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Abstract

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The Impact of Traditional vs. Interactive Instruction
on Student Comprehension

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Abstract

This action research project asks if the comprehension of students who have moderate to severe cognitive disabilities benefit more from interactive or traditional teaching methods. It was the claim that interactive teaching instruction is more beneficial to comprehension. Direct and interactive instruction was used with two students to determine which instruction was most beneficial. Through teacher interviews, student work samples, and field notes taken, direct instruction proved to be better for comprehension. Educators of students with significant disabilities should use a combination of direct and interactive instruction to benefit students' comprehension.

Impact of Traditional vs. Interactive Instruction on Students' Comprehension

Comprehension, or meaning making, is the overall goal of literacy. By connecting prior knowledge, experiences, and instruction, text becomes something that students interpret and make sense of. It is the necessary and important goal of educators to provide the most comprehensive and effective instruction that allows all students to reach their full potential as learners. For students who have been identified as having moderate to severe cognitive disabilities, this goal is especially important. Often, students who have disabilities have been exposed to a different set of literacy experiences than their typically developing peers. It is integral that teachers differentiate their instruction to fit the needs of these students to allow them to engage with text and make meaning in a literacy rich world.

While it is necessary to differentiate instruction for all students, it is particularly important to examine the best practices for teaching literacy to students who develop and learn in nontraditional ways. McDermott and Varenne (1995) discuss the idea of “culture as disability,” stating that a majority group labels, and in turn marginalizes, any group defined as being different, or lacking traditional cultural experiences. Thus stating that, “disabilities are less the property of persons than they are moments in a cultural focus” (McDermott and Varenne, 1995, p. 324). As educators, it is necessary to consider this while determining how to approach the instruction of a group of students from a variety of backgrounds. If students are not given opportunities to learn, through the teaching of different methods, which allow them to successfully make meaning from texts, then the group or person in power determines their rate of success. Through this narrowed viewpoint, any student deviating from the norm, or traditional student, is then consequently marginalized. As educators, it is important for the continuous circulation of thoughts and ideas, and for value to be given to all students' additions to the

meaning making that occurs in the classroom. After all, it is through the social process of interacting and code breaking that oral and written language is given meaning, and literacy learning can occur.

This action research seeks to take a closer look at today's teaching practices related to comprehension. Taking into account the wide variety of student learning styles, as well as ways students make meaning from text, it is the overall goal of this research to determine if students who have been diagnosed as having moderate to significant cognitive disabilities benefit more from interactive teaching methods, or from traditional teaching methods.

This action research asked if direct instruction or interactive instruction was more beneficial to the comprehension of students who have been identified as having moderate to significant cognitive disabilities. The research was conducted through a sociocultural lens. Through a review of the current literature in the field, it was determined that both direct and multimodal, or interactive, instruction practices are used in classrooms. There are benefits to both types of instruction. By working with two students, conducting teacher interviews, and collecting field notes this research determined that both types of instruction should be used, and that instruction for students with moderate to significant disabilities should be tailored to the specific needs of the students.

Theoretical Framework

Freebody and Luke (1990) define literacy as a “multifaceted set of social practices within a material technology, entailing code breaking, participation with the knowledge of the text, social uses of text and analysis or critique of the text” (p. 15). This definition means that there are many dimensions of literacy, including the developmental, sociocultural, linguistic and cognitive dimensions. Also, literacy is influenced by the social interactions between people, and

the material technologies of the time which promote literacy practices. From this definition, the importance of code breaking can be seen. Code breaking, or making meaning from language, is a key component of literacy, and allows for literacy development. Whether it is through written or oral language, the underlying goal of literacy is to make meaning and connections. Literacy is the interaction between thought and the interaction between students.

Freebody and Luke's (1990) definition of literacy is from the sociocultural perspective. The sociocultural perspective means that interactions between people influence literacy learning and acquisition. Kucer (2009) expands on this definition of the sociocultural perspective by stating that this perspective has "a focus on the social identities and how various groups use literacy to negotiate and critique their interactions with the world" (p. 7). Literacy is acquired through social, cultural and political, everyday interactions. These interactions and experiences provide a lens through which one sees the world and interprets the experiences they have. For example, the literacy rich environment of a home, while possibly different than the literacy rich environment of a classroom, both have an impact on the experiences with text and meaning making a child has. The outside school environment impacts the literacy acquisition a person has.

To effectively create a classroom environment that allows all students to socially interact and make meaning from texts, or comprehend the texts in use, there must be an even circulation of power. Rex and Schiller (2009) determined that the power positions given to the students and the circulation of that power allows each student to actively participate in their classroom environment. By valuing the narratives each student has, and allowing him or her to share that personal narrative, there can be an intersection between curriculum or subject matter, personal identity, and the social interactions. These interactions, while shifting the power between

students and teachers, allows students to make connections and form deeper understandings of the world around them.

Literacy is not only learned, but it is also acquired. Gee (2001) discusses the differences between learning literacy and literacy acquisition stating that “acquisition is the process of acquiring subconsciously without formal teaching,” while “learning is a process that involves conscious knowledge gained through skillful teaching” (Gee, 2001, p. 3). From a sociocultural perspective, literacy is acquired as children are emerged in a literate society in which there are opportunities for both instruction and acquisition.

Oral language promotes literacy acquisition. One of the components of literacy is the use of oral language about written language (Goodman, 2002). Children use words to talk about and make meaning from life events, which they then write down. Students’ oral language is also influential in their vocabulary development and comprehension. These literacy experiences can have a large impact of the developing beliefs children have about literacy and the functionality it has for their lives. As they see street signs, or parents making a grocery list, they begin to understand the importance of literacy in their day to day lives. Many times, the attitudes of adults in their primary discourse towards literacy development have a large impact as well.

Freebody and Luke (1990) state that one of the main identifiable sources of early reading failure is “the failure of the individual to acquire proficiency with the structured nature of spoken language” (Freebody and Luke, 1990, p.8). In order to comprehend and master the concepts of written text, students must have alphabetic awareness, knowledge of spelling patterns, and phonics. These are not only important for writing, but for comprehension of written texts as well. However, it is important to note that oral language is not the only aspect that promotes

literacy acquisition, particularly for students who may not have the capabilities to use oral language as fluently as their typically developing peers.

While the development of oral language is important, without written language as well, literacy acquisition and development cannot be complete. As Otto (2008) puts it, “oral language development and written language development are interrelated processes that culminate in children’s communicative competencies” (Otto, 2008, p. 2). Some of what oral language lacks may be made up in written language. For students with cognitive disabilities, who may have delays in oral language, this interrelated process of language development is particularly important to remember when creating instruction to meet the specific needs of these students.

Many principles guide the development of oral and written language. Goodman (2002) believes that children develop three major principles about language: the functional, the linguistic and the relational principles. The functional principle states that children develop understandings through interactions with adults. Meaningful literacy experiences and the amount of those encounters allow this principle to develop. Children develop their views on literacy by observing how adults interact with literacy. Adults serve as demonstrators, mediators and guides for children during this stage (Kucer, 2009). The linguistic principle ties to the understanding of the written form of language (Goodman, 2002). During this stage, children begin to have an awareness of punctuation and spelling, and move toward a more conventional form of written language. Children learn to develop an understanding of sign systems during this stage of development (Kucer, 2009). The third principle is the relational principle. This principle is the understanding children have about the ways meaning is represented in oral and written language (Kucer, 2009). Particularly for students who learn and develop differently, this understanding is needed.

Each of the three principles has its own distinct impact on oral and written language. However, the three principles point to the social nature of literacy learning and language acquisition. Students learn and make sense of their world based on the interactions they have and the role models they have to look up to. Taking their prior experiences, their views and capabilities with oral and written language, combined with texts allow them to comprehend the information that is presented to them. Incorporating this social aspect of learning into the classroom may allow for a deeper development of comprehension of texts, therefore furthering the growth of students as learners.

Research Question

Comprehension occurs when social, cultural and individual experiences combine to create meaning. Therefore, as a social interaction, this action research project asks, does the comprehension of students who have moderate to severe cognitive disabilities benefit more from interactive or traditional teaching methods?

Literature Review

The following literature review categorizes and critiques the various aspects that should be taken under consideration when researching comprehension instruction for students with moderate to severe cognitive disabilities. First, the review begins with an examination of the difficulties students with cognitive disabilities face when learning to read, and how those challenges impact reading comprehension. The literature review then examines the theories and practice related to direct instruction as a benefit for this population of students. Additionally, the research delves into the benefits of interactive and multimodal instruction as a means to increase

reading comprehension. Finally, the overwhelming need for research-based comprehension instruction methods for students with significant cognitive disabilities is investigated. The research indicates that there is a need for empirically based, proven strategies for teaching students with disabilities, using a combined approach of direct instruction that is engaging and interactive.

