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COMPREHENSIVE LITERACY INSTRUCTION: A REVIEW AND DEVELOPMENT OF  
LITERACY CURRICULUM SERVING INDIVIDUALS WITH SIGNIFICANT DISABILITIES  
WHO USE AUGMENTATIVE AND ALTERNATIVE COMMUNICATION

A MASTER'S THESIS  
SUBMITTED TO THE FACULTY  
OF BETHEL UNIVERSITY

BY  
SYDNE V. SPRINGMAN

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
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COMPREHENSIVE LITERACY INSTRUCTION: A REVIEW AND DEVELOPMENT OF  
LITERACY CURRICULUM SERVING INDIVIDUALS WITH SIGNIFICANT DISABILITIES  
AND WHO USE AUGMENTATIVE AND ALTERNATIVE COMMUNICATION

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APPROVED

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## Abstract

This literature review and application investigates instructional approaches used to teach literacy to students with significant disabilities who use augmentative and alternative communication (AAC). It reviews the current instructional strategies used for students with significant disabilities, instructional strategies used with developmentally similar students, and language-based literacy strategies that support AAC participation. The review guided the development of a Comprehensive Literacy Curriculum for students with significant disabilities who use AAC that outlines emergent instructional strategies to build foundational literacy skills necessary for independent reading and writing. A curriculum needs clear definitions of the purpose informing the instruction, explicit directions for instructional activities, and consistent opportunities for language development and expression. This literature review and application defines emergent instructional strategies and guides teachers to the implementation of evidence-based practices.

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## CHAPTER I: INTRODUCTION

The Individuals with Disabilities Education Act (IDEA) of 2004, ensures the right for individuals with disabilities to have equal access to school opportunities, participation, and independent living to develop economic self-sufficiency (Individuals with Disabilities Act, 2004). The general provisions of the act stated in subchapter I, that the Education for All Handicapped Children Act of 1975 ensured that all students received a free and appropriate public education (FAPE), however expectations of the educational experience were low resulting in additional provisions to address needs for special education programming, including the implementation of evidence-based practices. School districts and special education programs are held to the federal mandate that provides services for special education students to achieve success through high quality instruction. IDEA affected special education programming, raising the legal requirements for due process, teaching qualifications, and meaningful school opportunities. This review and application focuses on the later requirements by determining which meaningful school opportunities, specifically literacy-based instruction, and teaching qualifications best supports students with significant disabilities and/or language impairments. I am passionate about this topic as I have worked with this student population for several years and I have reflected on the quality of education provided in my classroom. This review and application aims to continue my professional growth to connect my self-reflection with research to construct an evidence-based literacy curriculum that ensures students with significant disabilities will receive the educational requirements outlined in IDEA.

My experience in special education started in a secondary program. The student population included seven students with significant disabilities. All seven students used augmentative and alternative communication (AAC) to access and participate in the curriculum.

AAC appeared as speech-generating iPads and core vocabulary boards that contained a group of 36 high frequency words represented by picture symbols. I implemented literacy teaching strategies outlined in The Four Blocks Literacy Framework, an approach developed by Dr. Patricia Cunningham and Dr. Dorothy Hall and later adapted by Dr. Karen Erickson and Dr. David Koppenhaver for students with disabilities. The Four Blocks Framework focuses on Guided Reading, Writing, Working with Words, and Self-Selected Reading. This framework, along with observations of colleagues, and the use of instructional coaching guided the implementation strategies used in my classroom. I attended Literacy Camp the following summer, where Drs. Karen Erickson and David Koppenhaver provided intensive training on the adapted Four Blocks Framework for students with disabilities. They focused on the purpose and instructional strategies of each literacy block. I brought this new knowledge to my classroom and attempted to implement the Four Blocks Framework with the evidence-based strategies. I realized barriers existed for implementing the Four Blocks and questioned the effectiveness of a literacy framework for school-wide programming.

The Four Blocks Framework was simply a framework that instructed teachers on what areas to teach, but did not give guidance about which activities incorporated the learning targets. Implementation strategies varied across classrooms dependent upon the teacher's access to mentors, professional development opportunities, and personal reflection towards student ability. Veteran teachers who focused on functional services affected student progress because they hesitated to provide high quality literacy instruction or provided instruction using minimally effective measures. A framework for literacy instruction allows too much flexibility so the purpose of the evidence-based practice gets lost in implementation. A comprehensive literacy

curriculum must give enough guidance to ensure that teachers understand the evidence-based practices and how to implement the teaching.

Another pitfall to the Four Blocks Framework was the lack of evidence-based practices for emergent readers. Emergent is defined by the absence of one or many foundational literacy skills. These skills include letter knowledge, active engagement during shared reading experiences, having a means to communicate, and the understanding that writing involves letters and words. If a student does not have all of these skills, they are labeled as emergent learners (Koppenhaver & Erickson, 1999). Emergent readers often do not receive the same emphasis on literacy as conventional readers due to the visible severity of their cognitive disability. Emergent students receive programming that is heavily focused on independent living skills and participation. This focus can be detrimental to student progress as students who transition to IEPs focused on independence do not receive the opportunities to build literacy skills. Literacy is language. Language is essential to accessing independence. Self-advocacy, problem solving, and self-management skills all require communication. A comprehensive literacy curriculum must provide the language emphasis necessary for students with complex disabilities to develop skills for independent communication.

The last realization that affected implementing literacy in my classroom, was the lack of access provided to students who used augmentative and alternative communication (AAC). The student population within my classroom had consisted of 60-80% of students using high-tech AAC devices on iPads, with the remaining population using low-tech core boards. This ratio required the identification of barriers that affected AAC users' engagement and participation. A language emphasis within literacy instruction provides access to AAC users. A comprehensive literacy curriculum must use core vocabulary to engage AAC users. The core set of foundational



vocabulary words is programmed into most AAC systems giving students access to participate and use functional communication.

I research and explored during my first years of teaching, for a curriculum designed for the student's I served in my classroom but was disappointed by the lack of curriculum options and the amount of adapting that was required to elicit student participation and growth. This literature review was completed to determine evidence-based practices for direct literacy instruction for both emergent readers with significant disabilities and students using AAC. Erickson and Koppenhaver (1999) have since updated the Four Blocks Framework to Comprehensive Literacy Instruction for All. This update merges the Four Blocks to display a comprehensive framework that connects each literacy area to another. Emergent readers are provided with a literacy path that respects the educational needs of students with significant disabilities. I plan to use this framework, alongside literature reviewed displaying the instructional strategies for students with significant disabilities, and more specifically, students who use AAC, to develop a curriculum that provides the explicit support necessary for successful classroom implementation.

Comprehensive literacy instruction is divided into two levels that follow typical language development and literacy skills. The levels are defined as emergent and conventional literacy. Specifically for the students with significant disabilities and/or significant language impairments, emergent literacy instruction allows the students exposure to functional language and foundational reading and writing skills. As defined, emergent literacy instruction focuses on the prerequisite skills for conventional or independent reading and writing. As the instruction focuses on the students current language abilities, emergent literacy instruction can apply to any age. Students' experiences and opportunities with comprehensive instruction differ; therefore

students who have had literacy instruction for several years, may have missed the foundational skills introduced during conventional instruction due to a lack of exposure to emergent literacy strategies. For this thesis, analyzing emergent strategies will support the development of an appropriate literacy curriculum for emergent students.

The outline of this literature review begins with the current instructional used in special education programming relating to literacy. To implement a literacy initiative, understanding the current practices and rationale provides guidance towards professional development and supports the need to change current curriculum or instructional practices. Instructional strategies to support comprehensive literacy for students with significant disabilities will provide the research needed to determine which evidence-based strategies to incorporate into curriculum activities. Emergent strategies that relate to students with significant disabilities or typically developing students with similar intellectual functioning will ensure that the foundational skills needed for independent literacy skills are addressed within the curriculum. Lastly, a look at the connection between language and literacy guides the access point for students who use AAC and incorporates the use of core vocabulary as an essential component to emergent literacy. Each of these areas will attempt to answer the following questions:

What are the current guidelines that teachers follow and how might these become barriers to implementing a comprehensive literacy curriculum?

What instructional strategies provide students who have significant disabilities access to emergent skills within a comprehensive literacy curriculum?

What is the role of language in an emergent comprehensive literacy curriculum and what instructional strategies provide access for students who use AAC?

## CHAPTER II: LITERATURE REVIEW

The National Reading Panel identified the five pillars of literacy instruction as phonemic awareness, phonics, fluency, vocabulary, and text comprehension. These represent the areas of literacy that are included in the reading curriculum for typically developing students. In comparison with special education curriculum, studies have determined that special education literacy curriculum often focuses on sight word instruction with little to no emphasis on the phonics and the skills necessary to decode words. The special education approach teaches through memorization which limits functionality and the amount of text that a student can read and comprehend (Ahlgrim-Delzell, Browder, Wood, Stanger, Preston, Kemp-Inman, 2016, pg. 86). Further research determined that students with disabilities benefit from systematic literacy instruction. This debunked the historical assumptions that students with disabilities could not learn or benefit from literacy instruction. Ahlgrim-Delzell et al. (2016) continued this research, and focused on students who used augmentative and alternative communication (AAC). This population of students was underrepresented in many other studies. Curriculum designed to support engagement and access was needed to provide AAC students with phonics instruction that allowed the students to manipulate and demonstrate understanding of phonemes (Ahlgrim-Delzell et al., 2016, pg. 87).

Research participants included 31 students with developmental disabilities who used AAC, could identify five or more letters, but who struggled with decoding text. The students ranged from kindergarten to 8<sup>th</sup> grade. Teachers from 16 different schools were trained before implementing the comprehensive instruction to their students. The study used the Early Reading Skills Builder (ERSB) curriculum as it focused on time delay, shaping, and fading to teach phoneme identification, blending sounds to identify words, and decoding for picture-word

matching (Ahlgrim-Delzell et al., 2016, pg. 88-89). The study aimed to recommend a comprehensive literacy instruction that contained intensive phonics instruction. The study used an iPad to provide accessibility for students who typically used AAC. This provided receptive and expressive interactions that required students to listen to letter and word sounds and connect it to written text (Ahlgrim-Delzell et al., 2016, pg. 93).

