

5-2019

The Effects of Felt Piece Manipulative Integration on Preschoolers' Abilities to Retell Stories

Megan Alexander

Northwestern College - Orange City

Follow this and additional works at: https://nwcommons.nwciowa.edu/education_masters



Part of the [Early Childhood Education Commons](#)

This Article is brought to you for free and open access by the Education at NWCommons. It has been accepted for inclusion in Master's Theses & Capstone Projects by an authorized administrator of NWCommons. For more information, please contact ggrond@nwciowa.edu.

The Effects of Felt Piece Manipulative Integration on Preschoolers' Abilities to Retell Stories

Megan Alexander

Northwestern College

An Action Research Project Presented
in Partial Fulfillment of the Requirements
For the Degree of Master of Education

April 2019

Dr. Sara Waring-Tiedeman

Table of Contents

Abstract	3
Introduction	4
Review of Literature	5
Methods.....	22
Findings.....	24
Discussion	32
Conclusion	36
References.....	38

Abstract

The purpose of this action research project was to determine the effect of felt piece manipulative integration on preschoolers' abilities to retell stories. A preschool class was taught retelling skills and story grammar elements. The class was exposed to a fairy tale five times and then each student was assessed on retelling abilities and the number of story grammar elements recalled without the integration of manipulatives. The class was then exposed five times to another fairy tale by the same author and was assessed on the same skills while having access to felt piece manipulatives that represented the story grammar elements taught, including characters, setting, and the feelings of the characters. Comparisons were made between the number of elements recalled and reported when children were assessed without felt piece manipulatives versus the number recalled and reported with felt piece manipulative integration. Analysis of the data collected suggests that integration of felt piece manipulatives has a positive effect on increasing the number of story grammar elements reported during assessments by preschool students.

The Effects of Felt Piece Manipulative Integration on Preschoolers' Abilities to Retell

This research will look at whether or not felt-piece manipulatives in particular may serve as an effective tool in developing the retelling skills in preschool students. As states have become more standardized in the objectives they require students to meet at each grade level, educators are looking for diverse and meaningful ways to help students meet these demands. Manipulative integration and hands-on learning activities have been developing as crucial elements to student advancement toward mastery of these standards. Schools, administrators, and teachers are pushing to implement these types of learning opportunities in classrooms of all grade-levels across the nation. Currently, much of the research that exists in regard to manipulative integration in schools pertains to manipulative integration in math and is primarily conducted in elementary classrooms. Many findings within this realm of studies do support the use of manipulatives and suggest increased student learning and more comprehensive understanding of classroom content when students experience the learning through the use of manipulatives.

Further research is needed, however, on the specific implications in preschool literacy. Some research supports claims that manipulatives can positively impact students learning, while other research suggests a possibility that such materials can actually be distracting for students as they perform learning tasks (Petersen & McNeil, 2012). This action research project looks to explore whether or not integrating felt-piece manipulatives into preschool students' retelling activities has an impact on the number of story elements they are able to recall during a retelling assessment. Many types of manipulatives exist, but felt-piece manipulatives are affordable and can be easily created and adapted to represent story grammar elements from any text. The researcher seeks to learn whether integrating this particular kind of manipulative into literacy will be an effective teaching strategy in developing retelling skills in preschool students.

The results of such study may have implications in many preschool classrooms and can serve as evidence to support integrating or not integrating felt-piece manipulatives in preschool settings to elicit and develop retelling skills in students. Felt piece manipulatives are reasonable in cost and provide a format in which teachers can easily create and manipulate props to fit the story grammar elements of any book or text. Findings from this research may impact the field of early childhood in offering a specific tool that is readily available and easily accessed and adapted for specific content as an option to be used in helping students develop retelling and comprehension skills. This may offer a way for teachers to integrate manipulatives when their school or district may not be in a financial position to do so otherwise. Because retelling and comprehension skills are linked to future academic success, increasing these skills in preschool students could also potentially impact their academic achievements throughout the rest of their education as well.

Review of the Literature

Literacy skills and reading ability consistently prove to top the list of importance in education systems throughout the world and are credited as markers of and for educational success. These skills provide the foundation from which students begin to learn other subject and content areas and linked as crucial to future success (Burts, Berke, Heroman, Baker, Bickart, Tabors, & Sanders, 2016). An increase in emphasis on teaching and developing the literacy skills and the accountability for making sure students have mastered these proficiencies have become prevalent across all age levels. As the importance of training our students in literacy becomes increasingly evident and our nation continues to invest intensively in the resources and supports needed to develop these skills in all students, the need to implement meaningful and well-designed literacy instruction for our youngest learners has quickly become evident as well.

The preschool years are “critical for literacy development” (Burts et al., 2016, p. 83). In addition to early number skills, phonics and comprehension skills often tap in as some of the very first curricular content taught to children, whether it be by teachers, care providers, or parents. Early oral language skills are foundational for literacy development in young children (Brown et al., 2014). It is crucial to invest time, energy, and effort into teaching students mastery of literacy content, and doing so has lasting impact on continued learning. In fact, the extent to which children understand reading and writing is one of the most effective predictors of whether or not the child will later “function competently in school and in life” (Burts et al., 2016, p. 83). Helping students develop these skills also impacts students’ feelings and attitudes toward school and toward learning in general. When children enjoy being read to and when what they are reading is relevant and exciting to them they become motivated to learn to read which is followed by a motivation to read to learn (Heroman & Jones, 2004).

Retelling

Reading is much more than simply phonetic decoding and calling out words (Burts et al., 2016). It is a process that engages cognitive processing and critical thinking to truly read and furthermore comprehend that which readers are decoding. Learning to interpret the “meaning behind words” (Burts et al., 2016, p. 98) and using context to develop vocabularies is an integral part of developing literacy in the primary grades (Fountas & Pinnell, 2011). Students combine linguistic skills and cognitive skills to see texts as meaningful and to more fully understand the literature (Florida Center for Reading, n.d.). Only through combining these skills does a student truly experience the literature, understanding what the author intended the literature to convey and comprehending what happened in the story.

Interpreting the meaning of words can be described as comprehending the text. Comprehension, “the process of finding meaning” (Burts et al., 2016, p. 98), involves connecting what is heard to prior knowledge and understanding. The foundation provides readers and listeners the ability to understand what is happening in the text they are experiencing. The development of this skill is crucial to students’ future success. “Comprehension of oral language and simple texts is essential to future reading success,” because through comprehension children learn to “process what they hear” and eventually what they read (Burts et al., 2016, p. 98). More advanced reading strategies like making inferences, identifying an author’s point of view, and making predictions all hinge on students’ abilities to first understand what has happened in a given text.

