWUAAC's potential literacy instruction.

Participants also noted how educators can become territorial when it comes to who teaches what. This makes it difficult for SLPs to justify teaching and supporting literacy instruction, when students should be receiving literacy instruction from other educators. But for many SWUAAC the first person to attempt literacy instruction with

them is the SLP. Participants noted how SLPs have the foundation to be teaching literacy to SWUAAC. As Dana stated,

> I think we should be core in that team, like maybe not doing every single day work because there's not enough of us, but I feel like we should be one of the key people on that team… Many people really forget that reading is a language process.

Additionally, participants noted many educators do not have the time to learn and see models from the SLP on how to teach literacy to SWUAAC. The general lack of knowledge is also the biggest influence related to the other external barriers.

Next, the *attitudes* barrier was discussed by participants as the second biggest barrier to literacy instruction. Attitudes barrier is defined as the lack of buy-in and low expectations for literacy instruction for SWUAAC. Participants attributed low expectations to a lack of knowledge regarding literacy and SWUAAC. Dana said,

> The buy-in can be hard, and sometimes I feel like there's a lot of ... Everything else but literacy is important in a child's school day, like they have to go to PE, and they have to do that, and they have to do this.

Having educators and administration not believing SWUAAC can learn literacy restricted the students from receiving literacy instruction as a core part of their day. Participants noted how many SWUAAC are confined to learning only functional life skills, when in fact the SWUAAC could be learning both. Furthermore, Anne noted SWUAAC are often not being taught functional literacy skills because it is easier on the educators to not support those skills. She said, "I was finding that some of my students were kind of being under served in the area of literacy, and really focusing on sight words... Kind of assuming that they couldn't do decoding skills"

The *time* external barrier related to challenges finding time to provide appropriate instruction, create adapted literacy materials, and consult with educators on instructional

approaches for SWUAAC. SWUAAC's school days were focused towards functional skills and activities of daily living, leaving little time for literacy instruction. Moreover, when exposed to literacy skills participants noted how the focus was on functional sight words; Anne said,

> One of the biggest barriers I think is a need for a mindset shift. That understanding that one, how important literacy is for life, and two that these kids are capable, and that often, even in very early grades they [SLPs, special education teachers, paraprofessionals] jump right to these very functional life skills, and they just don't even give the kid a chance.

Additionally, the participants noted how oftentimes literacy instruction is an afterthought, as previously noted by Dana, "Everything else but literacy is important in a child's school day." Additionally, participants noted the lack of time given to collaborate, teach, and adapt materials. For example, Elle said, "the teachers are all very bright, willing, and capable, but we just don't have the time and the day to train them. And to model and have them experiment because everybody is so busy."

Finally, participants mentioned *materials* as a barrier. Materials was defined as a lack of appropriate AAC devices and technology, and not modifying materials and activities for literacy instruction for SWUAAC. Participants noted how many students are not given appropriate devices to support literacy instruction. Cate noted,

> They are resistant to trying to get higher tech. I don't know who taught them that, honestly. A big Mac for a high school student is inappropriate. At least give them two choices. Saying, 'Hi, I'm David,' all day long gets old after the second time.

Using a system with limited language hinders the possibilities of learning further literacy skills because the device is their voice and means of expression. Beth contributed a similar statement, "I see such poorly designed vocabularies all the time, and I see such poor implementation in my opinion." Further, educators are not adapting materials and

activities to allow for participation in literacy instruction. Dana shared, "They [the school] are not doing a good job of adjusting things. They keep saying, 'We can't assess her reading skills' or ... They still don't know what to do as far as adapting to these kids."

Theme 3: Supports to Literacy Instruction

Three major subthemes related to supports to literacy instruction were determined from the interviews with participants: (a) materials, (b) knowledge, and (c) attitudes.

Materials was the most frequently discussed support to literacy instruction for SWUAAC. Materials is defined as the therapy and lesson materials, technology, AAC, and time to conduct literacy intervention and preparation. Participants discussed how having access to funds for devices and training is an asset towards SWUAAC literacy instruction. Elle said, "Our department, we get plenty of money for things like that…So that's not been a problem, and we're paid to go to training, so that's been really beneficial." Furthermore, Anne discussed how her school district has supported her mission of literacy for SWUAAC. She noted,

> We're lucky in our district that we have administrative support … they supported us in giving us time to do the presentation, and time to do preparation for it. I already have some time in my schedule to do AAC consultations… [a special educator] was given time in her schedule to go to other schools, to kind of support them with the more complex students.