The results showed an increase in phoneme identification after access to systematic instruction provided by the Early Reading Skills Builder curriculum. The students showed significant growth in decoding and attaching meaning to words through pictures, while other skills like sound blending did not change significantly. Overall, the study showed that students with disabilities who used AAC could benefit from comprehensive literacy instruction and acquire letter and letter sound concepts. The study limited exposure to specific phonemes, requiring two more years to teach all phonemes. The study results support the need for daily phonics instruction that includes opportunities to produce, manipulative, blend, and segment phonemes. Ahlgrim-Delzell et al. (2016) suggested pairing phonics instruction with comprehension to enhance learning opportunities and ensure that students have time to learn both the use and meaning of phonics.

Teaching emergent literacy to students with significant disabilities requires differentiation and accommodations. Individuals with language impairments are at risk for delayed skill acquisition (Botts et al., 2012, p. 120). They often receive intervention support at an early age by a teacher or speech language pathologist to address language and literacy needs. Students need foundational skills to participate in formal reading and writing instruction. In designing comprehensive emergent literacy curriculum, analyzing the pros and cons of intervention and direct instruction is necessary to address supports and materials needed for

successful implementation. Botts, Losardo, Tillery and Werts (2012) compared emergent literacy instruction between activity-based interventions and embedded direct instruction.

Botts et al. (2012) defined activity-based intervention as a transactional activity. This naturally occurring activity is guided by the student. The activity includes preplanned learning targets that the student achieves through interactive play. The learning activity has logical antecedents or prompts and consequences. Embedded direct instruction is explicit teaching. The teacher guides the instructional activity through modeling, practice, correction, and eventually faded support with independent activities to promote generalization. This highly structured activity has scripted antecedents and consequences with the addition of corrective measures (Botts et al., 2012, p. 121).

The study used both strategies with five preschool students with mild to moderate language impairments specific to language comprehension and production. The strategies occurred during circle time, reading time, and craft time. Data was collected on the nature of the transaction, introduction of goals, antecedent-response-consequence, and generalization to compare the two approaches. The teaching focused on six phonological awareness skills that included blending, segmenting, alliteration, and rhyming. The teachers used a variety of antecedents or prompts to elicit participation and learning (Botts et al., 2012, p. 120-124).

The data showed that embedded direct instruction had a more effective and efficient impact on phonological awareness development. The target skills were achieved more rapidly with direct instruction. Four out of the five students also showed generalization and maintenance of the target skills in probes outside of the instructional time. The use of explicit modeling and corrective procedure resulted in progress (Botts et al., 2012, p. 124-131). The study also reflected that maintenance of explicit prompts and the students' understanding of correct answers was

challenging for the activity-based interventions. The conclusion reported that students who have not mastered emergent phonological awareness benefit from explicit and systematic instruction (Botts et al., 2012, p. 131-132). Often, students with significant disabilities and language impairments do not receive direct instruction that is at the appropriate educational level. Comprehensive emergent literacy instruction would provide the explicit and systematic instruction that is beneficial for foundational literacy skills.

Ganz and Flores (2009), linked language interventions with direct instruction. Interventions are a tool used in education to address students' greatest areas of need. They require a specialist and time for the student to complete the intervention plan. Ganz and Flores proposed further research on interventions, specifically language-based interventions, and how to utilize direct instruction as an intervention. The researchers specified children with autism as participants due to the language/communication component that is a core feature of autism spectrum disorder. Language deficits manifest in spontaneous language, conversational skills, grammar, and social communication. Language deficits can be marked by echolalia or the complete lack of spoken language (Ganz and Flores, 2009, p. 75).

Direct instruction was defined by the essential components; instructional design, presentation techniques, and organization of instruction. Ganz and Flores further delineated strategies such as task analysis, corrective feedback, repeated practice with the correct response, and teacher modeling (Ganz and Flores, 2009, 75-76). For the study, three students with autism received direct instruction focused on the identifying common materials, a receptive language unit. Vocabulary skills were identified as an area of need for the subjects with ASD as comprehension of vocabulary is a primary skill that affects continued language development. The teacher followed a script, required choral responses from students, gave explicit cues to

signal student participation, modeled correct answers, incited choral responses for correct answers, and finished by having the students respond independently. The instructional steps were supported with tangible materials (Ganz and Flores, 2009, p. 76-77).

All three students made progress towards the language target. The students also maintained and generalized the vocabulary following direct instruction intervention. One student initiated conversations with family members about common materials. Vocabulary and language development increased discussion and identification skills that supported direct instruction as a successful language intervention (Ganz and Flores, 2009, p.79). The researcher believed that direct language instruction provided students with more opportunities to access the general education curriculum. The language skills necessary for classroom conversation and instruction can be taught through direct language instruction. More data is needed to determine the most appropriate way to incorporate language within the classroom (Ganz and Flores, 2009, p. 81).

This study showed that language skills can be taught in general education classroom. Providing daily language instruction for students with a language disability component in the classroom setting through direct instruction allows for teachers not only to target language needs, but to also teach the social language that exists for instructional participation (Ganz and Flores, 2009, p. 81).

Teacher perception and preferences can affect curriculum implementation. Ruppert, Dymond, and Gaffney (2011), studied surveys completed by special education teachers to gain knowledge of the current practices and ideologies guiding educational practice. Special education teachers balance the knowledge of functional educational programming with the federal mandates to include students in the general education environment. Literacy is the common thread that exists between general education content and functional programming.

Literacy skills meet the standards of functional education as access to written and verbal communication impacts an individual's ability to participate independently across settings. Communication represented by literacy skills grants access to peer interactions, engagement in general education classrooms, and participation in community opportunities (Ruppar, Dymond, Gaffney, 2011, pg.100).

Students demonstrated higher levels of acquisition and generalization when literacy instruction was presented with a focus on communication and its existence in naturally occurring activities. It is necessary for students with language impairments and/or students using augmentative and alternative communication (AAC) to interpret symbolic language and then translate understanding to expressive language participation through personalized communication system. Some scholars believe that literacy is the most important educational focus to provide students the ability to communicate and direct their own interactions and relationships. Teachers ranked social and communication skills more important than general education content for students with language impairments as they did not recognize the link between literacy instruction and functional skills based in language (Ruppar et al., 2011, pg. 101).

The survey was completed by 69 special education teachers working with students with severe disabilities who used augmentative and alternative communication (AAC). Questions focused on access to curriculum and inclusion of students in the general education setting and the settings and skills perceived as most beneficial for the students (Ruppar et al., 2011, pg. 103-104). The majority of teachers acknowledged student potential and strongly supported the use of literacy instruction, although they believed this instruction should be grounded in life skills



instead of the general education curriculum. Teachers cited cognitive abilities, learning readiness, and communication skills as factors reflecting the importance of a life skills focus.

Overall, the survey reflected a majority opinion that general education curriculum content was less important than perceptions of functional instruction. Ruppert et al., (2011) stated that learning and applying skills across environments ensures functionality (pg. 108). Teachers need more training on literacy implementation and inclusive practices with general education opportunities. The study reflected that teachers were unaware that access to the general education curriculum benefitted students or how to implement strategies at school (pg.109). The study concluded that students needed access to inclusive environments to practice and participate in functional skill instruction. This included access to general education opportunities and direct instruction focused on literacy and communication (pg. 110).

Hunt et al. (2020) compared the effects of a research-based literacy curriculum in a general education classroom. Early Literacy Skills Builder (ELSB) is a curriculum that has been implemented with success and efficacy as it utilized instructional strategies and systematic prompting to support students with severe disabilities. This curriculum targeted participation of nonverbal students using prompting design and instructional engagement through physical interactions such as pointing and clapping. This curriculum was used to determine if skills generalized across environments. All 80 participants were identified as having a moderate to severe intellectual disability or autism. The participants were students from 16 different schools, ranging from grades K-4. All students read below the first grade level at the beginning of the study (Hunt et al., 2020, pg. 333).

The study compared students who received comprehensive literacy instruction (ELSB) in the general education classroom to students who participated in “business as usual” instruction in

their special education classrooms. The specific literacy curriculum used in the special education classroom varied by school. General education students were used in the experimental classrooms as “reading buddies” paired with the special education students. They served as a models demonstrating emergent reading behaviors during literacy instruction and provided an observational learning opportunity for their partner (Hunt et al., 2020, pg. 334).

The results of the study showed that all special education students made progress, but the experimental group who received comprehensive literacy instruction (ELSB) in the general education classroom demonstrated greater progress in foundational literacy skills. Specifically, nonverbal students made more substantial progress with this intervention. Phonics, phonological awareness, comprehension, conventions of reading, and print referencing were all identified as areas of growth. The results supported the hypothesis that comprehensive literacy instruction could be used in both the special and general education classrooms. Reading buddies or peer models participated in positive social interactions with their classmates, while reviewing and emphasizing foundational skills for partners. The students with disabilities accessed inclusive literacy instruction at their reading ability level. The use of comprehensive literacy instruction supported students with significant disabilities across environments (Hunt et al., 2020, pg. 344).

Karen Erickson (2017) researched and developed the concept of comprehensive literacy instruction. As a speech pathologist, Erickson focused on the connection between language and literacy. Specifically, for typically developing students, oral language demonstrates comprehension of the functions of language necessary to participate in literacy instruction. Typically developing students have access to verbal expressions and engagement that support a typical learning spectrum. For students with significant disabilities and/or language impairments, language comprehension is learned concurrently with literacy instruction. In other words,

language is learned through literacy. This means that literacy instruction for students with significant disabilities needs to be centered on the language needs of the classroom.