As education has reformed and developed, assessment in narrative retelling has become an integral part of developing literacy in preschool students. In the 1960s, attention was drawn to the belief that educators need to foster preschool students’ experiences in the written word in addition to the work that had already been progressing in developing spoken language experiences (Raban, 2014). Since then, this belief has continued to develop and grow within the field of early childhood education. Engaging children in activities that develop their abilities in retelling the stories experienced can enhance understanding and comprehension of the text. Such activities can compound the positive impact these experiences can have. Integrating retelling into children’s early years increases literate vocabularies and leads to better readers and increased comprehension for children who have more frequently been engaged in literacy activities than for those who have not had as many encounters with literature (Burts et al., 2016).

What is retelling? Early narrative skills including identifying and retelling story grammar components have been shown to be one element of literacy development that is

necessary for later academic success (Brown et al., 2014). Retelling is a skill in which readers or listeners report information they read or heard in a text. Retelling “provides ‘on-task’ practice of a range of literacy skills” including “reading, writing, listening, talking, thinking, interacting, comparing, matching, selecting and organizing information, remembering, comprehending” (Robertson, Dow, & Hainzinger, 2006, p. 149). Narrative retelling evidences skills of recall and organization of linguistic elements and story grammar components (Brown, Garzarek, & Donegan, 2014). The story grammar components taught in retelling often vary in number, detail, and level of explicit exposure by grade and classroom, depending on students’ overall abilities to recall and remember. For instance, story grammar elements expected to be retold in a sixth grade classroom may be greater in number and include elements that require more inference than the fewer, more basic, and primarily concrete elements taught in a preschool classroom. Story grammar components are “sequential parts of a narrative that provide the key features and plot to understand and follow a story” and traditionally include “character, setting, initiating event, internal response, action, consequence, and conclusion” (Brown et al., 2014, p. 155).

Instructional Strategies for Teaching Retelling

Increasing students’ awareness of story elements and their abilities to retell stories often results only from direct and explicit instruction about various literary elements. Providing an organized and “systematic way” for students to monitor their own retelling skills “may support maintenance and increased metacognitive skills” (Brown et al., 2014, p. 155). These methods of instruction can include teaching them about what various story grammar components are, listening to examples of retelling, practicing retelling, and evaluating their own retelling to identify which story grammar components were present and which had been omitted. Many times this explicit instruction occurs in large group settings, but some students benefit from more

individualized instruction. Often times, small group interventions may be beneficial for developing students' comprehension of stories and their abilities to retell (Brown et al., 2014).

Direct instruction of story grammar elements. Crucial to students' ability to retell is their knowledge of what story grammar elements should be included in a retell. Children need to be able to understand what the story grammar elements are prior to being able to identify them in a source of literature. Explicitly teaching these elements, including character, setting, plot, and events, for example, in addition to giving examples and practicing identifying story grammar elements in a text is an integral part in helping students learn to retell narratively. Interventions have been shown to be successful even with students prior to entering kindergarten (Spencer & Slocum, 2010). To supplement this kind of direct instruction, teachers can integrate combinations of cue cards, pictures of events, or other visuals, indicating reminders for students as to what the story grammar elements are.

Direct instruction of retelling. Students may progress in developing literacy skills through direct instruction as to what retelling is and what it looks and sounds like through modeling, practice, and self-reflection (Burts et al., 2016; Brown et al., 2014). Teachers, parents, and other stakeholders can support this growth by integrating picture walks into the introduction of literacy. This includes previewing the pictures in the book and encouraging students to make predictions about what they think might happen throughout the story based on the illustrations and the cover of the book (Burts et al., 2016). To increase understanding, adults should also provide opportunities for discussion about the book before, during, and after reading (Robertson et al., 2006) and encourage students to use specific language and vocabulary from throughout the book. Having these discussions helps students gain insight into what they have understood from the story and what elements of the story they may be left having misunderstandings (Burts et al.,

2016; Hammond & Nessel, 2011). Retelling skills may be further developed through asking students to then take turns retelling different parts of the story, including more details as they are able, recording responses, and having students evaluate the retell they performed, identifying which story grammar elements were accounted for and which were left out. By incorporating a variety of these skills and practices in everyday literature experiences, children's overall understanding of the book deepens. Increasing their engagement with the text and by instigating discussions and conversations about the text, adults can help build students' understanding of the text, which results in enhanced ability to recall and retell details from the text (Burts et al., 2016).

Methods of auditory delivery. Children begin to develop these literacy skills and processes as they engage in literature with an adult reader (Robertson et al., 2006). Shared reading experiences have been shown to be useful in encouraging early literacy skills (Robertson et al., 2006). Methods of auditory delivery also seem to affect preschool students' abilities to retell stories. Retelling skills in students can also be impacted by the method of story delivery. A study by Isbell, Sobol, and Lindauer (2004) suggests a difference in students' abilities to retell stories based on whether they had heard the stories told verbally by a teacher or had the stories read to them out of a book. After hearing the same twenty-four stories, both groups of three to five year old students retold the stories. Analysis of language complexity and story comprehension suggest, "Both storytelling and story reading were found to produce positive gains in oral language" (Isbell, et al., 2004, p. 157). However, only students who heard the stories told demonstrated higher comprehension. Children who have had the stories read to them, on the other hand, demonstrated improved language complexity.

Assessing Retelling

There are countless varieties of assessments related to retelling stories and nonfiction text. Teachers may implement one strategy consistently or employ many strategies in efforts to meet their students' needs. Assessments that measure retelling span across all ages of education even beginning in early childhood classrooms. Two widely used sets of assessment standards are Teaching Strategies GOLD, an observation-based assessment system that offers standards of measurement from birth to third grade (Burts et al., 2016), and the Common CORE State Standards, research and evidence-based standards that outline what students should know at the end of each grade and aim to set consistent learning goals across the United States (About the Standards, n.d.). Each of these sets of assessment standards identify marks of achievement in regard to retelling and serve as resources for teachers in assessing student progress, growth, and mastery.

GOLD. Teaching Strategies GOLD's Objectives for Development and Learning serves as a widely used documentation system for early childhood programs across the United States. This documentation system provides supports for teachers in describing and measuring students' progression along a spectrum of development in 38 objectives. One of these objectives embraces "Comprehend[ing] and respond[ing] to books and other texts" (Burts et al., 2016, p. 98), which includes "retell[ing] stories and recount[ing] details" (p. 102). Teaching Strategies GOLD describes the most basic level of retelling stories in early childhood to be recounting "some events or information from a familiar story or other text with close adult prompting" (Burts et al., 2016, p. 102). As students master this task, the objective advances into "retell[ing] familiar stories and recount[ing] details from a nonfiction text using pictures or props as prompts" and furthermore into "retell[ing] a familiar story and recount[ing] an informational text in proper sequence, including major events and characters as appropriate" (Burts, et al., p. 102).