Reading Challenges for Students with Cognitive Disabilities

Typically, students with moderate to severe cognitive disabilities acquire language and literacy in ways that may be different than their typically developing peers. These students may not have the same exposure to literacy experiences or may be delayed in their acquisition of needed literacy skills and pre-reading skills. An integral part of this literature review is the discussion on challenges present for students with cognitive disabilities, as an understanding of their learning process is needed to determine the type of instruction most beneficial for growth. This research comes at an important time, as “expectations for children with intellectual disabilities in the area of reading are higher than they have ever been” (Lemons & Fuchs, 2010, p. 151).

For the purpose of this literature review, the term Cognitive Disabilities is used to include a wide range of disability categories. This term includes, but is not limited to, Autism Spectrum Disorder (ASD), Intellectual Disabilities (ID), and other nonspecific Developmental Disabilities (DD). Through multiple sources, definitions for specific disabilities overlap and sometimes contradict one another, however a general understanding of terms is necessary. Flores and Ganz (2007) define Developmental Disabilities to “include mental retardation, attention-deficit/hyperactivity disorder (ADHD) and Autism Spectrum Disorders (ASD)” (p. 244). Under

IDEA (2010), Intellectual Disabilities means “significantly subaverage general intellectual functioning, existing concurrently with deficits in adaptive behavior and manifested during the developmental period that adversely affects a child’s educational performance.” Students who are diagnosed with a cognitive disability may receive instruction in a general education setting, a special education setting, or a combination of the two.

According to Goodman (2002), children’s oral language development is an influential indicator of later success with literacy. However, many times students who have moderate to significant cognitive disabilities experience delays and difficulties with oral language development. There is a strong correlation between struggling readers and those who have difficulty developing oral language skills (Allor, et. al., 2010). It is through language and vocabulary development, that many pre-reading skills are developed. Wise, et. al. (2007) sought to determine the direct impact of vocabulary knowledge to literacy, particularly focused on pre-reading skills and word identification skills. Through a series of intervention methods, it was determined that receptive vocabulary development is indicative of pre-reading skills, while the attainment of expressive vocabulary correlates to word identification skills (Wise, et. al., 2007). The delays these students experience may also impact social aspects of their lives as well. Degabriele and Walsh (2010) examined humor as it relates to comprehension of language skills. It was found that participants in the study, nine children who are diagnosed as having Intellectual Disabilities, difficulties impacted their understanding of humor. According to the study, “participants’ language difficulties make it harder for them to interpret verbal humour,” and in most cases needed additional supports to understand the humor being portrayed (Degabriele & Walsh, 2010, p. 533).

An additional difficulty for students with cognitive disabilities can be the ability to which the students can speak, or verbalize their thoughts. Many children who struggle with language delays also struggle with speech production. It is common for students who have moderate to severe cognitive disabilities to be nonverbal, which can make tasks such as testing comprehension more difficult (Taylor, Ahlgrim-Dezell & Flowers, 2010). This struggle with speech poses an additional challenge for educators who are working with students who utilize alternative forms of communication. Students are then required to master another system of communication, typically a graphic mode communication system of some type. For those students, additional strategies, such as aided language stimulation help promote both symbol comprehension as well as symbol production needed for communication (Harris & Reichle, 2004).

Additional reading challenges for students with cognitive disabilities that impact reading comprehension include difficulty making connections, drawing conclusions, accessing background knowledge, and understanding the tasks being presented to them. Flores and Ganz (2009) researched a reading program and the importance of explicit instruction in the areas often identified as deficits for students with cognitive disabilities. The program specifically focused on oral language comprehension as it related to making analogies, providing evidence, classifications, associating opposites, making inferences and understanding true or false statements (Flores and Ganz, 2010). Through their research, it was found that students have difficulty in these areas, and the result is a significant decrease in comprehension. An additional focus on the difficulty students with cognitive disabilities have with drawing upon background knowledge, as it relates to understand of humor, supports the finding that comprehension is innately linked to combining text and background knowledge. Degabriele and Walsh (2010)

found that “humour is based on incongruity...it involves a mismatch between what is perceived and what is already known (p. 526). These processes must work in conjunction with one another to create a new meaning.

Finally, as simplistic as it may seem, research indicates that students with cognitive disabilities struggle with reading comprehension tasks due to a lack of understanding of what Question Words (who, what, where, why, when) mean. One of the most commonly employed strategy teachers use to check comprehension is by asking questions. However, without knowing if students understand what is being asked of them, those questions may not be an accurate representation of the meaning gathered from the text. Morgan, Moni and Jabling (2009) assert that “when learners do not understand the meanings of Question words, they experience difficulties in following directions, responding to questions, [and] using comprehension strategies that encourage self-questioning” (p. 179). Therefore, it is students with cognitive disabilities often need explicit instruction in the meanings behind Question words, prior to their active use in the classroom.

Understanding the challenges students with cognitive disabilities face, in regards to reading, is necessary before one can make an accurate judgment as to the best type of instruction for this population. Deficits in oral language, recall of background knowledge as well as the ability to make connections significantly impact the way these students view text. Through this lens of the challenges present for students with disabilities, the research provides ideas and strategies that aid students in overcoming these challenges.

Benefits of Direct Instruction

There are many different instructional strategies that have been used to teach reading skills. Many of the studies in this literature review focus on direct instruction as a model that allows students with cognitive disabilities to be successful in attaining reading skills. Direct instruction can be in multiple forms such as strategy instruction, one-on-one instruction, or small group instruction of reading skills.

One effective use of direct instruction for students with significant cognitive disabilities is for remediation strategy instruction. For example, some skills are inherently learned by typically developing peers, but this population of students may need explicit instruction to master. Flores and Ganz (2007) conducted one such study to analyze the impact of explicit instruction of strategies for skills including making inferences, use of facts, and the use of analogies. The research indicated that students not only seemed to enjoy the experimental instruction, but that there were marked increases for literacy skills. The program of study included teacher scripts, choral responses by students, immediate feedback and correction and direct modeling of skills (Flores and Ganz, 2007). Additionally, students “maintained performance after reaching criterion” indicating that generalization of learned strategies occurred (Flores and Ganz, 2007, p. 250). Lemons and Fuchs (2010) research indicated similar results, stating that students involved in a scripted scope and sequence program “demonstrated growth in important component skills” (p. 151). This study, which was conducted with twenty-four children with Down Syndrome, ages seven to sixteen, differed from Flores and Ganz’s research in that the direct instruction intervention was provided through one on one sessions, rather than small group intervention. However, even with students who have different backgrounds, Lemons and Fuchs’ (2010) research validates the use of direct instruction methods stating that, “incorporating elements of explicit, systematic reading instruction interventions...may hold

promise for many, particularly for children who are able to read a small number of sight words” (p. 153). Another study that highlighted the positive impact direct instruction can make is that of Taylor, Ahlgrim-Delzell and Flowers (2010). The intervention program employed in their research combined explicit instruction of reading skills with other teaching strategies commonly used in special education settings. These strategies include time delay, error correction and prompting students. With the additional support of the strategy instruction, there was a “positive impact on students’ reading in three areas: phonics and phonological awareness, sight words and comprehension” (Taylor, Ahlgrim-Delzell & Flowers, 2010, p. 531).

Direct instruction can be tailored to fit meet the needs of more specific strategy or skill instruction as well. While the majority of this literature review focuses on the research and instructional strategies for young learners, it is necessary to include relevant information found in studies conducted with adult learners who have cognitive disabilities as well. Van den Bos et. al. (2007) conducted one such study with the purpose of identifying effective strategies for increasing reading skills in adult learners. Many of the participants in this study had never been given the educational opportunity to become fully literate while in school, so the purpose of this study was to determine whether reading skills could be enhanced, even at later developmental stages in life. This study supported the effectiveness of intense, direct instruction and the ability for adult learners to increase literacy skills (van den Bos, et. al., 2007). Interestingly, the participants in this study made particularly significant gains with expository, or informational, texts.

Browder, et. al. (2008) conducted a study specifically focused on the direct instruction of pre-reading skills for early elementary aged students. These students, between Kindergarten and fourth grade, participated in an early literacy program to enhance sight word recognition. This

specific study found that “students who received the curriculum learned significantly more of the objectives than those who did not,” which proves the benefit of using strategic, explicit instruction with this population of students to enhance specific skills (Browder, et. al., 2008, p. 47). Building upon this research, Cupples and Iacono (2002) analyzed the impact of “whole word” versus “analytic” teaching approaches for reading instruction for students with cognitive disabilities. Through the explicit strategy instruction, it was found that an analytic approach to instruction not only yielded more successful results, but it also proved to be the instructional strategy that lead to more generalization of learned skills (Cupples and Iacono, 2002).