Erickson's (2017) literacy components include reading, writing, speaking and listening. As stated earlier, each of these function through language. Comprehensive literacy breaks the components into daily instructional experiences addressing word reading, written language comprehension, and fluency. Instruction focuses on the students' ability to interact, engage, and construct understanding with the materials presented. Erickson stated that this instruction was not geared towards mastery (Erickson, 2017). Instead, the learning should follow a continuous developmental path of language and literacy skills.

Erickson (2017) outlined the target emergent literacy instruction areas as functions of print and print conventions, phonological and alphabet awareness, and language skills focused on receptive and expressive interactions. More specifically, the target areas are taught within the realms of shared reading, independent reading, shared writing, independent writing, alphabet knowledge, and phonological awareness. The concepts are seen in many curricula, but Erickson defined the goals and instructional targets to guide the appropriate application of concepts.

Shared reading is a reading experience that exists between a student and an adult. The instructional targets include increasing student interactions between the book and adult, making connection between the text and the student or students' life, and increasing the students' ability to guide and lead interactions while reading (Erickson, 2017). This interaction is not focused on reading comprehension, but rather on the student having a meaningful interaction with a book. Erickson outlined strategies to use throughout this interaction. For students with significant disabilities or language impairments, communication attempts may not always be appropriate. Teachers need to practice providing wait time, to ensure the student has time to respond.

Teachers need to monitor that the student makes eye contact with the communication system and teach intentionality with the communication system by modeling questions and comments throughout the story. Lastly, adding meaning to all communicative attempts teaches the concept of shared expression (Erickson, 2017). These instructional targets and strategies build the foundational skills related to interactions around a book.

Shared writing is a strategy often used in primary schools, but also supports emergent literacy instruction for students with significant disabilities. The use of predictable charts creates a language activity out of writing instruction. The instructional targets focus on students making choices, interacting with concepts of print, identifying common words, and spelling and punctuation (Erickson, 2017). The targets can be met by the teacher talking out loud, narrating the writing process, and calling attention to a sentence feature. Charts also build the foundational language needed for students to talk about their experiences with partners (Erickson, 2017).

Independent reading and writing are instructional areas that Erickson included in her emergent literacy, although they do not look the same as their counterparts in conventional literacy instruction. Independent reading for emergent students focuses on students' ability to access books independently. The learning targets relate to expressing interest areas and practicing the functions of a book such as following along. For emergent literacy students, books could be in the classroom library, or online to give the student choices in selecting books. Independent writing focuses on the student accessing a way to create print. Alternative pencils or keyboards may be necessary. The learning targets focus on accessing a writing method and alphabet knowledge (Erickson, 2017).

Erickson's final areas of instruction included alphabet knowledge and phonological awareness. Alphabet knowledge consists of letter instruction focused on understanding letters

having meaning in reading and writing, not identification of letters (Erickson, 2017). Instruction can be provided independently, but providing letter instruction within all reading and writing activities supports the functional understanding and use of letters. Phonological awareness links oral and written language and develops the skills needed for phonemic awareness and the ability to read and spell. Phonological awareness is the understanding of sounds at the word, syllable, and individual letter level. Instruction utilizes nursery rhymes, raps, written poetry, or music. All of these materials expose the student to patterns within the spoken language and how that impacts the sounds heard. Teachers should focus on the sound segmentation and provide visual representations of words to build understanding of letter-sound correspondence and spelling patterns (Erickson, 2017).

Overall, this instruction comprehensively built upon language development and literacy applications. As Erickson was a speech language pathologist, she believed that the instruction required interprofessional collaboration. For students with significant disabilities and language impairments to access instruction, a collaborative team must identify specific supports needed for each student to participate in daily instruction (Erickson, 2017). Comprehensive emergent literacy instruction bridges the gaps for students who have not had access to comprehensive foundational skills instruction and allows them to progress to independent reading and writing. Independence and self-advocacy is taught to students from kindergarten to graduation. This instruction promotes communication and interaction so students can participate in all environments at their highest potential.

Analyzing instructional strategies in special education is supported by evaluating the skills and concepts taught in the primary curriculum. Literacy skills generally get sandwiched between first and third grade, specifically for students with complex needs and students who use

alternative and augmentative communication (Sturm et al. 2006). Familiarity with literacy skills and instructional strategies used in the general education classrooms helps guide instructional opportunities for special education students.

Researchers Sturm, Spadorcia, Cunningham, Cali, Staples, Erickson, & Koppenhaver surveyed of 141 first and third grade teachers. The survey was used to retrieve data describing specific instructional strategies the teachers used throughout one year of instruction. The survey results showed that all of the first grade teachers included all of the instructional strategies at some point during the school year. The teachers taught literacy in a broad sense, ensuring exposure to all literacy concepts. Common strategies included rhymes, predictable texts, and word work such as sorting sounds and decoding words. When the researchers compared the first grade results to the third grade results, they noted that the third grade teachers followed a more structured teaching cycle. They reported patterns of focus and instructional emphasis, one of the biggest area was reading comprehension. The third grade teachers also reported a shift in reading materials from non-fiction to informational texts. Strategies such as word identification and decoding instruction were prioritized less as the students read more fluently and gained independent decoding skills (Sturm et al., 2006).

As this survey information was retrieved, the researchers explained how instructional strategies used in the first and third grade curriculum could be adapted for special education students and students who used AAC. Shared reading was a teaching strategy used in both first and third grade instruction as a way to increase communication skills around a text or with a partner. AAC users could easily participate in this instruction with access to a communication system, low or high tech. Onset-rime instruction was another strategy mentioned that could be adapted for AAC users to teach decoding skills via high-tech AAC or technology that allowed

the student to hear and manipulate letters or parts of a word. As mentioned earlier, depending on the students' reading fluency, direct instruction related to word work may be unnecessary.

Reading discussions could be used before and after reading in small groups to expand communication opportunities to ensure AAC users active participation during instruction. Reader response, an activity in which students preview a book with staff or read the book independently, has the student mark their favorite part in the shared group book. When the teacher reads the book aloud during class instruction and sees a student's note, the class discusses it and adds it to a predictable chart displayed for all to see. This process connects the students' preferences to the text to their classmates. Lastly, independent reading could also be adapted for all students. Students need to have ample choices available to match their interests and reading abilities. The students explore reading books, and practice concepts of print by turning pages and finding words. Students should have the opportunity to read and listen to books (Sturm et al., 2006).

The strategies were suggested by the researchers based on information received from the survey, along with the analysis of special education accommodations. To ensure that proper instruction was implemented, teachers needed to know their students' reading and literacy levels. (Sturm et al., 2006). In conclusion, the strategies supported students' communication and participation. To develop literacy skills for students with significant disabilities and students who use AAC instruction should address their areas of greatest need, and also accommodate for active engagement.

Developing strategies for emergent literacy instruction for students with significant disabilities can be supported by analyzing the general education curriculum. Emergent literacy taught in primary classrooms, specifically preschool, focuses is on prerequisite skills needed for kindergarten. This instruction typically has a strong focus on phonological awareness with

nursery rhymes and alphabet instruction. Although important to literacy development, comprehensive literacy instruction needs to address all areas of foundational reading and writing skills. Justice, Kaderavek, Fan, Sofka, and Hunt (2009) analyzed preschool instruction, focusing on the development of print referencing skills. Preschool teachers often do not have the training to guide instruction for print knowledge. Justice et al. (2009) defined print knowledge as “the forms and functions of written language.” This includes a variety of skills associated with concepts of print, alphabet, and emergent writing which are necessary for conventional literacy such as word recognition and spelling.

Print knowledge is impacted by factors outside of direct instructional opportunities in the preschool environment. The frequency that students engage with storybooks affects print knowledge development. Students need to have ample time to explore print independently and with a partner. Parental belief towards home learning also impacts the development of print knowledge. Students need opportunities to engage with print materials across environments. The quantity of interactions with a book paired with the quality of home storybook interactions can affect preschool students’ print knowledge development. This is statistically represented by the delayed development of print knowledge that often occurs with children living in poverty compared to those in more advantaged households. Children who do not have the materials or exposure to print referencing at home are at risk for delayed emergent literacy skill development (Kaderavek et al., 2009).

Print referencing instruction is used to increase the students’ attention and interest in print. Children learn how to interact with books by observing an adult lead. Children do not independently look at the print when being read to. Through the use of verbal and nonverbal prompts, teachers and parents can draw a child’s eyes to the written print within a book. Prompts



may include locating letters on a page, commenting on the words seen or heard, and following along with the print (Justice et al., 2009). Justice et al. (2009) used teachers to gain understanding and implement print referencing strategies. The instruction was presented to natural reading groups to represent an instructional experience rather than intervention. The study included both print knowledge and language skills. Knowledge of concepts of print, alphabet, and name-writing were assessed to represent mastery of print knowledge. Sentence structure, word structure, and expressive vocabulary evaluation results provided the language baseline to measure language growth from print referencing instruction.

The results showed that students who received the print-referencing instruction during a natural storybook reading made progress in all three areas of print knowledge. Justice et al. (2009) concluded that print knowledge was necessary within the realm of emergent literacy skills needed for conventional reading success. Students exposed to reading instruction without foundational understandings of print and sound will struggle. The research also showed language growth as a result of print referencing and dialogic reading. This can be supported when teachers collaborate with speech language pathologists to build upon students' language and vocabulary development (Justice et al., 2009). This study supported the use of comprehensive literacy instruction for emergent students, whether preschoolers or students with significant disabilities. Print referencing builds upon literacy and language which is a necessary connection for emergent literacy curriculum.

Susan Gately (2004) discussed instruction around the concept of word. She focused not only on 'concept of word', but depicted the hierarchy involved in learning concepts of print, word, and letter. Concept of word is a skill not explicitly taught in general education settings, as typically developing students obtain these skills through the interactions typically provided with

common early literacy instruction (p. 16). In contrast, students with disabilities often do not learn concept of word through this absorption model and therefore do not progress past the early emergent instructional levels, specifically in areas of phonemic and phonological awareness (Gately, 2004, p. 17). As Gately stated, the hierarchy of skill acquisition begins with the understanding of concept of word. This understanding is foundational to the progression and facilitation of phonemic awareness and the movement towards conventional literacy. Gately provided five different instructional strategies to facilitate concepts of word. The strategies included; the use of environmental print, picture-word matching, repeated reading of predictable and leveled texts, language experience stories, and scaffolded writing (Gately, 2004, p. 17). The strategies are accessible to typically developing students, but can be used and adapted for students with significant disabilities and/or students with language impairments.

