

The Montessori Method's Use of Seguin's Three-Period Lesson  
and Its Impact on the Book Choices and Word Learning  
of Students who are Deaf or Hard of Hearing

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Submitted in partial fulfillment of the  
Requirements for the degree  
of Doctor of Philosophy  
in the Graduate School of Arts and Sciences  
Columbia University

2011

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## ABSTRACT

### THE MONTESSORI METHOD'S USE OF SEGUIN'S THREE-PERIOD LESSON AND ITS IMPACT ON THE BOOK CHOICES AND WORD LEARNING OF STUDENTS WHO ARE DEAF OR HARD OF HEARING

Rebecca L. W. Jackson

It has been well established in the literature that the acquisition of literacy presents a significant challenge for most students who are deaf or hard of hearing (Allen, 1986; Babbini & Quigley, 1970; Holt, 1993; Lane & Baker, 1974; Marschark, Lang, & Albertini, 2002; Moog & Geers, 1985; Traxler, 2000; Trybus & Karchmer, 1977). Vocabulary, which has been identified as one of the critical skills necessary for reading (NRP, 2000), is an area of language acquisition in which students with hearing loss demonstrate particular weakness (Davey & King, 1990; Gilbertson & Kamhi, 1995; LaSasso & Davey, 1987; Paul & Gustafson, 1991; Paul & O'Rourke, 1988). The Montessori Method uses Seguin's three-period lesson as a way to introduce new words to students. The individualization provided by the three-period lesson, as well as the simplicity of language and lack of feedback involved all hold potential benefit for students who are deaf or hard of hearing. While little research has been conducted on the book choices of students, King and Quigley (1985) demonstrated that text difficulty is less important when students have a high level of interest in a book. In theory, increasing student interest in a book by using it in book share sessions and teaching some of the unknown words may make that book more accessible to students.

The current study examined the impact of book share sessions, as well as two

different types of vocabulary instruction on the book choices and word learning of students. Six students from a first-grade classroom in a school serving students who are deaf participated in this study. A mixed-model design with alternating treatments employing the framework of qualitative analyses and single-subject design was used. The dependent variables were book choice and long-term retention of vocabulary items. The independent variable was the type of vocabulary instruction.

While the data showed no impact of any intervention on participants' book choices, five of six participants retained more words taught to them using the Montessori Method than those taught to them using traditional direct instruction. The study also demonstrated the efficiency of the Montessori Method in teaching vocabulary as compared with direct instruction that included verbal feedback and tangible reinforcement.

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## ACKNOWLEDGEMENTS

I would like to dedicate this dissertation to the memory of my Mother, Nancy Langley Wilson, who was also a teacher.

I owe my deepest gratitude to many who have helped me along the way. None of this would have been possible without the boundless support and encouragement of my remarkable husband, Todd Jackson. My father, Shelby Wilson, passed on to me his father's passion for learning. He also served as my editor, patiently checking over countless drafts. Doris and Ralph Langley, my grandparents, have provided me with constant love and support throughout my life.

My mentor and advisor, Dr. Robert Kretschmer, skillfully guided me through the process of becoming a researcher. Thank you, Dr. Kretschmer for all of your wisdom and support.

I would also like to thank Dr. Linda Hickson, Dr. Hsu-Min Chiang, Dr. Peter Gordon, and Dr. Honor O'Malley.

I owe many thanks to the students and teacher who participated in this study. Their flexibility and enthusiasm made data collection a wonderful experience. Thank you also, to the school faculty and staff who helped along the way.

## **Chapter I**

### **Introduction**

#### **Statement of the Problem**

The acquisition of language has been, and remains, the greatest challenge within the field of Deaf Education. Students with hearing loss, on average, leave high school with a reading level of fourth grade (Traxler, 2000). One area in which students who are deaf or hard of hearing have particular difficulty is vocabulary acquisition (Davey & King, 1990; LaSasso & Davey, 1987; Paul & Gustafson, 1991; Paul & O'Rourke, 1988). When compared with their hearing peers, students with hearing loss exhibit significant deficiencies in vocabulary (Breslaw, Griffiths, Wood, & Howarth, 1981). While vocabulary has obvious implications for literacy development, its effects reach beyond reading and language. Hart and Risley (1995) cited vocabulary as the single best predictor of overall academic success.

#### **The Montessori Method**

Maria Montessori was the first woman to become a physician in Italy (Standing, 1957). While working as a physician in asylums for 'defective' children, she became interested in the development and education of children (Mooney, 2000). She used her training as a physician to develop an approach to education that was based on clinical observation and inquiry (Montessori, 1964). Drawing on her clinical/scientific background, Montessori believed that a teacher should also act as a researcher by continually utilizing methodical observation to tailor the education of individual students

(Montessori, 1992).

The Montessori Method is an approach to education that is based on a philosophy of child development. A day in a Montessori classroom consists of large blocks of open-ended time during which individual students will be engaged in activities they have chosen, either independently or with the guidance of a teacher (Lillard, 2007). In order to make these activities beneficial for the students, one of the fundamental components of a Montessori classroom is a carefully prepared environment (Mooney, 2000). Montessori teachers work to ensure that all materials available to students are attractive, in good working order, and are developmentally appropriate (Lillard, 1972). At the same time, educational materials are flexible in that they may be used in various ways to meet the individual needs of each of the students in the classroom (Barron, 2008). In addition, most materials in a Montessori classroom are designed to allow students to interact with the materials without the assistance of a teacher (Montessori, 1967a).

The Montessori approach to education is also based on the belief in children's innate curiosity and desire to learn (Lillard, 1972). Using this as a foundation, the Montessori approach uses a child-centered approach in which even very young children are encouraged not only to choose their activities independently, but also to be active participants in the care and maintenance of themselves and their environment (Mooney, 2000). The goal of this is to allow a child's curiosity to guide his or her own learning while also instilling a sense of competence and independence.

Although her influence waned in the mid-twentieth century, the Montessori Method has enjoyed a resurgence in the United States in recent decades (Whitescarver & Cossentino, 2008). Among the more recent developments within the field of Montessori

Education is the increase in the number of public Montessori schools (Chattin-McNichols, 1990; 1992), as well as the use of the Montessori Method to assist in therapy for patients with Alzheimer's and other types of dementia (Boyle, Mahendra, Hopper, Bayles, Azuma, Cleary, & Kim, 2006; Camp, 2001). In addition, the Montessori Method has been explored as a way to meet the needs of students with a variety of special learning needs (Gitter, 1967; Orem, 1969; Orem & Coburn, 1978; Pickering, 1992; Pickering, 2004a; Pickering, 2004b).

The potential of the Montessori philosophy and method for students with hearing loss has not been overlooked. Currently, at least four schools within the U.S. that provide services for children with hearing loss utilize at least some components of the Montessori Method. These include Blossom Montessori School for the Deaf in Clearwater, Florida, The Alexander Graham Bell Montessori School in Wheeling, Illinois, The St. Rita School for the Deaf in Cincinnati, Ohio, and the preschool and elementary program at the Katzenbach School for the Deaf in Trenton, New Jersey.

Despite the recent increase of interest in, and use of, the Montessori Method, there remains very little empirical evidence to support it. "Ironically, the first educational philosophy to strive for a unified scientific approach to the child, an approach that broke ground championing the importance of observation, has failed miserably to mount a credible research base" (Schapiro, 1990, p.1). While recent research has shown the beneficial effects of the Montessori Method on student outcomes (Chattin-McNichols, 1981; Lillard & Else-Quest, 2006; McKenzie, 1990), very little time has been spent on bringing to light what makes the method effective. Chattin-McNichols (1990) discussed one of the challenges in building an empirical foundation for the Montessori Method by

pointing out the lack of researchers who are familiar enough with the Montessori Method to conduct research.

In any discussion of the Montessori Method, it is important to note two things. The first is the fact that the Montessori name is not legally protected in any way. This lack of protection means that the term Montessori may be applied by anyone to any type of school or teaching without any oversight or prior approval. This often results in some confusion over what the Montessori Method is, as it is may have been encountered in confusing or contrasting forms.

The second important issue to clarify is that within the field of accrediting Montessori entities, there exist two organizations. “There are two main interpretations of the Montessori Philosophy. AMI and AMS. Both interpretations are well thought out and valid, although they differ strongly on certain points.” (MontessoriAnswers.com, para. 1)” Association Montessori Internationale (AMI) was founded in Amsterdam, The Netherlands by Dr. Maria Montessori in 1929, along with her son Mario (Association Montessori Internationale, 2011). The American Montessori Society (AMS) was founded in 1960 by Nancy McCormick Rambusch, who was an AMI certified teacher (American Montessori Society, 2011). Both AMI and AMS offer certification programs for teachers and accreditation for schools. The most significant difference in the two organizations and the schools and teachers associated with them is the level of adherence to the original methods developed by Dr. Montessori. The following information, from [www.MontessoriAnswers.com](http://www.MontessoriAnswers.com) (2011), illustrates this difference:

In AMI schools, Montessori philosophy and curriculum are implemented in a way that is consistent with the original

approach of Maria Montessori. The Montessori materials are used precisely in the manner used by Dr. Montessori without deviation or extensions; preserving what proponents of this interpretation believe is the purity of the method. In AMS schools, teachers continue the methods developed by Dr. Montessori while bringing in outside resources, materials, and ideas to extend or supplement the Montessori curriculum. (para. 2 & 3)

Nancy McCormick Rambusch was appointed by Mario Montessori to be the U. S. representative to the AMI (Whitescarver & Cossentino, 2008). When Ms. Rambusch made the decision to establish the American Montessori Society, she felt that there were certain aspects of the Montessori Method that required modification and adjustment in order to accommodate American culture (American Montessori Society, 2011). According to The American Montessori Society (2011), “Mario Montessori disagreed with these changes, and in 1963, AMI and AMS parted ways. The two organizations have since reconciled their differences, and now enjoy a collegial relationship of mutual support and respect” (para. 10). In an article detailing the ‘Americanization’ of the Montessori movement, Whitescarver and Cossentino (2008) sum up the history of divergence between the two organizations by stating, “AMI and AMS share more in common with one another than either does with mainstream educational culture.” (p. 2589)

For the purposes of this study, it is important to note that the researcher is certified by the American Montessori Society and taught in an AMS accredited school.



Therefore, the interpretation of the Montessori Method used to develop and implement this study reflects some of the modifications the AMS has made to the original philosophy of Maria Montessori. For example, one component of this study is the shared reading of storybooks by the teacher to a group of students. In AMI accredited schools, it would be extremely rare to see, if at all, this type of whole-group activity. While AMS accredited schools do tend to have large blocks of time set aside for students to work independently, one or two small-group or whole-group activities, such as shared reading, are not uncommon during a school day. Another difference between the two views of the Montessori Method that may be evident in this study is the level of structure used during the three-period lesson. As taught in an AMI classroom, the three-period lesson tends to follow a strict script, while a three-period lesson in an AMS classroom uses more flexibility in the language used. In keeping with AMI's adherence to the original methods of Dr. Montessori, a three-period lesson presented by an AMI certified teacher would likely follow the script as written by Dr. Montessori herself. In *Discovery of the Child* (1967b) she used the example of introducing the concepts of 'rough' and 'smooth' through 'the three-staged lesson', as she called it.

First Stage: She will say: "It is smooth," "It is rough." She repeats the word many times over (p. 156). Second Stage: She will repeat over and over again the same question: "Which one is *smooth*?" "Which one is *rough*?" (p.157). Third Stage: The teacher asks the child: "What is this?" (p.158).

While the AMS interpretation of the three-period lesson tends to follow the

format prescribed by Dr. Montessori, the language used is slightly more diverse. The following is an excerpt from an AMS teacher certification program course reader (West Side Montessori School, 2008):

The First Period: Associate the object of the sensory impression with its name. This is generally in a simple sentence format. For example, in presenting the solid geometric shapes you might say, “This is a sphere.” or “This is a cube.” The Second Period: Reinforce the child’s association of the object or sensory impression with its name through simple tasks that require the child to demonstrate his/her recognition. For example, “Point to the cube. Now point to the sphere. Place the sphere on the table. Go to the basket and bring back the cube.” The Third Period: This is the test in which the child demonstrates the vocabulary. Point to the object of picture of the object and ask the child, “What is this?” or “What shape is this?” or “What color is this?” (What is the Three-Period Lesson?, para. 3-5).

While the two variations of the three-period lesson have much in common, the greatest difference comes in the diversity of prompts used by the teacher during the second period. The three-period lesson, as discussed and used in this study, will be the AMS interpretation.

**Critical or sensitive periods.** As she explained in *The Absorbent Mind* (1967a),

Montessori believed that children are able to absorb knowledge without effort. Although the idea of absorbing knowledge is antiquated, she also discussed the concept of sensitive periods. Montessori felt that when children are experiencing a sensitive period for learning in a certain area they will learn more readily during that sensitive period than before or after (Curry, 1990). This notion is reflective of the critical period hypothesis that suggests that there are optimal biological time frames for the emergence of language and other areas of development (Colombo, 1982). Although Montessori has not been given credit for developing the critical period hypothesis, her work and thinking are most certainly consistent with that approach, and her notion of sensitive periods later served as the foundation for Piaget's developmental stages (Kramer, 1988). This, according to MacWhinney (2002), was the first fully articulated *emergentist* view of development.

Montessori (1967a) pointed to the ease with which children seem to acquire their natural spoken language as support for sensitive periods. This has been noted and reiterated over and over again by a myriad of theoretical linguists and developmental psycholinguists. Montessori, like many of her predecessors and successors, believed that a child's sensitive period for language begins at birth and continues until the child is approximately six years old (Montessori, 1967a). This 'window' for language learning has been one of the central issues addressed in contemporary developmental psycholinguistics, particularly within biological (e.g. Lennenberg, 1967; Newport 1990; Pinker 2007) and emergentist orientations (Bowerman, 2009; MacWhinney, 2002). *Emergentism* is a theoretical position recognizing aspects of the biological basis of language development, but also emphasizing the complex interaction between the physical and neurological make up of the human organism, the individual's general

cognitive processes and the social world in which they exist (MacWhinney 2002).

Montessori's observation that children's language learning ability seems to decline after the sixth year has generally been accepted (Newport, 1990), yet issues surrounding the notion of critical periods are still being debated and contested. The issues have less to do with the existence of some general time frame in which children typically learn language, and more to do with the concept of these time frames as fixed, rather rigid and, more importantly, the mechanisms that account for this window of opportunity and the actual processes used to acquire or learn language within these critical periods. Some researchers (e.g. Snow, 1977; Cazden, 1972) are less supportive of this approach, seeing it as too rigid and biologically oriented while ignoring the contributions of nurture. Some have suggested that there may even be multiple critical periods, depending upon the language component being acquired (MacWhinney, 2002). Others prefer to think about optimal periods of acquisition rather than critical periods, which is far more consistent with the views of Montessori. Indeed, Locke (1995) argued that from an evolutionary linguistics perspective, we should think about periods of sensitivity rather than critical periods. It does seem to be the case that the majority of the structural components of language, (e.g. phonology, morphology and syntax), but not semantics or the lexicon, and the pragmatic use of language are acquired or developed before the age of six. Yet it has been noted that even certain aspects of the structural aspects of the language are not fully developed until a child reaches adolescence (Chomsky, 1975; Kretschmer, 1977; Newport, 1990) and possibly beyond.

Montessori asserted that during early childhood, children do not require someone to teach them how to speak, but rather they "absorb" the ability to speak from their

environment (Montessori, 1967a). This position is not unlike that of Chomsky (2009), Pinker (2007) and some emergentists who stress that the emphasis is on language acquisition rather than language learning. Chomsky makes a distinction between learning a language and acquiring a language, the latter of which he proposes is more accurate. For Chomsky, the child is biologically equipped to learn any language since it seems to be the case that all known languages hold certain properties in common. These are considered linguistic universals that form a type of tacit knowledge of language, allowing the child to learn any language to which he or she is exposed. The task for the child, according to Chomsky (2009), is to discover how these linguistic universals play themselves out in the particular language encountered. Furthermore, he suggests that this can be accomplished with relatively minimal language input, though much greater than that provided to Victor, the Wild Boy of Aveyron (Itard, 1962) or Genie, a modern day wild child (Curtiss, 1977). While disagreeing with Chomsky in terms of the existence of a specific Learning Acquisition Device (LAD), most emergentists, like Bowerman (2009), and MacWhinney (2002) accept the notion of language being acquired rather than learned as some form of tacit knowledge.

Montessori did not restrict her notion of sensitive periods to the acquisition of language, but applied it to other domains as well, e.g. curiosity, engagement in task completion, more complex thinking, and such “skills” as reading and writing (Lillard, 1972). Montessori believed that teaching a child a skill such as reading or writing requires some form of direct instruction after the sensitive period for language has passed and is, in effect, considered a form of remediation (Pickering, 2004a). Many current theoreticians and researchers in reading and writing would likely disagree that instruction

in reading and writing, in and of itself, is fundamentally remedial in nature. They would, however, agree that reading and writing to at least some degree are overlaid functions, and that in early childhood, children are drawn to print and typically seem to acquire these skills with ease, thus showing a certain “sensitivity” to the act of reading and writing (Berringer, 1996). During a sensitive period a child will acquire the skills, given a proper environment. After a sensitive period a child may still acquire a skill but it will require more explicit teaching and learning will not occur as naturally, e.g. learning a foreign language.

**Montessori and assessment.** Montessori expected that teachers should conduct ongoing research within their classrooms through observations and careful note taking (Montessori, 1967b). This is an expectation that continues in current Montessori programs, as evidenced by the Teacher-as-Researcher model (Chattin-McNichols & Loeffler, 1989). Montessori’s reasoning was that this would allow teachers to provide children continually with experiences that were highly appropriate for their individual needs and development. Frequent observation of children and problem solving difficulties that students encounter are two ways in which teachers assess the progress of their students as well as the effectiveness of their teaching. Within the Montessori philosophy, evaluation or assessment procedures are also built into the way that lessons are presented, thus integrating assessment with instruction (Lillard, 2007). This is not unlike the current-day Response to Intervention initiative (National Center on Response to Intervention, 2010) and other research-related teaching techniques. One example of this integrated assessment is the three-period lesson (Talbot, 1964).

The three-period lesson that Maria Montessori incorporated into her teaching

philosophy was originally created in the 1800's by French physician and educator Edouard Seguin (Standing, 1957). Seguin, in turn, had been a protégé of Jean-Marc Gaspard Itard who was an educator of children who were deaf in the late 18<sup>th</sup> and early 19<sup>th</sup> centuries and is best known for his work with Victor the Wild Boy of Aveyron (Lane, 1976). The theories gleaned from Victor and subsequent 'wild children' such as Genie (Newport, 1990) have done much to contribute to the field of language acquisition. Because of Itard's important contributions to the fields of Deaf Education and language development, the possible application of Montessori's methods for students who are deaf seems serendipitous, given her link back to Itard.

At the same time, it is important to consider that Itard, Seguin, and Montessori also shared the distinction of being both physicians and educators. This duality allowed them to bring a scientific lens (as such was conceived in their times) to the field of education in general and special education in particular. This scientific approach to the education of students has once again become timely in the current climate of teacher accountability and the strong call for Response to Intervention (RTI) and other research-related teaching techniques (Fuchs & Fuchs, 2005).

Montessori strongly believed that even very young children needed to have precise language labels for the objects and concepts in their world (Richardson, 1992). Within the Montessori Method, the three-period lesson is often used as a way to introduce a child to a new concept or set of materials as well as a way to expose a child to novel words (Richardson, 1997).

The theory behind the three-period lesson is multifaceted. First, as with the majority of the elements of the Montessori Method, a three-period lesson is typically

presented to an individual student (Lillard, 1972). This allows the teacher to meet the individual needs of the student by moving through each stage of the lesson at a pace appropriate for that student. Second, because no correction or reinforcement is offered to the child, the learning that occurs during a three-period lesson is thought to be intrinsically motivated and therefore is more apt to be internalized. Presumably, this would lead to a better understanding as well as long-term retention of learning. Dr. Montessori addressed this important aspect of the three-period lesson in *The Montessori Method* (1964):

If we should say, in correcting the child, “No, you have made a mistake,” all these words, which, being in the form of reproof, would strike him more forcibly than others, . . . would remain in the mind of the child, retarding the learning of names. On the contrary, the silence which follows the error leaves the field of consciousness clear, and the next lesson may successfully follow the first. In fact, by revealing the error we may lead the child to make an undue effort to remember, or we may discourage him, and it is our duty to avoid as much as possible all unnatural effort and all depression. (p.226)

Third, during a three-period lesson, two to three stimuli are presented at once in order to offer a contrast (West Side Montessori School, 2008). In principle, the effort to discriminate between the different stimuli will assist a student’s memory of those stimuli. Finally, the three-period lesson uses a minimum of language other than that which is



being taught. Montessori wrote that verbal strategies required ‘brevity, simplicity, and objectivity to avoid confusing the child with too much or irrelevant information’ (Montessori, 1964, p. 108). This simplicity may be particularly beneficial for a child with hearing loss (for whom language is already a struggle) because irrelevant information may be especially unclear and confusing. While students with language delays can benefit from exposure to rich language, simplicity may be beneficial during initial exposure. This initial encounter with a word should then be followed with varied, language rich experiences.

**Seguin’s three-period lesson.** Maria Montessori used the three-period lesson originally developed by Seguin to help children form associations between objects or concepts and their corresponding names (Richardson, 1997). Montessori emphasized especially the use of the three-period lesson in the early childhood classroom, citing the sensitive period for language that occurs between birth and six years of age (Lillard, 2007; Montessori, 1967a). Edouard Seguin divided his lessons into three periods to allow children to form an association between objects and words (Montessori, 1967a). The three-period lesson is a very purposeful way in which to introduce vocabulary, nomenclature, and concepts to children, and is frequently used in Early Childhood Montessori classrooms.

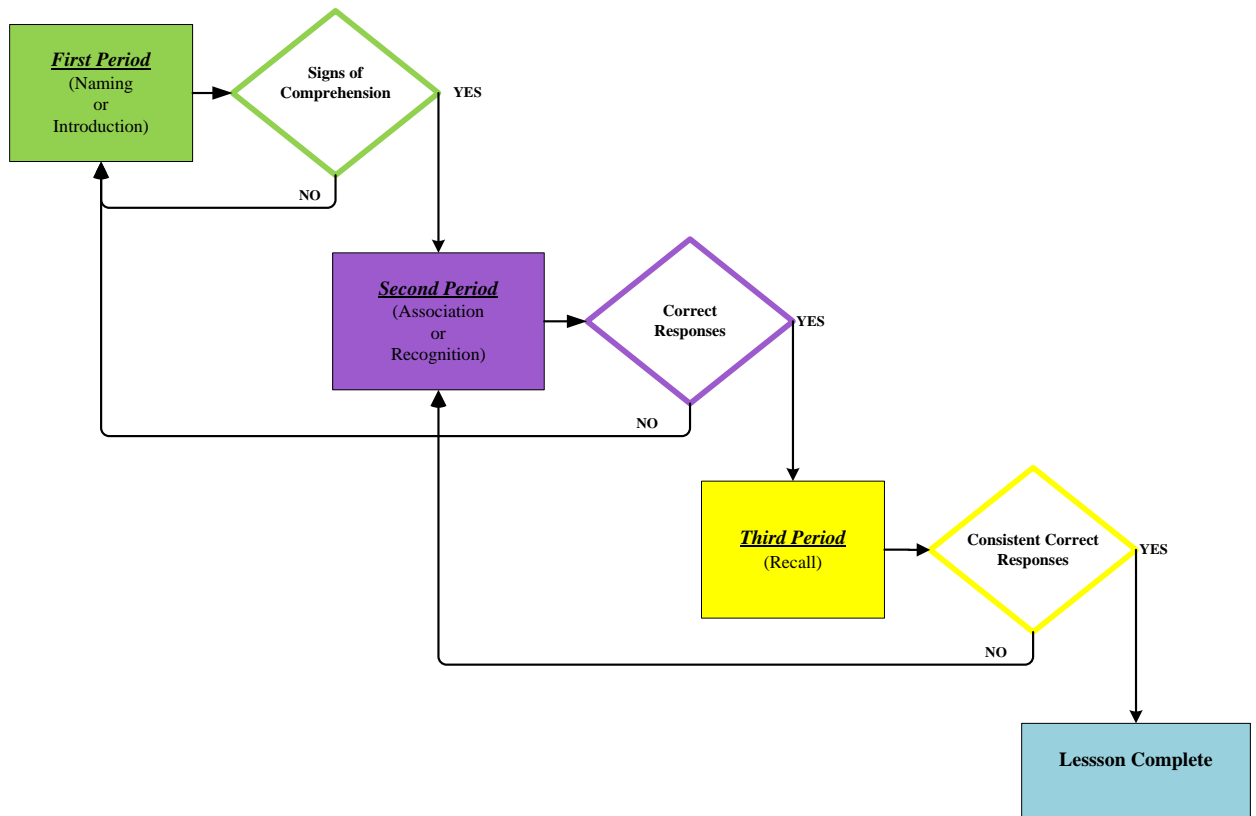
The first period is the Introduction or Naming (Standing, 1957). During this period, objects or words are shown to the student and named by the teacher (Montessori, 1967a). For example, when introducing new vocabulary words a teacher might arrange three cards with the words (or pictures) ‘cat’, ‘dog’, and ‘pig’ written on them facing the student. Working with each card individually, the teacher will indicate the card and say

the word to the student (Montessori, 1967b). Each word may be read several times, depending on the needs of the individual student (Montessori, 1967b). Based on observations during the first period, the teacher will decide whether to follow the first period with the second period, or to revisit the first period with the student at another time. At this stage of learning, children may show signs of comprehension through eye contact, nodding, repeating a word, etc.