Furthermore, participants noted how having the time to teach others how to conduct the literacy instruction was just as valuable as having the time to teach the SWUAAC literacy. As Dana stated, "If it's just me and the kids we'll never get the staffing, but if I take on the entire class the staff normally will hang out. They're [the teachers and paraprofessionals] starting to get it." She continued by saying, "if we [SLPs] were coming in once a month and showing a really high level way of doing things so people

had something to strive for. I feel like we could be like the personal trainer for the teachers."

Next, participants all reported information relating to how *attitudes* support their literacy instruction. The attitudes relate to the buy-in from teachers, paraprofessionals, parents, and administrators in teaching SWUAAC literacy. The participants believed that once educators saw progress towards literacy, the buy-in and expectations grew for SWUAAC. Anne noted,

> Having the belief that they can do it, and no matter what, if they're not making progress it's not because they can't do it, it's maybe because the way we're targeting it, that we have to rethink our methods. I think that that has been a support. We're lucky in our district that we have administrative support that they value what we're doing, so they supported us in giving us time to do the presentation, and time to do some of the preparation for it.

All participants stated, like Anne, that having the attitude that the student can and will learn literacy given the appropriate support. Elle affirmed,

> I think everybody has high expectations, and we all know now with the new IEPs and everything that we are required to show lots of progress towards reading for all students. So, I think that will probably only continue to improve. Teachers have been very receptive. A lot of times they'll have a student in their class who either they have an AAC or they may be really hard to understand or whatever, and, the general ed teachers, have always been very open to any type of help.

Having this encouraging attitude towards the student's abilities allowed the participants to be open to trialing and changing activities to fit the literacy needs of the SWUAAC.

Finally, having adequate *knowledge* emerged as a support, much like inadequate knowledge represented a barrier. Participants discussed how most of what they knew regarding AAC and literacy was discovered through continuing education or self-study. Anne described her educational experiences with AAC and literacy with this statement,

> Most of what I've learned has really been after grad school, and in my continuing education. I think in grad school the AAC course that I took was not even a full semester, it was like a half semester course. I don't remember talking about literacy in that class. I know literacy was talked about, like the idea that it was important for a speech pathologist to support literacy, like I remember leaving graduate school with that idea. I don't think I really understood what that meant.

Four participants discussed actively seeking out resources by preeminent researchers in AAC and literacy. Three participants also noted that they were the driving force behind literacy instruction for SWUAAC in their school. Beth stated, "It [literacy and AAC] is just my whole paradigm. This would probably not be happening at our school if this weren't my own passion." Participants knew how important their own knowledge on these topics was to the success of their SWUAAC.

CHAPTER FOUR: CONCLUSION

Discussion

The results of the current study indicate the challenges and supports in providing literacy instruction to SWUAAC. Participants involved in the study provided extensive insight into their perspectives in collaborating and teaching literacy to SWUAAC. Additionally, participants all discussed areas of need to enrich this population's literacy learning opportunities.

Literacy skills. First, participants all noted that literacy skills are being taught to their SWUAAC. All of the participants said they include literacy instruction in every therapy session and that they are seeing their SWUAAC improve on their literacy skills. Participants targeted the critical NRP skills of alphabetics, reading fluency through vocabulary and sight words, and comprehension, and with discussion of writing, all within a balanced perspective.

The NRP (2000), discussed alphabetics as the best predictor for literacy success, this emerged as an important literacy skills for the participants as well. For example, participants taught letter-sound correspondence and decoding, both of which are found to be skills taught based on current evidence for students ages 8 through 16 (Bailey et al., 2011; Barker et al., 2012; Coleman-Martin et al., 2005; Light et al., 2008). Participants in this study only discussed that they are teaching alphabetics, not how they are teaching it.

Furthermore, vocabulary and sight word instruction was also noted by participants as a skill being targeted during therapy sessions and by teachers and paraprofessionals. Within the current literature, vocabulary and sight word instruction were found to be the singular most taught literacy skill for SWUAAC (Browder et al., 2006; Light et al., 2008; Ratcliff & Little, 1996). Browder et al's (2006) synthesis examined 128 research studies

for individuals with severe cognitive disabilities which looked at vocabulary and sight word instruction. In this synthesis, it was judged that there is sufficient research completed on teaching vocabulary and sight words to this population (Browder et al., 2006). Moreover, Light et al (2008) and Ratcliff and Little (1996) were additional single case studies for early elementary school SWUAAC which showed strong support for teaching vocabulary and sight word instruction. From the combined knowledge gathered from both the literature review and participants' input, it appears vocabulary and sight words are being taught, and seen as skills to help to increase reading fluency for SWUAAC.