The first strategy uses environmental print, which Gately referred to as logos. Environmental print is a type of visual that is accessible in the students' environment. Logos are seen throughout daily interactions and across environments and also have a contextual and visual meaning to students. Teaching environmental print is a strategy used for individuals who do not demonstrate understanding or interest in alphabetic print. Familiar or motivating logos gain the students attention allowing the teacher to direct their eyes to the print included within the logos design. Logos should only be used to increase print engagement as the symbolic nature of logos does not translate into reading abilities associated with alphabetic print (Gately, 2004, p.17).

Picture matching and repeated readings of predictable text are two additional strategies that teach concept of word. The picture matching strategy teaches students to match words or sentences to pictures that represent the corresponding concept. This strategy calls for the gradual fading of pictures to support comprehension to develop students' understanding that words have

meanings. Gately suggested that this scaffold should extend to repetitive and predictable writing and reading opportunities. Using books with simple sentence structures and minimal words per page allows students to focus on skills such as identifying text and following along with their finger. Predictable text also supports students' identification of repeated or familiar words. Through memorized readings, students' understanding of concept of word and word comprehension can increase (Gately 2004, p. 18).

Language Experience Stories is the fourth approach to support concept of word during literacy instruction. This strategy works to build language around familiar activities or experiences which could be completed following a special activity, field trip, or event that engages all students. The activity starts with brainstorming where students comment on a chosen topic while the teacher scribes. The teacher creates a list or paragraph, forming sentences from the different comments. Repetitive sentence structure is beneficial because it connects the activity to other predictable text activities. The students reread the sentences multiple times, practicing skills such as following along and identifying words in the text (Gately, 2004, p. 18).

Scaffolded writing was the last instructional activity Gately suggested to teach concept of word. Many of Gately's other strategies focused on reading text to teach concept of word, but the final strategy was writing-based. For this activity, students dictate a sentence and the teacher draws lines to represent each word spoken in sentence format. The student practices by moving their finger on the lines to indicate each different word while they dictate a sentence. The student is given the opportunity to write a sentence, using lines that represent each word. The teacher should focus on understanding the concept of word by determining whether the student touched each line representing a word, rather than on spelling (Gately, 2004, p. 19).

Gately's five strategies highlighted that concept of word is based in both reading and writing instruction. The assessment of concept of word can be addressed through both reading and writing activities. Gately provided sample assessment ideas for teachers to easily implement through a five-minute interaction. The teacher reads a sentence while pointing to each word. Next teacher asks the student to read the sentence. If the student follows along, reading or remembering each word in the sentence, the student demonstrates understanding of concept of word. A teacher provides a verbal sentence prompt and asks the student to write it down. If the student uses spaces and writes each word of the sentence, disregarding spelling errors, the student shows understanding of concept of word (Gately, 2004, p. 17).

Overall, Gately's emphasis on direct instruction for concept of word pertains to its importance in literacy progression. She acknowledged that there was a group of students who do not progress past the early level of phonemic and phonological awareness due to their disabilities or lack of understanding print concepts. She emphasized the importance of understanding the concepts of letter, word, and sentence as foundational skills for conventional reading and writing. These instructional strategies can be used with students who have significant disabilities and language impairments. The use of predictable and core vocabulary allows for students who use AAC to access similar words on their systems. Gately's research supports the use of systems and models to address functional communication skills.

Storybook reading is a prominent strategy used to teach preliterate or students who have emergent literacy skills. This strategy supports language development and teaches foundational skills for print access such as recognizing a book by the cover, orientating the book, finding the beginning, and turning the pages. Story book interactions vary across classrooms, teachers, and families. Kent-Walsh, Binger, and Hasham (2010) specifically considered storybook reading

across a group of six families. All families had children between the ages of four and eight, who used AAC. Research has shown that students who use AAC often do not receive the same quantity or quality of storybook reading in the home. Caregivers rarely invite expressive communication from the AAC user due to lack of training and knowledge of how to create a reciprocal interaction. Asking yes/no questions, interrupting, taking most of the conversational turns, and focusing on the technology instead of the AAC user creates an unsuccessful interaction (97).

Kent-Walsh et al. (2010) studied the instructional guidance needed for caregivers to host a successful storybook reading using AAC. The study focused on prompt strategies and turn-taking skills to support active participation from the AAC user. Storybook reading is communication. No other skills were needed to participate. The rich verbal interactions, vocabulary growth, and predictable joint attention provided an activity that created a framework for communication growth (98). Six families participated in the study. Baseline data indicated that children had little to no communicative turns during storybook reading interactions. On average, each mother received 2.2 hours of training on prompting and communicative opportunities. Following the training, the number of conversational turns taken by each child at more than doubled within three sessions and continued to increase through the remaining phases of the study (Kent-Walsh, 2010, pgs 98-102).

Each family reported success for their child and recommended that other parents participate in the training, specifically families with children using AAC. The children expanded new communicative interactions across different environments within the home. Families wanted more guidance and materials to increase communication within the current individualized programming used in their homes and to incorporate a communication partner within daily

activities. All of the mothers attained high levels of proficiency in their communication interactions and established the ability to represent a communication partner for their student. This strategy increased family confidence and social interactions for students who used AAC (Kent-Walsh, 2010, pg 104).

This study highlighted the importance and usefulness of storybook reading as an instructional strategy based on the development of communication skills. The parents created predictable interactions that required students to perform communicative turns and participate in reciprocal interactions. Using familiar text allowed the parents to focus on the interaction, rather than the book content. The study affirmed that caregivers, including parents and teachers, used conversation dominating techniques during storybook interactions. The storytelling partner blocked the AAC user's ability to show competence or participate in the interaction. This study showed the value of training to guide adults understanding of prompt strategies and interactions that encouraged participation for the communication partner. The research results can transfer to classroom instruction by acknowledging the need for teachers and paraprofessionals to better support the AAC users in communication development, and active participation during storybook opportunities (Kent-Walsh, 2010, pg 105).

The scaffolding, attention to prompts, and interactions provided by an adult can predict student engagement during storybook reading. Storybook reading not only teaches vocabulary, but also promotes the general use of language. Using a scaffolded prompting structure allows an adult or teacher to provide more or less support during reading activities. For students who use AAC, this relates to changing expectations as students gain the ability to participate with less instructional guidance. This phenomena is considered the transition from book instruction to book interaction (Liboiron, 2006, pg. 70). An adult using specific prompts to elicit interaction

during dialogic reading supports development of oral language and emergent literacy skills. Professionals are beginning to utilize naturalistic environments for language interventions such as books, games, and daily routines. This storybook reading assesses skills, such as joint attention, to determine the student's instructional and communicative levels. Research showed increased communication competence when dialogic reading was used as an intervention with a trained adult. This strategy resulted in student success with increased vocabulary, sentence complexity, and print knowledge (Liborion, 2006, pg 72).

Liboiron (2006) studied the effects of dialogic reading with a special education student who was an eleven-year old girl with cerebral palsy. Her current goals reflected increasing self-generated communication attempts and increased word recognition and spelling skills. A speech and language pathologist participated in this study. After obtaining baseline data during storybook interaction, the study chose to analyze conversational turns (73-74). Data assessed the practitioners' frequency using scaffolded strategies and how the strategies correlated to the frequency of responses based on semantic complexity from the student. Scaffolded strategies included print referencing, cloze procedures, expansion, binary choice, pointing, yes/no questions, and constituent and comprehension questions. Student responses were categorized from low to high semantic complexity through indication, labeling, description, interpretation, inference, and the use of metalanguage. The practitioner and student used a reciprocal reading strategy that involved co-collaboration to tell the story (Liboiron, 2006, pgs 76-77).

The data showed that the practitioner most frequently produced comprehension questions which resulted in the student most frequently using metalanguage. The practitioner used 96 scaffolded strategies within 192 conversational turns. Scaffolded comprehension questions required the most complex semantic response from the student (Liboiron, 2006, pg 78). This

showed that dialogic reading and scaffolded strategies elicited student participation. The student showed skills such as imitating the practitioner, identifying practitioner support, and asking for help during the story reading. The reciprocal interaction taught skills necessary to encourage the student to build independent narrative skills. The collaborative book reading allowed the student to identify structures in the text and participate in interaction strategies. This study supported the growing research for training for adults who support students using AAC. The scaffolded strategies used in this study represented the different engagement techniques used with a variety of students. Creating prompts allowed adults to be successful in guiding interactions which promotes positive student engagement and social and educational growth (Liboiron, 2006, pg 88).

Word recognition is identifying the printed word and connecting it with the spoken counterpart. Word recognition is an essential skill that determines early literacy success but is difficult to address when the printed text contains a wide variety of unfamiliar words and concepts as emergent learners begin to read. Truxler and O'Keefe (2007) considered instructional strategies that focused on decoding. Decoding is the ability to segment words into phonemes, which allows students to sound out unfamiliar words. Decoding skills allow students to independently identify unfamiliar or low frequency words, essential in both emergent and conventional reading contexts (164).