The second period is Association or Recognition (Standing, 1957). This period may immediately follow the Introduction, or may be conducted as a separate lesson. The object of this period is to review and reinforce the new words or concepts introduced in the first period. The same materials are used and are arranged in the same way. The teacher will ask the student to demonstrate knowledge of the words or concepts learned in the first period (Montessori, 1964). For example, the teacher will say ‘Please point to ‘cat.’, ‘Please touch ‘dog’ to your nose.’ or ‘Please put ‘pig’ under the mat.’ In contemporary terms, the goal of this period is to assist the student in moving the words into his/her long-term memory. If the student is unable to complete the demonstrations in the second period, the teacher should return to the first period before attempting the second period again (Montessori, 1964). Again, based on teacher observations, the second period may be followed immediately by the third period or it may be presented later as a separate lesson.

The third period is Recall (Montessori, 1967a). Dr. Montessori (1967a) referred to this stage as ‘...a rapid verification of the first lesson.’ (p. 157). During this period, the student is shown the objects or words and asked to name them. For example, the teacher would show the student the ‘cat’ card and ask ‘What is this?’ It is important that the

teacher moves on to the third period only when there is confidence that the student will be successful. It is during the third period that a student will begin to take ownership of his or her own learning. If the student requires correction from the teacher, it may impede this ownership. Figure 1 below illustrates the structure of the three-period lesson as well as the movement between the periods.



*Figure 1.* The Structure of Seguin's Three-Period Lesson

The basic structure of the three-period lesson is pre-determined, yet the pace and number of repetitions of each period may easily be tailored to the individual needs of each student during each lesson. As with all aspects of the Montessori Method, teacher observation is key to successful lesson implementation (Montessori, 1992). The teacher must observe the student closely to determine whether or not to repeat a period and when

to move on to the next period (Montessori, 1967b). Depending on the circumstances, all the periods may be completed within one short lesson, or they may each be presented multiple times over a period of days or even weeks (West Side Montessori School, 2008). When deciding whether to move on to the next period, continue with the current period, or discontinue the lesson and revisit it later, the teacher observes the student for signs of comprehension and mastery of the labels. If a student appears not to have mastered the vocabulary as presented in the current period, the teacher will not move on to the next (Montessori, 1967a). This prevents the student from being unsuccessful and also ensures that the teacher will not be put into a position of correcting an incorrect response (Montessori, 1967b). Critical to this approach is that during the three-period lesson, as with the Montessori Method in general, the teacher refrains from correcting the student or providing verbal or material reinforcement (Montessori, 1964).

Richardson (1969) asserted that the period of time it takes for a student to move from the second to the third period of a three-period lesson is an illustration of the time and experience children sometimes require in order to internalize novel words. The flexible, child-centered nature of the three-period lesson might be particularly beneficial for students who are deaf or hard of hearing when they are transitioning from the second to the third period. In general, students with hearing loss require more exposures to a novel word in order to internalize the word and make it a part of their lexicon. In discussing the three-period lesson, Lillard (1996) points to individualization as one reason for its effectiveness:

The second stage, which is the actual learning period, can be extended and repeated as many

times as necessary for an individual child. Each child then has a greater chance of success in the last period, which is, in effect, the testing stage. (p. 37)

It is important that the above discussion of the three-period lesson be put in proper context in that, on the face of it, the three-period lesson appears merely to be a very simple, traditional and highly structured stimulus discrimination task. This, by some accounts, would be antithetical to a progressive approach that emphasizes child-centered learning. Additionally, the highly structured nature of the lesson, itself, appeals to minimal use of language. This seems to be at odds with a more natural dialogic approach involving scaffolding and more dynamic approaches of “motherese” involving expatiation and other child-directed strategies (Newport, Gleitman & Gleitman, 1977).

It should be noted, however, that not all developmental linguists agree that the notion of “motherese”, as displayed in Western and Northern European societies, is a universal phenomenon (Gleitman, Newport & Gleitman, 1984). In certain societies, e.g. certain Samoan tribes, caregivers do not talk to their infants until they are mobile. Even after the children become mobile, the caregivers often do not address their language to the child and they do not modify their talk as is done in motherese (Ochs, 1992). Similarly, mothers from Kululi of Papua, New Guinea, demonstrate a very different way of interacting with their children, particularly with respect to language. For the most part, they take on the role of both the child and the parent, and thus they do the talking for the child and they do so in adult terms. These caretakers provide the first person perspective of dialog whether it be in dyadic or triadic situation when taking on the role of the child.

It should be noted that neither strategy impedes the language acquisition of the children and they seem to develop language in the same time frame.

As a result, three things about the three-period lesson are important to understand in order to avoid the impression that this work is trivial at best. A closer look at the task reveals several important differences. First, the task is meant to be an initial introduction of a novel concept or word, which is meant to be followed by many varied experiences with that concept or word; this three-period lesson is but one activity within the entire scope of the Montessori Method and its curriculum. Second, the intuitive nature of the decision making process of the teacher as to when to move through the three periods is imperative to the effectiveness of the three-period lesson. Third, and most importantly, no direct feedback is provided with regard to the child's responses.

### **Student Interest and Book Choice**

Very little research has been done to examine the book choices of young children. Even fewer researchers have focused on the book choices of children with hearing loss. Harms and Lettow (1986) argue that personal choice is a powerful way to engage students in books by allowing them a sense of ownership of the reading process:

Interest is an all-important basis of learning, whatever the particular level of competence may be. The lack of interest causes many children...to fail in reading. But when moved by a high degree of interest children show increased energy to work persistently at reading until satisfaction is gained from accomplishment. (Howes, 1963, p. 491)

Students with typical hearing demonstrate higher levels of comprehension in correlation

with levels of interest in the material, regardless of difficulty (Asher & Markell, 1974; Estes & Vaighan, 1973). Anken and Holmes (1977) discovered a similar correlation for students with hearing loss. King and Quigley (1985) asserted that high levels of student interest made text difficulty less important while low levels of interest made text difficulty a more important factor.

Gelzer (1988) discussed the importance of sharing books with young children with hearing loss as a means of fostering language development, as well as nurturing an interest in reading and early literacy skills. Not surprisingly, both reading and writing competence in students have been shown to correlate with the amount of time that students spend reading. Further, students who choose not to read in their free time tend to 'lose ground' academically over time even if their reading skills were once at an appropriate level (Anderson, Wilson, & Fielding, 1988; Mullis, Campbell, & Farstrup, 1993; Stanovich, 1986).

The role of interest in education has been discussed by some of the best-known education pioneers (e.g., Dewey, 1913; James, 1950). In recent decades, research has supported this correlation by demonstrating that interest impacts learning, motivation, and effort (Hidi, 1991; Schiefele, 1991). Schiefele (1991) called interest an "important resource for learning that is related to cognition and intrinsic motivation, but has distinct properties and additional effects on learning" (p. 316).

Research into literacy has shown repeatedly that multiple experiences with text benefit students' reading development. One of the most important ways for students to interact with text is to explore books and read independently. This begins at an early age when students are developing their pre-reading skills. While shared storybook reading is

an important part of literacy development, providing students with the opportunity to deepen their personal experience with a book that has been shared by the teacher has the potential to increase the impact of that book on their developing literacy.

Unfamiliar or unknown vocabulary words in a text make a book more challenging for students. If students perceive a book as challenging or difficult, this is likely to impact their willingness to spend time reading and exploring that particular book. Simply increasing a student's knowledge of even a few key vocabulary words within a specific text may serve to make the book more accessible to that student, and should have the effect of raising a student's interest level in that book.

The selection of novel words for instruction is not a new concept. In fact, some form of direct instruction is often a part of a vocabulary curriculum. Teachers use techniques such as semantic mapping, definition copying, and using vocabulary words in a sentence. As discussed earlier, the Montessori Method advocates the use of the three-period lesson as a means of exposing students to novel vocabulary, followed by repeated, varied experiences with those words. One of the most important ways in which the three-period lesson in particular, and the Montessori Method in general, differ from the vocabulary instructional methods that typically take place in traditional classrooms is the lack of extrinsic motivation (Lillard, 2007). Deci and Ryan (2000) described intrinsic motivation as behavior that occurs "for the satisfaction inherent in the behavior itself" (p. 16), while Sansone and Harackiewicz (2000) explained that extrinsic motivation is based on "the desire to secure an extrinsic reward or avoid punishment" (pp.1-2). In a classroom setting, extrinsic motivation can range from something as simple as a smile or nod from the teacher to more concrete rewards such as stickers or prizes. Based on the



research regarding extrinsic motivators, the intrinsic motivation utilized by the three-period lesson is likely to result in deeper, more personal learning for students. In principle, this type of learning could lead to an increased interest in the topics and concepts being learned, as well as an increase in word recognition and vocabulary retention. If this is true, using the three-period lesson to teach word recognition and recall from a storybook may impact a child's tendency to independently choose that storybook during free-choice reading time. If the use of the three-period lesson would impact book choice in this way, it could be a useful tool for teachers to encourage their students to spend time with books that are more challenging, as well as simply spending more meaningful time with books in general.

### **Shared Reading**

Shared reading is a common practice, especially in early childhood and elementary school classrooms. During shared reading, a book is read (usually by the teacher) to the class. Throughout this reading, the pictures and text are shared with the students. Typically, the teacher will ask students questions about the story being read and will ask them to make inferences and predictions about what they think will happen in the book. In most instances, students are encouraged to make comments about the book, ask questions, and share connections with prior experiences.

The benefits of shared reading are multiple. It allows the teacher to model reading behaviors for students, and also provides students with access to text that they would be unable to fully engage with independently (Vygotsky, 1978). The group setting of shared reading provides an opportunity for students to be exposed to the thoughts and ideas of their peers. Accessing the information in age-appropriate books provides them

with information about the world (Bus, van Ijzendoorn, & Pellegrini, 1995), which they may not be able to access independently. Finally, sharing a book with students is one of many ways to provide them with contextual experiences with novel words.

### **Motivation**

*“The prize and the punishment are incentives towards unnatural or forced effort, and therefore we certainly cannot speak of the natural development of the child in connection with them.” ~ Maria Montessori (Montessori, 1964, p. 21)*

During the formulation of her educational methods, Maria Montessori developed the belief that evaluations such as grades and rewards were not beneficial to the learning process (Lillard, 2007). In fact, she believed that such external influences serve to disrupt children’s learning. Montessori felt that humans are naturally curious and have an innate desire to learn. Based on this, she felt that learning itself serves as a motivator for students and that no extrinsic rewards are necessary. In the decades since Montessori incorporated this belief into her educational philosophy, research has supported her belief about the disruptive effect that extrinsic reward might have on performance. For example, studies conducted in the early 70’s demonstrated that expected extrinsic rewards served to diminish motivation to participate in activities which participants had previously undertaken voluntarily (Lillard, 2007). Sadly, research has demonstrated that children’s intrinsic motivation declines steadily as they move through school (Eccles, Wigfield, Midgley, Reuman, MacIver, & Feldlaufer, 1993; Harter, 1981). While there are myriad factors that likely influence this change, the research suggests a strong correlation between an increase in extrinsic motivation and a decline in intrinsic motivation (Wiersma, 1992).

Research has shown that extrinsic motivators may be effective, but only in the short term. In a meta-analysis of rewards and motivation, Deci, Koestner, and Ryan (1999) found that the expectation of reward interfered with subject motivation across 128 experiments. For example, in a study that explored motivation in the context of student use of school-supply colored markers in a preschool classroom, Lepper, Greene, and Nisbett (1973) found that expectation of reward was correlated with decreased use of the markers by students who had previously chosen this activity of their own accord. This research affirmed the 'overjustification' theory by demonstrating that an expected-award condition lessened subsequent interest in an intrinsically motivated target activity more significantly than the unexpected-award or no-award conditions.

The implications of extrinsic rewards go beyond motivation. Researchers have demonstrated the negative impact of rewards on cognitive functioning, creativity, and prosocial behavior. Grolnick and Ryan (1987) demonstrated that students who expected to receive grades after reading a passage remembered the most information at first test, but had forgotten the most information when retested a week later. Those students who expected to be asked only about their personal reaction to the passage retained almost all of the information from the first test until the test a week later. This has strong implications for the impact of rewards on long-term learning. Miller and Estes (1961) investigated the impact of small versus large rewards. In a test of discrimination, students who were awarded one cent for each correct answer performed no differently than those who were awarded fifty cents for each correct answer. Those students who received no reward for correct answers performed better than either of the other groups. Further, Bahrick, Fitts, and Rankin (1952) demonstrated that rewards had the effect of

narrowing the attention of students. When there was an expectation of reward, students focused only on the learning that had the potential to result in reward. This narrowing has the potential to limit students' abilities to generalize their learning as well as result in missed opportunities to explore ancillary issues that are not the direct focus of a lesson.

### **Research Questions**

The intent of this study was to determine the impact of three possible interventions on the book choices, word recognition, and vocabulary retention of six students who are deaf.

More specifically, the following research questions were answered:

- 1) Will the use of Shared Reading increase the probability of students choosing the book being shared?
- 2) Will the use of the Three-Period Lesson in conjunction with Shared Reading increase the probability of choosing the book being shared, compared with the use of Direct Instruction in conjunction with Shared Reading, and the use of Shared Reading alone?
- 3) Will the use of the Three-Period Lesson in conjunction with Shared Reading lead to greater word recognition retention than the use of Direct Instruction in conjunction with Shared Reading, and the use of Shared Reading alone?
- 4) Will the use of the Three-Period Lesson in conjunction with Shared Reading lead to greater vocabulary learning than the use of Direct Instruction in conjunction with Shared Reading, and the use of Shared Reading alone?

## Chapter II

### Relevant Literature

#### Reading Acquisition and Deafness

Even once hearing loss is taken into account, the reading challenges faced by students who are deaf are not simple, but multi-faceted and complex (Wang, Kretschmer, & Hartman, 2008). We can learn much about the way students who are deaf learn to read by looking at the way that hearing students learn to read. Research has shown that even though the language acquisition of children with hearing loss may be delayed, children of varying hearing statuses still tend to follow similar patterns of development in the early literacy phase (Mayer, 2007; Williams, 2004).

In 2000, the National Reading Panel (NRP) published a report based on a review of research literature related to literacy. The report included a list of three areas of skill critical for reading. These skills include alphabets (phonemic awareness and phonics), fluency, and comprehension (vocabulary and text comprehension) (NRP, 2000). The findings of this report have become the basis for a good deal of reading instruction in schools. Schirmer and McGough (2005) discussed whether or not the findings of the NRP were applicable to students with hearing loss, and their conclusion was that the findings did have the potential to be applicable within the field of Deaf Education. At the same time, they asserted that the literacy needs of students with hearing loss are unique enough to warrant the further investigation of teaching techniques tailored specifically to their specialized needs.

For both students with typical hearing and those with hearing loss, vocabulary is a

key component of literacy. The vocabularies of children with hearing loss tend to be much smaller than, and significantly delayed, when compared with those of their hearing peers (Barker, 2003; Lederberg & Spencer, 2009). This deficit is likely to have a significantly negative impact on the reading acquisition of students who are deaf or hard of hearing.

### **Vocabulary and Reading**

As early as the 1920's, educational researchers discerned a correlation between word knowledge and development of reading skills (Whipple, 1925).

In all assimilative reading, grasp of content depends upon the associations made as the words are seen.

When associations are definite and numerous, the results are rich; when associations are hazy and few in number the results are vague. Growth in reading power means, therefore, continuous enriching and enlarging of the reading vocabulary and increasing clarity of discrimination in appreciation of word values. (Whipple, 1925, p.76)

The importance of the knowledge of word meaning to reading comprehension has long been established (Davis 1944; Dickinson, McGabe, Anastapoulos, Peisner-Feinberg, & Poe, 2003; Snow, Tabors, & Dickinson, 2001; Spearritt, 1972). Harris and Moreno (2006) discussed recent changes in vocabulary education:

Over the last ten to fifteen years, vocabulary has been upgraded as a component of language proficiency. After years of

overvaluation of morphological and syntactic skills, knowledge of words is now considered the most important factor in language proficiency and school success – in part due to its close ties with text comprehension. Words are the carriers of meaning: without knowledge of words, understanding sentences or texts is not possible. (p. 217)

At the same time, it is important to remember that while there is a widely held belief in the correlation between reading comprehension and vocabulary, there is little evidence to support a causal relationship between the two. It becomes a chicken-egg question: do students have strong reading comprehension because of their large vocabularies, or can large vocabularies be attributed to strong reading comprehension?

### **Vocabulary Instruction Research**

In the past, research on vocabulary instruction has focused mainly on providing support for the theory that direct instruction is a viable method of vocabulary acquisition (Pany & Jenkins, 1978; Petty, Herold, & Stoll, 1968). Some of the instructional strategies that have been shown to be effective through educational research include discussing novel words prior to reading (Gray & Holmes, 1938; Serra, 1953), writing sentences that include vocabulary words (Nelson, 1961; Anderson & Kulhavy, 1972), examining words morphologically (Otterman, 1955), using contextual experiences such as visual aids or field trips (Davis, 1951; McCullough, 1969), and using contextual cues (Eicholz & Barbe, 1961; Wittrock, Marks, & Doctorow, 1975).

There has also been much research regarding the effectiveness of direct vocabulary instruction. Pany (1978) found that direct text vocabulary instruction had the

effect of increasing word knowledge. Some studies have shown that direct vocabulary instruction has the potential to increase text comprehension (Kame'enui, Carnine, & Freschi, 1982; Marks, Doctorow, & Wittrock, 1974), while other studies have shown little to no benefit to reading comprehension (Pany & Jenkins, 1978; Pany, Jenkins & Schreck, 1982; Tuinman & Brady, 1974). Some reasons to explain the discrepancies between the findings of past vocabulary instruction studies include variations in instructional strategies, depth of word knowledge, complexity of words taught, and frequency of word encounters (Beck & McKeown, 1991; McKeown, 1985; Wixson, 1986). Paul (1996) stated: "It is becoming evident that text vocabulary learning is so complex that neither instruction nor context can account for what readers know about words and how they acquire this knowledge." (Beck & McKeown, 1991; Paul, 1997).

**What does it mean to know a word?** When discussing the acquisition of vocabulary, it is important to consider what it means to *know* a word. In their synthesis of research in vocabulary instruction, Baumann, Kame'enui, and Ash (2003) addressed this question. The development of semantic representations related to a word is likely to be a gradual and ongoing process that may continue for years (McGregor, Friedman, Reilly, & Newman, 2002). As Nagy and Scott (2000) stated, "We learn words in degrees, understand words through different types of knowledge, come to recognize multiple meanings for words, learn words in relation to our knowledge of other words, and learn different types of words differently." (p. 754). There has been much research to support the idea that children acquire most words in stages as they have repeated and varied experiences with them (Anderson, 1996; Krashen, 1989; Nagy, Herman, & Anderson, 1985; Nagy, Anderson, & Herman, 1987).



Vygotsky (1962) also explored the complexity of word meaning, defining a word as "...a unit of verbal thought that is already a generalization" (p.5). He considered words to be dynamic formations that change as a child learns and develops. Kame'enui, Dixon, and Carnine (1987) not only differentiated between expressive and receptive vocabulary, but also identified four different types of vocabulary; speaking (expressive), writing (expressive), listening (receptive), and reading (receptive). When discussing vocabulary acquisition, it is important to distinguish between the various types of vocabulary because a student does not need to have the same knowledge of a word in order to understand it receptively (in context) that he or she would need to use the same word expressively. In other words, there exist varying degrees of word knowledge.

Further, words themselves are not straightforward. Rather, they are multidimensional and include aspects such as semantic, graphic, psychological, social, and linguistic, just to name a few (Mezynksi, 1983; Mosenthal, 1984). "Words are sometimes represented as nodes in a network; these nodes may be interconnected on different dimensions: thematically (*table-chair-couch*), phonologically (*table-fable-label*), morphologically (*similitude-gratitude-altitude*), conceptually (*cup-glass-mug*), or sociolinguistically (*piss off-bollocks-fucking*)" (Vermeer, 2001, p. 218). The more connections any given word has, the more enhanced the understanding of that word will be (Nagy & Herman, 1987).

Once the various types and levels of vocabulary knowledge are considered, the task of assessing a student's vocabulary becomes quite complex. Most commonly, standardized, multiple-choice assessments are used to assess the vocabulary knowledge of students. By their nature, these types of assessments are not able to take into account

to complexity of word knowledge.

In their book, *Meaningful Differences in the Everyday Lives of American Children*, Hart and Risley (1995), discussed the importance of vocabulary, not only in relationship to literacy, but also as a predictor of overall academic success. This assertion was supported by the research of Vermeer (2001). Further, Hart and Risley (1995) demonstrated the widening of the gap as children progress through school and, alarmingly, confirmed that as children grow up, vocabulary instruction becomes less effective. Becker (1977) was one of the first to demonstrate this by linking the academic achievement of disadvantaged students to the size of their vocabularies and, based on this research, asserting that deficient vocabularies had a causal link to academic failure. Baker, Simmons, and Kame'enui (1998) affirmed this not only by demonstrating that differences in vocabulary size are evident early in students' school experiences but also confirming that these gaps become greater as children progress through school. This phenomenon is commonly known as the cumulative-advantage or Matthew Effect (Walberg & Tsai, 1983).

Within the field of Behaviorism, what it means to know a word has been given substantial consideration. Behaviorist research has shown that a child may be able to repeat a vocalization or sign representing a word after it has been produced by someone else, prior to the acquisition of that word. This type of production is called an *echoic* (Skinner, 1957). While the repeated use of an echoic may lead to the acquisition of the word, the initial repetitions represent a degree of word knowledge that differs greatly from a child's ability to independently produce a word through expressive language. It is common for receptive vocabulary acquisition to be slightly advanced in comparison with

expressive vocabulary acquisition. Individuals might be able to recognize and understand a word when it is used, but not be able to produce that same word in their own expressive communication. Educational behaviorists make the distinction between listener role (receptive language) and speaker role (expressive language). A child is considered to have 'Naming' if he or she is able to demonstrate both the listener and speaker roles. If a child is able to identify the correct object or picture once the label has been verbalized by someone else (listener role), but is not able to produce the verbal label (speaker role), he or she is considered to lack Naming (Greer & Speckman, 2009).

### **Vocabulary Instruction**

In a synthesis of research regarding vocabulary instruction, Paul (1996) suggested that the majority of instructional methods used with hearing students (Beck & McKeown, 1991; Nagy, 1988) as well as with students who are deaf (Conway, 1990; Dolman, 1992; Paul, 1989; Paul & Gustafson, 1991) are not supported by current theory. Many of the teaching strategies used expose the student to only one dimension of a word and do not result in a deep understanding.

Within the field of vocabulary instruction, there is a long-standing debate regarding the most effective method of teaching vocabulary. At the core of the debate is contextual learning versus direct instruction. While the debate has yet to be resolved, in general, researchers and educators on both sides of the issue tend to agree that a multifaceted approach to teaching vocabulary is the most effective method.

**Direct vocabulary instruction.** In their synthesis of research on the vocabulary development of hearing children, Baker, Simmons, and Kame'enui (1995) discussed several studies that demonstrated the benefits of intentional vocabulary instruction.

Coyne and his colleagues (2004) argued that direct instruction such as providing definitional information does have the potential to increase the vocabulary of young children who are at-risk for difficulty with literacy. However, no single best method of direct vocabulary instruction has been identified (Beck & McKeown, 1991).