Other types of strategy instruction are based on the premise of direct instruction, by their nature. One such reading instructional strategy is precision reading. Freeze and Cook (2005) define Precision Reading as a “5 minute daily constructive reading strategy...effective with students with low academic achievement and mild learning disabilities in inclusive classrooms” (p. 81). This progress, while typically used for students with mild learning disabilities, was adapted for the purpose of the study conducted by Freeze and Cook (2005) to increase the reading abilities of students with more significant cognitive disabilities. Along with the use of the specific reading program, repeated reading was used. Repeated reading of text allows the reader to make the reading of text more automatic. This strategy provides a shift in focus from decoding the text to interpreting and making meaning from the text. Across the board, the use of these two direct instruction strategies showed gains in all areas of reading measured for the participants in the intervention group (Freeze & Cook, 2005).

Another way direct instruction is beneficial to students is after a very specific area of deficit is identified. For example, Morgan, Moni and Jabling (2009) identified the use of Question Words to be an area that can cause confusion for students who have cognitive

disabilities. By targeting this area of weakness, educators can provide detailed, explicit instruction on a topic to fit the needs of the specific group of students. In this case, the research was conducted with a group of students identified as having Down Syndrome. The focus of the study was for educators to use direct instruction techniques for teaching the meaning of Question and Transition Words. For the purpose of the study, Question words were identified to be “who, what, where, when, why and how” and transition words included words such as “first, then, secondly, finally” (Morgan, Moni & Jabling, 2009, p. 180). Since many students with Intellectual Disabilities do not understand the meaning of question words, it was the hypothesis of the researchers that students who are explicitly taught the meanings behind these words, and appropriate ways to answer these questions, would then achieve greater success with activities that use such skills. The outcomes of the research indicated, with great confidence, that “Question Words should be taught prior to using questioning as a teaching strategy, and before administering comprehension assessments” (Morgan, Moni & Jabling, 2009, p. 184).

Students who have moderate to significant cognitive disabilities often have many challenges to overcome in order to become fully literate. Typically these students face challenges with delays in oral language, which lead to difficulties with pre-reading skills and early literacy skills. However, once the areas of deficit have been identified, direct instruction of strategies and direct instruction of reading intervention programs have proven to be beneficial in increasing all areas of reading, including reading comprehension.

Interactive and Multimodal Instruction

Students who have Intellectual Disabilities often have unique learning needs that are different than their typically developing peers. They may use communication devices, assistive

technology support, have specific sensory needs, or have difficulty focusing for long periods of time. In effort to address some of these unique needs of individuals with moderate to severe cognitive disabilities, research has been completed with a central focus on interactive and multimodal instructional strategies.

The use of music integration in reading instruction is a topic that has been researched in a variety of ways. Kauri and Winn (2006) sought to determine the differences in narrative comprehension between two types of text script presentations. The participants of this study were students who had oral language delays, as well as were identified as mild developmental disabilities. One presentation of text was through fairly typical spoken voice reading, while the other presentation was a sung script. The sung condition provided students with a more engaging, multimodal presentation of text than the traditional spoken script reading. Each script had a set number of lexical terms embedded throughout the text, with the goal for students to learn new lexical items through the presentation of texts. The study showed some increase in lexical item learning when the sung scripts were used, however more research would be needed to determine the precise impact the musical aspect of the presentation had on the research findings (Kauri and Winn, 2006). However additional studies such as the study conducted by Register, et. al. (2007) pointed to a more pronounced benefit to the integration of music and reading instruction for students with disabilities. Through the social interactions of students in a classroom playing literacy games with instruments and music, students receive a multisensory type of instruction that integrates a variety of learning styles, while still teaching needed pre-reading and early literacy skills (Register, et. al., 2007). This research showed that “music has influence on children’s acquisition and mastery of literacy skills” and therefore is a beneficial

tool by which to keep students engaged while teaching needed aspects of reading (Register, et. al., 2007, p. 28).

A second type of interactive teaching that has been proven beneficial to students with cognitive disabilities is social, interactive activities. One such socially based instruction is reciprocal teaching. Alfassi, Weiss and Lifshitz (2008) studied the effects of reciprocal teaching on students with developmental disabilities. Too often these students are left out of literacy experiences such as these because it is believed to be too challenging for them. Rather than raising the expectation for these students, often they are left to meet minimal goals which do not push them to reach their full literacy potentials. Reciprocal teaching activities, with guided scaffolding by educators, allow students to engage in higher level thinking, thus increasing their levels of comprehension (Alfassi, Weiss & Lifshitz, 2008). Another interactive teaching approach that allows students to socially interact while making meaning from text is the effective use of shared story reading in the classroom. Hudson and Test (2011) assert that the interactive process of questioning and commenting throughout the reading help improve students' comprehension of the text.

The use of assistive technology is not uncommon for students with moderate to significant cognitive disabilities. The types of assistive technology in a classroom can range from a special chair cushion to the most up-to-date computer software available for a communication device. The very nature of assistive technology lends itself to an important part in the discussion of interactive or multimodal instruction. Harris and Reichle (2004) focused research on the impact of symbol integration with text, and whether or not the use of symbols helped students' comprehension. The participants of the study were students who were functionally nonspeaking, which added some additional challenges with data collection.

However, results indicated that multiple input, or the combination of symbols and text, lead to better results on test objects than just text alone (Harris and Reichle, 2004). In line with that research, Jones, Long and Finlay (2007) found that students in their study who were stronger readers relied less on the symbols than those who had more difficulty with decoding the text.

Another type of assistive technology that may be used with students who struggle with reading is the use of colored filters, in the form of glasses or overlays for papers. Mitchell, Mansfield and Rautenbach (2008) studied the purpose and impact of colored filters on students' reading skills. Common eye symptoms of students with reading disabilities include "light sensitivity, poor visual resolution, span of visual focus and sustained visual focus" which can impact the way a child visually perceives the text on a page (Mitchell, Mansfield & Rautenbach, 2008, p. 517). While the use of colored filters may reduce eye strain, and some students showed increased reading scores, overall test results were inconclusive as to the overall effectiveness of colored filters as an assistive technology to aid reading skills. However, the results from this study should not be discounted altogether. While Mitchell, Mansfield and Rautenbach (2008) suggest more research on the topic, they all state that "there are some people who will benefit more from these lenses, so research is required to identify such candidates" (p. 529).

With the increase in availability of technology in schools today, the use of computer and video assistive technology is becoming more common in classrooms. These supports can be very beneficial as additional supports for students with special needs, particularly those who are in general education or inclusive classrooms. Evenova, et. al. (2011) found that the most effective videos were those which had interactive pieces, as well as captions. Students were engaged during the intervention sessions. The video integration was useful because "the

universally designed adapted videos...provide teachers with solutions to content-based instruction for students of different abilities and needs” (Evenova, et. al., 2011, p. 51).

Computer based instructional supports also provide students with multimodal instruction that help support literacy instruction. Douglas, et. al. (2010) conducted a study with four students to determine the effectiveness of electronic text and pictorial graphic organizers to enhance comprehension of functional texts for the use of reading a recipe. The examination of the most effective use of assistive technology to support literacy instruction allows teachers to gain a deeper understanding of the benefits interactive instruction with technology may have for students. Much like the research done by Evenova, et. al. (2011), this research found that “pictures paired with words also may facilitate reading skills as student exposure to the picture and text increases” (Douglas, et. al., 2010, p. 54). However, in general, there was an increase in functional comprehension through the use of e-text and pictorial graphic organizers. The combination of information from multiple inputs benefited student who struggled with decoding of the words. As students who receive special education are required to learn more of the general education curriculum, it is increasingly important for teachers to examine the best ways to incorporate these technologies into the classroom.

While multimodal instruction is important for reading skills, those same skills can be translated to important social skills for students with cognitive disabilities as well. Degabriele and Walsh (2010) conducted an interesting study on the ways nine students with intellectual disabilities comprehend humor. It was their assertion that the keys of humor comprehension may also tie to comprehension of texts, and that by studying the students’ ability to comprehend humor presented in different ways, educators would gain insight on the different types of multimodal instruction beneficial for these students. Degabriele and Wash found that, “it is

possible that gesture aided language comprehension rather than joke comprehension,” meaning that the visual and gesture additions to the text helped students comprehend that something was meant to be humorous (p. 534). This finding is important because it adds to the research supporting the findings that multimodal instruction may be more beneficial to students than instruction only provided one way.