Finally, comprehension was discussed by participants as the end goal for literacy for their SWUAAC. Comprehension is also the final puzzle piece for all students' literacy instruction, thus having SWUAAC receive comprehension instruction like TD students is an accomplishment. TD students receive comprehension instruction that includes learning story grammar elements (i.e., main idea, plot line, story retell, and inferencing) and answering 'wh' questions however, much of the previous research found regarding SWUAAC discussed comprehension in the framework of sight words (Browder et al., 2006). Although sight words are an important element of successful literacy, text comprehension requires deeper and more complex skills beyond sight words (Blischak et al., 2003). Participants in the current study discussed teaching skills similar to that of TD students. Thus, compared to previous research noted in the literature review, participants showed how successful comprehension instruction for SWUAAC can encompass the same elements as TD students instruction.

Furthermore, the participants noted using a balanced literacy perspective, which is also what is most commonly used with TD students (Otto, 2008). This provides evidence that SWUAAC do not require oral language skills as application of the developmental perspective would suggest (Blischak et al., 2003; Otto, 2008). Further, this study illustrates that at least some SLPs are supporting evidence-based literacy instruction and that such instruction is not only limited to published research studies (e.g., Barker et al., 2012; Browder et al., 2006; Light et al., 2008). Within the small sample size of this study, SWUAAC are receiving literacy instruction for the recommended NRP literacy skills within a model similar to that of TD students (Blischak et al., 2003; Foley & Wolter, 2010; Otto, 2008; Sayeski et al., 2015; Strum et al., 2006). Although the NRP does not mention any of their literacy skills precisely for SWUAAC, there is hope in that participants of this study shared SWUAAC are receiving the same literacy skills as TD students. Through the current study, it shows SWUAAC are receiving not only reading fluency enhancing vocabulary and sight word instruction but also the broader range of literacy skills of alphabetics and comprehension, like TD students.

Service Delivery. Next, the participants explained how their SWUAAC receive additional literacy instruction from other team members. According to the participants, when successful collaboration is happening between special education teachers, paraprofessionals, and SLPs, literacy instruction was observed to be most effective. This highlights the importance of collaboration, as has been noted in other areas of AAC service delivery (ASHA, 2004; Ehren & Ehren, 2001; Kent-Walsh & Light, 2003; Mirenda, 2014; Swengel & Marquette, 1997). SWUAAC do not need to be isolated in their special education classrooms when appropriate literacy instruction can be provided

with appropriate accommodations by a team of special education teachers, general education teachers, SLPs, parents, and paraprofessionals. Furthermore, a teaming approach represents a departure from literacy instruction for TD students. TD students receive literacy instruction primarily from their general education teacher and potentially with collaboration a reading specialist (Ruppar et al., 2011). A teaming and collaboration approach is not usually needed with TD students, however due to the complexities of SWUAAC one educator does not have all the necessary skills and time to teach them literacy. This further supports including SLPs in the literacy instruction team for SWUAAC (Squires et al., 2013; Wilson et al., 2015). Participants in this study all discussed the successes in using a teaming or consultative model to provide literacy instruction for their SWUAAC.

Participants also discussed how, in general, collaboration had not always occurred. They discussed how all educators can be territorial over who can and should teach literacy. They can become upset when their students are learning skills from multiple different people, however, for SWUAAC to be successful with literacy, participants recommended having SLPs as a team member. SLPs can provide additional knowledge of language and AAC which would further support the SWUAAC literacy instruction (ASHA, 2010; ASHA, 2004; ASHA, 2001; Ehren & Ehren, 2001; Kent-Walsh & Light, 2003). Furthermore, to have successful collaboration, teachers, SLPs, and paraprofessionals must be prepared to release responsibilities to and share knowledge with other team members. This is called role release, and is defined as "the flexibility in the roles of team members; release of some responsibilities traditionally associated with a specific discipline" (Paul, Blosser, & Jakubowitz, 2006, p.8). Having a team which is

ready to fully invest in collaboration and share responsibilities for the SWUAAC would further increase students' literacy competence.