Most school language arts curricula place little emphasis on the explicit teaching of vocabulary (Scott, Jamieson-Noel, & Asselin, 2003). This method of vocabulary instruction can be time consuming. Teachers often seek more efficient ways to approach the subject, such as computer software (Barker, 2003) or reliance on contextual learning. Some argue that providing students with contextual experiences with novel words is an adequate method of teaching vocabulary. While these experiences are an important component of a well-rounded vocabulary curriculum, they are not considered to be adequate in and of themselves. Research conducted with children whose language development is typical demonstrated that some direct instruction of vocabulary was necessary as well in order to foster appropriate language development (Beck, McKeown, & Kucan, 2002). Dubios and Vial (2000) demonstrated that an increase in word recall occurred when direct vocabulary instruction included a combination of spoken, written, and visual representation. Research in regular education has shown that drill and practice are effective means of teaching at least some aspects of the meaning of new words (McKeown, Beck, Omanson, & Pople, 1985; Pany & Jenkins, 1978; Stahl, 1983).

**Contextual vocabulary learning.** On the other hand, it has been argued that the sheer quantity of words that students need to learn cannot feasibly be acquired through direct instruction alone. Nagy and Anderson (1984) estimated that the academic materials with which students will come into contact in grades three through nine contain

more than 88,500 word families. The average word family is made up of an average of 4.5 words, which means that students can expect to encounter over 400,000 graphically distinct words, not including over 100,000 proper nouns. By the time children are five or six years old, they are estimated to have vocabularies ranging from 2,500 to 5,000 words (Baker, Simmons, Kame'enui (1995). It has also been approximated that the average student's vocabulary increases by roughly 3,000 words each year (Nagy & Anderson, 1984; Nagy, Anderson, & Herman, 1987; Nagy & Herman, 1987) and that between third and seventh grade, a child's vocabulary tends to double (Jenkins & Dixon, 1983). It is also important, however, to consider estimates of the average adult vocabulary (defined as words that are necessary to read junior high and high schools texts), which are roughly 17,000 (Nagy & Anderson, 1984). This figure makes direct instruction seem a more manageable method of vocabulary acquisition.

When discussing contextual exposure as a means of vocabulary acquisition, it is important to keep in mind that 'all contexts are not created equal' (Beck, McKeown, & McCaslin, 1983). Researchers have identified two general categories of contextual learning; deliberate and incidental (Jenkins, Stein, & Wysocki, 1984; Nagy, Herman, & Anderson, 1985). While there are few who would argue against the fact that children are able to learn new words through context, there are those who question the quality of this type of learning – specifically, how well the multiple dimensions of a word may be acquired through context (Schatz & Baldwin, 1986). Along with Beck, McKeown, and Omanson (1984) there are some researchers who think that students need experiences, such as direct instruction (e.g. dictionary work, sentence writing, semantic mapping), in addition to contextual exposure in order to grasp the full, complex meanings of new

words (Miller & Gildea, 1987; Stahl & Fairbanks, 1986).

While the two sides of this debate seem to have a good deal about which to disagree, they do reach consensus on one point: neither side has been a proponent for one single method of vocabulary instruction. Although they may not agree about the relative effectiveness of various instructional methods, or the amount of weight to place on one approach over another, they do feel that ‘multifaceted instruction’ is essential to vocabulary acquisition (Beck, et. al, 1984). In this vein, Stahl (1988) calls for a balance between contextual learning and direct instruction for vocabulary acquisition. In their synthesis of vocabulary instruction and research Baumann, Kame’enui, and Ash (2003) weigh in on the debate:

We certainly agree with Nagy et al. (1987) and Cunningham and Stanovich (1998) that word learning does occur during normal reading and that wide reading is a necessary and probably a causal factor for large levels of vocabulary growth. However, we also believe that instruction has a distinct role in vocabulary development (p. 761). Regarding rote vocabulary learning, they do not know what the most effective and efficient means are to provide students with initial, limited definitional knowledge of vocabulary such that it will serve as the foundation for subsequent deeper, richer instruction or the acquisition of meaning from context. (p. 776)

While most researchers agree that a combination of contextual experiences and direct instruction are most effective, the appropriate ratio of these methods is unknown (Baumann, Kame'enui, & Ash, 2003). Of course, there is unlikely to be a 'magic number' solution resolving this issue. Instructional methods will vary depending on many variables including, but not limited to, subject, context, and purpose, as well as a number of factors related to the student(s) being taught (Baumann, Kame'enui, & Ash, 2003).

McKeown, Beck, Omanson, and Pople (1985) call for 'rich, frequent' vocabulary instruction. Schirmer (2000) advocates for a multifaceted approach to promote 'natural growth in meaning vocabulary' that includes facilitating "...lifelong vocabulary learning through indirect vocabulary instruction [as well as]... the learning of specific words through direct vocabulary instruction" (p. 156). While there is a good deal of support for this method, a common question might be how an educator decides which vocabulary words should be taught explicitly and which implicitly. Kibby (1995) argues that words that are essential to reading comprehension should be taught explicitly as a pre-reading activity. Hiebert and Kamil (2005) suggest considering several variables such as word frequency, importance, utility, and instructional potential when choosing words for direct instruction.

**Incidental vocabulary learning.** Language exposure for children with typical hearing begins prenatally, when they are exposed to the prosody and sound segments of language (Locke, 1997). This allows these children to begin their lexical development long before they enter school and undertake reading acquisition. Infants born with hearing loss are less able to benefit from this early exposure to spoken language.

Based on statistical data that they collected from eighth-grade students, Nagy, Herman, and Anderson (1985) contend that incidental vocabulary acquisition from context is responsible for a sizeable part of first-language vocabulary acquisition of students. While Nagy and Herman (1987) feel that just one encounter with a word through these circumstances could allow for learning to occur, Jenkins and Dixon (1983) argue that between six and twelve encounters of this type may be necessary for a child to learn a new word.

The very nature of their hearing loss prevents children who are profoundly deaf from benefiting from the incidental encounters through which so much vocabulary acquisition can occur (Singleton, Morgan, DiGello, Wiles, & Rivers, 2004). Developing an age-appropriate English language vocabulary is a significant challenge for children who are unable to overhear spoken language occurring in their environment. Researchers have demonstrated the effects of this lack of exposure through findings that show that students who are deaf have a depressed English language vocabulary when compared with their hearing peers (Karchmer & Mitchell, 2003; King & Quigley, 1985; Marschark, 1997; Wilbur, 2000). Further, King and Quigley (1985) demonstrated that students who are deaf tend to score lower on subtests of word knowledge and vocabulary than on other subtests. A strong correlation has been found between the vocabulary scores of students with hearing loss and their reading comprehension scores (Lasasso & Davey, 1987; Paul & Gustafson, 1991). As deVilliers and Pomerantz (1992) stated: “Many hearing-impaired students are caught in a vicious circle: their impoverished vocabularies limit their reading comprehension, and poor reading strategies and skills limit their ability to acquire adequate vocabulary knowledge from context” (p. 428).



Due to this lack of incidental word learning, when a child who is deaf encounters a printed word for the first time, it is much less likely that he or she will already have a 'lexical file' or 'mental node' for that word. This is in contrast to a hearing child who is likely to have simply overheard the word in the peripheral language that occurs in everyday life. This prior experience likely allowed the child to gather syntactic, semantic, and morphological information about that word. Therefore, there will already exist a mental 'lexical file' into which the child may place the written form of that word (Ormel, Hermans, Verhoeven, & Knoors, 2006). In theory, exposing a child to a novel word prior to a contextual experience with that word may allow the child to establish a lexical file for that word. This could allow the child to use the contextual experience as an opportunity to begin 'filling up' the lexical file with information about the word rather than simply establishing an initial node or file. A simple activity such as the Three-Period lesson used to introduce students to new words has the potential to foster this type of lexical acquisition by laying the foundation for students' experiences with words. This may be particularly beneficial to students with language delays who are less likely to have lexical files established for words.

When a word is completely novel, the child must construct an entirely new lexical entry onto their semantic map (Ormel, Hermans, Verhoeven, & Knoors, 2006). However, it is important to keep in mind that for a number of children who are deaf, a strong foundation in American Sign Language (ASL) will likely improve the chance that a child will have a semantic file into which a novel printed word may be placed, although the semantic files of an ASL user will contain information that differs slightly from those of a spoken language user. Paul (1998) asserts that knowledge that these students have

acquired through ASL is beneficial because it enlarges their conceptual frameworks, thereby allowing them to build a more creative vocabulary. Children with hearing loss who have already acquired large vocabularies in sign language prior to beginning reading instruction are likely to be more successful in learning vocabulary words in the printed form. “The quantity of acquired sign vocabulary will predict subsequent development in the quantity of reading vocabulary for children who are deaf when cognitive variables like spoken language vocabulary, nonverbal intelligence, and short-term memory capacity are controlled for.” (Ormel, Hermans, Verhoeven, & Knoors, 2008, p.167).

It is important to keep in mind that while a strong sign language vocabulary has the potential to benefit a student’s written language vocabulary acquisition, these benefits do not necessarily carry over into a situation in which a child encounters an unknown word. There is no systematic correlation between the form of signs and their written counterparts, unlike the correlation between the sounds of spoken English and the letters of written English. Therefore, a student’s knowledge of a signed word is unlikely to be of assistance when the printed version of that word is encountered for the first time, except for the existence of a ‘semantic file’, as discussed above. Because of this, students with hearing loss often have to rely either on the context in which a new word is encountered in order to derive the meaning of that word or on some form of explicit instruction in order to include the form of the printed word in this lexical file. This task is even more challenging than it sounds because, as Hu and Nation (2000) pointed out, in order to accurately obtain the meaning of a novel word through context, a student must already know approximately 98% of the words in the text.

## **Students who are Deaf or Hard of Hearing**

The most commonly cited statistics within the field of Deaf Education are related to the reading levels of students who are deaf or hard of hearing. This is not surprising based on the language development challenges faced by children with hearing loss.

Hearing loss can have a significant impact on a child's development. The presence of hearing loss...alters a child's ability to extract linguistic cues from the auditory language models around him or her. Limited opportunities to "overhear" information from various input sources leads to impoverished experiences, with negative consequences for language rule formation, world knowledge, and vocabulary development. (Carney & Moeller, 1998, p.65)

Only an estimated 15% of students ages 17-21 who are deaf or hard of hearing have reading level of sixth grade or above (Allen, 1994). Fifty percent of students who are deaf graduate from high school with a reading level at or below fourth grade (Traxler, 2000). Of that population, 30% are functionally illiterate when they leave school (Marschark, Lang, & Albertini, 2002). On average, students who are deaf gain only about one third of a year of reading achievement for each academic year that they spend in school (Babbini & Quigley, 1970; Gallaudet Research Institute, 2002; Holt, 1993; Trybus & Karchmer, 1977; Wolk & Allen, 1984). Research has shown that students who are deaf have learning abilities that are the same as their hearing peers (Bradley-Johnson & Evans,

1991; Quigley & Paul, 1989), yet almost 90% of individuals who are deaf or hard of hearing work in manual labor, compared with 50% of hearing individuals (Easterbrooks, 1999; Sheetz, 1993). This is not surprising when one considers that 85% of jobs involve a reading level of at least ninth grade (Taylor, 1989).

The acquisition of reading skills is a well-documented area of challenge for students with hearing loss (Allen, 1986; Conrad, 1979; Lane & Baker, 1974; Lewis, 1996; Moog & Geers, 1985; Trybus & Karchmer, 1977). There is much empirical evidence to demonstrate the fact that children who are deaf, as a group, show significant delays in reading ability (Allen, 1986; Banks, Gray, & Fyfe, 1990; Harris & Moreno, 2004). Because this has long been considered by many to be the most critical issue within the field of Deaf Education, much research has been conducted in relation to this challenge. Despite this focus, there has been no discernable improvement in the reading outcomes of students with hearing loss (Marschark & Harris, 1996; Musselman, 2000; Paatsch, Blaney, Sarant, & Bow, 2006). “It is well known that the hearing-impaired population has a reading problem that has not changed much over time, despite all efforts to the contrary” (Kretschmer, 1982, p. 9).

It is a basic assertion that for children with typical hearing, language acquisition and literacy development are inextricably linked (Beck & Nabors-Olah, 2001; Dickinson, McCabe, & Essex, 2006). Geers (2006) points out that this is also true for children with hearing loss: “The frequently reported low literacy levels among students with severe to profound hearing impairment are, in part, due to the discrepancy between their incomplete spoken language system and the demands of reading a speech-based system” (p. 244). Said another way, hearing children are learning to read in a language that they

have already acquired, while many children who are deaf are learning to read and to acquire a language simultaneously.

Although there is no consensus on the best way to teach vocabulary, there is general agreement on the importance of vocabulary, not only for reading and spoken language, but also for a child's development of a broad understanding of the world (Gupta & McWhiney, 1997). While it is clear that hearing loss has the effect of limiting a child's access to language, it follows that this limitation would impede the impartation of general knowledge (Akamatsu, Musselman, & Zweibel, 2000). Unfortunately, this impediment may be perpetuated in some classrooms for students with hearing loss. As pointed out by Wood, Wood, Griffiths, and Howarth (1986), teachers of students with hearing loss may restrict their speech to simple language and may themselves have little exposure to general subject matter as a result of their specialized training to educate students with hearing loss.

Garrison, Long, and Dowaliby (1997) discuss the impact of prior knowledge on reading comprehension. One possible explanation for the reason that students who are deaf struggle with vocabulary is their lack of prior knowledge. Such difficulty reflects on their inability to assign meaning to the world around them (Lemke, 2002, p. 73). In other words, they suffer from lack of language socialization, which according to Kramersch (2002), impacts language development. Kibby (1995) discussed the connection between prior knowledge and vocabulary acquisition with focus on the discrepancy between acquiring both the initial knowledge of, and label for, a new object or concept concurrently versus being exposed to an object or concept before learning the vocabulary attached to it.

**Vocabulary of children who are deaf.** Davis, Elfenbein, Schum, and Bentler (1986) found that even a mild hearing impairment has the potential to cause delays in vocabulary acquisition, low verbal IQ scores, and low academic performance. The receptive vocabulary deficiencies in children with hearing impairment strongly suggest that they have difficulty learning new words (Gilbertson & Kamhi, 1995). Studies have attributed the low reading levels of students with hearing loss to several factors, one of which is vocabulary knowledge (Davey & King, 1990; LaSasso & Davey, 1987; Paul & Gustafson, 1991; Paul & O'Rourke, 1988). Researchers in the field of Deaf Education have found much evidence to support the importance of vocabulary to the reading proficiency of students with hearing loss (Geers & Moog, 1989; LaSasso & Davey, 1987; Paul, 1996). Kyle and Harris (2006) found that productive vocabulary was a significant predictor of the reading abilities of students who are deaf, even once hearing loss and nonverbal intelligence had been controlled. Lexical acquisition is particularly difficult for children with hearing loss because they “have no undistorted access to the flow of language and information in the environment” (Vess & Douglas, 1995, p. 1127).

In their study investigating the predictors of reading achievement in both children with typical hearing and children who were deaf, Kyle and Harris (2006) found that, as a group, children who were deaf showed significant delays in their productive vocabularies and had productive vocabularies that were significantly smaller than those of their hearing peers. In a study of word learning in preschoolers with hearing loss, Lederberg and Spencer (2009) found that children's ability to learn new words was related to their expressive vocabularies rather than to their chronological ages. Lederberg (2003), also found that many preschoolers with hearing loss enter school with significantly smaller

lexicons than children with typical hearing, and also have as gaps in their lexical knowledge. Not surprisingly, when compared with their hearing peers, children who are deaf have smaller spoken vocabularies (Blamey, 2003; Geers & Moog, 1989; Moores & Sweet, 1990) and the written vocabularies of children with hearing loss tend to exhibit significant deficiencies (Breslaw, Griffiths, Wood, & Howarth, 1981). This is especially true for the more than 90% of children who are deaf who have hearing parents (Lederberg & Everhart, 1998; Mayne, Yoshinaga-Itano, Sedey, & Carey, 2000; Moeller, Osberger, & Eccarius, 1986; Spencer, 1993).

Children who are deaf show delays in productive vocabulary not only when they are compared with their hearing peers, but also when they are compared with hearing children who are the same 'reading age' (Dodd, McIntosh & Woodhouse, 1998; Dodd, Woodhouse, & McIntosh, 1992; Geers & Moog, 1989; Moores & Sweet, 1990; Waters & Doehring, 1990). One area in which such students show particular deficiency is naming specific items. Barker (2003) gave examples of this such as children referring to a windshield as 'the window at the front of the car'. Assessments of students who are deaf have shown not only that their vocabularies are quantitatively smaller than children with normal hearing, but also that they develop at a slower rate (Cooper & Rosenstein, 1966; Paul, 1984; Walter, 1978).

Balow, Fulton and Peplow (1971) gave students with hearing loss the Metropolitan Achievement Test and found that they scored low on both vocabulary and reading achievement. They proposed that a correlation was indicated between the two areas, in that students' scores in one area were relative to their scores on the other. On the Word Meaning (vocabulary) subtest of the Stanford Achievement Test (SAT), students with

profound hearing loss showed only a 1.1 grade level gain in their scores from the age of ten to the end of their eighteenth year, and the average reading score of the oldest students was equivalent to a 3.6 grade level (Quigley, Steinkamp, Power, & Jones, 1978). Despite the development of the Stanford Achievement Test-Hearing Impaired (SAT-HI), which was normed on students who were deaf, low scores in both reading and vocabulary comprehension have persisted. This is also evidence of a continued correlation between the vocabulary knowledge and reading skills of students with hearing loss (Allen, 1986; King & Quigley, 1985; Paul & Quigley, 1994; Trybus & Karchmer, 1977). LaSasso and Davey (1987) caution:

Practitioners should be aware that there appears to be more of a relationship between lexical knowledge and reading comprehension for hearing impaired students than previously empirically established. Although this relationship has yet to be established as causal, practitioners should not ignore the lexical abilities of their students (p. 218).

A simple explanation for the importance of vocabulary to the reading acquisition of students who are deaf is that it is easier for children to read a word that they already possess in their vocabulary, rather than a word that is completely novel (Vellutino, Fletcher, Snowling, & Scanlon, 2004). Further, Connor and Zwolan (2004) as well as Kyle and Harris (2006) demonstrated that the productive vocabulary of children who are deaf was a reliable predictor of their reading success. In a comparison of students with hearing loss who were considered to 'read very well' with those who were labeled 'poor readers', Harris and Moreno (2006) found that the more advanced readers outperformed



the lower group in several skill areas, including vocabulary.

**Cognition and deafness.** Most educators involved with students with hearing loss would agree that language in general, and reading in particular, are the greatest challenges in the education of these students. Why is this the case? For too long, there was a common misconception that the language challenges faced by a child with hearing loss were caused by an accompanying cognitive deficiency (Howarth & Wood, 1977; Van Uden, 1977; Williams & Finnegan, 2003). In recent decades, however, research has shown that there is no correlation between hearing loss and decreased intelligence. In fact, Vernon (1967) showed that the distribution of intelligence among the deaf and hard-of-hearing population is “essentially the same as the general population” (p. 547). Studies have also shown that deaf and hard of hearing children’s nonverbal cognitive abilities tend to develop not only without the delay seen in their linguistic abilities, but also at a pace similar to that of their hearing peers (Braden, 1985; Mayberry, 1992). Lederberg and Everhart (2000) found that even though the preschoolers with hearing loss they studied exhibited a language delay of at least two years, their nonverbal cognition tested as age-appropriate on a standardized assessment.

Since cognition is not the causative factor for the reading levels of students who are deaf, what is the cause? Simply put, sensory deprivation is the cause. The considerable disparities that exist between children with and without hearing may be attributed to the impact of the hearing loss on the various facets of language development (Paul, 1998).

**Parents of children who are deaf.** Roughly 90% of children who are deaf have two hearing parents (Meadow, 1972). Until recently, when a child with hearing loss was

born to hearing parents, the diagnosis of hearing loss often did not occur until the child was a toddler or even later. Fortunately, the implementation of newborn hearing screening practices has dramatically decreased the average age of diagnosis (Yoshinaga-Itano, 2003). In addition to late diagnosis, many children with hearing loss who have hearing parents do not receive exposure to a complete language system because their hearing loss precludes accessing an auditory-verbal language, and their parents, not knowing their child is deaf, are unlikely to use a visual mode of communication, such as sign language. When and if the parents do begin to learn sign language they are unlikely to become proficient initially, if ever (Meadow-Orlans, Spencer, & Koester, 2004). Many children with hearing loss who are born to hearing parents lack exposure to a complete language model because their parents lack proficiency in sign, and tend to sign only one or two words per utterance (Lederberg & Everhart, 1998; Meadow-Orlans, Spencer, & Koester, 2004). Research has shown that children who are deaf and hard of hearing and have hearing parents tend to have lexicons that are smaller than and that develop more slowly than those of children with typical hearing (Blamey, 2003; Lederberg, 2003). A child whose primary language model(s) offer impoverished or variable input will not only have fewer opportunities to acquire new words but also may experience a hindrance in the development of word-learning abilities (Lederberg & Spencer, 2008). Anderson and Reilly (2002) found that unlike children who are deaf born to hearing parents, those born to parents who are deaf and use ASL tend to develop vocabulary at an age-appropriate level.

Previously, all of the factors discussed above have led to a prevalence of children with hearing loss entering kindergarten with ‘very low linguistic competence’ (Johnson,

Liddell, & Erting, 1989). Fortunately, the implementation of newborn hearing screening in conjunction with advances in hearing aid and cochlear implant technology have resulted in a better long-term language prognosis for children born with hearing loss (Spencer & Oleson, 2008) “Earlier identification of hearing loss allows for earlier intervention and raises expectations that increasing numbers of children who are deaf will develop language and literacy abilities that are comparable to their hearing age peers” (Mayer, 2007, p.1). Studies have shown that children whose hearing loss is diagnosed before six months of age have significantly improved expressive language outcomes (Mayne, Yoshinaga-Itano, Sedey & Carrey, 1998).

**Vocabulary instruction and deaf education.** There is little empirical data available regarding the vocabulary learning of students who are deaf (e.g., deVilliers & Pomerantz, 1992; Kyle & Harris, 2010, MacGinitie, 1969), although some inferences may be made based on general vocabulary research. Incidental vocabulary learning, as discussed by Nagy and Anderson (1984) and Nagy, Herman, and Anderson (1985), seems to be most effective for students who are already good readers and also seems to work best for less difficult words (Beck & McKeown, 1991; Graves, 1986; Schatz & Baldwin, 1986). Due to the low reading levels of most students with hearing loss, gaining word knowledge from context while reading is typically a challenge (Paul, 1996). Based on a synthesis of vocabulary acquisition research, Paul (1996) argued that poor readers (e.g., students who are deaf) require direct instruction in order to give them the skills to become independent word learners. However, as Conway (1990) pointed out, traditional methods of direct vocabulary instruction such as definition-and-sentence approaches (e.g., see discussions in Nagy, 1988; Paul, 1989; Paul, 1997; Paul & Gustafson, 1991) are

not suitable for students who are deaf. Instead, the goal of vocabulary instruction should be to help a student take ownership of a word by deepening his or her knowledge of that word.

Eduoard Seguin's three-period lesson, as conceived by Maria Montessori, has potential benefit for students who are deaf or hard of hearing. This hypothesis is based on research cited regarding vocabulary instruction, vocabulary acquisition, language development, intrinsic motivation and finally, personal book choices of students who are hearing-impaired. As discussed earlier, hearing loss often has the effect of limiting student's exposure to the 'peripheral' language that accounts for much of the vocabulary acquisition of children with typical hearing. Therefore, children with hearing loss are likely to have a paucity of lexical files or nodes when they begin formal literacy instruction in school. Based on the arguments and evidence presented in the previous chapter, this researcher hypothesizes that the three-period lesson could serve to develop some of the initial nodes or lexical files that are lacking in students who are deaf or hard of hearing. Rather than examining vocabulary instruction in isolation, it was decided that this study would also investigate aspects of language instruction that may be related to vocabulary acquisition. Therefore, instead of simply examining the impact of the three-period lesson on the vocabulary retention of students, this study also explored the ramifications of vocabulary instruction on participants' book choices as well as how much information they learned about each word. If the three-period lesson enabled participants to establish lexical files for vocabulary words prior to contextual experiences with these words, it would allow students to use these contextual experiences as opportunities to begin 'filling up' the lexical files for those words, rather than

establishing, from scratch, the initial nodes for those words. In theory, this could lead to improved vocabulary learning for students.