Interactive and multimodal instruction is important for enhancing the learning of students with significant cognitive disabilities. Through social interaction, reciprocal teaching, and making connections with the text, as well as through the use of hands-on activities to support literacy instruction, these students have a greater success rate at becoming literate individuals. Additionally, the effective use of assistive technology in the classroom is beneficial.

Research-Based Comprehension Instruction

Finally, this literature review seeks to shed light on the importance of research-based instruction for students with significant cognitive disabilities. Too often teachers are faced with the daunting task of creating curriculum without the necessary tools and empirically based teaching strategies to ensure that the lessons meet the needs of students, while also meeting the challenges of curricular expectations. As expectations for both teachers and students increase, so must the quality of instruction available for teachers to deliver to students.

A great deal of the research pointed to a lack of research on comprehension strategies that are effective for students with significant cognitive disabilities. Allor, et. al. (2010) suggest that this lack of research may be due to the fact that “many educators assume that children with Intellectual Disabilities are not capable to read...[therefore] little effort is made to teach these students to become fully literate” (p.3). According to No Child Left Behind Act, 2002 “all

children have the right to scientifically-based reading instruction and that it is not acceptable for any child to leave school with low literacy skills” (Allor, et. al., 2010, p. 3). As educators and researchers, it is integral to ensure that all students are provided with instruction that allows them to meet these goals.

Interestingly, Taylor, et. al. (2010), studied teacher perceptions on explicit instruction, which provided an overall lens through which to view the feelings teachers have when faced with the daunting task of creating and delivering effective instruction to students with significant disabilities. Through their study, they found that in light of the increased demands for students with special needs to have access to general education curriculum, “special education teachers have struggled with finding models and resources for teaching these academic skills” (Taylor, et. al., 2010, p. 524). With the use of research-based strategies such as time delay, error correction and prompting strategies, teachers felt that their students gained literacy skills during the intervention program. Statistically, the students’ scores improved as well.

In addition to teacher perceptions about instruction, Taylor, et. al. (2010) studied teacher perceptions on their own effectiveness as well as teacher self-efficacy. Teacher effectiveness examines both teacher behaviors as well as student development due to teacher actions, while teacher self-efficacy encompasses beliefs about one’s own skills and abilities as a teacher (Taylor, et. al., 2010). Teachers not only felt that they were more effectively using their time for planning lessons that were based on proven research, but they also saw greater organization in their curriculum, which led to overall higher levels of success. With the successes of the students, came “an increase in the sense of effectiveness on the part of these teachers that lead to an increase in their self-efficacy” (Taylor, et. al., 2010, p. 539). Continued success in classrooms with students who have significant cognitive disabilities benefits both the students and teachers.

In order to make this work, “teachers must be provided with up-to-date materials and extensive professional development and continued support” (Allor, et. al., 2010, p. 19). Review of literature of proven strategy instruction, as well as continued research in the field allows educators to provide the highest quality instruction to students.

Many factors impact instruction teachers provide for students, as well as the ways in which students respond to that instruction. Students who have special needs may benefit from instruction that varies from the instruction given to their typically developing peers. Taylor, Ahlgrim-Deizell and Flowers’ (2010) research supports the idea that a multifaceted reading program which allows a multitude of opportunities with literacy experiences benefits students who have significant disabilities. The current research shows that both direct and interactive approaches to instruction are currently being used with this population of students. This action research seeks to determine if one method of instruction is more beneficial than the other for students who have moderate to significant cognitive disabilities.

Method

Context

Honeycomb Central School District (pseudonym) is a rural district outside a larger city in Western New York. Both of the student participants live within the school district. According to the 2009-2010 New York State Report Card, Honeycomb Central School District is made up of 97% white students, and 1% of each of the following races: Black or African American, Hispanic or Latino, Asian or Native Hawaiian/Other Pacific Islander. Also according to the 2009-2010 data, approximately 11% of students receive free lunch, and 8% receive reduced price lunch (NYS Report Card, 2009-2010).

Honeycomb Central School District is based in a small, close knit community. The members of this community participate in school and community based organizations and events. The location of Honeycomb High School is within walking distance of the main area of town. With few shops and restaurants, the area surrounding the school is fairly quiet. As a supportive community, many of the shop and restaurant owners allow work study programs, particularly for students with disabilities, to occur in their places of business.

The specific context of the study took place in a variety of places. Individual teacher interviews occurred in the teachers' classrooms. One of the three teachers works at Honeycomb High School, while the other two teachers work at Honeycomb Elementary School. The setting for the student work sessions took place in their base classroom, situated within Honeycomb High School. With as few distractions as possible, these work sessions took place in a one on one work setting.

Participants

Ms. Jones (pseudonym) is the primary special education teacher at Honeycomb Elementary School (pseudonym). She works with a number of students, who are in kindergarten through second grade. She has taught at Honeycomb Elementary school for a number of years, and has been a teacher in the school district for a number of years. Ms. Kline (pseudonym) is the intermediate special education teacher at Honeycomb Elementary School. She works with a number of students who are in third through fifth grade. Ms. Duncan (pseudonym) is a life-skills special education teacher at Honeycomb High School. She has been a teacher in the school district for a number of years. These three teachers participated in teacher interviews, as part of my action research.

Two students, Michael (pseudonym) and Greg (pseudonym) will participate in the study as well. Michael is a fifteen year old, white, male, who has been classified as having Down syndrome. He enjoys school, and extra-curricular activities of his include playing the drums and participating in the school musical. Greg is a fifteen year old, white, male, who has been classified as having Autism. He is friendly, and enjoys sharing his hobby of collecting Pokemon cards. Both students are in the same Life-skills special education classroom at Honeycomb High School.

Researcher Stance

My educational background is in General Education as well as Special Education. For the past five school years, I have been a substitute teacher in the Honeycomb Central School District. Additionally, I have been a one on one aid in a Life Skills Special Education summer class for three different summers. Also, I have held long term substitute positions as a Resource Room teacher, as well as a Universal Pre-Kindergarten teacher. Currently, I am a per diem substitute at Honeycomb Central School District, as well as a graduate student in the Literacy Education program and St. John Fisher College.

During this study, I took the role of active participant observer. Miller (2011), describes the role of the active participant observer as someone who is “actively engaged in teaching” and someone who can “observe the outcomes of their teaching” (p. 75). Through interactions with students and the collection of detailed field notes, I will have the ability to use the knowledge gained through observation.

Method

In order to meet the desired outcomes of this action research project, a variety of types of data was collected. By collecting multiple forms of data, the research took a deeper look at all aspects being studied. The three types of data that was collected are the following: teacher interviews, field observations, and student work samples.

I interviewed three special education teachers, who all teach in self-contained special education classrooms in the Honeycomb Central School District. The teacher interviews were conducted in a one on one setting, with the purpose of attaining information regarding reading instruction for students with significant disabilities. The interview sessions were audio-recorded, and I transcribed these sessions. Additionally, questions regarding teacher perceptions different methods of teaching reading were addressed. Information of prior test scores and reading instruction of the student participants in the study that was done via conversation with their current special education teacher.

In order to collect data in the classroom, multiple visits to the classroom occurred. I worked in a one on one setting with each of the two students, six different times. Three of the times I worked with each student, I instructed him using a direct teaching approach. Detailed field notes were recorded, along with artifacts to support student work. The additional three times I worked with the student, I used an interactive instructional approach. Again, field notes and student work were collected. Each of the three interactive lessons was different, focusing on different types of interactive instruction. The three that were used are music incorporation, technology/video supported instruction, and sensory based instruction.

Quality and Credibility of Research

To ensure that this qualitative research is credible, I have followed the guidelines set forth by Guba (1981), ensuring that credibility, transferability, dependability, and confirmability are all present. These guidelines help ensure that the data is collected and analyzed in a way this is nonbiased and just to the participants. Throughout the collection and analysis of this qualitative research, credibility, transferability, dependability and confirmability were all addressed.

Mills (2011) defines credibility as “the researcher’s ability to take into account the complexities that present themselves in a study and to deal with patterns that are not easily explained” (p. 105). Through the collection of student work, field notes, and teacher interviews, the complexity of the research was examined from a variety of angles. Additionally, through conversation with the classroom teacher in the room in which the research took place, patterns in the research were looked at and discussed.