Continuation along this particular spectrum into primary grades integrates increasingly complex tasks including paraphrasing, summarizing central ideas, and describing the relationship between key points and main ideas.

Common CORE. Retelling is not a skill that disappears after early childhood. The Common Core State Standards also include retelling objectives as markers of students' proficiency and readiness to advance to higher levels. Ranging from kindergarten to twelfth grade, these standards hold students accountable for various skills in retelling which increase their comprehension and retention of literature and nonfiction text. Students will continue to be held accountable for advancing skills as they progress in their educational journey. Mastery of basic skills in early childhood and primary grades increases the likelihood that students will be successful in mastering the more advanced skills outlined by the Common Core (Burts et al., 2016).

Manipulatives

Manipulatives are the “concrete objects that students handle” (Willingham, 2017, p. 25) and have been shown to be effective in enhancing students' learning and their mastery of content, particularly with “unintuitive concepts” (Willingham, 2017, p. 27). There is a huge push in education to offer students the opportunity for hands-on learning, and manipulatives are often used as tools in doing so. They are prevalent in math and science (Bouck & Park, 2018; Uribe-Florez & Wilkins, 2010) and can include a variety of different objects. For example, dice, colored cubes, and shape pieces are commonly found in primary elementary classrooms to aid in teaching early math concepts. In addition to these content areas, manipulatives have also been shown to be effective tools in teaching other academic content as well in addition to physical, emotional, social health, and environmental issues (Synovitz, 1999). Integrating manipulatives

into a variety of educational experiences continues to evidence deepened learning, increased attention, and also enhanced participation in learning and assessment practices. They have even been found effective as communication tools and in eliciting children's talk for research purposes (Epstein, Stevens, McKeever, Baruchel, & Jones, 2008).

Though much research supports the use of manipulatives in the classroom, many factors influence how often manipulatives are used as learning tools and the ways in which they are used. The frequency with which teachers employ the integration of manipulatives has been found to have a particular correlation to grade-level, with elementary school teachers most consistently using this teaching strategy in comparison to middle school teachers and high school teachers (Uribe-Florez, 2010). Additionally, teachers' beliefs and prior experience with manipulatives also seems to influence the frequency with which they are used in the teachers' classrooms (Uribe-Florez, 2010). For instance, teachers that associate manipulative use with creating 'fun' learning experiences utilize manipulatives less frequently than those viewing manipulatives as a way to enhance 'real' math skills (Moyer, 2001). As with any purposeful teaching, teachers need to ensure thoughtful and intentional planning when integrating manipulatives to truly have a positive impact on students' learning.

Manipulatives integration in education. Manipulatives have been shown to be influential in early childhood classrooms as well (Mattoon, Bates, Shifflet, & Latham, 2015). Integrating hands on learning opportunities in which children are able to engage and experience learning in a visual and experiential way allows them to understand and conceptualize abstract content as it does in older grades. Preschool students, who tend to be more easily distracted and whose minds are not as developmentally ready to conceptualize abstract ideas, may need these implementations most. In fact, the National Association for the Education of Young Children

and the National Council of Teachers of Mathematics offer a joint statement requiring a “wide array of materials for young children to explore and manipulate” to support effective teaching and learning (Early childhood mathematics: Promoting good beginnings, 2010, p. 13). Young children are hands-on and experiential learners, absorbing most by exploring and engaging in the world around them. Because children have difficulty understanding abstract concepts, manipulatives can be an effective tool in engaging them in learning experiences and enhancing the depth at which they understand and retain that which they have learned.

Manipulatives integration in literacy. Manipulatives can be meaningfully integrated specifically into literacy and storytelling experiences through dramatics and puppetry, a process in which they are able to use concrete objects to act out real-life experiences or stories from stories and nonfiction literature they have been exposed to (Lepley, 2001). Puppetry, “the act of using an artificial figure representing a human being or an animal, manipulated by hand” (Epstein et al., 2008, p. 49), allows children the freedom of expression through play while promoting social, cognitive, and literacy development, fostering creative thinking, and building self-esteem (Synovitz, 1999). Puppetry can also be an effective tool in developing literacy skills and promoting storytelling abilities (Synovitz, 1999). Manipulatives in literacy allows children to act out familiar stories, enhancing their understanding of the characters, setting, and events of the story, as they become active participants in the story. Young children love to pretend, and engaging them with puppets has been shown to be an effective way of eliciting participation in assessments (Epstein et al., 2008). Teachers can capitalize on students’ engagement in puppetry and use this tool in assessing their abilities to retell stories and identifying which story elements the student remembers and can identify from literature they had previously experienced.

Negative implications of manipulative integrations. While many experts support the use of manipulatives in education, for decades researchers have been warning against putting too much stake in the efficacy of manipulatives (Willingham, 2017). Some research gatherings show manipulatives to have a negative impact on learning or no result at all (Uribe-Florez & Wilkins, 2010), others suggesting that manipulatives may actually increase the levels of distraction children experience in completing a given task (Petersen & McNeil, 2015; Willingham, 2017). While this research does support children's engagement in the task being increased by the integration of manipulatives, it seems they may be more likely to become distracted by playing with or exploring the objects themselves, rather than using the objects to complete the assessment set more effectively. This distraction could be a result of a combination of different elements related to the manipulatives including the perceptual interest levels of the manipulatives and children's foreknowledge and prior exposure to the manipulatives (Petersen & McNeil, 2015). When children's attention is drawn to features of the manipulatives that are "irrelevant to the analogy" the manipulatives are ineffective and actually tend to distract students from the task at hand (Willingham, 2017, p. 28). It is critical to ensure manipulatives have been selected purposefully and with consideration of children's prior exposure and which aspects of the manipulatives will draw attention.

There are other potential threats to the effectiveness as of manipulative integration as well. Another hindrance that may threaten the effectiveness of manipulatives in education is some children's potential to rely on the cautious approach of using manipulatives and not progressing toward abstract understanding and problem solving (Ambrose, 2002). Students may develop a dependency on the manipulatives and may experience difficulty in transferring and applying the knowledge in other situations. However, they would likely demonstrate increased

proficiency in tasks in which they would have access to the manipulatives, the actual mastery of content and ability would not necessarily be achieved. To avoid these challenges and threats to student success, teachers must be incredibly purposeful in the selection of manipulatives and in the ways, they choose to integrate them in learning.