## **Chapter III**

### **Method**

The purpose of this study was to determine the potential impact of Seguin's three-period lesson as a form of vocabulary instruction not based on direct feedback or reinforcement, as compared with a direct instructional approach utilizing feedback and reinforcement. Elements of the study included the book choices, word identification retention, and vocabulary learning of students who are deaf or hard of hearing. A mixed-model design was chosen to investigate the research questions.

### **Design**

The researcher used a mixed-model design (Johnson & Onwuegbuzie, 2004) entailing alternating instructional treatments within the framework of a qualitative and a single-subject approach that repeats across and among six participants and three instructional treatments. The use of a mixed-model (to be described below) approach was selected for two reasons. The first was to allow for triangulation of data (Jick, 1979). Second, it permitted the researcher to examine more closely the behaviors of the participants through descriptive text as a complement to the quantitative data.

The single-subject portion of the design was chosen for two reasons. First, the low-incidence of deafness makes finding a large participant group challenging. Second, there are myriad factors that may influence the language levels and abilities of students who are deaf or hard of hearing. They may include, severity, type and etiology of hearing loss, use of/type of assistive listening device(s), age of onset, family hearing status, primary language spoken in the home, and educational background, to list just a few.

This complexity typically results in a broad spectrum of language levels within one classroom serving students who are deaf. This variation could serve to cancel out any findings in a typical group design experiment.

The goal of this study was to determine if a relationship existed between the participants' spontaneous selection of storybooks available during Book Choice time and the type of Intervention used. In addition, the design allowed the researcher to compare the relative effectiveness of two different approaches to one-on-one vocabulary instruction, in terms of learning, to recall the print form of selected vocabulary items and their meaning.

Conceptually, this design was meant to collect both qualitative and numerical data regarding the six participants. The three settings consisted of Book Choice, Shared Reading, and one-on-one vocabulary instruction. Five tasks included: 1) the interactions of the classroom teacher and the students during group lessons in shared book reading, 2) book choice during free reading time, 3) one-on-one instruction in recognizing print vocabulary drawn from the instructional texts, 4) probes for the children's understanding of word meaning of the selected vocabulary items and 5) post intervention recall of the words taught.

Within this design, the researcher also used alternating treatments between two forms of one-on-one vocabulary instruction – one in which explicit feedback and reinforcement were provided (Direct Instruction) and another where no explicit feedback or reinforcement were provided (Three-Period Lesson). These treatments were counterbalanced to examine any effect of one treatment being preceded by the other.

Two notions are of particular importance in the description of the mixed-model

design above: 1) *mixed-method design* and 2) *within the framework of single subject design*. Johnson & Onwuegbuzie (2004) make a distinction between *mixed-model designs* and *mixed-method designs*. In terms of the former, Johnson and Onwuegbuzie state "...one can construct mixed-model designs by mixing qualitative and quantitative approaches within and across the stages of research..." (p. 19); whereas, they state that mixed-methods designs "...are based on the crossing of paradigm emphasis and time ordering of the quantitative and qualitative phases." (p. 19). The difference is that in mixed model-designs, the approaches occur simultaneously whereas in mixed-method designs the approaches are distinguished and separated in time order, e.g. quantitative before qualitative or vice versa. Johnson and Onwuegbuzie (2004) note further that although a given method is usually associated with a particular research paradigm, it need not be. They contend that it is possible to separate the philosophical epistemology of the paradigm from the method used.

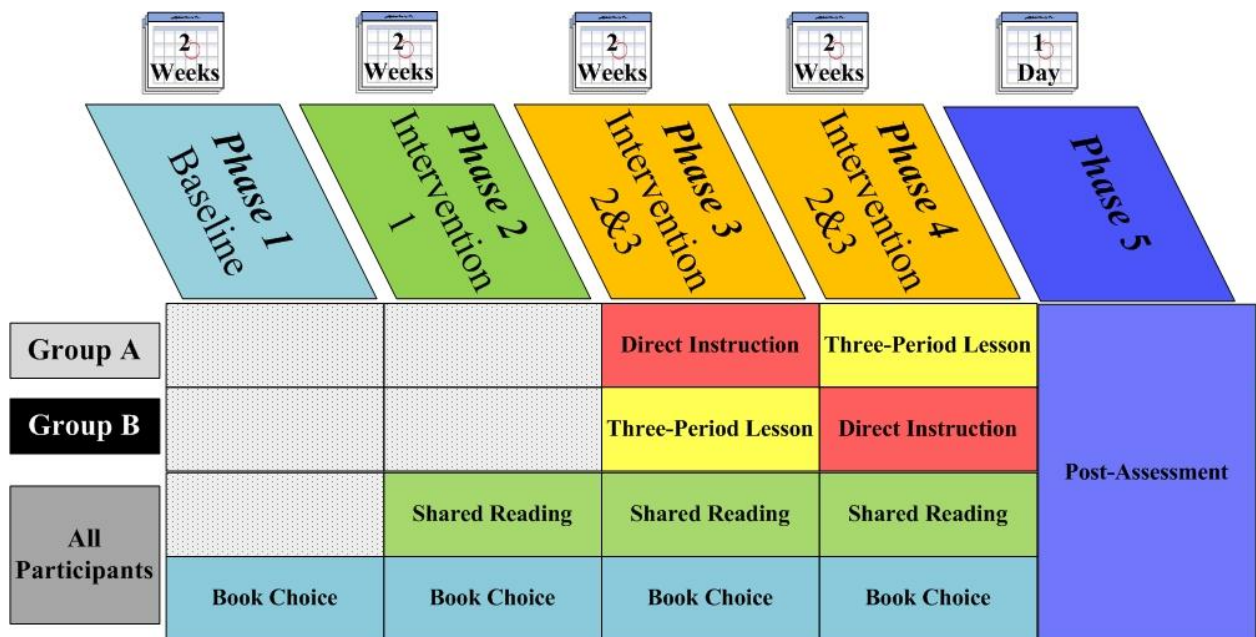
As used in this work, the phrase *alternating instructional treatments within the framework of a single-subject Applied Behavior Analysis (ABA) approach repeats across and among six children and three instructional treatments* refers to the fact the researcher utilized a modified version of an A-B-A-B or C (whereby A represents baseline, B represents intervention, A refers to a return to baseline and B or C refers to a return to treatment or the introduction of a different treatment. These types of designs are usually associated with *radical behaviorism* as set forth by B. F. Skinner and the field of Applied Behavior Analysis. It should be pointed out, however, that while the design aspect of the study was conceived within the ABA framework, the philosophy and epistemology of radical behaviorism and ABA were not. Biesta (2010) distinguished seven levels in the



discussion of mixed methods. These levels serve to differentiate between many dimensions of research, including ‘methods’, ‘design’, ‘epistemology’, and ‘ontology’. While this study uses the design of single-subject, the epistemology is different from that typically associated with single-subject research. This use of research methods incorporating varied worldviews is supported by Creswell and Clark (2011) who state, “We believe that multiple paradigms can be used in a mixed methods study.” (p.45).

Table 1 provides a visual representation of the actual research design itself. It should be noted that in addition to collection of qualitative data during each Phase, another departure from classic ABA single-subject design is the fact that blocks of sessions (a week’s presentation of a book and its associated vocabulary items) was time fixed. In classical single-subject design, movement to another intervention is governed by the performance of child. Unfortunately this was not possible for two reasons: 1) given structure of the classroom and 2) the nature of other aspects of the design.

*Table 1.* Visual Representation of the Research Design



For the purposes of this study ‘Book Choice’ was defined as a period of 15 minutes during which students were expected to select books to be read independently. ‘Long term retention’ was defined as a participant’s ability to successfully produce the sign and/or vocalization for a word when presented with the printed form of that word two-six weeks after receiving vocabulary instruction for that word. The four conditions were: 1) storybooks on display in the classroom and available to students with no direct intervention and Book Choice during Book Choice sessions (Baseline), 2) an intervention consisting of a Shared Reading of an appropriately leveled book and Book Choice during Book Choice sessions (Intervention One – Shared Reading), 3) storybooks presented through Shared Reading, word recognition instruction utilizing vocabulary from storybooks presented using a Three-Period Lesson prior to shared reading, and Book Choice during Book Choice sessions (Intervention Two – Three-Period Lesson), and 4) storybooks presented through Shared Reading, word recognition instruction utilizing vocabulary from storybooks presented using Direct Instruction entailing explicit feedback and reinforcement prior to shared reading, and Book Choice during Book Choice sessions, (Intervention Three – Direct Instruction).

Data collection took place over eight weeks, during which each child received two weeks each of Baseline and Interventions One, Two and Three. When implementing Interventions Two (Three-Period Lesson) and Three (Direct Instruction), half of the students (Group B) received the intervention in the sequence stated above, (i.e. Intervention Two followed by Intervention Three). The other half (Group A) obtained a reverse order of this sequence, (i.e. Intervention Three followed by Intervention Two) to counter-balance possible order effects of the two comparative instructional treatments.

Participants were randomly assigned to the two groups.

## **Participants**

**Participant selection and prescreening.** Within a classroom for students with hearing loss, all six students in the class were chosen to participate in the study. Student records, classroom teacher input, and current language assessment scores were collected. In addition, a Fountas and Pinnell Benchmark (2009) reading record was conducted for each participant in order to obtain current standardized reading levels. The Fountas and Pinnell (2009) assessment evaluates a student's reading level on a text gradient from A-Z, of which the lowest level is A. A typical first grade student is expected to have a Fountas and Pinnell (2009) reading level that ranges from level C to level I.

Data collection for this study took place in a first grade classroom of a school for the deaf in the Northeast. There were six students in the class, five males and one female. The mean age of participants was 6.9 years at the beginning of data collection. Four of the students had no other deaf members in their immediate families or homes. Two of the students had parents who were both deaf, and one of these students had one deaf and one hearing sibling. Two of the students' families spoke Spanish at home, and one student's family spoke Chinese.

Table 2. Demographics of Participants

Group and Participant Number	Gender	Age	Hearing Loss and Assistive Listening Device	Deaf Family Members	Language Spoken at Home	Fountas and Pinnell Reading Level
A1	M	6.5	Severe to Profound Loss  Right Ear: Cochlear Implant Left Ear: Unaided	No	English	A
A2	M	6.11	Profound Loss  Right Ear: Cochlear Implant Left Ear: Unaided	No	Spanish	B
A3	F	7.7	Severe to Profound Loss  Right Ear: Digital Hearing Aid Left Ear: Digital Hearing Aid	Both Parents and One Sibling	American Sign Language	D
B1	M	7.1	Moderate-Severe to Profound Loss  Right Ear: Digital Hearing Aid Left Ear: Digital Hearing Aid	Both Parents	American Sign Language	E
B2	M	7.9	Severe to Profound Loss  Right: Cochlear Implant Left Ear: Unaided	None	Spanish	B
B3	M	6.1	Severe to Profound Loss  Right Ear: Cochlear Implant Left Ear: Unaided	None	Chinese	A

Participant A1 was 6.5 years of age at the beginning of data collection. His hearing loss was severe to profound. He had a unilateral cochlear implant in his right ear and his left ear was unaided. He was assessed to have a Fountas and Pinnell independent reading level of A. His family members were all hearing and spoke English

at home.

Participant A2 was 6.11 years of age at the beginning of data collection. His hearing loss was profound. He had a unilateral cochlear implant in his right ear and his left ear was unaided. His Fountas and Pinnell assessment showed him to have an independent reading level of B. His family members were all hearing and spoke Spanish at home.

Participant A3 was 7.7 years of age at the beginning of data collection. Her hearing loss was severe to profound. She used bilateral digital hearing aids. Her Fountas and Pinnell independent reading level was D. Her parents and one sibling were deaf and used American Sign Language (ASL) at home.

Participant B1 was 7.1 years of age at the beginning of data collection. His hearing loss was moderate-severe to profound. He used bilateral digital hearing aids. His Fountas and Pinnell independent reading level was E. His parents were both deaf and used ASL at home.

Participant B2 was 7.9 years of age at the beginning of data collection. His hearing loss was severe to profound. He had a unilateral cochlear implant in his right ear and his left ear was unaided. His Fountas and Pinnell independent reading level was B at the beginning of data collection. His family members were all hearing and spoke Spanish at home.

Participant B3 was 6.1 years of age at the beginning of data collection. His hearing loss was severe to profound. He had a unilateral cochlear implant in his right ear and his left ear was unaided. His Fountas and Pinnell instructional reading level was A. His family members were all hearing and spoke Chinese at home.

## Setting

Screening procedures, all interventions, and data collection took place in a school serving students who are deaf or hard of hearing. Both the Three-Period Lesson and Direct Instruction sessions took place in a setting that was separate from the rest of the participants in order to avoid unintentionally exposing study participants to treatments. Shared reading and book choice data collection occurred in the classroom.

## Materials

As a part of this study, twelve children's storybooks were used. Six were explicitly used in the study and six served as distractors during Book Choice sessions. The particular books used were selected based on the Fountas and Pinnell (2010) reading assessment conducted during the prescreening, along with teacher input. Prior to collaboration with the classroom teacher, the researcher used several resources to select an initial list of books for possible inclusion in the study. Book lists included in articles such as *Sharing Traditional and Contemporary Literature with Deaf Children* (Schuler & Meck, 1992), and *Books to Read, Books to Sign* (Stewart, Bennett, & Bonkowski, 1992) were consulted, and age appropriate titles were included in the list of potential books for the study and cross referenced with various approaches to leveling books, including *The Fountas and Pinnell Leveled Book List* (Fountas & Pinnell, 2009). These resources were used in an attempt to compile a list of books that were well written, appealing to children, and appropriate for the needs of students who are deaf or hard of hearing. After several consultations, the researcher and classroom teacher decided that Fountas and Pinnell (2009) level H books would be appropriately challenging for both the reading levels of the students and the requirements of the study. Once an adequate list had been

constructed, the classroom teacher was consulted again to assist in the final selection of books to include in the study. Books with which children were already familiar, as well as books deemed inappropriate by the classroom teacher were removed from the list.

Once the list of books had been narrowed to twelve (see Appendix F), six of these books were randomly chosen for explicit inclusion in the intervention phase of data collection. The researcher then selected three vocabulary words from each of the six books. Words were chosen based on variables identified by Hiebert and Kamil (2005) as discussed in Chapter Two. These variables included word frequency, importance to the story, utility, as well as level of difficulty, anticipated novelty, and ease of representation. Ease of representation means that, to the greatest extent possible, words represented in the pictures in books were given preference over words that are not represented in the pictures. This allowed for consistency in the classroom teacher's ability to link the word to the picture during Shared Reading. Only nouns were chosen as vocabulary words for two reasons: first, for purposes of congruity and second, because research has shown that nouns are acquired more easily than verbs both by children with typical language development as well as those with language difficulties (Waxman & Kosowski, 1990). Again, the classroom teacher was consulted to ensure that the words selected were appropriate for the needs and academic levels of the students. After a consultation with the classroom teacher, the selected word list was modified based on the teacher's input. Once the vocabulary words were chosen, the researcher created a set of vocabulary cards. Each vocabulary word was printed on a blank white 3 X 5 index card using a font style consistent with the print used in the classroom and in 72-point type. Six additional vocabulary cards were created using vocabulary words chosen from the books included in

the study but not explicitly included in intervention for use in pre- and post-assessment of students' vocabulary.

### **Instrumentation**

All shared reading sessions, instructional sessions, and book choice time sessions were videotaped and coded.

### **Procedures**

Throughout data collection, the researcher spent three days each week collecting data. Each day of data collection followed the same pattern. First, (during Interventions Two and Three) the Direct Instruction or Three-Period Lesson component was conducted by the researcher in a one-on-one setting with each of the participants. Second, the classroom teacher conducted a Shared Reading session with the students. Third, students were allowed at least fifteen minutes of Book Choice time. While the specific timing of each phase varied due to the classroom schedule, phases always occurred in the same order. Typically, the one-on-one vocabulary instruction occurred shortly after the students arrived in the classroom, while they worked on the 'morning work' assigned to them individually by the classroom teacher. This morning work was generally followed by 'circle time' and then a class such as Art or Gym. When the students came back to the classroom after these classes, the Shared Reading typically took place. Shared Reading was usually followed by a short lesson, the content of which varied. This lesson was followed by Book Choice. Each of these phases of data collection was observed and videotaped by the researcher.

During each week of Intervention, the book being used as a part of the



intervention, along with three other books, were displayed in the classroom throughout the day. There were six copies of each book on display to allow for the possibility of multiple students choosing the same book. Throughout data collection, each of the six books involved in the interventions was on display for a total of two weeks; one week in which the book was a direct part of the Intervention, and one week in which the book was not directly involved with the Intervention. In three instances, the book was one that would be used in an Intervention but had not yet been used. In the other three instances, the book was one that had already been used in an Intervention. The book rotation schedule was designed this way in order take into account the possibility of inherent interest in a book not yet taught and the possible effect of familiarity in the case of those already taught. In addition, two books that were not used in any Intervention were on display each week to serve as distractors. Thus, four books were available during each Book Choice period: the book currently being in the Intervention, a book that either would be used for an Intervention or had already been used for an Intervention, and two distractor books. Any given book, whether used in Intervention or as a distractor was only displayed twice during the six weeks of interventions. Table 3 provides a visual display of the above description.

Table 3. Book Rotation Schedule

		Books											
		A	B	C	D	E	F	G	H	I	J	K	L
Weeks of Data Collection	1	X			X			X			X		
	2		X				X		X				X
	3			X		X				X		X	
	4		X		X				X		X		
	5	X					X	X					X
	6			X		X				X		X	

X= Current Intervention Book	X= Past Intervention Book
X= Future Intervention Book	X= Distractor Book

The classroom staff was provided with a spreadsheet, which included each student's name along with the names of the books on display. The staff was asked to make note of any interactions (e.g., selecting the book, asking a question about the book, making a comment about the book) the students had with the books outside of the Book Choice/data collection time. At the end of each week, the researcher collected the grid and conducted a short interview with the staff in order to collect qualitative data regarding students' interactions with the books outside of book choice time.

During the direct observation of Book Choice, field notes were collected by the researcher to assist in the coding of Book Choice data. Additionally, field notes were collected while the Shared Reading sessions were being conducted. The classroom

teacher was asked to keep anecdotal field notes regarding any student behavior related to the storybooks and/or vocabulary words included in the study.

**Pre-assessment.** Participants were probed for prior knowledge of the twenty-four vocabulary words to be included in the study. The word list was modified to ensure appropriate novelty for the participants. The tolerance for removing a word from the list was either: 1) two or more students demonstrating prior knowledge of that word, or 2) any one student demonstrating prior knowledge of two or more of the words on the list. Once the word list was modified, the participants were screened again for prior knowledge of the replacement words. In addition to the words included in the study, the researcher created cards printed with words from the ‘word wall’ in the classroom. These words were used in the pre-assessment in an attempt to raise participants’ comfort level by including words with which they were already familiar. No data were collected regarding these ‘comfort’ words.

**Baseline.** To establish a baseline, each student had two weeks without any intervention. During each of these weeks, data collection occurred on three days each week. On each day of data collection, four storybooks used in the study were displayed in the classroom and were available to students during Book Choice time. The books displayed each day paralleled the order in which the books were displayed during the six weeks of Intervention (See Table 3). For example, the four books displayed on the third day of Baseline data collection were the same four books that were displayed during the third week of Intervention. The researcher recorded all of the books that were selected by each student during this period. For the purposes of this study, a book selection was defined as an occurrence during which a student picked up a book and looked at a

minimum of three parts of the book (e.g., the front cover and two pages).

**Intervention One (Shared Reading).** Each student received two weeks of Intervention One, which consisted of the classroom teacher sharing one of the storybooks with the class three days each week. Prior to the commencement of Interventions and data collection, the classroom teacher and the researcher collaborated to develop a list of characteristics that would be present across each storybook sharing included in the study. To establish an empirical foundation for this discussion, the article *Reading to Deaf Children: Learning from Deaf Adults* (Schleper, 1995) was consulted. The agreed upon characteristics (see page 79 for a list) were documented and consulted throughout data collection, as well as during video coding. After the Shared Reading had occurred students were given Book Choice time, which was observed and videotaped.

**Intervention Two (Three-Period Lesson).** Intervention Two also occurred for a total of two weeks for each student and consisted of the use of the Three-Period Lesson (as described in Chapter One) to present vocabulary from the selected storybook three days each week prior to the Shared Reading of the book. For the Three-Period Lesson portion of the Intervention, each participant was given a one-on-one session in which the researcher presented the three vocabulary words corresponding to the current book, following the three-period lesson procedures discussed in Chapter One. This intervention also included whole-class Shared Reading of the book and Book Choice time, following the same procedures used in Intervention One (Shared Reading).

**Intervention Three (Direct Instruction).** Intervention Three occurred for a total of two weeks for each student and consisted of the use of Direct Instruction to present

vocabulary from the selected storybook three days each week prior to the Shared Reading of the book. For the Direct Instruction portion of the Intervention, each participant was given a one-on-one session in which the researcher presented the three vocabulary words corresponding to the current book. This Direct Instruction followed the same format as the Three-Period Lesson, but differed in that feedback and reinforcement were provided by the researcher (verbal and in the form of stickers) and mistakes made by the student were explicitly corrected by the researcher. This Intervention also included whole-class Shared Reading of the book and Book Choice time, following the same procedures used in Intervention One (Shared Reading).

As previously noted, all students began the study with two weeks of Baseline. Three students (Group A) then received two weeks each of Interventions One (Shared Reading), Three (Shared Reading plus Direct Instruction), Two (Shared Reading plus the Three Period Lesson), in that order. The remaining three students (Group B) received two weeks each of Interventions One (Shared Reading), Two (Shared Reading plus the Three Period Lesson), and Three, (Shared Reading plus Direct Instruction), in that order. This allowed for a comparison of the effects of Intervention Two prior to Intervention Three, and vice versa; alternating treatments to counterbalance the possible effects of order of presentation.

**One-on-one vocabulary instruction.** While both the Direct Instruction and the Three-Period Lesson sessions followed the format of the three-period lesson, the role of feedback and reinforcement had an impact on the movement between periods during the Direct Instruction. This will be explained in more detail later in this section. During this study, the researcher always began the first day of each week with the first period, during

which she introduced the new words to the participant. This was done by placing all three of the word cards on the floor facing the participant in between the researcher and the participant. The researcher would then point to each word and pause to allow the child to look at the word and then back at the researcher. When the child looked up, the researcher would vocalize and sign the word. The same procedure was followed for each of the three words. In most cases, the participant would repeat the word/sign after the researcher produced it. After each of the three words had been introduced, the researcher would repeat the first period. On the second repetition, the researcher observed the participant for indications that they were ready to move on to the second period. During the second or third repetition of the first period, participants almost always began to produce the word as soon as the researcher pointed to it. This subtle shift from repeating the word that the researcher had produced to producing the word independently was a signal that it was appropriate to move on to the second period. Occasionally, a participant did not begin to produce the sign independently. When this occurred, the researcher repeated the first period three or four times and then moved on to the second period.

The second period consisted of prompts from the researcher such as “Can you show me ‘whiskers’?”, or “Can you put ‘chimney’ on your head?”. During the Three-Period Lesson, if the participant selected the wrong word, the researcher immediately moved back to period one. In these cases, period one was repeated again until the child began to produce the word independently and the researcher felt that it was appropriate to move on to the second period again.

The Direct Instruction differed due to the role of feedback. When the participant

responded correctly to a prompt, the researcher would offer verbal feedback and reinforcement such as, “Right!” or “Good job!”. This verbal feedback was intended to resemble the verbal feedback that the researcher has observed being provided to participants by the classroom teacher. Correct responses were also reinforced with a sticker. If the participant selected the wrong word, the researcher would provide feedback such as “No. That’s not ‘tire’. Where is ‘tire’?” This feedback generally enabled the participant to select the correct word, in which case the researcher continued with the second period. If the child struggled to select the correct word, even with feedback or if he or she required frequent feedback to select the correct word, the researcher moved back to the first period.

Even if a participant was able to select the correct words, each word was typically given several repetitions during the second period, especially on the first and second day of instruction, or if the child had struggled on previous days. Multiple repetitions are typical during the second period of the three-period lesson because this allows the child to move the words from short- to long-term memory.

As with the movement from the first to the second period, the researcher observed the participant carefully to decide when to move on to the third period. If the participant had successfully selected each word multiple times and without hesitation, the researcher moved on to the third period. If the child was hesitating over the words, or had required multiple transitions between the first and second periods, the researcher generally chose not to move on to the third period. At the same time, a very brief third period (one prompt for each word) was sometimes used to conclude a vocabulary instruction session during which the participant was occasionally hesitant during the second period or moved

back and forth between the first and second periods. This was done simply as a quick way to give the researcher information about how well the participant was acquiring the words and to inform the vocabulary instruction session the following day. If the child was continuously hesitating or selecting the wrong words, the vocabulary instruction was concluded without moving on to the third period.