Letter knowledge and phonological awareness are part of the print-to-sound translation and early predictors of reading skills. Letter recognition alone does not support reading as students need to identify letters within the context of a word to understand the purpose and function of print. Researchers stated that phonological awareness facilitates reading and spelling



skills. A focus on phonological awareness teaches the structure of sounds within words that connect to letters. This combination supports decoding skills. (Truxler and O’Keefe, 2007)

Truxler and O’Keefe (2007) assessed the phonological skill development in students with physical impairments who used AAC (165). The acquisition and maintenance of letter/sound correspondence and phonological awareness were the focus of the experiments. Four students between the ages of eight and nine participated. The researchers specified six letters that would be emphasized during instructional time. In the first experiment, the teacher read a book aloud, and focused on comprehension prompts. The teacher read the book a second time pointing out the designated letter sounds and asked students to find the letter on the keyboard at their desk. In the second experiment, students practiced using the same six letters to spell CVC words. Generalization was assessed through the students’ ability to use phonological awareness skills to spell non-words. If the student spelled non-words, phonological awareness instruction supported the self-teaching needed to identify unfamiliar words (165-167).

Truxler and O’Keefe’s (2007) results determined that the instructional strategies did not support students’ ability to decode independently. Only one student improved with word recognition and spelling, but did not generalize the skills to non-words. Truxler and O’Keefe (2007) defined non-word generalization as the “hallmark of self-teaching strategies.” The researchers stated that teaching letter/sound correspondence must to be paired with phonemic awareness to sufficiently develop decoding and spelling skills. Breaking down letter instruction from a story to a smaller unit such as a sentence or word could support students’ attention to simple print structures by bridging the spoken, pictured, and written print. Adding mnemonics to letter instruction could support students’ ability to remember and store letter instruction information. Finally, repeated practice and teaching the link between orthographic patterns and

phonological forms could support the students' acquisition of literacy skills needed to independently read new or unfamiliar text (174).

Writing is an area of literacy where students use foundational skills to express ideas through words. Participation in writing instruction requires students to have an understanding of the alphabet. Miller, Light, and McNaughton (2004) showed the connection between writing and phonemic awareness. The study focused on direct writing instruction and writer's workshop. The research determined how an individual's phonemic awareness was impacted by the dual-approach to writing instruction. More specifically, the researchers were focused on results for individuals who utilized alternative and augmentative communication (AAC). Approximately 70-90% of individuals who use AAC show deficits in literacy skills, both in instructional activities and functional applications. Students who use AAC often struggle to participate in writing instruction as language impairments make it difficult for the teacher and student to connect meaningful thought into writing. As a result, student who use AAC often do not receive the writing instruction needed to support the acquisition of foundational skills such as phonemic awareness and letter-sound correspondence (165). In this study, three individuals were chosen, who all were between the ages of six and twelve, and used AAC to meet their basic needs. Baseline academic performance showed that all participants knew most of the alphabet letters and could recognize familiar words from memorization. All three participants struggled to decode unfamiliar words, use decoding strategies, or segment beginning, medial, and ending letter sounds, relative to writing tasks. The research methods were based on three participants who participated in the same writing program that included direct instruction and a writing workshop. The direct instruction was focused on letter-sound correspondence and phoneme segmentation of the initial letter. The writing workshop focused on written expression, where the

participants practiced sharing ideas through print. Following typical developmental standards, the development of phonological awareness paired with an individual's success in writing whereas the skill development with segmenting phonemes within words predicted reading and spelling success. The researchers verbally presented words to students who used an adaptive keyboard for spelling. All of the words began with a set of five specific letters. Data collection focused on successful spelling attempts.

The results of the study showed that two of the three participants acquired letter-sound correspondence for all five target letters and continued to show mastery of these five letters in the months following the study. The student who did not reach mastery, needed adaptations to the original research implementation method. Once adapted, the participant mastered two of the letters before the study concluded. This is important to note as students who lack foundational skills such as letter identification or attention to tasks may need accommodations in their programming (Miller et al., 2009).

Miller (2009) showed that students with developmental disabilities and speech impairments benefited from explicit and systematic phonemic instruction. This study also showed that students need to be exposed to phonemic awareness using a variety of formats, not just oral expression. Students do not often work with letter sounds in isolation. Students who are not taught orthographic language, will become dependent on tangible or representational symbols for all access to the environment. This decreases the individual's opportunity to generalize skills across environments as they are dependent upon partner assistance to provide communication opportunities or decipher interactions (Miller et al, 2004, pg. 164). Students need to explore words and topics that relate to the targeted phonemic skill to generalize letter-sound

correspondence to writing opportunities. This provides students opportunities for independent exploration and expression of phonemic awareness and writing.

This study was successful but only included three participants. The world of special education is composed of students with a wide range of disabilities, ages, and skill levels. It is not possible to verify that the results of this programming would result in the same success in a larger sample size with a broad range of student needs. It would be insightful to see the results of this study using a larger population of students. To develop an appropriate writing instruction or program, the content of the program, instructional techniques, and required adaptations for motor and speech needs will have to be considered.

Overall, the students showed success using a writing program that focused on letter-sound correspondence and phoneme segmentation. This research showed that students need direct instruction for phonemic and phonological awareness concepts to participate in higher order writing activities. Phonemic awareness and letter-sound correspondence have been researched using strategies that teach the skills separately and together. More success was seen in emergent reading and writing when the two skills were taught in unison (Miller et al., 2004, pgs. 165-166). The writing instructional approach needs to include both direct instruction and writing workshops. Direct instruction should be used to teach the foundational writing skills discussed earlier, such as phonemic awareness and letter-sound correspondence using learning targets, instruction, modeling, and practice. The writing workshop focused on content, not correcting errors in spelling or grammar. This was the student's opportunity to find enjoyment in the writing process, use creativity, choose the topic of interest, and explore using print to express ideas. This two-fold instruction ensured that students received foundational skills instruction and learned how to use writing as a tool for expression (Miller et al., 2004, pg. 166). The

generalization of skills following instruction showed that students with disabilities generalized literacy concepts. Continuing to teach and support literacy concepts is necessary for students with disabilities to achieve success in literacy.

Writing instruction can be difficult if the student does not have foundational writing skills such as concept of word or the physical ability to use a writing utensil. McClure (2016) introduced an instructional strategy called Shared Writing. Shared writing was defined as a collaborative process in which the teacher and student worked together to express an idea with written print. The teacher was used as a scribe, which allowed for students of all abilities to participate. In this method, the teacher uses the writing opportunity to draw the student's attention to different print concepts such as concept of word, phonemic awareness, phonics, and high-frequency words. This instruction is necessary for emergent students to build the foundational skills for conventional writing, and literacy concepts connected to independent reading (p. 505).

Patricia Cunningham initially introduced predictable charts as a shared writing strategy for elementary classrooms, but found it beneficial for any emergent writing student. The strategy is composed of listening, speaking, reading, and writing shared among the students and the teacher. The instruction teaches how language and communication skills work reciprocally within the learning environment. This interaction occurs through modeling concepts such as generating or talking through ideas, identifying high frequency words, and recognizing new spelling patterns which all support writing fluency (McClure, 2016, p. 505).

According to McClure and Cunningham (2016), predictable chart writing consists of one week's worth of instruction focused on writing concepts and word manipulation. To begin, the teacher chooses a topic or sentence starter to guide the weekly activities. The sentence should be

relevant to the students' interests or communicative abilities and to ensure that all students can participate. The sentences target high-frequency words or functional vocabulary. The teacher activates the students' prior knowledge by introducing a language-based activity or discussing a topic or sentence of the week. The teacher begins the writing activity by modeling an expression of an idea using the pre-selected sentence starter followed by re-reading the sentence to the students. Students participate as they complete the sentence starter with individual responses. The teacher scribes the sentences while continuing to model concepts of print for all students. To add ownership, the teacher writes the students' name in parenthesis after each sentence (p. 506).

The initial sentences are used throughout the week during shared writing instruction. At the beginning of the week, activities such as choral reading focused on concepts of print provides students with repetitive practice with sentence structure. Having the students cut sentences into words is an activity focused on word recognition and the purpose of spaces. Reorganizing the words back into sentences reiterates sentence structure and provides word identification practice. Sentence Builders is an interactive activity in which the teacher writes one word of a sentence on a separate piece of paper and distributes one to each student. The students work together to arrange themselves in sentential order. This activity monitors students' awareness of sentence structure following repeated exposure and practice. Lastly, the students attach the words to paper and draw or find a picture that relates to the sentence. The pages are arranged to create a classroom book that represents the original topic. The book can be added to the classroom library for independent reading. The repetitive exposure creates an independent reading opportunity for emergent students (McClure, 2016, p. 507).

Predictable charts are easily adapted for students with disabilities and are a useful strategy to create writing opportunities for emergent readers. The use of functional or high-

frequency text is important for AAC users or emergent communicators as it allows for the use of personal communication systems and provides additional language-based instruction. The weekly activities build on the exposure to print concepts, sentence structures, and word identification skills which are important to develop independent writing and reading skills. This shared writing activity allows for scaffolded support as the teacher recognizes progress in the students engagement and interactions with written print. This instructional strategy can also be used across literacy areas to write about topics or use the vocabulary in separate lessons that continue to emphasize concepts of print and foundational skills that build fluency (McClure, 2016).

When assessing individuals with complex communication needs, researchers considered the foundational skills necessary to achieve higher level literacy concepts. Taibo, Iglesias, Mendez, and del Salvador (2009), focused on working memory and phonological skills. The researchers believed that the two skill areas had directly affected literacy acquisition. The study participants included individuals with cerebral palsy who used alternative and augmentative communication (AAC). The researchers assessed working and phonological skills. They used this data to group the subjects into a high and low group for each area based on scores compared to the mean. They then presented reading and spelling tasks to all participants and noted the scores.

The experiment results aligned with the hypotheses expressed by the researchers. Both the high working memory group and the high phonological skills group scored higher on the reading and spelling tasks than their counterparts. The researchers discovered a significant difference in reading and spelling task scores between the high and low working memory groups. The data showed signs of a restricted visual vocabulary in participants with low working

memories. The participants read at a slower pace and struggled to identify and/or read words presented in the tasks. This showed that working memory impacted literacy for individuals with complex communication needs. The researcher proposed working memory training as a strategy to support these individuals, along with direct instruction related to visual vocabulary for common or high-frequency words. The researchers also discovered differences in the reading and spelling scores related to phonological skills. Again, the high phonological skills group scored higher than the low counterpart, as hypothesized by the researchers, although there was an unexpected discovery. In the descriptive reading tasks, the high phonological group displayed a reliance on visual vocabulary. They were unable to distinguish pseudo words, or words that were not actual words but followed common grammar rules. This illustrated that although subjects demonstrated better phonological skills, both groups showed areas of need in phonological awareness. The researchers proposed direct phonological instruction for individuals with complex communication needs (Taibo et al., 2009).