Positive manipulative integration. Several elements are critical to successful use of manipulatives in education. To increase the likelihood of manipulatives having a positive impact on students' understanding and mastery of content, teachers can focus on these factors in integrating manipulatives. First, teacher guidance is critical for the successful implementation of manipulatives (Bouck & Park, 2018; McDonough, 2016; Uribe-Florez & Wilkins, 2010; Willingham, 2017). Teachers must model and demonstrate the appropriate ways to use and care for the manipulatives and must provide explicit explanation of how the use of the manipulatives relates and demonstrates the content being learned. As teachers describe the metacognition and the actions taken during the learning opportunities, students also begin to more deeply understand how the models relate to what is being learned.

Teachers must also be intentional in the manipulatives selected for instructional use. Two factors that have been shown to specifically influence efficacy in manipulative use are the "nature of the manipulatives" and how the teacher "encourages its use" (Willingham, 2017, p. 25). The appearance of a manipulative is important and affects the efficacy of the implementation (Epstein et al., 2008). Aspects of the manipulatives that are unrelated to the content being taught can easily distract students. Manipulatives are most effective in progressing understanding when children's attention is drawn to the relevant features of the manipulatives (Willingham, 2017). Yes, teachers want to select engaging and attention-sustaining manipulatives. Perceptually rich manipulatives can be particularly effective in engaging children

(Petersen & McNeil, 2015) and in highlighting relevant properties. However, such features may also distract from the task at hand if children have already associated the objects with another meaning (Willingham, 2017). For instance, using animal figurines may engage students' attention in participating in an activity, but if the activity is simply counting with one-to-one correspondence, the figurines actually may prove to distract the children from the desired task due to their prior experience with the animals as toys they play with. Children "have no way of knowing which features of the manipulative are important and which are not" (Willingham, 2017), so teachers must ensure that key features are highlighted in manipulative selection. For manipulative integration specific to puppetry, aesthetically pleasing tools that are soft may enhance opportunity for successful intervention, especially in regards to students' self-expression and emotion (Epstein et al., 2008).

Manipulatives will not stand alone in influencing understanding and learning. Teachers must be willing to intervene when children are using concrete manipulatives (McDonough, 2016). While "overly restrictive" instructions in manipulative use risk students simply following directions rather than mastering content (Willingham, 2017), teachers should employ comprehensive good teaching practice to increase student learning. Effective manipulative selection and integration must be supplementary to developmentally appropriate tasks, meaningful questioning, and positive praise. Children should be encouraged not only to show how they solved the problem, but also to explain verbally the thought processes they engaged throughout the problem-solving process. Once the child is able to do this with manipulatives, challenge the student to solve the problem without the manipulatives as well, aiding the child in moving forward in understanding without the need for constant manipulative use. The true value of manipulatives is the enhanced student thinking that is developed through using them and the

“abstractions that can be reached from the interaction with these objects” (Uribe-Florez & Wilkins, 2010, p. 364). By thoughtfully integrating this intentionality in incorporating manipulatives in learning, teachers can increase the likelihood of the manipulatives positively influencing students’ learning.

Retelling by Diverse Learners

Many factors, including disabilities, native languages, learning environments, social influences, and cultural practices, can influence a child’s literacy development (Burts et al., 2016; Brown et al., 2014) and must be considered when implementing direct literacy instruction, including that of narrative retelling. Negative impact on children’s early literacy skills may be affected by “poverty; limited English proficiency; visual, hearing, and language impairments; cognitive deficiencies; and parents who have difficulty reading” (Burts et al., 2016, p. 83). Research shows that children who do not learn the early literacy skills of reading and writing by the end of grade school are “at risk for school failure” (Burts et al., 2016, p. 83). It is critical for educators to understand the negative consequences of potential factors that may play a part in the development of students’ struggles in building literacy skills so that appropriate support may be provided to these students. Integration of manipulatives may have a positive impact in supporting these students in their early literacy learning.

Students from families living in poverty. Oftentimes, early literacy skills are developed through simply being exposed to literature and listening to stories and books read by adults with little explicit teaching (Brown et al., 2014). Some children, however, do not naturally pick up on these skills and require more direct instruction, particularly in the case of children coming from lower income environments. These challenges may be a result of “lack of exposure and quality of language and literacy experiences, cultural differences in language and interaction styles,

parent expectations, and/or limited resources” and are associated with academic difficulties later in education (Brown et al., 2014, p. 154). Additional factors that have been shown to influence literacy development include sociodemographic factors, like “parental education level, family income level, minority group membership” (Brown et al., 2014, p. 154), and homelessness. The difference in experiences had by children from middle-class families versus children from lower socioeconomic status is substantial. Children from middle-class families have typically experienced being read to aloud for around 1,000 hours prior to entering kindergarten, while children from families living in poverty have experienced only 25 hours of being read to aloud (Burts et al., 2016). Children from lower income homes often demonstrate lower literacy abilities than children from middle-class families (Brown et al., 2014), and literacy deficits are often compounded when multiple risk factors are present. This results in a crucial need to implement explicit teaching of narrative skills to students with these experiences and often for more intensive instructional intervention for these students.

Equipping students from families living in poverty with the skills necessary to retell stories is critical. In fact, in a study completed by Fazio, Naremore, and Connell (1996) suggests the best single kindergarten predictor for students’ future academic status in children from families living in poverty who received instructional intervention was story retelling. Visual aids such as felt pieces may be of benefit in designing instruction and intervention for students who experience literacy delays. Because these students often lack the vocabulary necessary to succeed in narrative retelling, pictures and visual supports may aid children from lower income environments may benefit from the integration of visuals into their instruction in narrative retelling. The visual aids may provide the concrete representational support these students need to effectively organize and systemize the information they can recall from stories to enable them

to be more successful in retelling stories. A study published by Brown, Garzarek, and Donegan (2014), findings suggest that integrating age-appropriate visual aids in combination with other intensive intervention strategies can be an effective strategy for increasing success in retelling for students who had been identified as “at-risk for language and literacy disorders” (Brown et al., 2014, p. 161).

English language learners. Generally, the same principles that guide our instructional implementation for native English speakers are also influential for students learning the English language, but often adjustments and additional supports need to be integrated into instructional practice as well (Burts et al., 2016). Students whose native language differs from that which is being utilized in their educational setting often times struggle to retell stories as a result of deficits in the vocabulary and oral fluency necessary to do so successfully. Typically, English language learners (ELLs) respond positively to creative dramatics (Lepley, 2001), developing confidence in their abilities to speak English. Integrating manipulatives or puppetry may be particularly effective in working with ELLs on this skill, because it provides a participation setting in which students may feel more comfortable making mistakes and expressing themselves as they become more familiar with the English language. Additionally, it allows them to identify the characters in the story and act out events of the story visually even if their vocabulary and proficiency in English would not be sufficient to do so.