**Probes.** At the end of each week when one-on-one vocabulary instruction was conducted, the researcher probed each participant as to their understanding of the meaning of the words being taught. This was done to determine if word knowledge garnered from the Shared Reading would carry over to that portion of the Intervention that involved the one-on-one vocabulary instruction.

**Post-assessment.** Approximately two weeks after the completion of the initial eight-week data collection, all participants were probed again for word retention and knowledge of targeted vocabulary items using the vocabulary cards utilized during the vocabulary instruction Interventions (Three Period Lesson and Direct Instruction). Each of the twenty-four vocabulary cards were presented in random order to each participant. The student was asked to identify the vocabulary word, either through sign language, vocalization, or both. Fingerspelled renditions of the words were not accepted, as it could not be determined whether the child actually recalled the word or was just copying the spelling of the word, and the child was prompted to either sign or say the word. Responses were recorded as either correct or incorrect, with any incorrect words noted for further analysis. When a student correctly identified a word, the researcher asked a follow up question such as, “What did you learn about that word?” These data were used in the qualitative component of the study, to determine the occurrence and quality of



vocabulary learning.

### **Dependent Variable Measure**

There were two dependent variables. The first was Book Choice (as defined earlier in this chapter) during book choice time. The second dependent variable was word recognition retention, i.e., the number of vocabulary items retained over a two- to ten-week period of time. For the purposes of this study ‘retention’ was defined as the ability to produce the correct sign and/or vocalization when presented with a word printed on a card.

### **Independent Variable**

The independent variable was the type of intervention used (Shared Reading, Shared Reading plus Three Period Lesson, or Shared Reading plus Direct Instruction) in terms of Book Choice and the type of presentation in establishing word recognition, e.g., no vocabulary instruction, vocabulary instruction using the Three-Period Lesson (involving no feedback or reinforcement), and vocabulary instruction using Direct Instruction (involving feedback and reinforcement).

### **Fidelity of Treatment**

In order to ensure validity, all of the whole-class Shared Reading sessions, the individual Three-Period Lessons and the individual Direct Instruction sessions were videotaped. After each whole-class Shared Reading, the videotape was reviewed to determine whether there was adherence to the guidelines agreed upon as to the characteristics of whole-class Shared Reading. In addition, three sessions per phase were reviewed by two educators of the deaf and hard of hearing (see Reliability) to determine

whether the researcher adhered to the guidelines established for the particular Intervention being used. Finally, once data collection was complete, ten video samples of the vocabulary instruction sessions with participants, along with a description of each of the two types of instruction (Three-Period Lesson and Direct Instruction) were provided to two teachers of the deaf. Each teacher viewed the video samples and labeled each one according to the instructional method they determined had been demonstrated.

### **Reliability**

Three forms of reliability checking were performed. The first reliability check was to determine the consistency of agreement in judging whether the classroom teacher adhered to the agreed-upon characteristics of a whole-class shared reading and consistency of agreement with the researcher's judgment of this adherence. The researcher consulted the list of agreed-upon characteristics while reviewing the videotape of each Shared Reading session. Second, two teachers of the deaf and hard of hearing reviewed three videotaped whole-class Shared Reading sessions per phase. The two teachers, as well as the researcher, coded actions on the tape based upon the agreed-upon checklist of the characteristics of what a whole-class shared reading activity should resemble. Percentages of agreement among these three coders were calculated. A similar procedure was followed in determining the reliability (and fidelity) of the two types of individual vocabulary instruction Interventions. The third form of reliability involved calculating the percentage of agreement among the two educators of the deaf and hard of hearing and the researcher in terms of scoring the responses of the children during the probe testing.

## **Qualitative Study**

**Entrance into the field.** Prior to beginning participant screening and data collection, the researcher visited the classroom several times in order to get to know the students and classroom staff and to become familiar with the classroom routines. The purpose of this was for the researcher to familiarize herself with the organization of the classroom and to observe how language was taught in the classroom. It also allowed the students and the teacher to become more comfortable with the researcher before intervention began. Likewise, it gave the researcher an opportunity to better understand the daily routines of the class and become familiar with and the students, the teacher, and the teacher's orientation to teaching and literacy. These visits took place over four weeks, during which the researcher visited two days each week. Each visit lasted approximately three hours. Throughout this observational period, the researcher took field notes regarding all of the points mentioned above. To this end, the researcher was able to observe the teacher sharing books with her students as well as the students having book choice time.

**Classroom teacher interviews.** Both formal and informal interviews were conducted with the classroom teacher throughout the study. The more formal interviews included a list of predetermined questions (See Appendix C) and follow-ups to those questions that were answered both in person and via e-mail. The less formal interviews took the form of weekly discussions and e-mails. The purpose of these interviews was to allow the researcher to implement the study in a way that was appropriate for answering the research questions posed, while at the same limiting the disruption to the classroom. The interviews also provided helpful qualitative data to supplement the quantitative data

collected during the study.

**Pre-assessment, interventions and post-assessment.** Throughout the pre-assessment, eight weeks of data collection, and post-assessment, all sessions related to the study were videotaped by the researcher. The researcher transcribed all videotapes into verbal transcripts. Once transcribed, the text was reviewed for accuracy in preparation for open coding. The researcher's field notes and interviews were reviewed and coded. This qualitative data was considered and discussed both on its own, and as a supplement to the quantitative data collected as a form of triangulation and to assist in the interpretation of the findings.

An additional qualitative component attempted to separate the students' word recognition skills from their vocabulary learning. To collect data about the students' word learning, the first and third day of data collection during each week of Interventions Two (Shared Reading plus Three Period Lesson) and Three (Shared Reading plus Direct Instruction) included an extra component during the one-on-one vocabulary instruction session between the researcher and each of the students. After the Three-Period Lesson or Direct Instruction had been completed on the first day, the researcher asked each student one question about each of the three vocabulary words being covered that week: "What do you know about this?" On the third day, the question was changed to "What did you learn about this?" The purpose of this data collection was to determine whether or not any learning related to the word in the study occurred as a result of the combination of explicit and implicit vocabulary experiences provided to students. It was theorized that the Three-Period Lesson and Direct Instruction components of the study would allow students to open 'lexical files' for each of the vocabulary words. In turn,

these lexical files would begin to ‘fill up’ during the Shared Reading and Book Choice sessions. This qualitative piece of the study attempted to gather data about if, and how well, students were able to begin filling up their lexical files.

## **Chapter IV**

### **Results**

There were two main findings for this study. The first was that none of the participants' Book Choice probabilities were noticeably different from their Baseline data during any of the three Interventions. This indicates that no participant showed any preference for any book or books used within any Intervention. Therefore, neither Shared Reading nor either type of vocabulary instruction had an impact on participants' probability of choosing a book.

The second finding was related to the participants' word retention. The comparison of data from the pre- and post-assessment probes showed that five of the six participants retained more words from books shared with them during their Three-Period Lesson intervention than those from Shared Reading (only) books, books shared with them during their Direct Instruction intervention, and words from the distractor books.

Over the course of data collection, the researcher also noticed some interesting trends in participants' behavior during Book Choice sessions as well as the length of time necessary to complete the vocabulary instruction sessions. These data and observations are discussed in an 'Additional Analyses' section at the end of this chapter.

### **Entrance into the Field**

Prior to beginning participant screening and data collection, the researcher visited the classroom several times in order to get to know the students and classroom staff and also to become familiar with the classroom routines. This was important not only because it gave the researcher an opportunity to observe the language instruction in the

classroom, but also because it allowed the students to become more comfortable with the researcher before the one-on-one vocabulary instruction sessions began.

Three important findings emerged from these early classroom visits. First, the researcher was able to observe the teacher sharing books with her students as well as the students having book choice time. These were consistent parts of the classroom routine and the students seemed comfortable with the procedures and expectations of these sessions. They required little direction from the teacher and carried out the sessions without any signs of unease or confusion. In addition, the researcher observed that the teacher was already in the habit of reading the same book multiple times across one or two weeks. The fact that this type of shared reading was already a well-established part of the classroom made it easy to incorporate the Shared Reading portion of the study into the classroom without a great deal of disruption or adjustment. The researcher was able to observe the teacher sharing two books with the students multiple times. The first was *Polar Express* (Van Allsburg, 1985), which was read several times over two weeks, and the second was *A Chair for My Mother* (Williams, 1984), which was read several times in one week. These observations allowed the researcher to see that the teacher had firmly-established methods for reading a book multiple times, which made it easy for the teacher and researcher to work together to list the features that would be included in the Shared Reading sessions related to the study. The teacher was able to implement these features naturally because they were already a routine part of her shared reading, and the students were accustomed to participating in multiple shared reading sessions for one book.

Second, observing shared reading sessions prior to beginning the study also allowed the researcher to see how the teacher dealt with unknown or unfamiliar words

encountered in a text. While observing one of the shared reading sessions of *A Chair for My Mother* (Williams, 1984), the researcher documented the following dialog:

Teacher: (Reading from the book.) *“Usually Grandma sits with us, too. While we count, she likes to hum.*

Do you remember what humming is?”

B1: (Begins to hum.)

Teacher: “Yes! It’s singing with your mouth closed.”

Students: (Take turns humming.)

The third observation that informed this study was the use of feedback and reinforcement in the classroom. There was tangible reinforcement in the form of paper stars, which the students received during transitions from one lesson to the next and occasionally during a lesson. These stars were saved up in order to earn a popcorn party for the class. Stars were withheld for behaviors such as not paying attention during a lesson, being unkind to a classmate, and not following instructions. Additional stars were given out to students who demonstrated model behavior.

Verbal feedback and reinforcement were also an important part of the classroom culture. The teacher often gave students ‘high fives’ for correct answers, and made statements such as, “Good job!”, and “Right!” after correct responses. Incorrect answers were often followed by statements such as, “No.”, and “Try again.” The researcher asked the teacher about her use of feedback and reinforcement during an interview and the teacher responded, “I try and use feedback and positive reinforcers in everything I do. The students really respond to these things and learn from others’ behavior based on these



things”. The use of feedback and reinforcement was quite typical for a traditional classroom and the students appeared to be acclimated to both verbal and material reinforcement as a part of their classroom experience.

Finally, the researcher was able to observe the students working on their weekly spelling words. This provided helpful information about the level of vocabulary words that the students were assigned by the teacher. The class was divided into two groups for spelling words, based on ‘ability’. A3 and B1 were assigned one set of words, while A1, A2, B2, and B3 worked on a different set of words. (To refresh the reader’s memory, the designation of ‘A’ refers to those children who during one-one vocabulary instruction received Direct Instruction before the Three-Period Lesson, while the Designation of ‘B’ refers to those participants who received the Three-Period Lesson first followed by Direct Instruction). During one of the weeks that the researcher observed, the first group had a list of words that included: ‘title’, ‘author’, ‘outside’, and ‘zipper’, while the second group was working on words such as: ‘map’, ‘cap’, ‘gap’, and ‘lap’. In order to accommodate the slightly higher reading levels of A2 and B2, the teacher stated that she often assigned them one or two words from the set of higher-level words in addition to the list of simpler words assigned to A1 and B3. The considerable difference in the level of the words being learning by the two groups alerted the researcher that choosing one set of words for all participants would be a challenge.

### **Classroom Teacher Interviews**

Throughout the study, the researcher conducted several interviews, both formal and informal with the classroom teacher. These interviews were helpful in several ways, one of which was establishing some of the procedures for the study such as the features

used during the Shared Reading sessions. Based on an interview with the classroom teacher about her procedures for sharing a book with her students, the criteria for Shared Reading sessions were established.

- Asking students to make predictions/inferences
- Asking students about/discussing point of view/feelings
- Discussing problem/solution
- Asking students to identify: Title, Author, and Illustrator/photographer
- Asking students to summarize the story/identify the main idea
- Focus on difficult meanings of words/signs

In addition, these interviews provided the researcher with insight into the language levels and abilities of the participants as well as how the teacher structured her language instruction. The less formal interviews assisted the researcher in clarifying confusions that arose related to her observations of, or vocabulary instruction sessions with the participants. Finally, the information the teacher provided regarding study-related issues such as vocabulary instruction and the use of feedback and reinforcement were useful not only in implementing the study, but also in interpreting the findings.

### **Intervention**

A mixed-model design with alternating treatments for implementing the one-on-one instruction within the framework of a single-subject design was used to determine if a functional relationship existed between the students' selection of storybooks during Book Choice time and the type of Intervention used. An additional goal was to assess the efficacy of a traditional approach to Direct Instruction of word recognition and recall

using feedback and reinforcement as opposed to the Three-Period Lesson, an approach that does not use feedback or reinforcement. In the process of conducting this study, both qualitative and quantitative data were collected. More specifically, during Baseline, quantitative data with regard to Book Choice were collected. During Intervention One (Shared Reading), which entailed only Shared Reading, two sets of data were collected: qualitative data with regard to the verbal interactions between the teacher and her students, and quantitative data for each student with regard to Book Choice. During Interventions Two (Three-Period Lesson) and Three (Direct Instruction), which involved a counter-balancing of alternating treatments with regard to word recognition and retention, the following data were collected: First, qualitative data with regard to the teacher-student interaction during Shared Reading, and second, quantitative data with regard to trials-to-mastery of word recall. In addition, quantitative measures of total time used for each session and qualitative data with regard to the children's behavior were collected. Finally, there was a post-assessment of retention of the words taught.

The data and results are reported in the following manner: First the quantitative results of Book Choice across all four conditions are reported, followed by the quantitative results of one-on-one vocabulary instruction under the two differing conditions in terms of trials-to-learning in each session. Following the report of the quantitative data, the qualitative data collected and analyzed during the vocabulary instruction and Shared Reading sessions are reported. The results of the two-week follow up with regard to long-term retention of the vocabulary words and the qualitative probes as to what they remembered about the words are reported. Finally, three additional analyses are reported.

## Book Choice Sessions

Each Book Choice session was both observed by the researcher and videotaped. For each session, the researcher used a spreadsheet to record the book choices of the participants. These data were averaged across Baseline and across each week of Interventions One (Shared Reading), Two (Three-Period Lesson) and Three (Direct Instruction).

The data across all six participants showed that none of the three Interventions had an obvious impact on participants' choice of the books used during Interventions One, Two, or Three when compared with Baseline. Figures 2-7 below illustrate participants' Book Choice data for Baseline and all Interventions.

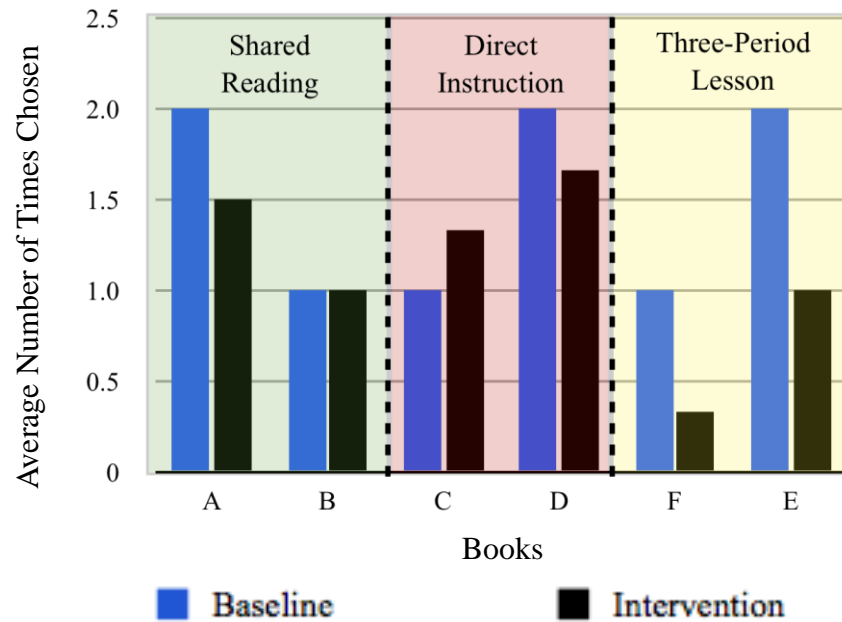


Figure 2. Participant A1 Book Choice Data

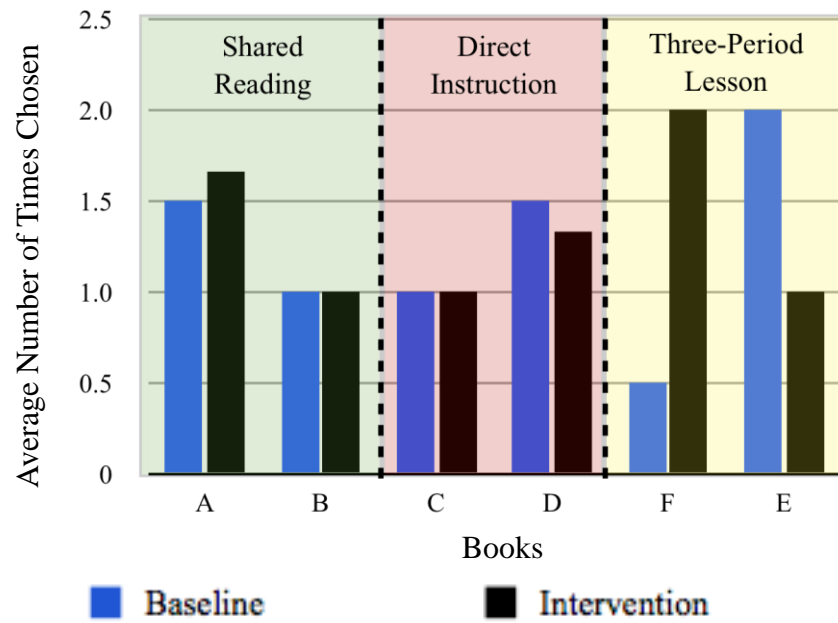


Figure 3. Participant A2 Book Choice Data

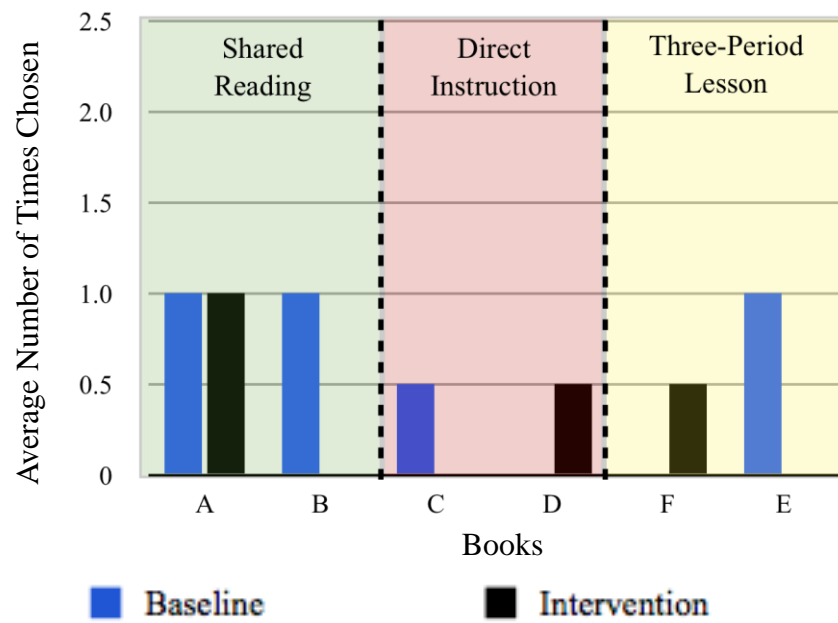


Figure 4. Participant A3 Book Choice Data

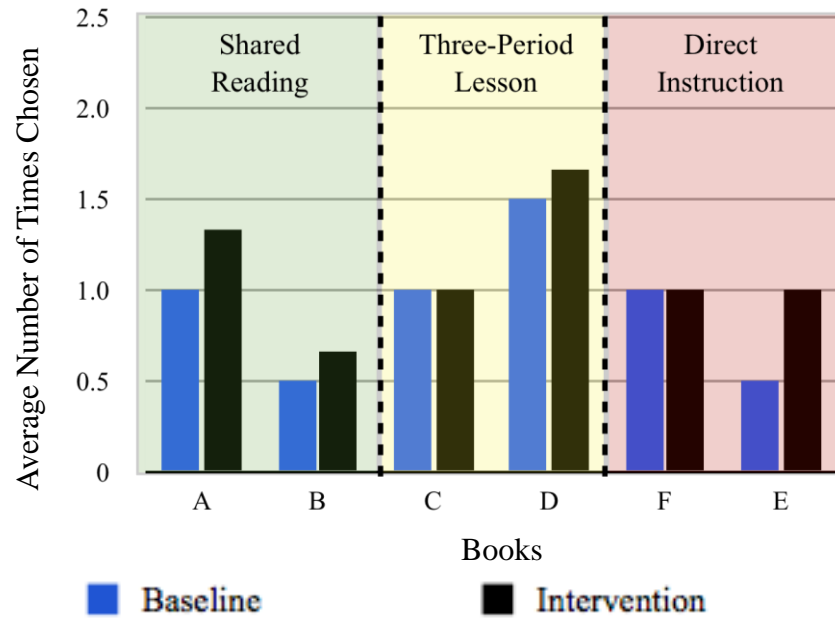


Figure 5. Participant B1 Book Choice Data

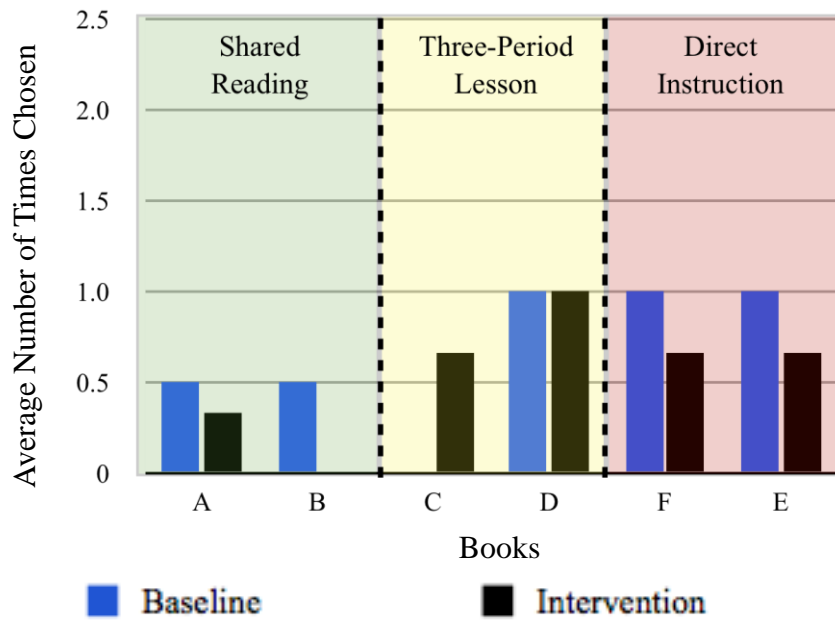


Figure 6. Participant B2 Book Choice Data

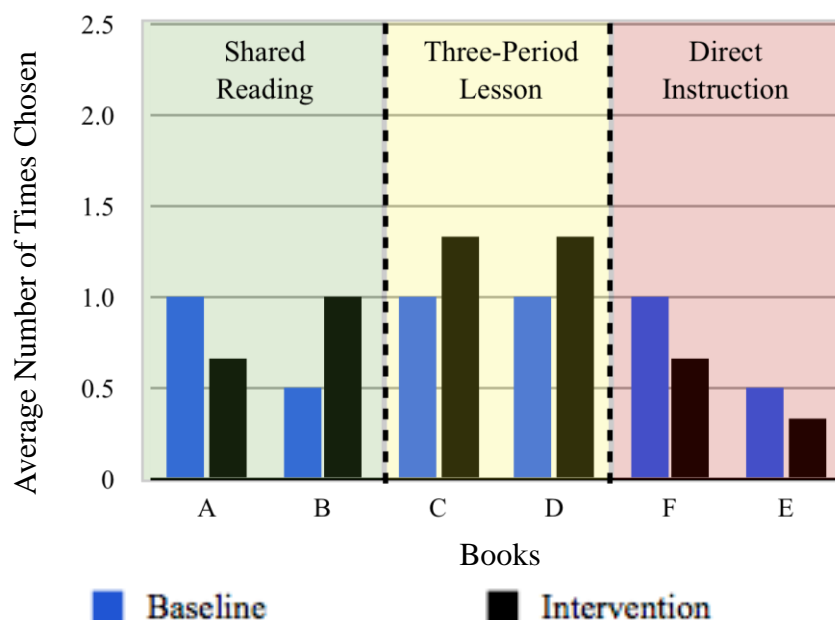


Figure 7. Participant B3 Book Choice Data

While some participants' Book Choices for certain books were slightly higher during the week in which that book was shared by the teacher, these differences did not occur across any Intervention, with one exception. Participant B3 chose the study books taught during his Three-Period Lesson Intervention slightly more often than he chose them during Baseline. However, this difference was very small. There are some instances in which participants' tendency to choose a particular book seem positively related to their interest in that book (as quantified by the comments and redirects data discussed later in this chapter). However, there are also examples in which this was not the case.