Throughout the course of the study, detailed descriptions of both data and context will be recorded, ensuring transferability (Mills, 2011). As stated in the discussion of triangulation, multiple types of data will be collected and cross checked, creating dependability of data. The checking of this data helps ensure transferability by making the results ones that may be generalized to other students, over the course of other instructional settings.

The use of triangulation or “the desire to use multiple sources of data” (Mills, 2011, p. 92) improved the quality of the data collected. According to Mills (2011), during the collection of quality data, dependability, of “the stability of the data,” is required (p. 104). The use of triangulation of data, or “comparing a variety of sources and different methods with one another in order to cross check data” will be done through the comparison of field notes, student work

samples, and teacher interviews (Mills, 2011, p. 104). Extensive interviews were conducted with three different special education teachers, of varying backgrounds, who hold different positions throughout the school district. Field notes, which include setting, participants, use of assistive technology, materials used, and events that occurred were accurately recorded during each session with each individual student. Also, student work samples, in their original form, were collected.

Finally, confirmability or “the neutrality or objectivity of the data that has been collected [is maintained]” will be addressed both by triangulation of data as well as an account of my reflections throughout the research process (Mills, 2011, p. 105). The audio-recording of the teacher interviews, and exact transcribing of those interviews, shows both authenticity and neutrality. No information was left out of the data presented by those interviews. Additionally, the detailed accounts of participants and the events that occurred during the course of each work session with the students show that all aspects of the session were recorded as they occurred in order to have the most complete view of the student and the research that took place.

Informed Consent and Protecting Rights of Participants

Before official research began, I gained the permission from the school’s principal. After a one on one meeting, in which the study and the purpose was explained, I began the research. Prior to conducting the research, I asked for informed consent from both Michael and Greg’s parents. In a letter detailing the confidentiality of the study, the purpose and the intent, I explained to parents the overall reasons for my asking permission to work with their child. Additionally, I gained consent from the three participating teachers who I interviewed. For the protection of all individuals who are part of the study, all names have been changed to

pseudonyms. Additionally, the school's name has been changed to a pseudonym. Prior to working with each of the two students, I acquired verbal assent, as I feel that the written assent form would be beyond their level of comprehension.

Data Collection

After official approval from the school and consent was given, I began the data collection process of the action research project. I met with each of the three teachers to interview them in a one on one setting. As stated previously, I audio-recorded the interview in order to have data to transcribe at a later date. Each of the three interviewees was asked the same set of questions regarding reading instruction, and views on instructional practices. Additional questions were asked to clarify or add to comments made by those being interviewed.

For each of the classroom visits, I worked one on one with the student. I conducted three direct instruction tasks, as well as three interactive instruction tasks with each student. The interactive instruction tasks included music inclusion, technology or video support, and sensory integration. The tasks were presented in the same manner to Greg as they were to Michael. Students were asked Who, What, Where, Why, and When questions regarding the text passages used in the variety of tasks. Both detailed field notes as well as student work samples were collected for analysis.

Data Analysis

After collecting all data, it was necessary to carefully organize and analyze it. First, each of the interviews was transcribed into legible, clear transcripts depicting the conversations that took place. Then, the extensive field notes were typed and organized by student and by date. It

was important to ensure that the field notes are recorded in an organized manner, as they are presented as data. Additionally, all work samples were dated and organized.

Upon the completion of the data collection, it was necessary to carefully and reflectively analyze the data. The first step of the analysis was to prepare the data by making multiple copies of the information collected in order to code each form of data. To code the data, it was necessary to read the data collected and determine themes that emerged in the collected information. Then, from a researcher's stance, it was necessary to make note of anything that stood out in the data collected. For example, themes that occurred most often, or outlying data that may have gone against the remaining data collected were noted. Once the data had been coded once, it was important to reread all data with the themes in mind to determine three to four overarching themes present in the data. After the overall themes were selected, the data was examined for a third time to determine any information that raised additional questions about the data collected.

Once the themes were identified, and the data was analyzed, it was important to connect the data outcomes to the current research present in the field. Interpretation of the data and the connection of the data to current research allowed the collected data to be viewed through a more complex lens to determine the implications in the field of education. Additionally, once the data was fully analyzed, limitations with this action research were determined, and conclusions were drawn based on the data collected.

Findings and Discussion

The purpose of this action research was to determine if one type of reading instruction was more beneficial than another, specifically for student comprehension. The two types of

instruction examined were direct and interactive, with a focus on students who have been diagnosed as having moderate to significant cognitive disabilities. The research was conducted through teach interviews, student work samples, and field notes collected while students were working on tasks designed for the purpose of this research. Findings of this action research indicated the following themes: varied materials and resources work best with student with disabilities, instructional practices matter and perceptions vary, and challenges relating to comprehension. Through the discussion and findings, the goal was to determine if direct instruction or interactive instruction had a greater impact on student comprehension of text.

Varied Materials and Resources Work Best for Students with Disabilities

One theme that appeared both in research conducted via teacher interviews, as well as through the literature review, was the availability and accessibility of instructional materials for students with special needs. In any classroom, general or special education, teachers are charged with the task of meeting the needs with a diverse set of learners' needs. As Taylor, Ahlgrim-Delzell and Flowers (2010) found in their research, "special education teachers have struggles with finding models and resources for teaching [these] academic skills," a statement that was echoed during the interviews of classroom teachers currently working to meet the needs of their students (p. 524). The availability of resources needed, as well as the training to support the population of students present in the classroom both greatly impact a teacher's ability to effectively teach a group of students.

Through teacher interviews, it was determined that most self-contained special education classrooms have students with a wide variety of academic, as well as emotional and behavioral needs. Teachers find that part of their responsibility is to determine the academic needs, and best

ways to meet those needs with the materials they have at their disposal. When asked about instruction in her self-contained Life Skills Classroom, one teacher answered that it is very “individualized, each of the four students get their own program...their own reading program” (Ms. Duncan, 2012). For her students, it is not only imperative that she find materials to work on their academic goals, but also materials at their level that are age appropriate. As they are part of a Life Skills Classroom, much of their reading and writing is based on functional literacy, and skills they will need to be members of the community outside of school. Ms Duncan spoke about the challenges of finding materials that are new and engaging for students, particularly since she has worked with the same class for a number of years. In her explanation of the materials she combines to reach her students’ academic goals, she commented that she has used “Basil stuff, I’ve done things that are specifically for special needs kids...ReadingAtoZ, and then just short passages” (Ms. Duncan, 2012). Her ability to be flexible with the materials she has at her disposal and combine them into a working curriculum are skills that make her a teacher that sees growth with her students in the areas of reading and writing. Her combined use of materials for literacy instruction aligned with Register, Darrow, Standley and Swedberg’s (2007) research which stated the benefit of tapping into multiple learning styles to teach students who have disabilities.

A second teacher interview echoed the concerns and frustrations that, at times, are prevalent with the lack of resources available to special education teachers. Much like the concerns presented in Taylor, Ahlgrim-Delzell and Flowers’ (2010) research, which discussed an overall lack of literacy programs specifically created for students with special needs, Ms. Kline commented on the lack of a research based literacy program that works for the students in her self-contained special education classroom. When asked about the materials she uses with her

class she responded that she uses the “Fountas and Pinnell-the intervention kit, and [I also use] ReadingAtoZ.com,” stating that she does “have some other programs that [she] pulls from as needed” (Ms. Kline, 2012). While she felt that her students had a diverse set of academic needs, Ms. Kline felt that a more complete curriculum with materials to guide her instruction would be very beneficial to her literacy instruction.

Conversely, the third teacher interviewed as part of this action research was happy with the opportunity to be able to combine and use parts of materials from different kits and publications in order to meet the specific needs of the students she is working with each year. When asked if there were any specific kits or publishers that she uses frequently with students, Ms. Jones replied that she “likes anything that, first, gives them some interest...I do use the orange kit from Fountas and Pinnell” (Ms. Jones, 2012). She felt very strongly that it was important to use a variety of materials with her students stating that, “I don’t just make it one thing. I don’t think you do yourself any justice and I don’t think it does them any justice. We’re constantly doing different things...it’s all a conglomeration of what you think someone will be able to use, and what will work for each student” (Ms. Jones, 2012). Ms. Jones’ willingness to pull from a variety of resources comes, in part, from her previous successes in teaching reading and writing to students. She is an effective teacher, and therefore her sense of self-efficacy improves with each success. As Taylor, Ahlgrim-Deizell and Flowers’ (2010) research states, both teacher effectiveness and teacher efficacy can be supported by research based literacy programs that aid students to gain the skills needed to become better readers.