Children with delayed language skills. Challenges in successfully developing retelling and other literacy skills is not limited to children from families living in poverty and children who are learning the English language. Children may experience challenges in literacy as a result of delayed language, which can stem from a variety of causes such as academic learning disorders, physical disabilities (Kinto, Salameh, & Lohmander, 2015; Nordberg, Sandberg, &

Miniscalco, 2015) or speech and language delays (Robertson et al., 2006). These students, too, can benefit from interventions in teaching narrative retelling. For instance, a child with autism's struggles to retell a story may be a result of inadequate oral language skills as opposed to their inability to recall information about a text (Gabig, 2008). Children with autism, a disability in which a "lack of spoken language" is characteristic and some never develop "functional speech or language" and remain nonverbal (Gabig, 2008, p. 498) may benefit from integrating manipulatives as a tool to convey knowledge about a story visually when their oral language skills may impede them from doing so. A study by Spencer and Slocum (2010) supports this belief and shows strong evidence that interventions including visual reminders had a positive impact on narrative retelling abilities in children with a variety of risk factors and narrative language delays.

Reaching struggling students. As most schools currently practice inclusion, settings in which children with physical and mental disabilities have the right to attend and participate in mainstream classrooms, typically in an environment that is least restrictive to themselves (Synovitz, 1999). This means that teachers' classrooms likely include students with a wide range of abilities, and teachers need to ensure they are meeting the needs of each of these students. Narrative interventions can be effective in having a positive impact on children's narrative retelling skills (Spencer & Slocum, 2010). One type of intervention is manipulative integration in teaching retelling. Manipulatives are consistently credited as useful tools in working with students with disabilities (Bouck & Park, 2018) and may be useful in helping students develop literacy and retelling skills in particular. Especially in working with preschool students, who tend to be more distractible and are more likely to speak unintelligibly or more quietly, visuals such as felt piece manipulatives may be an effective tool in helping develop retelling and literacy

skills, because they offer students a hands-on element that has been shown to increase engagement (Petersen & McNeil, 2015).

Clearly, literacy skills are crucial to academic achievement, and to succeed in developing these skills all students need a “literacy-rich, supportive environment” in which “teachers provide appropriately challenging instruction and numerous opportunities for practicing newly developed skills” (Burts et al., 2016, p. 85). Understanding the needs of diverse students and developing effective and purposeful instructional interventions and meaningful learning activities for not only these students, but also all students, is crucial in building the foundational literacy skills needed to influence future educational success.

Methods

Participants

The participants within this study are four and five year-old preschool students in a public school in Northwest Iowa during the 2018-2019 school year. This preschool setting sees students Monday, Tuesday, Thursday, and Friday each week from 8:15 to 11:15 in the morning. Ability ranges and prior exposure to academic content varies greatly within the classroom, including students who have previously attended one or two years of formal preschool education and students who have had no prior experience in formal education. Of the nineteen students in the class, two have individual education plans with two additional students being monitored as a part of the schools Multi-Tier School Support (MTSS) team for possible future identification. Three students are native Hispanic speakers, and at least five students would qualify for free and reduced lunch. This data is not available for preschool, but five students have older siblings in the school who already qualify.

Data Collection

In the first six weeks of schools, retelling was discussed and taught as an important part of reading and understanding stories on a daily basis. Students listened to whole-group read aloud stories and retelling was modeled with emphasis on characters, setting, feelings, and events. Its importance was described as helping readers understand a story. Each day, a story was read to the students one time after snack time, and story grammar elements were discussed. The specific story grammar elements for each book discussed during this time were characters, setting, feelings, and events. The next day, the same book was read to students; prior to reading, the teacher guided the students in retelling the specific story grammar elements discussed the day before, reminding students of the types of story grammar elements and soliciting students' input as to what those elements were in the story they'd read. Students participated and practiced retelling in various settings including whole group time, center time, and in conversation throughout the day.

For the control group, students were read Mara Alperin's *Goldilocks and the Three Bears* five times throughout a two-week time period. After each of the readings, students took part in a whole-group retell of the text, discussing with particular emphasis characters, setting, events, and feelings of characters in the story. Following the fifth exposure, students were individually asked to "retell the story" with the classroom teacher. The classroom teacher used a recording sheet to record the correct various story grammar elements (characters, setting, feelings, and events) and the total number of any incorrect elements reported by each student.

The same group of students then was read Mara Alperin's *The Three Billy Goats Gruff*, a part of the same fairy tale story pack. After each of the readings, students again practiced retelling with emphasis on the same story elements. Following the fifth exposure, students were

individually asked to retell the story with the same classroom teacher. This time, however, felt piece manipulatives were provided that represented the characters, setting, and feelings of the characters. These pieces included: the three goats, the troll, the bridge, the mountain, the meadow, a scared face, a mad face, a happy face, and a hungry face. Several pieces were included that did not relate to *The Three Billy Goats Gruff* including a gingerbread man and a space ship. The students were able to interact with the manipulatives as they retold the story. The teacher used the same recording form to track the number of correct story grammar elements (characters, setting, feelings, and events) and any incorrect elements retold by each student during the assessment.

The difference between the numbers of correct story elements retold with manipulatives was compared to the numbers of correct story elements retold without manipulatives. The number of correct story elements retold without manipulatives was subtracted from the number of correct story elements retold with manipulatives to find the difference. Similarly, the number of incorrect story elements retold with manipulatives was compared to the number of incorrect story elements retold without manipulatives. The difference was found by subtracting the number incorrect of story elements retold without manipulatives from the number of incorrect story elements retold with manipulatives. The data is shown in Tables 1, 2, 3, and 4.

Findings

Quantitative Data Analysis

Students' scores were recorded in regard to the number of story grammar elements recalled during a retelling assessment given without the provision of manipulatives. Each student was given a letter and his or her scores were recorded in regard to the number of characters, the number of setting elements, the number of feelings, and the number of events the student

recorded. These subparts were added together to find the total number of correct story grammar elements retold correctly. Additionally, the number of incorrect story grammar elements reported during the retelling assessment—if any—was recorded as well. Students' retelling in character traits ranged from zero to three with three students reporting zero characters, seven students retelling one character, seven students reporting two characters, and two students retelling three characters. The number of setting elements retold ranged from zero to two with six students retelling zero setting elements, ten students retelling one setting element, and three students retelling two setting elements. The number of feelings reported by students ranged from zero to two with eight students retelling zero feelings elements, five students retelling one feeling, and six students retelling two feelings elements. Students retold zero to three events with three students retelling zero events, five students retelling one event, five students retelling two events, and six students retelling three events. The total number of correct responses ranged from one to ten with varying numbers of correct responses throughout the class; four students retold only one story element, three students retold three elements, one student retold four elements, three students retold five elements, two students retold six elements, two students retold seven elements, two students retold eight elements, one student retold nine elements, and one student retold a total of ten correct story grammar elements. The number of incorrect story elements retold was also recorded, ranging from zero to two, with six students retelling zero incorrect story grammar elements, eleven students reporting one incorrect story grammar element, and two students including two incorrect story grammar elements.