Overall, this research provided the instructional guidance necessary for direct literacy instruction, more specifically, instruction focused on visual vocabulary and phonological awareness. This study showed that a student's working memory, or ability to recognize familiar spelling patterns or words, was necessary for both word identification and higher order reading concepts. Increasing students' visual vocabulary through direct instructional strategies such as word building and identification will support this area of need. Direct instruction for phonological awareness will also support students in decoding unfamiliar words, or words not included in visual vocabulary instruction. This combination of instruction is needed to address foundational literacy needs that exist for students with complex disabilities and communication needs.



Intervention-based research can also guide instructional strategies for students with complex needs or those who use alternative and augmentative communication (AAC). Direct instruction may not be enough for the students to attain literacy concepts, therefore intervention or skill-focused strategies and activities may be necessary. Johnston, Buchanan, and Davenport (2009), used of gradual and fixed letter array identification trials to assess the acquisition of letter-sound correspondence. This literacy concept is included in all curriculum as it is the foundation for reading and writing. The research was conducted with two preschool-aged boys diagnosed with autism and developmental delay who used AAC. The study included the participants' teacher as an interventionist and included a strict trial schedule and procedure.

The letters *m* and *t* were chosen as the focus letters for the intervention. Researchers presented the letters in fixed and gradual arrays. The fixed array consisted of the letter alongside seven distracter letters. Twelve different fixed array visuals were copied three times, resulting in 36 fixed array worksheets. The student was assessed on the same worksheets until mastery (two consecutive trials with 80% accuracy) was achieved. The gradual array consisted of a various numbers of distracter letters. The first worksheets showed the letter in isolation. Following isolation, the letter was used in increasingly more challenging arrays until the student reached mastery (Johnston et al., 2009).

One participant was assessed with the *m* in a fixed array and *t* with a gradual array. The other participant was assessed using the opposite set-up, the *m* with a gradual array and the *t* with the fixed array (Johnston, Buchanan & Davenport. 2009). The study results indicated progress under both the fixed and gradual conditions. Both students made faster progress using the fixed array intervention versus the gradual. The researchers assessed the maintenance of letter-sound correspondence, to which the students had 87% and 90% mastery during 10 session

maintenance trials. Lastly, the researchers tested the gradual array letters using a fixed condition and both students reached mastery in two and six trials (Johnston et al., 2009).

Although this data documented success, the time used to teach two letters limited the results. With 26 letters in the alphabet, students need repetitive exposure to all 26 letters. They also need exposure to letters in functional contexts such as words, sentences, or on a keyboard. Instead of guiding strategies to teach letter-sound correspondence, this research showed that it was necessary to analyze progress and utilize academic interventions in special education. It also showed that teachers needed to assess their presentation of information to students to gain insight into how students acquire literacy skills. Teachers often assess letter-sound correspondence by having students point to the desired letter, but this is not a functional use of letter knowledge. In this study, knowing if the student used the letter /m/ or /t/ functionally showed whether they understood concept of letter. The fixed array conditions showed faster acquisition which could be used to teach other skills such as word recognition and decoding skills. This type of intervention or skill-based teaching strategy may be necessary for teaching foundational skills to emergent learners. (Johnston et al., 2009).

Successful implementation of comprehensive emergent literacy instruction requires all team members to understand the supports needed for students with significant disabilities and language impairments. General participation in literacy instruction requires students to communicate. The process for Individualized Education Plans (IEP) process requires the educational team to collaborate and determine how to provide student access to learning. For students with language impairments, that includes assistive technology and implementation training. Augmentative and alternative communication (AAC) includes a variety of speech devices that can support the development of language skills necessary for academic participation

and progress (Andzik et al., 2019, p. 89-90). With the presence of AAC in schools, Andzik, Chung, Doneski-Nicol, and Dollarhide completed interviews reflecting 14 special education teachers' understanding and perspective about using AAC.

Special education teachers reported challenges implementing AAC systems such as lack of experience, knowledge, and training in AAC. This affected the teacher's ability to support communication use in the classroom which impacted student participation and overall educational experience. Device abandonment and student frustration were named as consequences (Andzik et al., p. 89). Andzik et al. (2019) focused teacher interviews on preparation, assessment, and implementation to reflect the areas of professional development or consultation needed for teachers to support AAC.

Preparation related to the time, training, and professional development available to teachers. In this study, 29% of the special education teachers received AAC training from a speech and language pathologist. One teacher reported AAC training each year, but the material was the same and was never observed to present new information or supports for implementation. The majority of the teachers used online resources to learn about the foundations and strategies aligned with AAC. Teachers did not feel confident to implement learned strategies in the classroom from self-education (Andzik et al., 2019, p. 92). Overall, special education teachers reported low levels of preparation for supporting AAC use in the classroom.

AAC assessment is the process of evaluating a student's communication needs and determining what type of communication system would be most appropriate for that student. Speech and language pathologists in the school setting support assessment and contribute expertise. Collaboration was not available for all special education teachers interviewed. The

characteristics of the school and student population influenced the availability and knowledge of the speech and language pathologist. Not all districts had speech and language pathologists and not all speech and language pathologists practiced or used AAC. In these instances, teachers were responsible for supporting the students' needs through self-education and research (Andzik et al., 2019, p 93). The lack of expertise and AAC knowledge affected the student's AAC assessment results.

Lastly, the teachers' perspective on AAC affected implementation levels. The special education teachers lacked preparation time to create materials and supports needed for AAC implementation. Teachers reported zero to 90 minutes of preparation time each day dedicated to academic materials, behavior supports, and communication systems (Andzik et al., 2019, p. 92). More time was needed to sufficiently create and implement AAC strategies. Time constraints affected collaboration which lead to lack of proper training for AAC implementation. The general education teacher, speech and language pathologist, and any other professionals that interact with a student need to be updated and trained on implementation strategies that support communication across environments. Teachers reported that individuals are not always available or understand the importance of AAC use and support (Andzik et al., 2019, p. 93). Lastly, paraprofessionals presented as a challenge to AAC implementation. Paraprofessionals primarily handle the personal care needs of the students in the classroom. Lack of training time for communication and self-advocacy affected students' participation levels in daily activities. Paraprofessionals attended to student needs before modeling or teaching the student how to communicate their needs using a communication system (Andzik et al., 2019, p 93).

The survey showed lack of training, inadequate assessment, limited preparation opportunities, and inconsistent implementation were challenges that special education teachers

faced when implementing AAC in the classroom (Andzik et al., 2019, pg. 93). Student opportunities with AAC were dependent upon the teacher's knowledge and understanding of AAC. Andzik et al. (2019) suggested three initiatives to increase classroom AAC implementation including training for all team members, adequate time to collaborate and implement communication systems, and data collection to support assessment and progress reporting (p. 94).

Communication, language, and literacy are foundational skills needed to participating in daily activities relating to all areas of life. Light and McNaughton (2012) noted that skills such as expressing wants and needs, making requests, sharing information, developing social relationships, and participating in the grand social environment were all connected to communication development and participation. Close to one million children in the United States have complex communication needs (CCN). CCN may be linked to an educational disability or speech language impairment. Light and McNaughton (2012) studied current needs within the AAC community to connect individuals with CCN to the proper communication system and instruction. To participate in education, employment, and social expression, individuals with CCN need to acquire functional skills in communication, language, and literacy (34-35).

Developing appropriate AAC interventions for individuals with CCN is essential for skills acquisition. Turn taking, requesting, commenting, receptive and expressive vocabulary, extended communicative messages, phonological awareness, and writing skills should all be addressed through AAC intervention. Research has shown that increased AAC intervention results in decreased negative behaviors because individuals are on-task and engaged. The use and implementation of AAC systems has increased in recent years, as technology has developed, AAC is currently a regular part of early intervention discussions (Light and McNaughton, 2012,

pg. 36). Professionals have recognized that communication is incorporated into all daily activities and therefore, should be addressed alongside with all instructional and individualized programming. Light and McNaughton (2016) acknowledged two barriers still present in AAC research; the improvement of current AAC systems, and the effective translation of AAC interventions to daily life (36).

Current AAC systems require interpreting multiple factors to ensure success and use. The Light and McNaughton (2012) study acknowledged how each result determined the areas for further research. One must primarily understand that the AAC user needs instruction and practice to become independent and successful. Students do not have to be literate to use AAC, but they need explicit interactions that teach the concepts and use. Language concepts are represented by symbolic characters which are taught to individuals who use AAC systems. Different AAC systems use different organization themes the symbols. Individuals using AAC need direct instruction and practice to understand the way the system is organized and how to navigate tools to access all vocabulary. Overall, instruction and practice needs to be included as part of AAC interventions (Light and McNaughton, 2012, pgs 37-38).

AAC interventions require knowledge of symbols, system organization, and system navigation by communication partners or teachers. AAC programming is determined and implemented by parents and professionals. Research showed that limited understanding and use of an AAC system by the parent or professional, correlated with limited vocabulary and vocabulary development using the AAC system. This was not based on the individual's ability to understand vocabulary, but rather the parent or professionals lack of AAC knowledge (Light and McNaughton, 2012, pg 41).

Light and McNaughton (2012) determined the next steps to successfully implement AAC interventions. Increasing public awareness of AAC provides recognition and understanding of AAC interactions across environments. Improved trainings for adults working with individuals using AAC will increase understanding and build the skills needed to effectively collaborate with team members to develop systems that work for individuals. Addressing these proposals would increase the effectiveness of AAC implementation. Addressing AAC implementation focused on language and literacy, establishing literacy interventions, and using evidence-based curriculum is needed to guide AAC participation and provide students access to educational programming (Light and McNaughton, 2012, pg 42).