### One-on-One Vocabulary Instruction Sessions

Interventions Two (Three-Period Lesson) and Three (Direct Instruction) entailed

vocabulary instruction in recognizing and recalling the print version of three words per week. While both types of instruction followed the same format, the Three-Period Lesson sessions did not involve any feedback or reinforcement from the researcher, while the Direct Instruction sessions included both feedback and reinforcement from the researcher. Individuals identified as A1, A2, and A3 received the Direct Instruction approach for two weeks, followed by two weeks of the Three-Period Lesson. Individuals identified as B1, B2, and B3 received two weeks of the Three-Period Lesson followed by two weeks of Direct Instruction.

Figures 8-19 below represent the one-on-one vocabulary instruction. The first column on the left shows the type of vocabulary instruction. The next column shows the week, and day of each session as well as the session length. Each session is broken down by word, as well as by each period of the three-period lesson. Colors have been assigned to represent each period of the three-period lesson. Green signifies the first period, purple the second, and yellow the third. It was important to visually represent the three periods, because it is common to move back and forth between the three periods within one session. Within the green cells representing the first period, the number above the slash represents the number of times that the researcher presented the word to the participant. In the first period, the researcher pointed to each word then signed and voiced the word. The number below the slash represents the number of times that the participant signed or said the word along with the researcher. In the purple and yellow cells representing the second and third periods, the number above the slash represents the number of times the researcher prompted the participant with that word. An example of a prompt would be, “Can you show me ‘whiskers’?” The number below the slash in the



second and third periods represents the number of times the participant gave a correct response to the researcher's prompt. A dash (~) represents a word that was neither presented nor prompted by the researcher during that particular portion of the instruction. This occurred when the participant was unable to give a correct response on another word, which required the researcher to end the current period and return to the previous period.

As discussed in Chapters One and Three, the decision to move from one period to the next within the three-period lesson is nuanced and intuitive. While both the Direct Instruction and the Three-Period Lessons followed the format of the three-period lesson, the role of feedback and reinforcement had an impact on the movement between periods during the Direct Instruction.

The following figures represent the vocabulary instruction sessions for each of the participants under both conditions of Direct Instruction and the Three Period Lesson.

**Participant A1.** A1 began with two weeks of Direct Instruction followed by two weeks of Three-Period Lesson, as indicated in Figures 8 and 9. During the first session of his first week of Direct Instruction, A1 quickly learned the print form of the vocabulary items presented. He had more difficulty in the subsequent two sessions. In the second session of week one he needed to return to period one (naming) and period two (recognition) twice until he achieved mastery of the print form of the words. As for the second week of Direct Instruction, using a different book during Shared Reading and different vocabulary words, he acquired the print form of the words very quickly. There was no need in any session to return to a previous period. Indeed, in session three, there was no need to begin the lesson with the first period.

Participant A1										
Direct Instruction		1	2	3	4	5	6	7	8	
	Week 1, Day 1 5:51	2 2 2 / / / 2 2 2	3 3 2 / / / 2 3 2	1 1 1 / / / 1 1 1						
	Week 1, Day 2 12:06	1 / ~ 0	2 2 2 / / / 2 2 2	4 4 3 / / / 2 2 3	2 2 2 / / / 2 2 2	2 2 2 / / / 2 2 2	1 1 1 / / / 1 1 1			
	Week 1, Day 3 14:35	1 / ~ 0	2 2 2 / / / 2 2 2	8 5 5 / / / 4 5 5	2 3 2 / / / 2 2 2					
		garbage soldier whiskers	garbage soldier whiskers	garbage soldier whiskers	garbage soldier whiskers	garbage soldier whiskers	garbage soldier whiskers	garbage soldier whiskers	garbage soldier whiskers	garbage soldier whiskers
		1	2	3	4	5	6	7	8	
	Week 2, Day 1 10:26	2 2 2 / / / 2 2 2	5 4 5 / / / 4 4 5	2 2 2 / / / 2 2 2						
	Week 2, Day 2 9:50	2 2 2 / / / 1 1 0	3 2 3 / / / 2 2 3	3 3 3 / / / 3 3 3						
	Week 2, Day 3 4:00	1 1 1 / / / 1 1 1	2 2 2 / / / 2 2 2							
		chimney pipes cement	chimney pipes cement	chimney pipes cement	chimney pipes cement	chimney pipes cement	chimney pipes cement	chimney pipes cement	chimney pipes cement	chimney pipes cement

Figure 8. Participant A1 Direct Instruction

In terms of the Three Period Lesson sessions (Figure 9), A1 learned the print format of the vocabulary items for the first week of instruction very quickly. He achieved mastery in all three sessions with no need to go back to any of the earlier periods. In week two, a different set of words, he found the task more difficult. This may have been due to the fact that he missed the first day of instruction. He required a return to period one during both of his sessions for this week, and on the final day he was not able to

move from period two to period three. The challenges A1 exhibited during this week are discussed further below.

		Participant A1																							
Three-Period Lesson		1			2			3			4			5			6			7			8		
	Week 1, Day 1 2:55	3	3	3	3	3	3	2	2	2															
	Week 1, Day 2 2:46	1	1	1	3	4	4	3	3	3															
	Week 1, Day 3 6:24	2	2	2	3	3	4	1	1	1															
		laundry	hopscotch	jacks	laundry	hopscotch	jacks	laundry	hopscotch	jacks	laundry	hopscotch	jacks	laundry	hopscotch	jacks	laundry	hopscotch	jacks	laundry	hopscotch	jacks	laundry	hopscotch	jacks
	Week 2, Day 1 0:00																								
	Week 2, Day 2 5:38	3	3	3	4	3	3	2	2	2	2	2	2	1	1	1									
	Week 2, Day 3 3:15	1	1	~	2	2	3	2	2	2															
		shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire

Figure 9. Participant A1 Three-Period Lesson

Of the six participants, A1 had the most noticeable response to the transition from one type of vocabulary instruction to the other. He seemed to enjoy the stickers used during the first two weeks, often smiling when the researcher asked him which color sticker he wanted, and pausing to consider the colors he chose. He was frequently distracted from the Direct Instruction by playing with the stickers and asking questions or making comments about the stickers. When the researcher explained to him on the first

day of Three-Period Lesson instruction that there would be no stickers, he expressed disappointment and inquired about the stickers again the next day, however, he achieved mastery very quickly.

Beginning on the first day of Direct Instruction, the videotapes showed that he was engaged in the task. He watched the researcher closely when she was prompting him and made frequent eye contact. He often chose to enthusiastically ‘slap’ the cards rather than point to them after a researcher prompt. This engagement continued through each of A1’s six Direct Instruction sessions. At the beginning of each session, he sat across from the researcher as soon as he entered the room and remained sitting with his legs crossed, facing the researcher until the each session was completed.

The videos also showed evidence that A1 was relying heavily on feedback from the researcher during the Direct Instruction sessions. When the researcher said, “Can you show me ‘whiskers/soldier/garbage’?”, he tended to quickly put his hand on one of the cards and then look up at the researcher. If he did not receive positive feedback from the researcher, he would quickly move his hand to the next card and then the next. This method of ‘guessing’ until he made a selection of the correct word and received positive reinforcement did not require him to give much focus to the words themselves. It should be noted that although he hesitated over the correct response, he was never given feedback until he actually chose a card.

On the first day of the Three-Period Lesson, as the researcher was arranging the cards to begin instruction, A1 said, “You forgot the stickers.” The researcher explained that she would not be using stickers that week and A1 scrunched his face in disappointment. From the first day of Three-Period Lesson instruction, he was more

subdued than he was during the previous two weeks, pointing gently to the cards rather than slapping them. On the second day of Three-Period Lesson instruction, his expression of disappointment at the lack of stickers continued. He again began the session by asking the researcher about stickers. When she reminded him that they would not be using stickers that week, he sighed and signed, “Pay attention.”, as though indicating that it was an effort for him to pay attention.

While his seated posture and orientation to the researcher remained focused and consistent throughout the two weeks of Direct Instruction, it began to change on the second day of Three-Period Lesson instruction, when he sat on his feet rather than sitting with his legs crossed in front of him. By the fourth and fifth day of Three-Period Lesson instruction, A1 rocked back and forth and fidgeted throughout the session with the researcher. The second week of Three-Period Lesson instruction videos also show that he was reluctant to begin the sessions. Upon entering the room on the second and third days of the second week (he was absent the first), A1 did not sit down to begin instruction as he had in the past sessions. Instead he went to a chalkboard that was in the room and wrote several numbers and drew several shapes. He then walked to a blank bulletin board and began rearranging the pushpins that were scattered around the board. When he eventually sat down, he further delayed instruction by commenting on the researcher’s necklace and the chalk dust on his hands. During A1’s final session of Three-Period Lesson instruction, he changed his position often from sitting up to lying down and rocked vigorously when he was sitting up. At one point during the session, he stood up and walked to the chalkboard to draw another shape.

The videotapes of the first week of Three-Period Lesson instruction showed that

A1 was focusing on the cards and using each of the words to discriminate and choose the word that the researcher requested. Rather than quickly choosing a card and looking at the researcher for feedback, he leaned forward and looked at each of the cards before making a selection. This consideration and comparison of the words on the cards was an interesting contrast to his guessing method during Direct Instruction in which he spent little time looking at the cards. At the same time, by the third day of the Three-Period Lesson, A1 began to show the evidence of frustration discussed above. These behaviors began to interfere with his focus on the words. During Direct Instruction, he had seemed to enjoy the interaction, particularly receiving stickers. The change from direct instruction to Three-Period Lesson instruction seemed to frustrate A1.

**Participant A2.** A2 also began with two weeks of Direct Instruction followed by two weeks of the Three-Period Lesson. He was absent for two of the three sessions during the first week of Direct Instruction (Figure 10), but present for all three sessions during the second week. Despite his absence, A2 quickly learned the print forms of the word in the first week of Direct Instruction. In session one, he was able to achieve mastery in one session of instruction and without having to repeat periods one or two. In terms of week two of Direct Instruction, he again had no difficulty in achieving mastery without having to go back to earlier periods. It should be noted that in week one, day three, the reason he was not given periods one or two is because as soon as he came into the room and sat down, he immediately correctly identified the print forms of the words without any prompts.



Participant A2										
Three-Period Lesson		1	2	3	4	5	6	7	8	
	Week 1, Day 1 0:00									
	Week 1, Day 2 3:25	2 /	2 /	2 /	4 /	4 /	4 /	3 /	3 /	3 /
	Week 1, Day 3 2:32	1 /	1 /	2 /	2 /	2 /	2 /	2 /	3 /	2 /
		1 laundry	1 hopscootch	2 jacks	2 laundry	2 hopscootch	2 jacks	2 laundry	3 hopscootch	2 jacks
	Week 2, Day 1 2:35	2 /	2 /	2 /	3 /	3 /	3 /	3 /	3 /	3 /
	Week 2, Day 2 1:55	2 /	2 /	2 /	3 /	3 /	3 /	3 /	3 /	3 /
	Week 2, Day 3 1:43	1 /	1 /	1 /	1 /	1 /	1 /	2 /	2 /	2 /
		1 shop	1 ferry	1 tire	1 shop	1 ferry	1 tire	2 shop	2 ferry	2 tire

Figure 11. Participant A2 Three-Period Lesson

While he seemed to enjoy the stickers, smiling when he was asked to choose a color, A2 did not show evidence of being distracted by them. When he was given a sticker, he would place it on his card and then look back up at the researcher. He did not comment on the stickers or spend any time rearranging them. His posture throughout his four sessions of Direct Instruction remained consistent. He sat facing the researcher and tended to shift from sitting on both feet to sitting on one foot and bringing up one knee.

On the first day of Three-Period Lesson instruction, the researcher explained to A2 that they would not be using stickers. He showed slight disappointment in his facial



expression, but did not mention the stickers again during any component of the study. His posture and orientation to the researcher remained consistent across the Direct Instruction and the Three-Period Lesson sessions.

**Participant A3.** A3 was the third participant to receive two weeks of Direct Instruction followed by two weeks of the Three-Period Lesson. As can be seen in Figure 12, she, like A2, found the first week's words quite easy. She mastered the print form of the words in one session. She was absent for the second day, but on the third day she showed retention of these words such that it was not necessary to begin conduct period one (naming), but only periods two (recognition) and three (recall). A3 found the words in the second week of Direct Instruction slightly more difficult. She was absent for the first session in week two, but she was there for days two and three. On day two, her first introduction to the words, she had to repeat periods one (naming) and two (recognition) twice each and she never achieved recall (period three).

Participant A3																									
Direct Instruction		1			2			3			4			5			6			7			8		
	Week 1, Day 1 5:57	2	2	2	3	3	3	2	2	2															
	Week 1, Day 2 0:00																								
	Week 1, Day 3 2:42	1	1	1	2	2	2																		
		garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers
	Week 2, Day 1 0:00																								
	Week 2, Day 2 3:15	2	2	2	1	~	~	1	1	1	1	1	1	1	1	1	2	1	2						
		2	2	2	0			1	1	1	0	1	1	1	1	1	1	1	2						
	Week 2, Day 3 5:25	1	1	1	3	3	3	3	3	3															
	1	1	1	3	3	3	3	3	3																
	chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement	

Figure 12. Participant A3 Direct Instruction

In terms of the words used in the Three-Period Lesson, (Figure 13), A3 learned the print forms very quickly. A3 was absent for the third day's session in week one but in the prior two sessions, A3 learned the print forms of the words in week one. On the first day, it only took one block of presentations, from naming to recall, to demonstrate proficiency, and on day two it was not necessary to present period one (naming), given her performance the day before. During this session she demonstrated proficiency in recognition and recall. Similarly, in week two of the Three-Period Lesson condition she

performed well enough in day one that it was not necessary to go through periods one (naming) or two (recognition) on days two or three. It was possible to simply go to the recall condition (period three), which she was able to demonstrate on both the second and third days.

Participant A3																									
Three-Period Lesson	1			2			3			4			5			6			7			8			
	Week 1, Day 1 1:35	1	1	1	2	2	2	3	3	3															
	Week 1, Day 2 1:19	2	2	2	2	2	2																		
	Week 1, Day 3 0:00																								
		laundry	hopscotch	jacks	laundry	hopscotch	jacks	laundry	hopscotch	jacks	laundry	hopscotch	jacks	laundry	hopscotch	jacks	laundry	hopscotch	jacks	laundry	hopscotch	jacks	laundry	hopscotch	jacks
	Week 2, Day 1 1:38	2	2	2	3	3	3	3	3	3															
	Week 2, Day 2 0:29	1	1	1																					
	Week 2, Day 3 0:34	2	2	2																					
		shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire

Figure 13. Participant A3 Three-Period Lesson

As noted above, A3 was present for four of her six Direct Instruction sessions and five of six of her Three-Period Lesson sessions. Across both conditions, her posture and orientation to the researcher remained consistent. She sat either on her feet or with her legs crossed in front of her and remained facing the researcher. On the first day of the

Three-Period Lesson, when the researcher told her that they would not be using stickers anymore, A3 nodded and smiled, not showing any disappointment.

**Participant B1.** B1 received two weeks of the Three-Period Lesson followed by two weeks of Direct Instruction. He was present for all six Three-Period Lesson sessions, but only three of the Direct Instruction sessions (Figure 14).

As can be seen in Figure 14, B1 learned the print form of the words in the Three-Period Lesson very quickly both weeks. On the first day of week one, the entire three-period lesson was performed, while on day two, only periods two (recognition) and three (recall) were necessary. On day three, it was only necessary to present period three (recall). Similarly in week two, the first and second days required a full three-period lesson whereas on day three, only the recall period was necessary (period three).

Participant B1																
Three-Period Lesson		1			2			3			4	5	6	7	8	
	Week 1, Day 1 1:49	1 / 1	1 / 1	1 / 1	3 / 3	4 / 4	3 / 3	1 / 1	1 / 1	1 / 1						
	Week 1, Day 2 0:56	1 / 1	1 / 1	1 / 1	2 / 2	2 / 2	2 / 2									
	Week 1, Day 3 0:47	2 / 2	2 / 2	2 / 2												
		garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers
	Week 2, Day 1 2:26	2 / 2	2 / 2	2 / 2	5 / 5	4 / 4	5 / 5	1 / 0	1 / 1	1 / 0						
	Week 2, Day 2 2:05	1 / 1	1 / 1	1 / 1	4 / 4	4 / 4	5 / 5	2 / 2	2 / 2	2 / 2						
	Week 2, Day 3 0:48	3 / 3	3 / 3	3 / 3												
		chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement

Figure 14. Participant B1 Three-Period Lesson

B1 was absent for half of his Direct Instruction sessions, but despite this he performed well. Direct Instruction began on the second day of the Intervention and thus the full Three-Period Lesson was provided and he demonstrated proficiency after one trial. His performance was such that only period three (recall) was necessary on the next day of instruction. In week two, B1 missed the first two days, which made it necessary to provide all three periods on the third day, after which he was able to achieve mastery.

Figure 15 displays the results of B1’s Direct Instruction condition.

Participant B1																									
Direct Instruction	1			2			3			4			5			6			7			8			
	Week 1, Day 1 0:00																								
	Week 1, Day 2 3:40	2	2	2	2	2	2	3	3	3															
	Week 1, Day 3 0:58	2	2	2																					
		laundry	hopscootch	jacks	laundry	hopscootch	jacks	laundry	hopscootch	jacks	laundry	hopscootch	jacks	laundry	hopscootch	jacks	laundry	hopscootch	jacks	laundry	hopscootch	jacks	laundry	hopscootch	jacks
	Week 2, Day 1 0:00																								
	Week 2, Day 2 0:00																								
	Week 2, Day 3 4:02	2	2	2	4	3	3	3	3	3															
		shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire

Figure 15. Participant B1 Direct Instruction

Although B1 was aware that some of his classmates were receiving stickers during his two weeks of Direct Instruction, he never asked about the stickers or mentioned them during his sessions with the researcher. His posture and orientation to the researcher remained consistent across both conditions. He tended to sit with his legs crossed in front of him, facing the researcher. When the stickers were added into the sessions, they seemed to have no impact on his behavior during the sessions. His response to receiving the stickers was neutral and he often had to be reminded to choose a sticker after a correct response.

**Participant B2.** B2 also received two weeks of the Three-Period Lesson followed by two weeks of Direct. As shown in Figure 16, on the first day of the Three-Period Lesson condition, B2 only needed one sequence of the three-period lesson. Because of his performance the previous day, on day two instruction began with the second period (recognition). However he demonstrated difficulty in recognizing the print forms so it was necessary to provide a full three-period lesson to achieve success.

On the second week of instruction using the Three-Period Lesson with a different set of words B2's performance was more consistent. On days one and two, the full three-period lesson was conducted. Based upon his performance on the first two days, day three began with print recognition (period two) after which he was successful in demonstrating print recall (period three).

		Participant B2																										
Three-Period Lesson		1			2			3			4			5			6			7			8					
	Week 1, Day 1	3	3	3	4	5	4	1	1	1																		
	3:45	/	/	/	/	/	/	/	/	/																		
		3	3	3	4	5	4	1	1	1																		
	Week 1, Day 2	1		1	2	2	2	3	3	2	3	3	3															
	2:53	/	~	/	/	/	/	/	/	/	/	/	/															
		0		1	2	2	2	3	3	2	3	3	3															
	Week 1, Day 3	3	2	3	2	2	2																					
	2:17	/	/	/	/	/	/																					
		3	2	3	2	2	2																					
	garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers	
		1			2			3			4			5			6			7			8					
Week 2, Day 1	3	3	3	5	5	5	3	3	3																			
2:48	/	/	/	/	/	/	/	/	/																			
	3	3	3	5	5	5	3	3	3																			
Week 2, Day 2	2	2	2	3	3	3	3	3	3																			
2:34	/	/	/	/	/	/	/	/	/																			
	2	2	2	3	3	3	3	3	3																			
Week 2, Day 3	2	2	2	2	2	2																						
1:28	/	/	/	/	/	/																						
	2	2	2	2	2	2																						
	chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement	

Figure 16. Participant B2 Three-Period Lesson

B2 had difficulty in completing the tasks in the Direct Instruction condition. On the second day of week one of Direct Instruction, the session began with the first period (naming), so the researcher moved on to period two (recognition). Because B2 had difficulty, the researcher went back to period one (naming) and completed the entire three-period sequence in order to achieve success. On the second day, because of his performance the previous day, the session started with period one (naming) in which B2 was successful as well as in periods two (recognition) and three (recall). On the third day, the session began with recognition (period two) and he moved on to recall (period



three), with which he was successful.

Interestingly, B2’s performance on the second set of vocabulary items was identical to that of his performance in week one – initial problems on the first day, requiring repeating the three-period sequence, completing the entire Three-Period Lesson in one set of trials and beginning day three with period two (recognition) followed by period three (recall).

Participant B2																									
Direct Instruction		1			2			3			4			5			6			7			8		
	Week 1, Day 1 7:27	4	4	4	3	3	3	1	1	1	1	1	1	1	1	1									
		/	/	/	/	/	/	/	/	/	/	/	/	/	/	/									
		4	4	4	3	2	3	1	1	1	1	1	1	1	1	0									
	Week 1, Day 2 6:03	2	2	2	3	3	3	2	2	2															
		/	/	/	/	/	/	/	/	/															
		2	2	2	3	3	3	2	2	2															
	Week 1, Day 3 3:15	1	1	1	3	3	3																		
		/	/	/	/	/	/																		
		1	1	1	3	3	3																		
	laundry	hopscotch	jacks	laundry	hopscotch	jacks	laundry	hopscotch	jacks	laundry	hopscotch	jacks	laundry	hopscotch	jacks	laundry	hopscotch	jacks	laundry	hopscotch	jacks	laundry	hopscotch	jacks	
		1			2			3			4			5			6			7			8		
Week 2, Day 1 6:20	3	3	3	~	~	1	2	2	2	4	4	4	1	1	1										
	/	/	/	~	~	/	/	/	/	/	/	/	/	/	/										
	3	3	3			0	2	2	2	4	4	3	1	1	1										
Week 2, Day 2 5:15	2	2	2	3	3	4	3	3	3																
	/	/	/	/	/	/	/	/	/																
	1	1	1	3	3	4	3	3	3																
Week 2, Day 3 5:50	7	2	7	3	3	3																			
	/	/	/	/	/	/																			
	7	2	6	3	3	3																			
	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	

Figure 17. Participant B2 Direct Instruction

Like each of the students in Group B, B2 was aware that some of the students

were receiving stickers during their one-on-one sessions, but he never mentioned this to the researcher during his Three-Period Lesson sessions. When stickers were added to his sessions, he seemed to enjoy selecting his stickers. He smiled while making his selection and quickly began to select a sticker automatically once he had received positive feedback from the researcher. However, during the third day of his first week of Direct Instruction the researcher took out the stickers while setting up the session but forgot to hand the stickers to him after his first correct response. When this happened, B2 did not mention the stickers to the researcher, who remembered them after his second correct response. His posture and orientation to the researcher remained consistent across both conditions. He sat with his legs crossed in front of him and faced the researcher.

**Participant B3.** Like B1 and B2, B3 first began with the Three-Period Lesson which was followed by the Direction Instruction condition. Figure 18 depicts B3's performance.

Although B3 began the week in session one needing only one sequence of the three-period lesson, his performance worsened over the course of the week. On day two, it was necessary to return to period one (naming) when B3 showed difficulty with period two (recognition). On day three, his performance was even worse. It required a total of 4 cycles of the three-period lesson before success was achieved. B3's performance on the second week's vocabulary set was much better. He went through all three periods only once on days one and two. On day three the session began with period two and progressed to period three (recognition followed by recall).