Table 1

Retelling Assessment Scores without Manipulatives

Student	Characters	Setting	Feelings	Events	Total Correct	Incorrect
----------------	-------------------	----------------	-----------------	---------------	----------------------	------------------

A	2	0	1	2	5	1
B	0	0	0	1	1	0
C	1	1	2	3	7	0
D	1	1	1	2	5	0
E	2	1	0	3	6	0
F	3	2	2	3	10	1
G	2	1	2	3	8	1
H	2	0	1	1	4	2
I	1	1	0	1	3	0
J	1	0	2	2	5	0
K	2	2	1	2	7	0
L	0	1	0	0	1	1
M	3	1	2	3	9	0
N	2	1	2	3	8	0
O	1	0	0	2	3	1
P	1	0	0	0	1	0
Q	1	1	0	1	3	2
R	0	1	0	0	1	1
S	2	2	1	1	6	0

The number of story grammar elements retold by each student when the retelling assessment was administered with the provision of manipulatives. The number of characters, setting elements, feelings, and events were recorded for each student, and those numbers were

added together to get the number of total correct story elements retold. Students' retelling character traits ranged from one to three with five students retelling one character, eight students reporting two characters, and six students retelling three characters. The number of setting elements retold ranged from zero to two with one students retelling zero setting elements, ten students retelling one setting element, and eight students retelling two setting elements. The number of feelings reported by students ranged from zero to two with four students retelling zero feelings elements, five students retelling one feeling, and ten students retelling two feelings elements. Students retold zero to four events with one students retelling zero events, three students retelling one event, five students retelling two events, seven students retelling three events, and three students retelling four events. The total number of correct responses ranged from two to eleven with varying numbers of correct responses throughout the class; two students retold a total of two correct story grammar elements, one student retold three elements, one student retold four elements, two students retold five elements, one students retold six elements, three students retold seven elements, three students retold eight elements, two students retold nine elements, three students retold ten elements, and one student retold a total of eleven correct story grammar elements. The number of incorrect story elements retold was also recorded, ranging from zero to one, with fourteen students retelling zero incorrect story grammar elements and five students reporting one incorrect story grammar element.

Table 2

Retelling Assessment Scores with Manipulatives

Student	Characters	Setting	Feelings	Events	Total Correct	Incorrect
A	2	1	2	3	8	0
B	2	1	1	2	6	0

C	3	2	2	3	10	0
D	1	1	2	4	8	0
E	2	2	1	3	8	0
F	3	2	2	4	11	1
G	3	2	2	4	9	1
H	1	1	2	2	5	1
I	2	1	0	2	3	0
J	1	0	0	1	2	0
K	2	2	2	3	9	1
L	2	1	0	1	4	0
M	3	2	2	3	10	0
N	3	2	2	3	10	0
O	2	1	1	3	7	0
P	3	1	2	1	7	0
Q	1	1	1	2	5	0
R	1	1	0	0	2	1
S	2	2	1	2	7	0

The researcher subtracted the number of story grammar elements correctly retold without manipulatives from the number correctly retold with manipulatives to find the difference between the total numbers of correct story grammar elements between the two assessments. Student J retold three fewer story grammar elements ($N=2$) when provided manipulatives in comparison to the five elements retold without manipulatives. Student I retold the same number

of correct story grammar elements during assessments regardless of whether or not manipulatives were provided. The remaining seventeen students retold more story grammar elements with manipulatives than they did without. The increase ranged from one to six more elements with six students increasing the number of story grammar elements retold by one, four students increasing the number of elements retold by two, four students increasing by three elements, one student increasing by four elements, one student increasing by five elements, and one student increasing by six correctly retold story grammar elements.

Table 3

Comparison Between Correct Retelling Assessment Scores

Student	Total Number of Correct Story Grammar Elements Retold Without Manipulatives	Total Number of Correct Story Grammar Elements Retold With Manipulatives	Difference Between the Total Number of Correct Story Grammar Elements Retold With and Without Manipulatives
A	5	8	+3
B	1	6	+5
C	7	10	+3
D	5	8	+3
E	6	8	+2
F	10	11	+1
G	8	9	+1
H	4	5	+1

I	3	3	0
J	5	2	-3
K	7	9	+2
L	1	4	+3
M	9	10	+1
N	8	10	+2
O	3	7	+4
P	1	7	+6
Q	3	5	+2
R	1	2	+1
S	6	7	+1

The researcher also considered the number of incorrect story grammar elements retold during the assessments. The researcher subtracted the number of incorrect story grammar elements retold without manipulatives from the number of incorrect story grammar elements retold when manipulatives were provided to find the difference between the total number of incorrect story grammar elements retold between the two assessments. The difference ranged from an increased number of incorrectly retold elements by one to a decreased number of incorrectly retold elements by two. Student K increased in the number of story grammar elements when manipulatives were made available from zero to one. Three students who reported an incorrect story grammar element without manipulatives still reported one incorrect element with manipulatives, showing no change. Thirteen students who reported no incorrect story grammar elements without manipulatives also reported no incorrect story grammar

elements when provided manipulatives. Four students reported one less incorrect manipulative when assessed with manipulatives than when assessed without. Student Q reported two less incorrect elements when provided manipulatives than when not provided the manipulatives.

Table 4

Comparison Between Incorrect Retelling Scores

Student	Total Number of Incorrect Story Grammar Elements Retold Without Manipulatives	Total Number of Incorrect Story Grammar Elements Retold With Manipulatives	Difference Between the Total Number of Incorrect Story Grammar Elements Retold With and Without Manipulatives
A	1	0	-1
B	0	0	0
C	0	0	0
D	0	0	0
E	0	0	0
F	1	1	0
G	1	1	0
H	2	1	-1
I	0	0	0
J	0	0	0
K	0	1	+1
L	1	0	-1

M	0	0	0
N	0	0	0
O	1	0	-1
P	0	0	0
Q	2	0	-2
R	1	1	0
S	0	0	0

Discussion

Summary of Major Findings

The findings of this study indicate that felt piece manipulatives have a positive impact on preschool students' abilities to retell, specifically in increasing the number of story grammar elements a student reports during a retelling assessment. As summarized in Table 3, the data shows that when felt piece manipulatives are integrated into retelling assessments, students typically recalled and retold more story grammar elements than they did when felt piece manipulatives were not integrated into a retelling assessment. With the exception of two students, the entire class consistently retold a higher number of correct story grammar elements when given manipulatives during the retelling assessment than they did without manipulatives. These findings are consistent with findings in studies by the Lepley (2001) study and the study by Mattoon, Bates, Shifflet, and Latham (2015) which support that students' understanding and retention may be positively impacted by the integration of manipulatives. This research supports the idea that felt piece manipulatives may be one specific type of manipulative that can have a positive impact in the learning of preschool students, particularly in retelling literacy.