Core vocabulary consists of specific high frequency words expressed by individuals to guide interactions across contexts. The words are organized by word class or function, but are prevalent in the vocabulary of individuals who speak the same language. Core vocabulary is used for instruction or therapy to facilitate language development and social interaction with individuals who have language impairments. Boenisch and Soto (2015) determined which high frequency words that were used specifically in school environments to guide language-based opportunities for students using AAC. Core vocabulary is beneficial for students using AAC as it creates a small vocabulary bank that can be used across contexts, and can be combined to expand and enhance language opportunities for students (pg. 77).

Expressive language is necessary for students to participate in social interactions, classroom activities, and literacy instruction. Typically developing students have the ability to engage in activities by participating verbally. Students with significant disabilities who use AAC need access to the same vocabulary to achieve the same consistency and quality of participation. Developing the appropriate vocabulary for students who use AAC allows language and literacy

engagement that provides the foundation needed for conventional literacy. Boenisch and Soto (2015) identified core vocabulary in typically developing, English speaking students. The study included 30 students between the ages of seven and 14 including native speakers and students identified as English language learners (ELL). Students were recorded during all school activities to identify what language they used in structured and spontaneous language opportunities (pg. 78).

The results showed that 100 words represented 71% of the student vocabulary. The native speakers and the ELL students produced a similar collection of core words. Verbs, nouns, and adjectives comprised the majority of the content-based language compared to prepositions, conjunctions, and pronouns (Boenisch & Soto, 2015, pg. 79-81). The results aligned with core vocabulary studies completed outside of the school context. The list of core vocabulary can serve as an inventory of core vocabulary relevant to school-based language development. Researchers proposed using the list as a guide to facilitate vocabulary instruction for AAC participants. ELL students could benefit from core vocabulary instruction that targeted content words during activities based on labeling and paired association. Functional words, or prepositions, conjunctions, and pronouns are learned when students hear and use word combinations and sentence structures. The study concluded that language structure emerges through practice and use, therefore it is necessary to guide instructional content with language in mind (Boenisch & Soto, 2015, pg. 82).

“AAC systems are not always designed in a way that allows children to engage in language and literacy activities to the same extent as children who are typically developing.” Wood, Appleget, and Hart (2016) acknowledged disparities that exist in AAC development that affect a student’s ability to participate in school activities by the same standards as their typically



developing peers. Students need access to a wide variety of vocabulary to engage with language and literacy. Lack of vocabulary programmed into AAC systems restrains a student's expressive language. Wood et al. (2016) examined core vocabulary present in literacy instruction, specifically focused on written narratives (pg. 198). Researchers wanted to know what vocabulary children used during writing opportunities and how it applied to AAC programming. First and fourth grade students made up the 211 participants. Core vocabulary was selected from the set of words that make up 70-80% of the total vocabulary generated. The same sentence prompt was given to both grade levels where 191 words made up 71% of the vocabulary (Wood, Appleget & Hart, 2016, pgs. 200-203).

The results of the study showed that core vocabulary related to written expression could be influenced by or dependent on the task given to students. The sentence prompt focused on what the student was going to do after school. Vocabulary related to home and after school activities was common based on the topic. The core vocabulary comparison between first and fourth grade samples showed increased sophistication for the older students. Overall, the results illustrated that language development was present in student's written expression. AAC systems accommodate not only the student's oral communication, but also provide access to vocabulary necessary for written expression. Systems should include more than nouns and verbs to encourage expanded sentences to support the transition towards conventional writing. As students gain foundational literacy skills, such as phonemic and phonological awareness, the goal is conventional writing. Writing allows students to communicate beyond the limits of their AAC device. The core vocabulary highlighted in this study provides a foundation to target during sentence building and writing opportunities as students develop emergent literacy skills (Wood et al., 2016, pgs. 205-206).

### CHAPTER III: APPLICATION OF RESEARCH

A simplified guide to Comprehensive Literacy Instruction for Emergent Learners was created with guidance from the literature reviewed. The instructional areas are outlined as Book Study, Shared Reading, Shared Writing, Word Study, and Alphabet Knowledge. Each lesson is guided by learning and instructional targets to support the purpose and instructional strategies needed to support implementation. The weekly outline presents daily activities that, when implemented, address all learning targets. Each week, the materials change to focus on different core vocabulary words, but the instructional foundation does not change. This provides the repetition and routine expectations needed for students with significant disabilities to develop intentional participation, and the flexibility to address specific communication needs by highlighting core vocabulary relevant to the students' functional communication abilities.

The purpose of this curriculum is to provide intentional and evidence-based literacy instruction to students with significant disabilities who use AAC. Reviewing intervention and instructional strategies previously used with this population, and with typically-developing students with similar intellectual functioning, formed the guidelines necessary for literacy engagement and success. Research was used to create a user-friendly curriculum that teaches not only the purpose and learning targets of each literacy area, but also depicts the instructional strategies needed to ensure evidence-based practices translate to implementation. Special education teachers working with emergent literacy students who have significant disabilities and use AAC are the target audience, but this curriculum can be tailored to emergent readers. Therefore, the instructional strategies can be utilized across age, disability, and communication skills.

The curriculum intentionally focused on the implementation strategies rather than materials. Material access differs across districts and classrooms, therefore a curriculum guided by materials requires access to funds or purchasing. To supply appropriate literacy instruction to all emergent students, a focus on instruction was imperative. If a lesson is taught using a book curriculum, but the teacher does not focus on any of the instructional targets, the intent and impact of the literacy experience is lost. Providing flexibility with materials rather than implementation strategies ensures evidence-based practice. Materials can be created with minimal resources such as pen, paper, books, and access to creating books relevant to the topic, core vocabulary, or student interest. Print concepts and shared book interactions can be taught with emergent texts, or books created online or in a word processing system. Phonological and phonemic awareness can also be taught using books with word patterns and rhymes, and alphabet materials used as printed letter tiles and printed words within the students' environment (labels around the room, names on desks, environmental print pictures). Material creation is an area for further development to address barriers such as access and classroom and program preferences.

I implemented the strategies outlined in this research for one year. Further research and professional development guides the implementation of this curriculum for a special education program containing 8 emergent classrooms. The sustainability of this project requires further data collection geared towards successful implementation to ensure all learning targets and instructional targets are addressed, teachers demonstrate understanding of purpose, and student progress is seen in literacy assessments. Professional development, specifically professional development that allows for opportunities to model, practice, and discuss the curriculum would support the development of critical thinking relating to implementation.

## Simplified Guide to Comprehensive Literacy Instruction for Emergent Learners

<b>Book Study (Concepts of Print)</b>				
<b>Learning Targets - What will students do?</b>				
<ul style="list-style-type: none"> <li>▪ Students will understand the concepts of print (specifically in simple sentences)</li> <li>▪ Students will understand that spoken words are represented by written text</li> <li>▪ Students will develop pre-requisite skills necessary for independent reading/decoding</li> </ul>				
<b>Instructional Targets- What will staff do?</b>				
<ul style="list-style-type: none"> <li>▪ Staff will teach the function of text using books with simple sentences and core vocabulary</li> <li>▪ Staff will create opportunities for hands-on interactions with books and the words in the books</li> <li>▪ Staff will prompt students to identify text features (e.g. title, start of a sentence, pictures, words)</li> </ul>				
Monday	Tuesday	Wednesday	Thursday	Friday
Locate print in books and environment	Locate the start of print in words and sentences	Follow along with print with finger, demonstrate directionality	Locate familiar words in print	Locate novel words in print

(Gately, 2004 & Justice, Kaderavek, Fan, Sofka, and Hunt, 2009)

<b>Shared Writing</b>				
<b>Learning Targets - What will students do?</b>				
<ul style="list-style-type: none"> <li>▪ Students will understand that their own ideas/messages can be turned into printed words</li> <li>▪ Students will understand that individual words can be combined to make sentences</li> <li>▪ Students will use their individual communication system to complete shared writing activities</li> </ul>				
<b>Instructional Targets- What will staff do?</b>				
<ul style="list-style-type: none"> <li>▪ Staff will demonstrate writing using core vocabulary and simple, functional sentence structures</li> <li>▪ Avoid novel or overly complex sentences/vocabulary</li> <li>▪ Staff will attribute meaning to all student messages</li> </ul>				
Monday	Tuesday	Wednesday	Thursday	Friday
Write simple sentences related to core vocabulary word	Find the words and letters in sentences written, practice writing	Cut out the words in sentences, find specific words, remake sentences	Students remake a sentence in team building activity	Students draw or find pictures to go with sentence.