Overall, the reactions of teachers in the field show that there is no ‘one size fits all’ program available for teaching reading and writing to students with special needs. Teachers must be flexible and adapt the materials they have access to in order to meet the needs of the

students in their classroom. Although some materials used from classroom to classroom may be the same, the views of the teachers and their knowledge of a variety of resources greatly impacts the type of instruction they deliver to their students. The differences in instruction given to students, whether it is through an interactive or a more direct approach, due to the resources available for instruction can have an impact on the overall student outcome on a reading task.

Instructional Practices Matter and Perceptions Vary

In addition to the materials used for teaching, the model of instruction plays an integral part in the way a student or group of students learns. Interestingly, in conversations with the teachers interviewed, the perceived definitions of direct instruction and interactive instruction took on very different meanings, depending on who was providing the definition, based on teacher training and their perceptions of what these terms mean. Additionally, the use of each of these teaching strategies varied from classroom to classroom. This could be due to the different teaching style of each classroom teacher, or the teacher's background. The differences present in point of view, as well as uses of these strategies points to the underlying need for more research to be conducted in each of these areas.

Overall instruction varies by student need in the classrooms as well. For example, in Ms. Duncan's room, she stated that she felt her instruction was "individualized, each of the four students get their own program" (Ms. Duncan, 2012). With her students' need for functional literacy, she explained the use of skill integration in her classroom as an important aspect of her literacy instruction. Ms. Kline described her overall instruction method as "direct instruction" stating that "we basically read books together, we do whisper reading" and that most of her groups are "one on one, but [she does] have a group of two or three" (Ms. Kline, 2012). The

third teacher interviewed described her reading instruction as “varied...depends on the group I have.” (Ms. Jones, 2012). This variation in instruction, based on student need, is very much in line with the research from Douglas, et. al. (2011), stating that the ability to adapt and change depending on student need increases the likelihood that students will be successful with instruction. The instruction seemed to be varied to meet the needs of the specific students in the classroom, as well as to work on the academic goals those students have. While it is not possible in each setting to have one on one instruction, each of the three teachers’ instruction tailored to the needs of their students as individually as possible.

When asked about instructional approaches that could be deemed interactive, as well as their effectiveness, the three teachers interviewed stated that they used interactive methods in a variety of ways. Ms. Duncan commented on her use of sensory approach to writing stating that “we’ll get out the shaving cream and they’ll write it with their fingers...When I’m working with Michael he loves if I write the work on his back” (Ms. Duncan, 2012). She did however explain that sensory approaches such as these are not appropriate for all students, as they can be more of a distraction than a tool to aid learning. Music integration is another interactive teaching approach used for reading instruction in this classroom. In line with Register, et. al. (2007) research, which proved an effectiveness in increasing comprehension when music was integrated into the classroom, Ms. Duncan had strong feelings about using music in the classroom. She stated that “I’m a huge believer in the ability to really help them...I think music is a great tool to teach” (Ms. Duncan, 2012). The use of listening activities to aid in reading a text was a commonly used practice in both Ms. Kline and Ms. Jones classrooms. All three of the classes use cooking as a way to integrate life skills and literacy instruction. Using skills such as reading labels and recipes for cooking, questions such as “How do you know it’s that ingredient? What

comes next?” test student comprehension (Ms. Jones, 2012). Activities such as these serve a more functional purpose, as the comprehension of these words and reading skills work together to help the students with daily tasks such as cooking. Many of the same type of pictorial graphic organizers were studied in Douglas, et. al. (2011) study are used with success in these classrooms as well. An additional type of interactive instruction Ms. Kline’s students have used this school year are Snap Words cards for teaching sight words. These cards “have three different parts to it: it has a really cool picture, you’re supposed to give a motion with it, then the next one is putting it into a sentence” (Ms. Jones, 2012). This kinesthetic approach combines movement with the reading task, which makes it more interactive than a traditional reading of a word. Jones, Long and Finlay’s (2007) research on symbol integration is in line with Ms. Jones’ findings that students have been more successful with the Snap Words than a traditional sight word flashcard. Through hands on activities such as cooking, and tasks that pair movement with reading, students are being exposed to a more interactive instructional approach. Not only does this approach tend to hold students’ attention longer, but it can help them better comprehend the task as well.

Another aspect of instruction that falls under the category of interactive instruction includes the use of technology as part of reading instruction. Particularly in the modern, technological society in which the schools are situated, it is important to incorporate that technology into the day to day literacy instruction. According to field notes collected during student work periods, both Greg and Michael were very excited to use a computer for two of the days. Technology is integrated into instruction in many ways. Ms. Kline commented that “there’s so much you can do with the Smartboard, and we do a lot on the computer...we have the ipads, and there are so many great apps out there that we use for handwriting and spelling,

listening to books, so many things” (Ms. Duncan, 2012). Other programs such as “RAZKids and Tumblebooks are used to reinforce what they’ve already read, on the computer” (Ms. Kline, 2012). The integration of these technologies helps promote multimodal instruction in the classroom, which helps tap into the strengths and needs of these students. These computer programs pair an audio version of the book with the text, which can be beneficial in modeling fluency, tone and phrasing. In addition, students who are stronger with listening comprehension may benefit from hearing the text in conjunction with reading the text. Students who choose technology based programs, such as computers, as a preferred activity may be more willing to engage in literacy activities when presented with this option as well. This could benefit students who might otherwise be reluctant to participate in reading activities.

In addition to the interactive instructional techniques used, direct instruction is also used in all three of the classrooms. In alignment with Flores and Ganz’s (2009) research, the benefits of direct instruction for specific literacy skills have been seen in classrooms as well. Ms. Kline stated that her instruction is mostly direct, and that she uses “Fountas and Pinnell – the intervention kit” with her students (Ms. Kline, 2012). Additionally, the use of direct instruction for specific skills, such as filling out forms is beneficial for students in the Life- Skills class that Ms. Kline teaches. This type of instruction is similar to the strategy of precision reading, proven by Freeze and Cook’s (2005) research to be beneficial to students with special needs.

For the purpose of this action research, direct instruction focused on a traditional approach to literacy instruction, wherein a student had a book and a pencil/paper task to answer questions about that book. An interactive instructional approach meant something other than a direct approach. In the field research that occurred, this approach was conducted in the following ways: video support to text, music integration, and the use of props to support the text.

The following data tables depict the data collected during six different work sessions, three of direct instruction and three of interactive instruction. The fractions represent the number of correct answers over total number of comprehension questions asked, post instruction.

Table 1

Direct Instruction

Trial	Greg	Michael
	%	%
1	100	29
2	100	83
3	86	71

Note: % = percentage of comprehension questions correct

For the direct instruction samples, students were given a book and pencil/paper task to complete comprehension questions that went along with the book. Through field notes taken during the work period, it was noted that both students enjoyed having a book to hold onto, and seemed to like the stories they were reading. Michael used a highlighter to mark the answer he was choosing, as his fine motor ability prevented him from being able to circle or bubble in a correct response. During the direct instruction work periods, Greg was quick to independently pick up the book and look back in the text for an answer if he was stuck. When asked about this strategy, he commented that “that’s how you find the answer” (field notes, 2012). This remark shows a learned strategy for answering questions based on a text read.

Table 2

Interactive Instruction

Trial	Greg	Michael
	%	%
Video Supported Text	100	44
Music Enhanced Text	75	63
Props Used to Support Text	78	88

Note: % = percentage of comprehension questions correct

Interestingly, both students were more distracted when presented with an interactive mode of instruction. Both Greg and Michael used a pair of headphones while listening to the music enhanced text, which helped them stay focused on the computer monitor, while they did not use headphones for the video supported text. Overall, Greg's comprehension was lower for the interactive texts than the direct text, however he answered all of the comprehension questions correctly when watching the video supported text. Michael's comprehension was better for the direct instruction, with the exception of the interactive text with props. These results seem to indicate that direct instruction was generally more beneficial for these students. One reason these students may have done better on the comprehension questions after the direct instruction could be because that is what is more familiar to them. The interactive instruction was more novel to them, and therefore could have been distracting. Michael's distractibility while completing academic tasks, rather than the mode of instruction presented could have impacted his scores, especially on the interactive tasks. The comprehension score for Greg during the video adaptation of text is supported by research that states that "video instruction can be effective for students who are visual learners and are motivated by watching television," as watching television is a preferred activity for him (Evmenova, et. al., 2011, p. 50). Michael, on

the other hand, seemed distracted by this type of activity, and it did not seem to hold his attention as long as when he held onto a book while reading. Both students were very engaged when given hands on props to aid in comprehension of text, however it did not significantly increase the scores on Greg's comprehension questions.