		Participant B3																							
Three-Period Lesson		1			2			3			4			5			6			7			8		
	Week 1, Day 1	3	3	3	4	5	4	2	2	2															
	4:21	/	/	/	/	/	/	/	/	/															
	Week 1, Day 2	3	3	3	4	5	4	2	2	2															
	2:45	~	/	~	/	/	/	/	/	/	1	1	1												
	Week 1, Day 2	1	1	1	1	1	1	2	3	2	3	3	3	1	1	1	2	1	1	2	1	2	2	2	2
	5:07	/	~	~	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
		0			1	1	1	1	3	2	3	3	3	1	1	0	1	1	1	2	1	2	2	2	2
		garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers	garbage	soldier	whiskers
	Week 2, Day 1	4	3	3	3	3	3	3	3	3															
2:52	/	/	/	/	/	/	/	/	/																
Week 2, Day 2	4	3	3	3	3	3	3	3	3																
2:42	2	2	2	4	4	4	1	1	1																
Week 2, Day 3	2	2	2	3	3	3																			
1:53	/	/	/	/	/	/																			
	2	2	2	3	3	3																			
	chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement	chimney	pipes	cement	

Figure 18. Participant B3 Three-Period Lesson

Figure 19 presents B3's performance under the Direct Instruction condition. As can be seen, B3 was given the full three-period sequence during first session of week one and was successful. This instructional sequence and performance were repeated the next day. As a result, on day three, the session began with period two (recognition) and moved on to period three (recall) with success. In the second week, the first session began with the first period (naming) and there was follow through periods two (recognition) and three (recall) in one cycle. B3 was absent for the second day of week

two. On the third day, the session began with period two (recognition), though his performance was not good, so the researcher moved back to period one (naming) and went through the entire three-period sequence with success.

Participant B3																									
Direct Instruction	1			2			3			4			5			6			7			8			
	Week 1, Day 1 8:13	2	2	2	3	3	3	1	1	1															
	Week 1, Day 2 7:01	2	2	2	3	3	3	3	2	2															
	Week 1, Day 3 3:45	2	2	2	3	3	3																		
		laundry	hopscootch	jacks	laundry	hopscootch	jacks	laundry	hopscootch	jacks	laundry	hopscootch	jacks	laundry	hopscootch	jacks	laundry	hopscootch	jacks	laundry	hopscootch	jacks	laundry	hopscootch	jacks
	Week 2, Day 1 8:10	3	3	3	4	4	4	1	1	1															
	Week 2, Day 2 0:00																								
	Week 2, Day 3 5:24	~	~	1	2	2	2	2	2	2	3	3	3												
		shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire	shop	ferry	tire

Figure 19. Participant B3 Direct Instruction

B3 was highly aware that some of his classmates were receiving stickers during their one-on-one sessions and he asked the researcher about stickers during four of his six Three-Period Lesson sessions. After two of his Three-Period Lesson sessions, he explored the room trying to locate the stickers.

During the Three-Period Lesson sessions, B3 often smiled when selecting the

word requested by the researcher. He seemed to enjoy the sessions and would often enthusiastically slap a card or pick it up and move it to a different spot rather than simply pointing at it. He was focused on the researcher across all of his Three-Period Lesson sessions. During the first two sessions, he tended to look only at the researcher and had to be prompted to look at the words. After the first two sessions, no further prompting was required.

B3 was excited about the addition of stickers to his Direct Instruction sessions. He smiled broadly while selecting his stickers and gave careful consideration to how he arranged the stickers on his card. During the Direct Instruction sessions, he pointed to the word requested by the researcher rather than slapping it or picking it up. When he felt confident that his selection was correct, he immediately picked up the sheet of stickers. He was often distracted by rearranging his stickers and making comments about them. B3's posture and orientation to the researcher remained consistent across both conditions. He sat with his legs crossed in front of him and faced the researcher.

### **Shared Reading Sessions**

Each of the eighteen Shared Reading sessions related to this study were videotaped, transcribed, and coded. This allowed the researcher to observe closely several aspects of the shared reading sessions. The process used to accomplish this task is as follows:

Once all of the verbal statements were transcribed, the transcriptions were checked for accuracy by reviewing the video multiple times and cross checking what was written with the utterances captured on tape. The teacher and the participants used a combination of sign language and spoken language during the shared reading sessions.

For the purposes of this study, all utterance were transcribed in English.

Once the tapes were transcribed, open coding began. Initially the utterances were divided into two categories: 1) verbatim recitations of the texts on the part of the teacher and 2) all other utterances. The former were excluded from the analysis since they were simple verbal renditions of the text in the book read by the teacher. Only those utterances that were not verbal renditions of the text were of interest and, thus, analyzed. Once these comments and interchanges were recorded, boundaries of dialog were established. Typically these events were single, self-contained events that were either topically or functionally related. For example:

Teacher: (Reading from the book.) *“Spring is a nest of eggs, a bed of twigs, and grass and moss.”*

A2: “What’s moss?”

Teacher: “It’s a different kind of grass called ‘moss’. It grows on rocks. Remember when we were outside by the buses and you and B2 and B1 picked it up and said ‘Ew, ew, ew, dirty grass.’ It was moss.”

B1: “Ms. XXX said ‘moss’.” [Referring to another teacher who was present during the situation the teacher is describing.]

Teacher: “Yeah, it was moss. It’s just like grass. Grass that’s roots are inside the dirt also.”

A2: “I touched the moss.”

Teacher: (Nods.)

The first teacher utterance was a verbatim rendition of the text within the book. This was followed by an utterance by A2 that queried the meaning of the word ‘moss’. The rest of the interchange involved exploring the meaning of that word. The interchanges ended with the teacher nodding in affirmation of A2’s statement that he

touched the moss. After this the teacher returned to reading aloud the text in the book.

The dialog was parsed into verbal renditions of the text and other utterances. The other utterances were grouped into dialogic units, and these dialogic units were then reviewed and subjected to further open coding. These open codes were based on the function or purpose of these dialogic units. Once completed, the categories were reviewed for internal consistency and revised as necessary. The text below presents the categories found and provides examples of the dialog.

**Comments and redirects.** One major distinction was the use of comments and redirects on the part of the children and the teacher. Participants' utterances categorized as comments were those that were directly related to various aspects of the book being shared. These utterances were only categorized as participant comments if they were initiated by the participant, rather than the teacher. Teacher utterances categorized as redirects entailed the teacher redirecting an individual's attention back to the book. This was typically accomplished by saying a student's name or tapping the table to gain a student's attention. In considering these data, it was decided that the numeric quantity of these two categories of utterances might be used to better understand each child's engagement in shared reading. Figures 20-25 provides this information for each participant.

***Participant A1.*** Across the two Shared Reading sessions in which A1 participated during the first week of Intervention One (Shared Reading), he averaged 1.0 redirect and 2.0 comments per session. He participated in all three Shared Reading sessions during week two of Intervention One (Shared Reading) and averaged 2.0 redirects and 3.5 comments per session.

A1 participated in all three Shared Readings of Book F and two of the three Shared Readings of Book E during Intervention Two (Three-Period Lesson). Across sessions of week 1, he averaged 0.66 redirects and 10.66 comments per session. Across the sessions of Book F during week two of Intervention Two (Three-Period Lesson), he averaged 0.0 redirects and 3.0 comments per session.

A1 participated in all three Shared Readings of Book C and Book D during Intervention Three (Direct Instruction). Across sessions of week 1, he averaged 0.66 redirects and 7.0 comments per session. Across the sessions of Book D during week two of Intervention Three (Direct Instruction), he averaged 0.0 redirects and 8.0 comments per session.

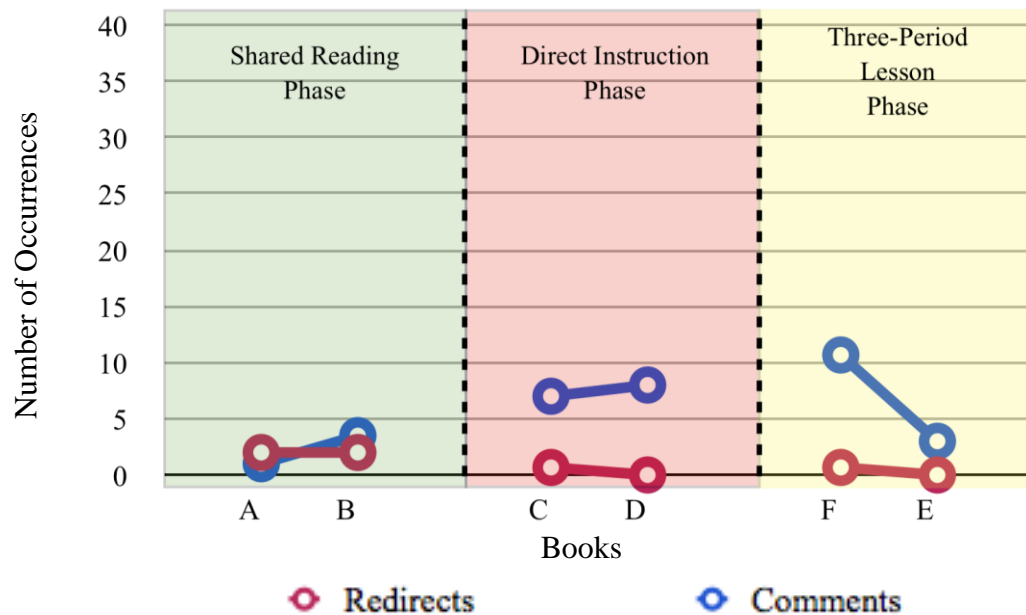


Figure 20. Participant A1 Redirects and Comments During Shared Reading Sessions

**Participant A2.** A2 participated in all three of the Shared Readings of Book A during the first week of Intervention One (Shared Reading). Across these three sessions, he averaged 0.33 redirects and 3.33 comments per session. He also participated in all



three Shared Reading sessions of Book B during week two of Intervention One (Shared Reading) and averaged 2.33 redirects and 8.66 comments per session.

A2 participated in two of the three Shared Readings of Book F and all three Shared Readings of Book E during Intervention Two (Three-Period Lesson). Across sessions of week 1, he averaged 0.0 redirects and 16.5 comments per session. Across the sessions of Book F during week two of Intervention Two (Three-Period Lesson), he averaged 0.0 redirects and 11.33 comments per session.

A2 participated one of the three Shared Readings of Book C during week one of Intervention C. During that session, he had 1.0 redirect and made 11.0 comments. Across the three sessions of Book D during week two of Intervention Three (Direct Instruction), he averaged 1.33 redirects and 30.33 comments per session.

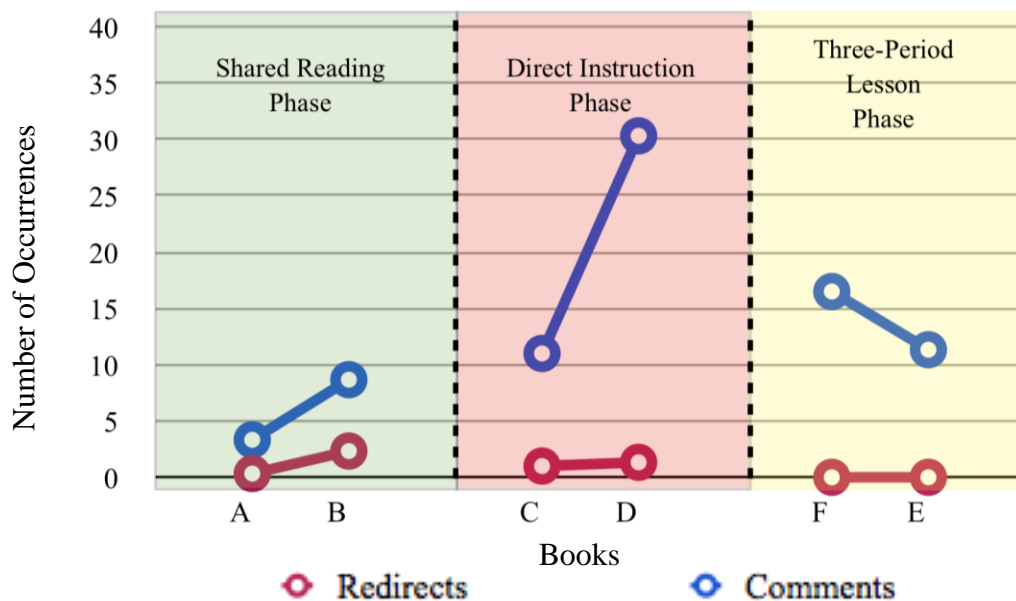


Figure 21. Participant A2 Redirects and Comments During Shared Reading Sessions

**Participant A3.** A3 was only present for one of the Shared Readings of Book A during the first week of Intervention One (Shared Reading). During this session, she had 0.0 redirects and made 11.0 comments. She participated in two of the three Shared

Reading sessions of Book B during week two of Intervention One (Shared Reading) and averaged 0.0 redirects and 2.0 comments per session.

A3 participated in two of the three Shared Readings of Book F and all three Shared Readings of Book E during Intervention Two (Three-Period Lesson). Across sessions of week 1, she averaged 0.0 redirects and 16.5 comments per session. Across the sessions of Book F during week two of Intervention Two (Three-Period Lesson), she averaged 0.0 redirects and 9.67 comments per session.

A3 participated in two of the three Shared Readings of Book C and Book D during Intervention Two (Three-Period Lesson). Across the two sessions of week 1, she averaged 0.0 redirects and 8.0 comments per session. Across the two sessions of Book D during week two of Intervention Three (Direct Instruction), she averaged 0.0 redirects and 13.0 comments per session.

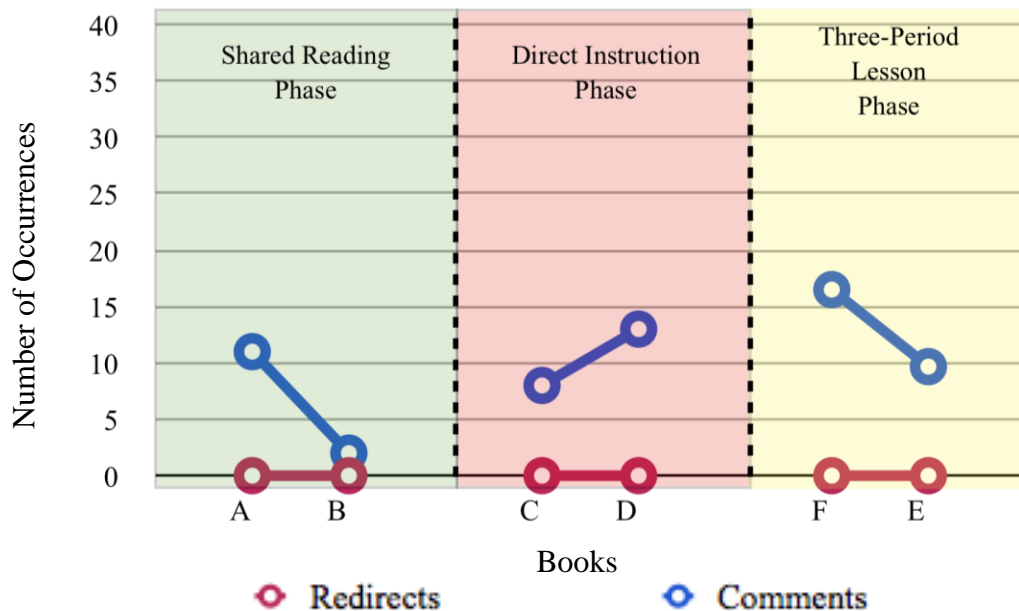


Figure 22. Participant A3 Redirects and Comments During Shared Reading Sessions

**Participant B1.** B1 participated in all three of the Shared Readings of Book A during the first week of Intervention One (Shared Reading) and Book B during the

second week. Across these three sessions of Book A, he averaged 0.66 redirects and 5.0 comments per session. Across the three Shared Reading sessions of Book B, he averaged 0.33 redirects and 11.0 comments per session.

B1 participated in all three Shared Readings of Book C and Book D during Intervention Two (Three-Period Lesson). Across sessions of week 1, he averaged 0.33 redirects and 15.33 comments per session. Across the sessions of Book D during week two of Intervention Two (Three-Period Lesson), he averaged 0.0 redirects and 11.33 comments per session.

B1 participated in all three Shared Readings of Book F and one of the three Shared Readings of Book E during Intervention Three (Direct Instruction). Across sessions of week 1, he averaged 0.0 redirects and 34.67 comments per session. During the session of Book F during week two of Intervention Three (Direct Instruction), he required 0.0 redirects and made 5.0 comments.

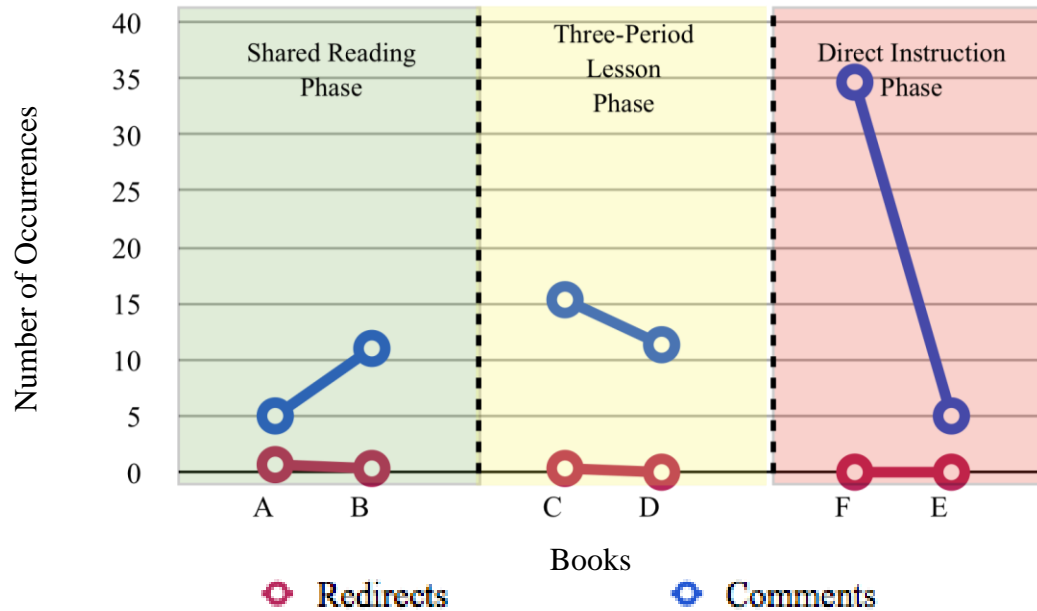


Figure 23. Participant B1 Redirects and Comments During Shared Reading Sessions

**Participant B2.** B2 participated in all three of the Shared Readings of Book A during the first week of Intervention One (Shared Reading). Across these three sessions, he averaged 1.66 redirects and 4.0 comments per session. He participated two of the three Shared Reading sessions of Book B during week two of Intervention One (Shared Reading) and averaged 0.0 redirects and 3.0 comments per session.

B2 participated in all three Shared Readings of Book C and Book D during Intervention Two (Three-Period Lesson). Across sessions of week 1, he averaged 0.0 redirects and 7.33 comments per session. Across the sessions of Book D during week two of Intervention Two (Three-Period Lesson), he averaged 0.0 redirects and 20.0 comments per session.

B2 participated in all three Shared Readings of both Book F and Book E during Intervention Two (Three-Period Lesson). Across sessions of week 1, he averaged 0.34 redirects and 19.0 comments per session. Across the sessions of Book F during week two of Intervention Two (Three-Period Lesson), he averaged 0.34 redirects and 15.0

comments per session.

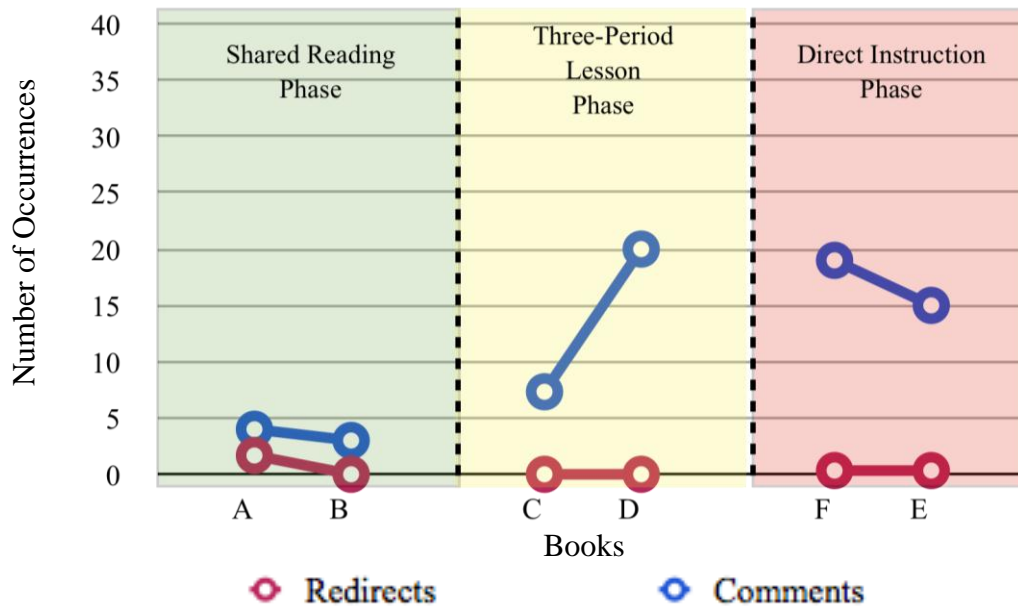


Figure 24. Participant B2 Redirects and Comments During Shared Reading Sessions

**Participant B3.** B3 participated in two of the three Shared Readings of Book A during the first week of Intervention One (Shared Reading). Across these three sessions, he averaged 1.0 redirect and 5.50 comments per session. He participated two of the three Shared Reading sessions of Book B during week two of Intervention One (Shared Reading) and averaged 0.50 redirects and 3.0 comments per session.

B3 participated in all three Shared Readings of Book C and Book D during Intervention Two (Three-Period Lesson). Across sessions of week 1, he averaged 0.66 redirects and 10.33 comments per session. Across the sessions of Book D during week two of Intervention Two (Three-Period Lesson), he averaged 0.0 redirects and 11.0 comments per session.

B3 participated in all three Shared Readings of both Book F and Book E during

Intervention Two (Three-Period Lesson). Across sessions of week 1, he averaged 0.34 redirects and 18.34 comments per session. Across the sessions of Book F during week two of Intervention Two (Three-Period Lesson), he averaged 0.0 redirects and 8.34 comments per session.

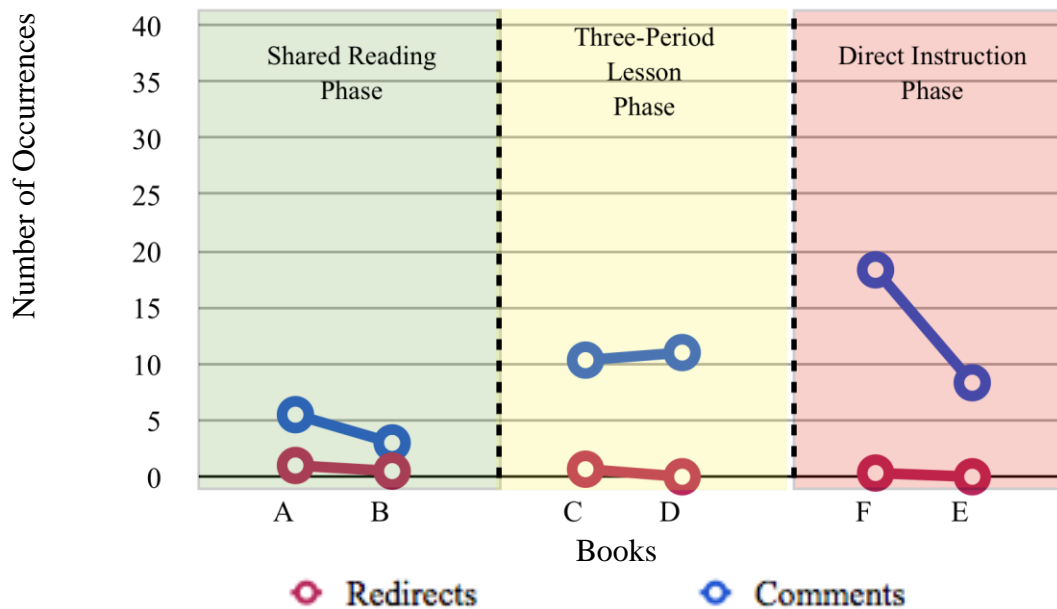


Figure 25. Participant B3 Redirects and Comments During Shared Reading Sessions

The Shared Reading coding also provided the researcher with examples of how the classroom teacher dealt with words in a book that were new or unknown to her students. For example, during the second week of Intervention One (Shared Reading), on the second day of reading Book B, the following interaction took place:

Teacher: (Reading from the book.) *“Spring is a nest of eggs, a bed of twigs, and grass, and moss.”*

A2: “What’s moss?”