Even though manipulatives unrelated to the story were made available, the number of correct story grammar elements reported typically increased, and the number of incorrect story grammar elements typically decreased or stayed the same. As shown in Table 4, the data collected in this study also shows that most students who had reported incorrect story grammar elements when assessed without manipulatives reported fewer incorrect story grammar elements when felt piece manipulatives were integrated. Only one student increased in the number of incorrect story grammar elements told when manipulatives were available during retelling. Several students decreased in the number of story grammar elements retold, and many reported the same number of incorrect story grammar elements regardless of whether or not manipulatives were available during the retelling assessment. This suggests that students' abilities to retell were more likely to decrease the number of incorrect responses than to increase the number of incorrect responses. The presence of manipulatives that did not pertain to the story but the lack of students' incorrect inclusion of those manipulatives in retelling also suggests that students are able to distinguish between manipulatives that represent story grammar elements for a particular story and random manipulatives that were not story-related. Students seem to have been able to overcome any distraction the manipulatives may have added and to have attended to and engaged in the assessment task at home. With only one student retelling more and several students continuing to report the same number of incorrect story grammar elements when manipulatives were present in comparison to when they were not, the results from this study are not entirely clear in regard to the effect manipulatives have on the number of incorrect story grammar elements retold by students. Overall, however, the effects do seem to be more positive than negative in that there were significantly more students who retold a lower number of incorrect

story grammar elements than students who retold a higher number of incorrect story grammar elements.

Limitations of the Study

Several limitations of this study may result from only having completed the study in one classroom. Results may be more effective if widespread throughout multiple rooms. The relatively small sample size of just nineteen students over the course of a few months does not necessarily reflect the same findings that would be had over a longer period of time including students from several classrooms being taught by a variety of teachers. For example, if one teacher is teaching more explicitly retelling skills, it may also have an impact on students' abilities to retell. Another limitation resulting from only assessing students in one classroom is the students' increased abilities to retell stories through practice. The students may have improved in retelling skills having had additional exposure and practice, so influence from increased practice retelling in general may have impacted scores in addition to the influence of manipulative inclusion.

Additionally, when in the school year the research takes place may affect findings in that completing this study at the beginning of the year may yield different results than it would at the end of the year. Students may be more or less developed in classroom, academic, language, and social development, impacting their abilities. Additionally, outside events surrounding the assessment dates may have affected the results as well. Weather-related school cancelations or other changes in the regular schedule may influence students' focus and their general attention and engagement in the story readings and/or in the assessment activity. The same might be said of the time of day during which the assessment takes place. Students eager to return to choice time or new materials elsewhere in the classroom may have been less motivated to be engaged in the retelling activity, impacting their scores.

Another element that factors into the results of this study is students' other educational needs. This may include needs for special education and adaptations or speech and language development needs. Students receiving special education services through a variety of interventions may be more or less likely to successfully retell stories, regardless of the supplements and interventions put into place. Similarly, students' abilities in language production may influence their abilities to retell certain or all elements of a story. These elements of diversity could leave room for discrepancies between the data gathered and the impact felt-piece manipulatives independently have on students' abilities to retell.

Finally, students' experiences outside of school, including ethnic and socio-economic status, may impact findings in that students may be coming into class on any given day with a variety of experiences that would influence their performance. This may also include traumatic experiences at home or highly positive experiences. All of these students may be more or less susceptible to influence by manipulative inclusion, depending on the framework with which they view literacy and the previous experiences they've had engaging with it. Some parents may be working with their students on retelling strategies at home while others may not be, which would also influence students' performances. Students also just have very different levels of exposure to literature outside of school, which would likely impact their abilities to comprehend and retell stories in general.

Further Study

In the future, it would be meaningful to continue or expand this study in other classrooms and with more students over a longer period. Having data on more students would increase the reliability of the data. Additionally, assessing the same group of students on their abilities to retell multiple times with multiple different books would increase the reliability of the data as

well. Being able to assess abilities to retell with manipulatives at various points in the year and compare the data to data gathered assessing their abilities to retell without manipulatives at various points in the year would decrease the limitations resulting from the potential development in their abilities to retell from additional practice.

Conclusion

Based on the results from this study, data collected suggests that felt piece manipulatives may be an effective tool in increasing the number of story grammar elements preschool students are able to retell. As shown in Table 1, the number of story grammar elements recalled and retold by preschool students typically increased when felt piece manipulatives were integrated into their retelling assessment times in comparison to times when felt piece manipulatives were not available. Though some research may suggest that some manipulatives may lead to distraction from the task (Petersen & McNeil, 2012), much previous research supports the use of manipulatives. Existing research highlights manipulatives of varying kinds as having been shown to be a successful tool in educating children of all ages, particularly in math and science (Bouck & Park, 2018; Uribe-Florez & Wilkins, 2010), and this study suggests similar success to be had in literacy at the preschool level.

As this study suggests, felt piece manipulatives may be a particularly useful tool in supporting preschoolers' abilities to retell and are desirable and accessible. These manipulatives can be easily created and adapted to support any book. Because felt is a material that can be cut, drawn on, and glued together, it lends itself to being adaptable to represent the characters, setting elements, feelings, and events from any book an educator chooses. Felt may also serve as an effective resource in supporting preschool students' efforts to retell in that it is an affordable resource that is typically available for purchase at local stores. Often times, teachers are limited

in the funds available to them for purchasing classroom materials. Because preschool classrooms experience a wide variety of literature throughout any year, purchasing and providing manipulatives for every book would be very expensive and an unlikely occurrence; however, felt offers an affordable resource in doing so. Finally, felt piece manipulatives are age appropriate and easily manipulated by young learners, which promotes engagement and attention to the task at hand. Because of these characteristics of felt piece manipulatives, the results of this study are important and applicable in many preschool and early childhood settings suggesting this tool as effective in increasing preschool students' success in retelling stories.