While the research supports the benefits of interactive instruction at times, it also shows that there are benefits to a more direct instructional approach as well. Interestingly, all three teachers interviewed use a combination of approaches with their students, even if they identified their instruction as mostly one type or the other. The student work samples collected showed that there was an overall increase in comprehension of texts when a direct instruction method was used.

Challenges Relating to Comprehension

During the course of this action research, it became apparent that teachers face a variety of challenges in both instruction and well as assessment of students who have moderate to significant cognitive disabilities. This is important to note when trying to determine the most effective type of instruction, as these challenges can impact the way student comprehension is measured and recorded, and therefore should be kept in mind when analyzing data. These challenges come in many forms such as student distractibility and attention, time constraints, and pressures of standardized assessments. These challenges can sometimes be navigated by instructional strategies, but other times they are more difficult to bypass.

Based on field notes collected during student work periods, it was clear that distractibility was a factor that impacted students while working. For example, if other students in the room were noisy, often the noise was enough of a distraction that students needed to be redirected back

to the reading task. Another example from field notes collected was when Greg became agitated and distracted by a breeze blowing through an open window. It was enough of a distraction to halt the work session until he could refocus. Additionally, fatigue is another challenge that impacts students' ability to attend to a task, regardless of the type of instruction given.

According to Ms. Duncan, "we take breaks if necessary, but I'm always trying to work on their endurance, mostly I try to switch up the activity" when students show signs of fatigue during work periods (Ms. Duncan, 2012). Often this switching of activities means a switch to more interactive methods of instruction, which can sometimes hold the students' attention longer. Switching from a direct approach to an interactive approach may be enough to reengage the student in the activity.

Challenges with working memory, background knowledge, and overall understanding of the task at hand can impact students' comprehension as well. These challenges impact both the direct and interactive methods of teaching. Ms. Jones commented that the challenges with students' working memory can be very difficult and get in the way of many academic activities. As she put it "sometimes you ask a question, you look at them and realize, ok, they didn't get that one...so how can I, as the practitioner back it up and break it apart for them?" which takes a great deal of patience on the part of the teacher (Ms. Jones, 2012). Background knowledge gives students a starting point for making connections, and when that is lacking, it puts the student at a disadvantage. Flores and Gantz's (2007) research discussed the difficulty students with Autism and Developmental Disabilities have in connecting prior knowledge to texts, which has negative impact on overall comprehension. Another struggle for students with cognitive disabilities, regardless of the teaching approached used, as discussed in Morgan, Moni and Jobling's (2009) research, is that students do not always understand question words, and what types of responses

are expected of them when they hear those question words. This confusion was also noted in field notes during Greg's work periods, when he would often read a question word incorrectly (ex. what for why) without realizing his mistake. This confusion with the task impacts the overall comprehension.

This action research also points to the challenge of comprehension when working with students who have moderate to significant cognitive disabilities, in terms of accurately measuring what the student truly comprehends. The teachers interviewed specifically mentioned the challenges with normed or standardized assessments, as their students do not complete tasks at the same pace or the same way as their typically developing peers. Ms. Jones spoke about assessment challenges stating, "my benchmarking is probably going to look different than somebody else's...they might not have the words per minute, and most of my kids, even though they don't have that, they are still able to keep their comprehension" (Ms. Jones, 2012). The differentiation of assessment is difficult when students are being compared to a norm. Additionally, Ms. Duncan spoke about the challenges with formal assessments saying, "someone like Student A, you send him to the school psychologist to be assessed and you think, he's not going to do as well. Even, do they understand...if it's a real formal assessment, where you have to ask specifically what it is or what they have to do and you can't change the wording, I think that brings their scores down...if you could just change the way it's asked they would get it and could truly show what they're capable of" (Ms. Duncan, 2012). So, while the student may be more capable, the way an assessment is given, or the way that assessment is scored may impact what the student's comprehension seems to be.

Another challenge was the unpredictability of student behavior and the impact that has on the educational setting. Self-contained special education classrooms have a wide range of

students, and sometimes their needs are more behavioral than academic. As Ms. Jones put it, “this room is not just about learning disabilities, it’s about behaviors...and the behaviors go to an extreme. You have to clear the room, or you have to take [the class] somewhere else...it’s not that they can’t do it, it’s that they choose not to” (Ms. Jones, 2012). These extreme behaviors can cause a disruption to the academic setting, which can greatly impact the overall academic atmosphere of the classroom.

This action research determines that students with moderate to significant cognitive disabilities benefit from both direct and interactive forms of reading instruction. The category of students with special needs includes such a wide variety of students, each with his or her own set of strengths and needs, that it is difficult to make an overall statement as the benefit of one type of instruction over the other. Other research based studies have similar conclusions that suggest that more research is needed to determine if one set of materials and instructional strategy is more beneficial for student comprehension.

Implications and Conclusions

After completing this action research, which sought to determine the best type of instruction for students with moderate to significant cognitive disabilities, it has been found that both direct and interactive instruction can benefit student comprehension. Students who fall under the category of having significant cognitive disabilities may have a wide range of strengths and needs academically. As an instructor, it is important to have an arsenal of strategies and materials to be able to use with students to determine which type of instruction is most beneficial for each student.

Through this action research it was determined that there is no specific set of materials, nor one research based instructional technique that is most beneficial to students. The use of a

variety of materials, including the use of technology and other multimodal instructional techniques may be beneficial to some students, provided that these techniques reinforce rather than distract from the text being read. Using interactive teaching methods to hold the attention of students is a strategy that many classroom teachers use. However, as the research showed, it may not actually aid student's comprehension.

Additionally, it is important to ensure that students who have cognitive disabilities fully understand the expectation of the task set before them. As it can be a challenge to determine what precisely a student with such needs comprehends, the expectations of the task need to be clearly outlined so that the student has the best chance for showing what he or she knows. As the research stated, this outlining of expectations may entail pre-teaching the question words in order for students to understand what type of responses are expected of them when they read those words.

Limitations and Questions for Further Research

While the research was informative, there were some limitations that should be considered for future research. The two students who were part of the study were approximately at the same reading level, in the same high school aged life-skills special education class. For this study, it was not possible to work with students from different classrooms. The two students studied were both males, who are able to verbally communicate their thoughts. This similarity in student participants' functionality may limit the degree to which the results of this study can be generalized to students who also fall under the category as having cognitive disabilities, but may have very different needs. This lack of variety in students studied may have impacted the results. An additional limitation was the time constraints. Each of the trials was conducted in

consecutive days, at the same time each morning. Perhaps results may have indicated something different had more trials been conducted, or at different times throughout the school day.

After analyzing the results of this research study, and considering the limitations, I am left with questions for further research. The first of those questions is the following: would students of different ages and reading levels have better results on comprehension questions after interactive instruction than direct instruction? Secondly, I question whether or not the student's level of communication skills impacts the results of a study such as the one completed.

Therefore a second question is the following: would a student who is nonverbal communicate their level of comprehension in the same way as students who are able to communicate verbally?

Additionally, as a researcher, I am curious to know if the time of day the study takes place impacts the results. An additional question for further research would be the following: would the comprehension of students benefit more from one type of instruction over the other at a different time of day?

Conclusions

This action research asked if direct instruction or interactive instruction was more beneficial to the comprehension of students who have been identified as having moderate to significant cognitive disabilities. The research was conducted through a sociocultural lens, meaning that it looked at literacy as a social practice. Kucer (2009) stated that this theory means there is a "focus on the social identities and how various groups use literacy to negotiate and critique their interactions with the world" (p. 7). Through a review of the current literature in the field, four main themes presented themselves. Those themes are the following: the challenges with reading for students who have cognitive disabilities, benefits of direct literacy instruction, benefits and types of interactive and multimodal instruction used in classrooms, and the need for

research-based comprehension instruction in schools. Through teacher interviews, field notes collected, and work sessions with two high school aged students from a life-skills special education classroom, more research was collected. Upon analyzing this research, additional themes were present. These themes were the following: varied materials and resources work best for students with disabilities, instructional practices matter and perceptions vary, and challenges relating to reading comprehension. It was determined that both direct and multimodal, or interactive, instruction practices are used in classrooms. There are benefits to both types of instruction, however the students in this action research study benefitted more from direct instruction than interactive instruction. Varied materials and resources work best for students with disabilities. Additionally, the use of technology, sensory input, graphics, music and other multimodal instructional aids may help some students' comprehension, provided that the interactive instruction does not distract from the overall intended instructional outcomes. From this research, it is important for educators to know the importance of differentiating their instruction to meet the individual needs of their students, particularly for students who have moderate to significant cognitive disabilities, in order for all students to be given the tools to meet their full potential.