(McClure and Cunningham, 2016 & Miller, Light, and McNaughton, 2004)

<b>Shared Reading</b>				
<b>Learning Targets - What will students do?</b>				
<ul style="list-style-type: none"> <li>▪ Students will participate in interactions about a text by making comments, asking/answering questions, etc.</li> <li>▪ Students will increase their expressive and receptive language skills</li> <li>▪ Students will interact with books with a partner</li> <li>▪ Students will practice and build joint attention skills by participating in shared activities and interactions with others</li> </ul>				
<b>Instructional Targets- What will staff do?</b>				
<ul style="list-style-type: none"> <li>▪ Staff will model language and core vocabulary both verbally and using students' AAC systems</li> <li>▪ Staff will use CAR and CROWD approaches to facilitate shared reading</li> <li>▪ Staff will create opportunities for students to initiate interactions</li> <li>▪ Prompt students to comment or expand, not just answer questions- Teach don't test!</li> <li>▪ Staff will teach students appropriate interactions with books</li> <li>▪ Students practice turning pages, finding the title, holding the book in the correct direction, finding the words</li> <li>▪ Focus on the process rather than outcome</li> </ul>				
Monday	Tuesday	Wednesday	Thursday	Friday
Predictions Look at the book before reading, focus on making predictions from the pictures and print	Commenting Focus on the act of commenting and responding to staff prompts	On-Topic Commenting Focus on making on topic comments while reading and discussing	Print-Referencing Read the book and use print referencing prompts used in Book Study	Bring Book to Life Read the book with interactive or hands on activity

(Erickson, 2017 & Kent-Walsh, 2010)

<b>Word Study</b>				
<b>Learning Targets - What will students do?</b>				
<ul style="list-style-type: none"> <li>▪ Students will understand that letters make sounds.</li> <li>▪ Students will understand that these sounds are what make words.</li> <li>▪ Students will understand patterns of sounds and letters that make up words.</li> </ul>				
<b>Instructional Targets- What will staff do?</b>				
<ul style="list-style-type: none"> <li>▪ Students will understand that letters make sounds.</li> <li>▪ Students will understand that these sounds are what make words.</li> <li>▪ Students will understand patterns of sounds and letters that make up words.</li> </ul>				
Monday	Tuesday	Wednesday	Thursday	Friday
Build words from specific word family with letters	Read words from specific word family, isolate beginning letter sound	Sort words by word family ending sound	Identify words and familiar objects that end with specific word family	Rhyming/syllable activity with word family sound

(Botts, Losardo, Tillery and Werts, 2012)

<b>Alphabet Knowledge</b>				
<b>Learning Targets - What will students do?</b>				
<ul style="list-style-type: none"> <li>▪ Students will understand that letters represent sounds</li> <li>▪ Students will understand that letters make up words</li> <li>▪ Students will find target letters in various forms of text (names, logos, core words, simple sentences)</li> <li>▪ Students will produce target letters by writing or typing</li> <li>▪ Students will listen for target letter sounds in different positions in words</li> </ul>				
<b>Instructional Targets- What will staff do?</b>				
<ul style="list-style-type: none"> <li>▪ Staff will teach a different letter every day</li> <li>▪ Staff will teach letter sound correspondence</li> <li>▪ Staff will reference letters in words in teaching materials and environment</li> <li>▪ Staff will demonstrate how to identify letters by listening to sounds in isolation and words to teach letter-sound correspondence</li> </ul>				
Monday	Tuesday	Wednesday	Thursday	Friday
<ul style="list-style-type: none"> <li>❖ Identify letter by visual representation</li> <li>❖ Identify letter by sound</li> <li>❖ Locate the letter in various print opportunities (words, sentences, books, environmental print)</li> <li>❖ Make the letter (typing/writing)</li> <li>❖ Phoneme activity: isolating beginning, medial, and ending sounds</li> </ul>				

(Taibo, Iglesias, Mendez, and del Salvador, 2009 & Johnston, Buchanan & Davenport, 2009)

## CHAPTER IV: DISCUSSION AND CONCLUSION

### Summary

IDEA (2004), requires that students with disabilities receive high quality instruction. Drs. Karen Erickson and David Koppenhaver adapted literacy curriculum to form frameworks for teaching students with significant disabilities and have been used to guide my professional development and inform the strategies used in my classroom. This research aimed to determine which current practices are used for literacy instruction, to analyze instructional strategies, and to incorporate the language emphasis necessary to provide educational access for students with specific language impairments or students who use AAC.

The current guidelines followed by teachers to determine literacy instruction are based on school-wide programming decisions, along with personal perspectives and historical practices. Teachers ranked social and communication skills as more important than general education content for students with language impairments. They did not recognize the link between literacy instruction and functional skills based in language (Ruppar et al., 2011, pg. 101). Teachers also used varying classroom schedules that focused on interventions or individual work to teach target skills. Botts et al. determined that students achieved learning targets at a faster rate using embedded direct instruction and showed higher rates of generalization across time (2012). This highlighted that direct literacy instruction is needed to combine functional language acquisition with generalization of skills. Barriers such as access to professional development, funding, and teacher buy-in impacted the success of literacy curriculum. As access to professional development varies across school districts, a comprehensive literacy curriculum must contain explicit directions to ensure that teachers can implement evidence-based strategies without the need for funding or professional development opportunities (Botts et al., 2012).

After determining that direct literacy instruction benefitted students with significant disabilities, emergent instructional strategies provided guidance for curriculum development. As outlined by Koppenhaver and Erickson (2019), a comprehensive approach to literacy instruction provided a robust experience. The literacy skills were focused in five literacy blocks named Book Study, Shared Reading, Shared Writing, Word Study, and Alphabet Knowledge. Book study focused on understanding concepts of print. Foundational skills such as locating words, practicing the function of a book and print, and identifying common or new letters and words in print builds the foundational skills necessary for independent reading and writing. Gately (2004) explained how concepts of print were not explicitly taught with typically developing students as they obtained the skills automatically through print interaction, but students with significant disabilities needed explicit instruction to gain these skills.

Shared Reading focuses on language and shared interactions around a book. The primary instructional strategy needed for this lesson is the emphasis on language while providing communication opportunities for students to make comments and expand on topics without the comprehensive question guides. Students with significant disabilities, especially those using AAC, need to build language skills required to participate in comprehension activities. This is completed through modeling core vocabulary, providing wait time, and adding meaning to all communication attempts made (Erickson, 2007). Shared writing combines Book Study and Shared Reading strategies focused on predictable writing guided with core vocabulary. The instructional strategies outlined in Shared Writing ensured that all communication was acknowledged and put into print. Students with significant disabilities need instruction to connect verbal expression with written expression. This was taught with predictable charts that



reiterated common vocabulary, and added personalized information for each student (Erickson, 2017).

Word Study and Alphabet Knowledge both focused on phonemic and phonological awareness. Combining these two areas created a comprehensive understanding of letter and sound identification. Alphabet instruction for students with significant disabilities needs to rotate through all letters at a daily pace with a focus on identifying letters in functional locations such as words and logos. Letter identification in isolation was not functional for students with significant disabilities because an additional learning step to connect the isolated letter to a printed word (Johnston et al., 2009). Additional focused instruction is needed to address combining letter sounds and to manipulate of letters in words. This scaffolded approach to phonemic and phonological awareness provided foundational skill success with functional practice that increased students' reading and writing skills (Botts et al., 2012).

The final guiding research question aimed to connect instructional strategies with language to provide educational access to students who used AAC. Literacy and language are intertwined and interdependent to develop functional communication and participation skills (Ganz and Flores, 2009). Core vocabulary was the focus of an emergent literacy curriculum to ensure that students with varying AAC systems could participate. As mentioned, acknowledging all communication attempts, and modeling concepts and communication skills provided the needed teaching for students with significant disabilities to learn ways to access and participate in the curriculum (Erickson, 2017). The language emphasis in a comprehensive curriculum provides the repetition and consistent opportunities needed to generalize communication skills across environments and literacy activities.

## **Professional Application**

This research and application provided the guidelines necessary for analysis of appropriate literacy instruction for individuals with significant disabilities and language impairments. This relates to special education programs located in Minnesota, and across the country. The Individuals with Disabilities in Education Act (IDEA) is a federal mandate that impacts all special education programming across the United States. This literature review represents a variety of methods to provide special education services. This literature review shows that individuals with disabilities benefit from comprehensive literacy instructional strategies. These research-based strategies directly affect language skills for all students. I would believe that the application of comprehensive literacy instruction should become a national standard of service to ensure all special education programming aim for the student's highest ability. Regarding specific schools and classrooms, special education students currently receive educational programming based on teacher or district mandates and budgets. This means that services vary from school to school, and from classroom to classroom. Evidence-based practice is needed in all schools which includes teacher training and professional development to grow understanding of the importance of literacy as it relates to functional communication. The information from his research review applies to special education teachers who lack opportunities for professional development and support. Special education teachers are required to create classroom materials, programming, and instructional sequences often with little guidance or research to support. The curriculum developed in this The Comprehensive Literacy Instruction for Emergent Learners transforms the idea of a framework, to a daily curriculum that provides learning targets and instructional strategies needed to directly address each literacy skill.

## **Limitations of the Research**

There were limitations regarding both the research included in this review, and the research available to review. More research is needed regarding the connection between literacy instruction and AAC. AAC specific research often focused on interventions rather than direct instructional strategies. The success of the intervention strategies used in large group interactions for AAC users is uncertain. The strategies used in the interventions were guided by speech language pathologists or someone with an expertise in the field of language. Additional analysis and interpretation is needed to frame the results of this research into a literacy curriculum. I also discovered a limited amount of research on literacy instruction for individuals with significant disabilities. Teacher interviews showed that many special education programs focused on adaptive and functional skills. Comprehensive literacy instruction is developing credibility, but there was limited data showing implementation results due to literacy only recently being acknowledged as a need for this population. I analyzed instructional strategies used for typically developing emergent readers for individuals with significant disabilities, but there was a lack of research on implementing these general education strategies for students with disabilities.

## **Implications for Future Research**

More research is needed regarding effective teaching strategies for special education students, specifically in educational settings where students have significant disabilities and language impairments. Significant disabilities can affect student participation in the general education curriculum and diminish inclusivity when the student is unable to access instruction. I question the areas of general education the students can access and wonder how those opportunities serve the student and meet their educational needs. Further research should look at the effects that comprehensive literacy instruction has on language and participation across

environments, and the barriers that restrict teachers from successful implementation including professional development opportunities and strategies.

## **Conclusion**

The guiding questions for this literature review and application thesis were: what current literature guidelines do teachers follow and how might these become barriers to implementing comprehensive literacy instruction; what instructional strategies provide students who have significant disabilities access to emergent skills within the comprehensive literacy framework; what is the role of language in an emergent comprehensive literacy curriculum; what instructional strategies provide access for students who use AAC? The Simplified Guide to Comprehensive Literacy Instruction for Students with Significant Disabilities who use AAC incorporates the need for explicit teaching expectations, evidence-based instructional strategies, and a language connection for students to access and intentionally participate in literacy instruction. This guide can be used for all emergent learners and expands communication opportunities provided during daily literacy instruction.

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