In conjunction with team collaboration, school districts must be prepared to continue the collaboration between buildings. Participants recognized once the SWUAAC leave their building, they do not truly know what literacy instruction is continuing for them. They would both like to see better consistency between providers and throughout their districts. Having consistency in instruction and programming is another component of literacy instruction we provide TD students (Foley & Wolter, 2010; Sayeski et al., 2015; Strum et al., 2006). TD students build upon their skills learned, consistently and frequently growing in literacy. Thus, consistency is something SWUAAC should receive as well, but previous research on AAC and literacy has noted that direct and consistent instruction is rare of SWUAAC (Koppenhaver, 2000; Strum et al., 2006).

Participants also discussed instruction for SWUAAC that was similar to that of typical elementary students, regardless of the SWUAAC's age. SWUAAC from preschool through high school were given direct and consistent opportunities to learn and practice literacy skills throughout the day. Furthermore, participants reported working towards giving SWUAAC the same experiences, activities, and instructional opportunities as TD students. Participants mentioned reaching towards giving SWUAAC the same 1 ½ to 2 hours of instruction a day to meet the NRP (2000) guideline for TD students. Dahlgren Sandberg et al. (2010), noted that reading difficulties for SWUAAC appear to be related to "experiential and instructional deficits" (p. 201), which the results of the current study suggest clinicians are working toward fixing. Nonetheless,

participants noted there still is some way to go. For instance, two participants provide literacy instruction to school age SWUAAC, despite not working in a school setting, because the student is not being adequately served in the school. This suggests that despite the literacy instruction some SLPs provide, it may not be common practice, and there continues to be a lack of focus on literacy for SWUAAC (Ehren & Ehren, 2001; Foley & Wolter, 2010; Foorman et al., 2016; Hetzroni, 2004; Strum et al., 2006).

Barriers and supports to literacy instruction for SWUAAC. The results of the current study also identified barriers that hindered literacy instruction for SWUAAC. The participants believed that internal barriers can be overcome given appropriate support by educators, SLPs, parents, and administration. Much of the current literature regarding internal barriers for SWUAAC suggests the same (Light & McNaughton 2009; Light et al., 2008; Koppenhaver et al., 1991). Participants all believed SWUAAC can learn literacy, but the external barriers, systems, and attitudes surrounding them limit their potential.

The main external barrier which influenced all other barriers is knowledge related to literacy and AAC. Participants alleged that if everyone had the background knowledge about literacy instruction (e.g., instructional methods, adaptations to materials, etc.) for SWUAAC, attitudes towards literacy instruction would change and instruction would be happening successfully. For instance, general education teachers are great at teaching literacy to TD students, however adapting materials for SWUAAC does not appear to be happening (Light et al., 2008; Light & McNaughton, 2009; Ruppar et al., 2011). To successfully adapt materials, you must have time and the background knowledge about AAC, language, and literacy (Kent-Walsh & Light, 2003; Light et al., 2008; Light &

McNaughton, 2009). As stated earlier, participants believe the ability to adapt materials and lessons requires consultation and collaboration with a SLP. Furthermore, participants noted, similar to that of previous research, that to successfully assess a student's literacy knowledge you need to have an appropriate AAC system that allows for full participation in the lessons (Browder et al., 2006; Strum & Clendon, 2004; Ruppar et al., 2011).

Finally, participants described their supports to literacy instruction for SWUAAC. All participants discussed how having passion and strong background knowledge on literacy and AAC has helped them create environments which support literacy instruction. Their own personal knowledge has changed attitudes of other educators and the administration. Research has suggested teachers do not have the background knowledge to support these students, so the role of the SLP must be one to fill in the gaps for SWUAAC (Ehren & Ehren, 2001; Kent-Walsh & Light, 2003; Zangari, 2012). As stated by Zangari (2012), "Unfortunately, teacher education programs often fail to adequately prepare general and special education teachers for the support of students with disabilities, including those with AAC needs in inclusive settings" (p.2). Therefore, to fill this gap, the SLP must have the time in their work day to teach other teachers, paraprofessionals, and even parents. Such teaching will increase the number of knowledgeable and capable people who can teach and support these students' literacy.

The participants in the current study report having support from educators, SLPs, parents and administration to provide literacy instruction. Participants all incorporate literacy into their lessons; however, teaching the paraprofessionals and teachers how to teach literacy to SWUAAC was reported as just as critical as directly teaching literacy to

the SWUAAC. Without the support of an entire team SWUAAC will not learn literacy (Kent-Walsh & Light, 2003). When support is provided from the whole educational team, SWUAAC are given appropriate materials, AAC devices and systems, instruction, and time towards literacy (Kent-Walsh & Light, 2003; Light & McNaughton, 1993; Koppenhaver, 2000; Zangari, 2012).