References

- Alberts, M. (2011). *Eggy's easy out*. Learning A-Z.
- Alfassi, M., Weiss, I., Lifshitz, H. (2009). The effect of reciprocal teaching in fostering the reading literacy of students with intellectual disabilities. *European Journal of Special Needs*, 24(3), 291-305. doi: 10.1080/08856250903016854
- Allor, J. H., Mathes, P. G., Roberts, K., Cheatham, J. P., Champlin, T. M. (2010). Comprehensive reading instruction for students with intellectual disabilities: Findings from the first three years of a longitudinal study. *Psychology in Schools*, 47(5), 445-466.
- Allor, J. H., Mathes, P. G., Roberts, J. K., Jones, F. G., Champlin, T. M. (2010). Teaching students with moderate intellectual disabilities to read: An experimental examination of a comprehensive reading intervention. *Education and Training in Autism and Developmental Disabilities*, 45(1), 3-22.
- Boelts, M. (2011). *Bonk's bad dream*. Learning A-Z.
- Browder, D. M., Ahlgrim-Dezell, L., Courtade, G., Gibbs, S. L., Flowers, C. (2008). Evaluation of the effectiveness of an early literacy program for students with significant developmental disabilities. *Council for Exceptional Children*, 75(1), 33-52.
- Butler, D. (2011). *How we measure*. Learning A-Z.
- Butler, D. H. (2011). *Beanie and the missing bear*. Learning A-Z.

- Calhoun, M. B., Sandow, A., Hunter, C. V. (2009). Reorganizing the instructional reading components: could there be a better way to design remedial reading programs to maximize middle school students with reading disabilities' response to treatment? *The International Dyslexia Association*, (60), 57-85. doi: 10.1007/s11881-009-0033-x
- Cockcroft, D. (2011). *The igloo*. Learning A-Z.
- Cohen, D., Plaza, M., Perez-Diaz, F., Lanthier, O., Chauvin, D., Hambourg, N., Wilson, A. J... Riviere, J. P. (2005). Individual cognitive training of reading disability improves word identification and sentence comprehension in adults with mild mental retardation. *Research in Developmental Disabilities*, (27), 501-516.
- Cupples, L., Iacono, T. (2002). The efficacy of 'whole word' versus 'analytic' reading instruction for children with Down syndrome. *Reading and Writing: An Interdisciplinary Journal*, (15), 549-574.
- Degabriele, J., Walsh, I. P. (2010). Humour appreciation and comprehension in children with intellectual disability. *Journal of Intellectual Disability Research*, 54(6). 525-537
doi: 10.1111/j.1365-2788.2010.01277.x
- Douglas, K. H., Ayres, K. M., Langone, J., Bramlett, V. B. (2011). The effectiveness of electronic text and pictorial graphic organizers to improve comprehension related to functional skills. *Journal of Special Education Technology*, 26(1), 43-56.
- Evmenova, A. S., Behrmann, M. M., Mastropieri, M. M., Baker, P. H., Graff, H. J. (2011). Effects of video adaptations on comprehension of students with intellectual and developmental disabilities. *Journal of Special Education Technology*, 26(2), 39-54.

Flores, M. M., Ganz, J. B. (2007). Effectiveness of direct instruction for teaching statement inference, use of facts, and analogies to students with developmental disabilities and reading delays. *Focus on Autism and Other Developmental Disabilities*, 22(4), 244-251.

Flores, M. M., Ganz, J. B. (2009). Effects of direct instruction on the reading comprehension of students with Autism and developmental disabilities. *Education and Training in Developmental Disabilities*, 44(1), 39-53.

Freebody, P., & Luke, A. (1990). Literacies programs: Debates and demands in cultural context. *Prospect*, 5(7), 7-16.

Freeze, R., Cook, P. (2005). Learning to read against all odds: Using precision reading to enhance literacy in students with cognitive impairments, extreme academic deficits, and severe social, emotional, and psychiatric problems. *Exceptionality Education Canada*, 15(1), 79-109.

Goodman, Y. (2002). The development of initial literacy. In E. Cushman, E.R. Kintgen, B.M. Kroll & M. Rose (Eds.), *Literacy: a critical sourcebook*. (pp. 316-324). Boston: Bedford.

Harding, J. (2011). *A seed grows*. Learning A-Z.

Harris, M. D., Reichle, J. (2004). The impact of aided language stimulation on symbol comprehension and production in children with moderate cognitive disabilities. *American Journal of Speech-Language Pathology*, (13), 155-167.

Hudson, M. E., Test, D. W. (2011). Evaluating the evidence base of shared story reading to

- promote literacy for students with extensive support needs. *Research and Practice for Persons with Severe Disabilities*, 36(1-2), 34-45.
- Jitendra, A. K., Burgess, C., Gajria, M. (2011). Cognitive strategy instruction for improving expository text comprehension of students with learning disabilities: the quality of evidence. *Exceptional Children*, 77(2), 135-159.
- Jones, F. W., Long, K., Finlay, W. M. L. (2007). Symbols can improve the reading comprehension of adults with learning disabilities. *Journal of Intellectual Disability Research*, 51(7), 545-550.
- Kouri, T. A., Winn, J. (2006). Lexical learning in sung and spoken story script contexts. *Child Language Teaching and Therapy*, 22(3), 293-313.
- Kucer, S. (2009). *Dimensions of Literacy: A conceptual base for teaching reading and writing in school Settings*. (3rd edition). Mahwah, NJ: Erlbaum.
- Lemons, C. J., Fuchs, D. (2010). Modeling response to reading intervention in children with Down Syndrome: an examination of predictors of differential growth. *Reading Research Quarterly*, 45(2), 134-168.
- Lionni, L. (1967). *Frederick*. USA: Alfred A. Knopf, INC.
- Mills, G. E. (2011). *Action research: A guide for the teacher researcher*. Boston, MA.: Pearson.
- Mitchell, C., Mansfield, D., Rautenbach, S. (2008). Coloured filters and reading accuracy, comprehension and rate: A placebo controlled study. *Perceptual and Motor Skills*, (106),

517-532.

- McDermott R., Varenne, H. (1995). Culture “as” disability. *Anthropology & Education Quarterly*, 26(3), 324-348.
- Morgan, M. F., Moni, K. B., Jobling, A. (2009). Who? Where? What? When? Why? How? Question words-What do they mean? *British Journal of Learning Disabilities*, (37), 178-185, doi: 10.1111/j.1468-3156.2008.00539.x
- Otto, B. (2008). *Language development in early childhood*. Upper Saddle River, NJ.: Merrill.
- Register, D., Darrow, A., Standley, J., Swedberg, O. (2007). The use of music to enhance reading skills of second grade students and students with reading disabilities. *Journal of Music Therapy*, 44(1), 23-37.
- Taylor, D. B., Ahlgrim-Delzell, L., Flowers, C. (2010). A qualitative study of teacher perceptions on using explicit instruction curriculum to teach early reading skills to students with significant developmental disabilities. *Reading Psychology*, (31), 524-545 doi:10.1080/02702710903256569
- van den Bos, K. P., Nakken, H., Nicolay, P. G., van Houten, E. J. (2007). Adults with mild intellectual disabilities: can their reading comprehension ability be improved? *Journal of Intellectual Disability Research*, 51(11), 835-849, doi: 10.1111/j.1365-2788.2006.00921.x
- Wise, J. C., Sevcik, R. A., Morris, R. D., Lovett, M. W., Wolf, M. (2007). The relationship among receptive and expressive vocabulary, listening comprehension, pre-reading skills,

word identification skills, and reading comprehension by children with reading disabilities. *Journal of Speech, Language, and Hearing Research*, 50(4), 1093-1109.

Appendix ATeacher Interview Questions:

1. How long have you been teaching?
2. What is your educational background? Certification(s)?
3. Can you describe the population of students you are currently working with? What is your title this school year?
4. How would you describe your current literacy instruction?
5. Are there any specific materials or kits you use frequently, or find most useful?
6. What are some challenges you face, working with the students you currently work with?
7. Most often, how do you assess students' comprehension?
8. Are you met with any specific challenges when assessing student comprehension? If so, can you describe some of the challenges and how you work to navigate them?
9. How would you define direct literacy instruction?
10. In comparison, how would you define interactive literacy instruction?
11. Do you feel that your literacy instruction tends to be more interactive or direct?
12. In your opinion, do your students benefit more from one type of instruction over the other? Why?
13. What types of technology do you use during literacy instruction?
14. Do you use any other assistive technology during instruction?