The importance of these findings may be applied to many preschools and early childhood facilities. Some educators are hesitant to integrate manipulatives in fear of distracting students from the tasks at hand or in doubt of the efficacy. However, as early childhood teachers seek ways to increase students' competencies in literacy skills and retelling, this study may offer some support. Findings from this study suggest teachers should embrace felt-piece manipulatives as a tool in developing their students' learning in these areas. This study may alleviate any hesitation and offer support for teachers to move forward in integrating this kind of manipulative into retelling activities in their classrooms.

References

- About the standards. (n.d.). Retrieved February 20, 2019, from <http://www.corestandards.org/about-the-standards/>
- Ambrose, R.C. (2002). Are we overemphasizing manipulatives in primary grades to the detriment of the girls? *Teaching Children Mathematics*, 9(1), 16-21.
- Brown, J. A., Garzarek, J. E., & Donegan, K. L. (2014). Effects of a narrative intervention on story retelling in at-risk young children. *Topics in Early Childhood Special Education*, 34(3), 154–164. <https://doi.org/10.1177/0271121414536447>
- Burts, D., Berke, K., Heroman, C., Baker, H., Bickart, T., Tabors, P., & Sanders, S. (2016). *Teaching strategies GOLD objectives for development & learning birth through third grade*. Bethesda, MD: Teaching Strategies.
- Early childhood mathematics: promoting good beginnings. (2010). Retrieved February 20, 2019, from <https://www.naeyc.org/sites/default/files/globally-shared/downloads/PDFs/resources/position-statements/psmath.pdf>
- Epstein, I., Stevens, B., McKeever, P., Baruchel, S., & Jones, H. (2008). Using puppetry to elicit children's talk for research. *Nursing Inquiry*, 15(1), 49-56. doi:10.1111/j.1440-1800.2008.00395.x
- Fazio, B. B., Naremore, R. C., & Connell, P. J. (1996). Tracking children from poverty at risk for specific language impairments: A 3-year longitudinal study. *Journal of Speech and Hearing Research*, 39(3), 611-624. Retrieved February 9, 2019, from <https://www.ncbi.nlm.nih.gov/pubmed/8783139>.
- Fountas, I. C., & Pinnell, G. S. (2001). *Literacy beginnings: A prekindergarten handbook*. Portsmouth, NH: Heinemann.

- Gabig C. S. (2008). Verbal working memory and story retelling in school-age children with autism. *Language, Speech & Hearing Services in Schools*, 39(4), 498–511. Retrieved from <http://ezproxy.nwciowa.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=105700938&site=ehost-live&scope=site>
- Guo, Ying (2008). The role of vocabulary knowledge, syntactic awareness and metacognitive awareness in reading comprehension of adult English language learners (Doctoral dissertation). Retrieved from https://www.researchgate.net/publication/254671181_The_Role_of_Vocabulary_Knowledge_Syntactic_Awareness_and_Metacognitive_Awareness_in_Reading_Comprehension_of_Adult_English_Language_Learners
- Hammond, W. D., & Nessel, D. D. (2011). *The comprehension experience: Engaging readers through effective inquiry and discussion*. Portsmouth, NH: Heinemann.
- Heroman, C., & Jones, C. (2004). *Literacy: The creative curriculum approach*. Washington, DC: Teaching Strategies.
- Isbell, R., Sobol, J., Lindauer, L., & Lowrance, A. (2004). The effects of storytelling and story reading on the oral language complexity and story comprehension of young children. *Early Childhood Education Journal*, 32(3), 157-163.
doi:<http://dx.doi.org.ezproxy.nwciowa.edu/10.1023/B:ECEJ.0000048967.94189.a3>
- Klintö, K., Salameh, E. K., & Lohmander, A. (2015). Verbal competence in narrative retelling in 5-year-olds with unilateral cleft lip and palate. *International Journal of Language & Communication Disorders*, 50(1), 119–128. <https://doi-org.ezproxy.nwciowa.edu/10.1111/1460-6984.12127>

- Lepley, A. N. (2001, June). How puppetry helps the oral language development of language minority kindergartners (Doctoral dissertation). Retrieved May 26, 2018, from <https://gse.gmu.edu/assets/docs/lmtip/vol1/A.Lepley.pdf>
- Mattoon, C., Bates, A., Shifflet, R., Latham, N., & Ennis, S. (2015). Examining computational skills in prekindergartners: the effects of traditional and digital manipulatives in a prekindergarten classroom. *Early Childhood Research & Practice, 17*(1). Retrieved from <http://link.galegroup.com.ezproxy.nwciowa.edu/apps/doc/A429735029/AONE?u=nwcollege&sid=AONE&xid=33775084>
- McDonough, A. (2016). Good concrete activity is good mental activity. *Australian Primary Mathematics Classroom, 21*(1), 3-7. Retrieved February 07, 2019, from <https://eric.ed.gov/?id=EJ1096473>.
- Moyer, P. (2001). Are we having fun yet? How teachers use manipulatives to teach mathematics. *Educational Studies in Mathematics, 47*, 175-197.
- Nordberg, A., Dahlgren Sandberg, A., & Miniscalco, C. (2015). Story retelling and language ability in school-aged children with cerebral palsy and speech impairment. *International Journal of Language & Communication Disorders, 50*(6), 801-813. doi:10.1111/1460-6984.12177
- Petersen, L. A., & McNeil, N. M. (2012). Effects of perceptually rich manipulatives on preschoolers counting performance: Established knowledge counts. *Child Development, 84*(3), 1020-1033. doi:10.1111/cdev.12028
- Robertson, L., Dow, G. A., & Hainzinger, S. L. (2006). Story retelling patterns among children with and without hearing loss: Effects of repeated practice and parent-child attunement. *The Volta Review, 106*(2), 147-170. Retrieved February 9, 2019, from

<http://search.ebscohost.com/login.aspx?direct=true&db=pbh&AN=24039899&site=ehost-live>

Spencer, T., & Slocum, T. (2010). The effect of a narrative intervention on story retelling and personal story generation skills of preschoolers with risk factors and narrative language delays. *Journal of Early Intervention, 32*(3), 178-199.

Synovitz, L. B. (1999). Using puppetry in a coordinated school health program. *Journal of School Health, 69*(4), 145-147. doi:10.1111/j.1746-1561.1999.tb04172.x

Uribe-Flórez, L., & Wilkins, J. (2010). Elementary school teachers' manipulative use. *School Science and Mathematics, 110*(7), 363-371. doi:10.1111/j.1949-8594.2010.00046.x

Willingham, D. T. (2017). Do manipulatives help students learn? *American Educator, 25*-30.

Retrieved February 07, 2019, from

https://www.aft.org/sites/default/files/periodicals/ae_fall2017_willingham.pdf.