Implications

SWUAAC have shown they can learn literacy skills when given the instructional opportunities (Foley & Wolter, 2010; Foorman et al., 2016; Hetzroni, 2004; Machalicek et al., 2010; Strum et al., 2006). Thus, literacy instruction should be at the forefront of consideration for SWUAAC's education. However, from the results gathered, participants talked of a few central causes obstructing SWUAAC literacy success.

First, SWUAAC require a support system of people who have knowledge about AAC and literacy. This support systems needs to include individuals who understand literacy in the context of the student's complex needs. This requires a team approach to literacy instruction for SWUAAC. For a team approach to happen there needs to be background knowledge share by those on the team. Pre-service SLPs need to have additional course work as it relates to literacy, to better prepare them to participate in literacy discussions with teachers and paraprofessionals. Ehren & Ehren (2001) note, "Many SLPs may not be comfortable with their expertise in written language because they did not take course work in that area during their education." (p. 234).

Furthermore, special and general education teachers need to be given further instruction regarding AAC and students with CCN. Currently, teachers receive minimum or no course work on SWUAAC (Kent-Walsh & McNaughton, 2005). Besides specific

training courses, teams need to have in-services and frequent consultation. These opportunities for the educators would provide background knowledge the participants deemed critical to supporting SWUAAC. Moreover, it will help teams transition SWUAAC's instruction between grades and school buildings, further creating consistency in instruction. Having these opportunities for educator learning will translate to better prepared and adapted materials, and overall better buy-in for those teaching literacy for these students. Subsequently, to create a cohesive team, SLPs and teachers need time. This requires support from administration to allow teams time to adapt materials and attend trainings.

Finally, SLP participants interviewed for this study were extremely invested in literacy instruction for their students, which in turn created an environment their students would be receiving literacy instruction in addition to other SLP services. However, the perception many SLPs frequently have is that literacy is not their focus; but literacy is written language, and language is an area of expertise for SLPs (ASHA, 2001; Ehren & Ehren, 2001). SLP's role is often narrowed to the spoken components of language, however spoken language supports literacy or written language. SLPs need to begin taking ownership of this relationship of spoken and written language to better support all students who have language difficulties.

Limitation of Study

The results of this study contribute to the field by further exploring the perspectives SLPs hold related to literacy for SWUAAC. However, there are limitations to the study that need to be considered when interpreting the results.

First, only five SLPs were part of this qualitative research study. With the given sample size, participants were all chosen given their experience with SWUAAC and literacy instruction for them. It is reasonable to assume that other SLPs with similar experiences would give comparable responses, however, it is possible that other SLPs would have differing perspectives. Nevertheless, the participants in this study represented a variety of backgrounds, including geographic locations, graduate programs, educational levels, and work settings. All participants discussed similar information regarding AAC and literacy, suggesting that there is comparable literacy instruction, barriers, and supports for SWUAAC even given the heterogeneity in location, education, and work setting of the participants. The consistency in answers across participants interviewed further supports that SWUAAC are receiving literacy instruction within a variety of contexts.

Next, participants were interviewed in a semi-structured format, which allowed for a variety of information to be shared with the researcher; however, it is unknown how much the participants relied on memory verses interpretation of events. Further, asking participants about their professional practices may cause a social desirability bias, in which participants may feel pressure to create answers which best fit the questions, rather than wholly truthful answers (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In that respect, participants may have felt lead by questions and embellished answers to fit with what the researcher was asking. However, given the exploratory nature of this qualitative study, questions were chosen through a review of the literature, pilot study, and with consultation from committee members. Participants were assured of the confidentiality of

their responses, which may have reduced any feelings of needing to convey an untruthful perspective to come across as a stronger clinician.

Finally, as with any qualitative study, there is risk of over-interpretation and under-interpretation. However, the analysis of the interviews was completed by three different people to control for this. There was a reliability of 90% between those involved in analysis. The data analysis having reliability between multiple people indicate the themes discovered are reasonable interpretations of the data collected (Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville; 2014).

Future Research

Future research is required to more deeply understand SWUAAC and literacy. First, there needs to be future research with regard to removing barriers and growing supports for SWUAAC literacy. This will allow educators to better support literacy for these students and find ways to overcome barriers. Future studies should include replications of this study with other SLPs and educators (i.e., general education teachers, special education teachers, paraprofessionals). This would contribute additional perspectives on literacy instruction for these students. Additional research should include professionals who do not have the same background knowledge or passion for AAC and literacy. Participants in the current study all noted how their passion for AAC and literacy fostered the literacy instruction for their SWUAACs, thus discussing this topic with people who are not as passionate about AAC and literacy would draw out additional literacy instruction, barriers, and supports.

Furthermore, research should look directly at the literacy skills and instruction for SWUAAC, not just those reported by the SLPs or others. This study relied on the

participants to discuss literacy skills SWUAAC have. It would be beneficial to assess literacy skills with the SWUAAC, to determine which skills SWUAAC are learning. Such research could also examine literacy as it relates to different populations who use AAC (i.e., ASD, DS, CP, etc.) and different types of AAC devices. SWUAAC use it for a variety of reasons, thus considering the connections between diagnoses or devices and literacy would allow for better personalization in literacy instruction. Finally, future research related to the instructional methods, activities, and targets for literacy for SWUAAC should be looked at. This will also help develop more personalized literacy instruction for SWUAAC.

Conclusion

The development of literacy skills leads to a better education, jobs, and social life. When provided literacy instruction, SWUAAC can demonstrate their knowledge better than when limited to oral communication, regardless of whether that is through spoken language or augmented communication. Literacy provides a mainstream way of connecting with peers, teachers, and others. Despite the importance of literacy, SWUAAC often do not receive adequate literacy instruction (Kliewer & Biklen, 2001; Ruppar, Dymond, & Gaffney, 2011; Strum et al., 2006). Although, if most SLPs who provide services to SWUAAC are like the participants in the current study, perhaps more and more SWUAAC will be provided with literacy instruction.

Further, it is known that SWUAAC can gain successful literacy skills (Bailey, Angell, & Stoner, 2011; Barker, Saunders, & Brady, 2012; Browder, Wakeman, Spooner, Ahlgrim-Delzell, & Algozzine, 2006; Coleman-Martin et al., 2005; Light et al., 2008; Ratcliff & Little, 1996). The identification of those skills were noted throughout this

study, as well as the supports and barriers to literacy for SWUAAC. SWUAAC require collaboration between team members to provide the most effective and efficient literacy instruction. They require educators to learn all we can related to literacy and AAC and find practical activities and lessons to apply frequently and consistently to our students. As Dana said, "I find I keep saying you have to invest…They're [educators] like, what do you mean? I'm like do you check your bank account every single day? You have to put money into it or that number never changes."

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Appendix A:

Demographic questions

Participant information:

1. What is your highest level of education?
2. Where did you receive this degree?
3. What is your current work setting?
4. What state do you currently work in?
5. How many years have you worked in this setting?
6. How many years working as a SLP in all settings?

SWUAAC information:

1. How many students have you worked directly with who use Augmentative and Alternative Communication (AAC)?
2. How many total students/patients/clients are on your caseload?
3. Give a brief and general description of your student(s) who use AAC.
7. What is (are) the age(s) and grade level(s) of your students who use AAC?
8. What is (are) their primary disabilities and challenges? Why does the student use AAC?
9. How does the student communicate (systems, devices, high tech, low tech, etc.)?
4. How many students who use AAC have you taught literacy to?
5. Briefly describe the literacy instruction you provide for your students who use AAC.
6. Briefly describe other literacy instruction they receive from other professionals.

Appendix B:

Interview questions

1. Tell me about your SWUAAC.
2. Tell me about your SWUAACs' literacy skills.
    a. Yes, they have literacy skills.
        i. Who teaches literacy?
        ii. How often do they receive instruction?
            1. Direct, indirect, consultation
        iii. What literacy skills do they learn?
    b. No, they do not have literacy skills.
        i. What barriers do your students experience?
3. When you think about literacy instruction you have provided...
    a. What has supported your instruction?
    b. What has hindered your instruction?
4. We've been talking about your specific students; I would like to broaden it out...
    a. Describe the role special education teachers play in literacy instruction for SWUAAC?
    b. What attitudes do they have related to teaching literacy to SWUAAC?
    c. What is missing or in place regarding their role?
    d. Describe the role SLPs' play in literacy instruction.
5. What do you wish your role as an SLP was in literacy instruction for SWUAAC?
6. What education have you received related to...
    a. literacy? literacy and AAC? (Graduate vs. Continuing Education)
7. Anything else you would like to add?