Teacher: “It’s a different kind of grass called ‘moss’. It grows on rocks. Remember when we were outside by the buses

and you and B2 and B1 picked it up and said ‘Ew, ew, ew, dirty grass.’ It was moss.”

B1: “Ms. XXX said ‘moss’.”

Teacher: “Yeah, it was moss. It’s just like grass. Grass that’s roots are inside the dirt also.”

A2: “I touched the moss.”

Teacher: (Nods.)

---

Later during the same Shared Reading session a similar conversation took place:

Teacher: (Reading from the book.) “*Nuts and pumpkins and corn in husks.*”

B1: “Husks?”

Teacher: “Does mommy make corn on the cob?”

B1: “Yes, so cooks it.”

Teacher: “Right, when you peel it looks like grass and leaves. It’s the husk. You need to peel it before you eat it.”

On the third day, the meaning of the word ‘moss’ came up again during the

Shared Reading:

Teacher: (Reading from the book.) “*Spring is a nest of eggs, a bed of twigs, and grass and moss.*”

B1: “What’s ‘moss’ mean?”

Teacher: “What does ‘moss’ mean? What do you remember from yesterday?”

B1: “Tree.”

Teacher: “No. (Points to the picture of moss in the book.) That’s

moss. It's a kind of grass that grows on hard surfaces, like black top, or from a rock, or the sidewalk."

B1: "Like a plant."

Teacher: "It is a plant."

B1: "Like a plant that covers a rock."

Teacher: "It is a plant, mmm-hmm."

In each of the three cases present above, the lexical item was a noun and the teacher tried to help the students understand its meaning by appealing to personal experiences, e.g., descriptions of the objects, properties of the object, or relating the noun to a higher order category, e.g. '*its a kind of.*' It is important to note that the above examples were student initiated. There were also instances of teacher initiated inquiries as to word meaning followed by a definition and elaboration of the word's meaning.

Examples of this occurred during the third week of Intervention, when the teacher read Book C to the class. One the first day the following dialogue took place:

Teacher: (Reading from the book.) "*They hiked through the rain and sleet.* Do you know what sleet is? It's like freezing rain. It's between snow and rain. It can be very wet snow."

B1: "Spring."

Teacher: "Sleet doesn't happen in springtime. It's wintertime. It's like a mixture between snow and rain."

The second time she read the book to the class, the teacher again focused on the meaning of 'sleet':

Teacher: "Do you remember what that word means? Sleet? Remember? It's in between rain and snow. It's a little bit of both."



Another tactic that the teacher used was to simply ask students if they knew the meaning of a word:

Teacher: (Reading from the book.) “*Time for chow!* What does ‘chow’ mean?”

B1: “Food.”

In addition to emphasizing unknown words, the teacher also directed students’ attention to words that they were in the process of learning. For example:

Teacher: (Holding the book out B3 and A1 and pointing to a word.) “What’s that word? It’s a spelling word.”

(B2 raises his hand)

Teacher: “B2, it’s not one of your words. Hold on...B2, can you tell them? Tell your friends. What’s that word?”

B2: “Out.”

Another example:

Teacher: (Reading from the book.) “*He was taking a nap on Pete’s bed.* A nap. N-A-P. One of your spelling words.”

On other occasions, the students noticed familiar words in the text without the teacher’s assistance:

A1: (Pointing at the book.) “Hat. Spelling.”

Teacher: “It’s a spelling word in your study book, you’re right. You need to know that tomorrow, ok?”

Each of the above examples dealt with words that were not directly taught to students as a part of this study. While the classroom teacher was aware of the words that the researcher was teaching to the participants during the Direct Instruction portion of the

study, she had been asked not to place any more emphasis on these words than she normally would while sharing the book with her students. However, there were several instances during which the students asked a question or made a comment about one of the words involved in the study. Interestingly, all of these instances occurred during the Shared Reading of Book D, *Building a House* (Barton, 1981), for which the vocabulary words being taught were ‘cement’, ‘chimney’, and ‘pipes’. Below are examples of student-initiated exchanges related to each of these three words on each of the three days that this book was shared with the class.

First Shared Reading Session:

Teacher: (Reading from the book.) “*A cement mixer pours cement.*”

B2: (Pointing to the book) “Glue.”

Teacher: “It’s not glue, it’s cement.”

---

Teacher: (Reading from the book.) *A bricklayer builds a fireplace and chimney too.*

B2: (Pointing to the book.) “Smoke.”

A1: “Fire. Fire, going up the chimney. Black.”

B1: “Santa. Reindeer. They jump down the chimney.”

---

Teacher: (Reading from the book.) *A plumber put in pipes for water.*

B2: “Pipes. Pipes.”

Teacher: “Pipes, mmm-hmm, are in the walls.”

B2: “Blood?” [The sign for blood is similar to a sign used the

show water dripping.]

Teacher: “Not blood. No. Water. The water drips. Not blood.”

B2: (Pointing at the book.) “What’s that?”

Teacher: “They’re pipes for the water.”

---

Teacher: (Reading from the book.) “*A cement mixer pours cement.*”

A1: “Paint. Making it level.”

Teacher: “It’s not paint. It’s cement. What was it for?”

A1: “White. White.”

Teacher: “The white is called cement”

---

Second Shared Reading Session:

Teacher: (Reading from the book.) *A bricklayer builds a fireplace and chimney too.*

B2: “Chimney. Smoke.”

Teacher: “Yep, for the smoke. The fireplace is inside the house in the living room or the den and then it goes through the roof. The chimney is for the smoke to escape.”

A1: “Build the brick higher and higher and then it’s finished.”

A3: “The smoke rises up through the chimney.”

Teacher: “Yeah, you need to have that for the smoke.”

---

B2: “In the bathroom, pipes.”

Teacher: “Good. Are inside the bathroom, and what’s that for? What goes inside the pipes?”

B2: “Water.”

Teacher: “Water, inside is water, good.”

---

Third Shared Reading Session:

Teacher: (Reading from the book.) “*A cement mixer pours cement.*”

A1: (Pointing to the book.) “White”.

Teacher: “White? What’s that white called?”

A1: “White. Car” [Likely referring to the cement mixing truck.]

Teacher: “What’s it called, do you remember?”

B1: “It’s called...rock” [The sign used for cement is a compound sign combining the signs for ‘rock’ and liquid’.]

B2: “Liquid.”

A3: “Liquid.”

A2: “Rock.”

Teacher: “Right.”

A3: “If you stand in it, you’ll get stuck.”

---

Teacher: (After turning the page, before reading the text.) “Builds a fireplace and a, what?”

B1: “A fireplace. Smoke goes up through the chimney.”

B2: “House.”

A2: “House.”

A3: “Fire. Chimney. Smoke goes up through the chimney.”

Teacher: "And a chimney, too"

A3: "Chimney."

Teacher: (Reading from the book.) *A bricklayer builds a fireplace and chimney too.*

A3: "They built a chimney for the smoke."

---

A2: "Pipes. Pipes." [Predicting/recalling what's on next page.]

Teacher: "Yes."

B2: "Pipes."

A3: "Pipes. Bath."

Teacher: "Pipes for what?"

A2: "Water."

B1: "Bathroom."

Teacher: "For water, for water. Water flows through the pipes and out through a shower head."

A3: "Bath. (Goes up to the book and points at a pipe.) That one."

Teacher: "Yeah."

B2: "I want to see." (Goes up to the book and points at one pipe.)  
"That one?"

A2: "Green." [The pipes are different colors.]

Teacher: "Yeah, this one looks like it might be for the bathtub..."

A2: "I have. I have. I opened the door to a cabinet and I saw pipes."

Teacher: "... and then I think this one is for the toilet and I think this one is for the what?"

B1, A3, and B2: “Shower.”

Teacher: “And this one, maybe what?”

A2: “Toilet.”

Teacher: “The sink?”

A3: “Yes.”

B2: “No.”

Teacher: “No?”

B2: “Bathroom.”

Teacher: “Yeah, that’s the bathroom, but the sink where you wash your hands. The sink.”

A2: “I saw at home. I opened cabinet door and saw pipes.”

Teacher: “Yeah?”

A2: (Nods.) “I saw.”

There were also several instances during which the students made direct connections between the Shared Reading sessions with the teacher and other components of the study. For example, during the first Shared Reading session of the first book, B1 looked at the book that the teacher was preparing to read and said, “That’s the same book as over there.”, while pointing to the shelf on which the study books were displayed. There were also several instances during which the students connected the words in the book being shared to the words taught during one-on-one vocabulary instruction. Below are transcripts of these connections:

Teacher: (Reading from the book.) “*The soldiers marched in a parade.*”

A1: “I read a card. The same. (Points to Becca.) Same.”

B1: "With Becca."

A1: "Soldier."

B1: "And whiskers, and garbage."

Teacher: "Yeah? Same? Good connection!"

A1: "Soldiers, and garbage, and whiskers."

Teacher: "Yeah, you remember?" (Gives A1 a high-five.)

B3: "Same."

---

Teacher: (Reading from the book.) "*All he could fix for Captain Cat were his whiskers.*"

A1: "Same. Same. (Turns around and looks at Becca.) Same as you." [Referring to vocabulary taught earlier.]

---

Teacher: (Reading from the book.) "*But Captain Cat sprang right out of bed. Why did he get out of bed fast?*"

B2: "To eat."

B1: "He had to check the garbage."

Teacher: "He had to check the garbage, you're right."

B1: "Same. Becca. Garbage."

Teacher: "Yeah? She has garbage?"

B1: "Card."

Teacher: "Oh, on the card. You remember that."

B2: "Yeah, card."

---

Teacher: (Reading from the book.) *“All he could fix for Captain Cat were his whiskers.”*

B1: “Card. Same.”

Teacher: “On the card also?”

B3: “He straightened the whiskers.”

---

Teacher: (Reading from the book.) *“All he could fix for Captain Cat were his whiskers.”*

B3: “Same. Whiskers. Same.”

Teacher: “Same as what?”

B3: (Points to Becca.)

Teacher: “The words with Becca?”

B1: “And garbage and soldier.”

B3: “Garbage.”

---

Teacher: (Reading from the book.) *“A bricklayer builds a fireplace and chimney too.”*

B2: “Chimney.” (Looks at Becca and smiles.)

---

Teacher: (Reading from the book.) *“Let’s play hide-and-peek.  
Let’s play kick-the-can. Let’s play ball. Let’s play cards.  
Let’s play jacks. Let’s play hopscotch.”*

B1: “Hopscotch.”

A3: “Jacks and hopscotch. Same as the cards with Becca.”

Teacher: “Yeah, the same cards?”

---



Teacher: (Reading from the book.) *“I can’t play today. I’ve got to help my sister do the laundry. Ask me tomorrow.”*

B1: “Like the cards. Becca.” (Points to ‘laundry’ in the book.)  
“Laundry. New word.”

Teacher: “Good for you! Did you know that this morning?”

A3: “I knew it.”

---

Teacher: (Reading from the book.) *“Let’s play hide-and-peek. Let’s play kick-the-can. Let’s play ball. Let’s play cards. Let’s play jacks. Let’s play hopscotch.”*

B1: “Like the cards.” [Referring to cards used during one-on-one vocabulary instruction.]

Figure 26 illustrates the frequency of students’ connections to the vocabulary instruction words during the Shared Reading session. The data are organized by participant as well as by type of instruction (Three-Period Lesson or Direct Instruction).

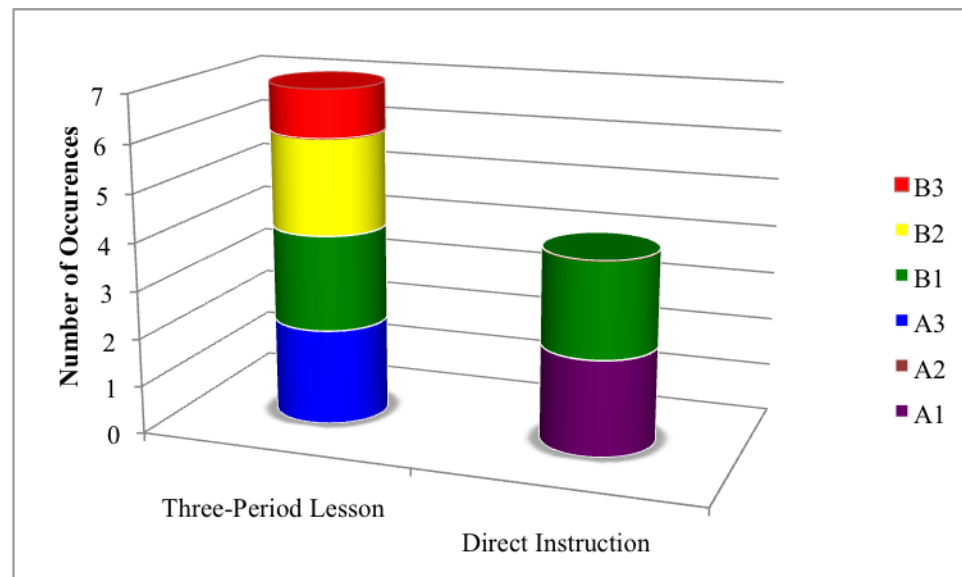


Figure 26. Participants’ Connections to Vocabulary Instruction During Shared Reading Sessions

During Shared Reading sessions, students also made connections to other books in the study. For example, when the teacher pointed out a picture of the moon while reading Book B, B1 made a connection to the rotation of the earth discussed in Book A, which had been read the previous week. B1 made another connection to Book A while the teacher was reading Book F. The transcript of this connection is below:

Teacher: “What is this?” (Pointing to a picture of that cat’s shadow.)

B2: “Cat.”

Teacher: “It’s the shape of the cat, but what is it?” (She holds up her arm to create a shadow on the wall.)

B1: “Shadow.”

Teacher: “A shadow.”

A2: (Holds up his hand to make a shadow.) “Look, look!”

B3: “Shadow.”

Teacher: “Like when it’s sunny outside and you can see your shadow.”

B1: “Like *Sun Up, Sun Down*.” [Book A]

In addition to making connections to books that had already been shared as a part of the study, students made connections to books that were involved in the study but had not yet been shared by the teacher or had only served as distractor books. For example, when preparing to read Book C to the class the teacher asked A3 to point to the author’s name. A3 pointed to the name and then told the teacher that the same author wrote one of the other books (one which had served as a distractor during the study) that was available to students during book choice time. When the teacher introduced Books D and F to the

students on the first day that each book was shared, A3 made the following comments, which indicated that she had become familiar with the books during book choice sessions:

A3: “When the house is finished, a family arrives and it is their home.”

Teacher: “Good. You know this story! From reading?”

A3: (Nods and points to bookshelf with study books)

Teacher: “Yeah. Good! Ok, let’s read.”

---

Teacher: “I have a new book for you guys this week, ok? I think you’ve seen it before.” (Holds up book).

A3: “Come Out and Play, Little Mouse.”

Teacher: “Good, A3. You guys have seen this before?”

A3, A1, and B2: (Nod.)

Teacher: “Alright. *Come Out and Play Little Mouse*. What do you think it’s about?”

A3: “Cat. Mouse. The cat asks again and again. Mouse says, ‘Ask tomorrow, ask tomorrow.’ Mouse goes outside, gets caught.”

Teacher: “You remember this story.”

### **Word Retention**

Prior to beginning Baseline, the researcher conducted a pre-assessment probe with each of the participants. This assessment consisted of a one-on-one session during which the researcher showed the participant each of the 24 words (18 words from the books

used in the study and 6 words from the distractor books) involved in the study. The researcher asked the participant to identify each word either with a sign, a spoken word, or a combination of the two. The pre-assessment sessions were videotaped and the participants' responses were recorded.

Two weeks after the conclusion of the final phase of the study, the researcher conducted a post-assessment probe with each of the participants. The post-assessment procedures were the same as they were for the pre-assessment sessions. Five of the six participants retained more words from Intervention Two (Three-Period Lesson) than Intervention Three (Direct Instruction), and all participants retained more words from Intervention Two (Three-Period Lesson) than Intervention One (Shared Reading). The results of the pre- and post-assessments for each participant are illustrated in Figures 27-32 below.

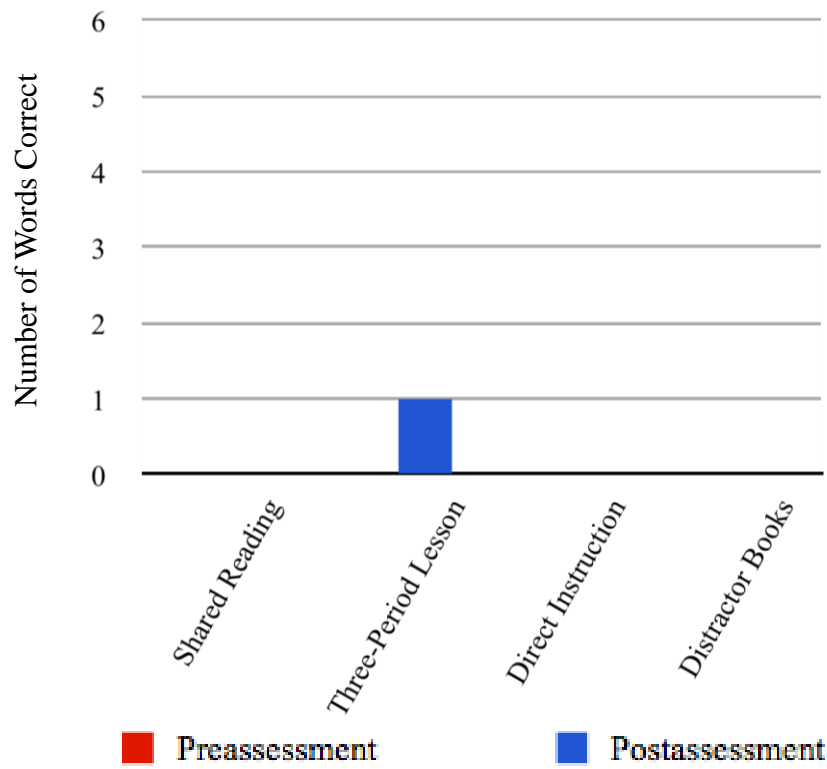


Figure 27. Participant A1 Pre- and Post- Assessment Data

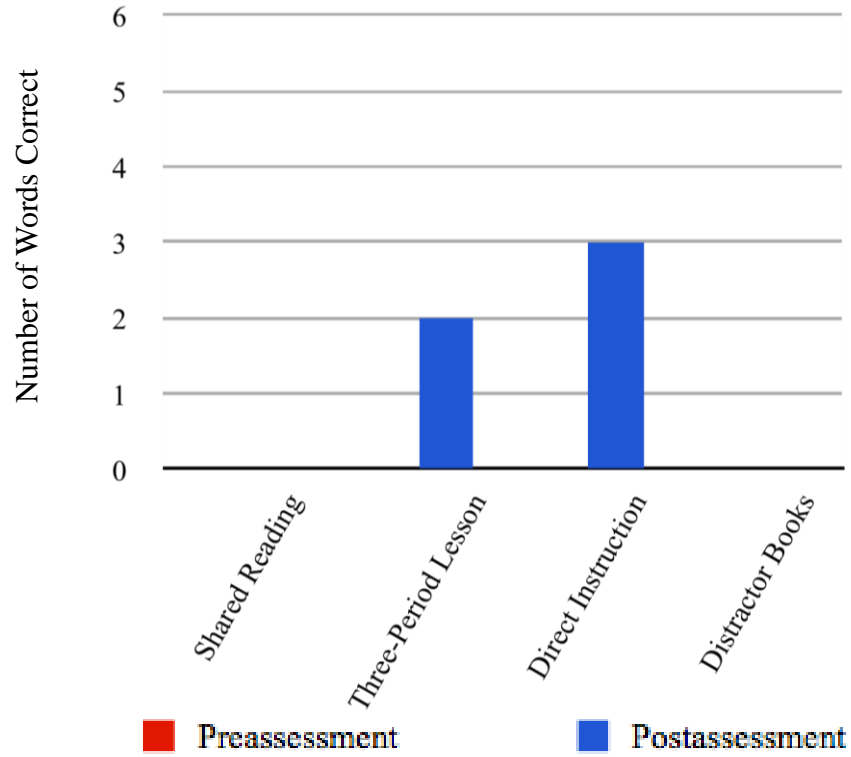


Figure 28. Participant A2 Pre- and Post- Assessment Data

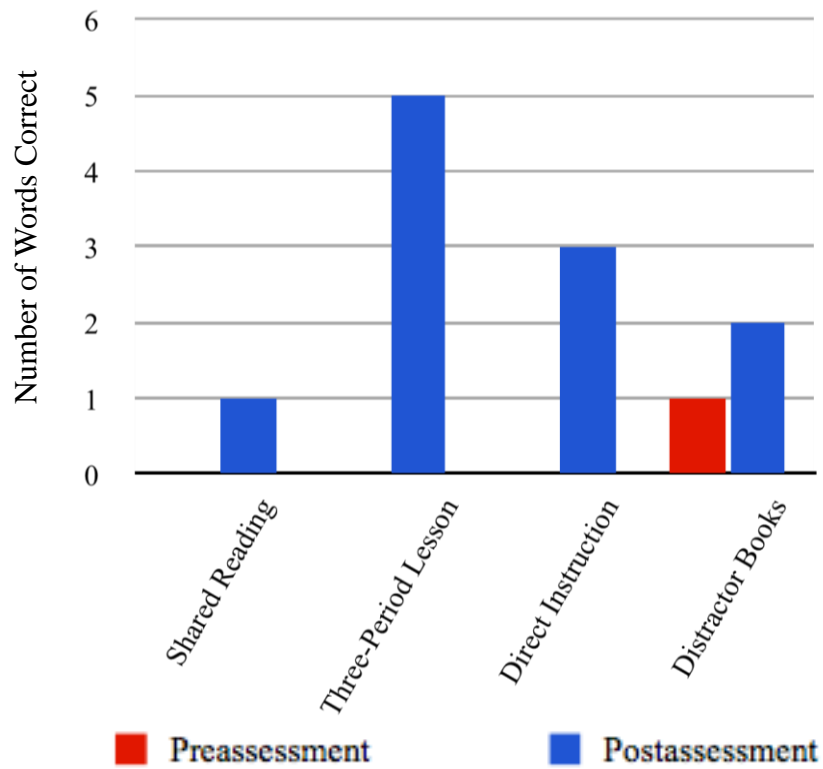


Figure 29. Participant A3 Pre- and Post- Assessment Data

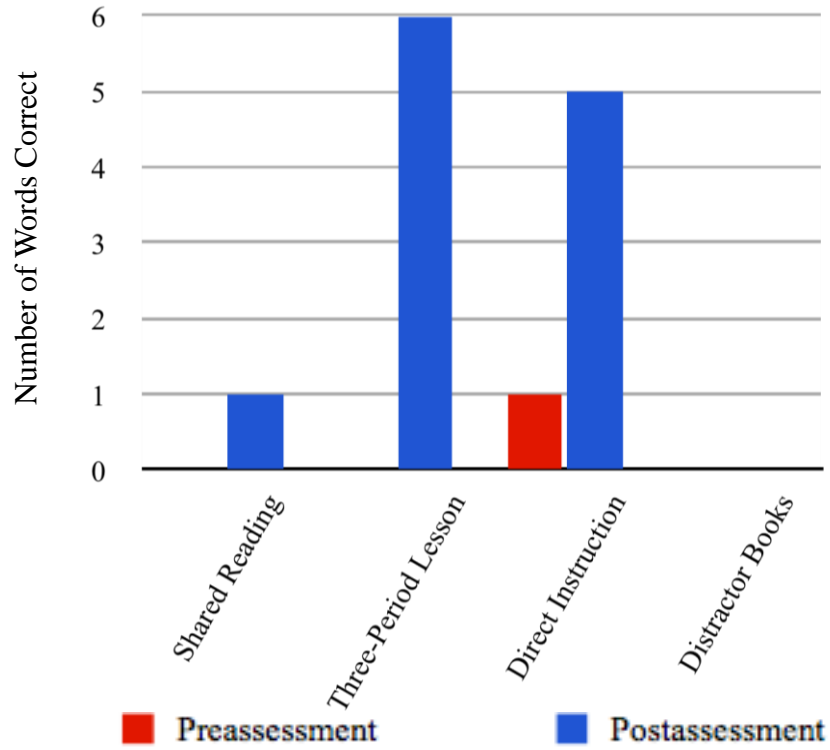


Figure 30. Participant B1 Pre- and Post- Assessment Data

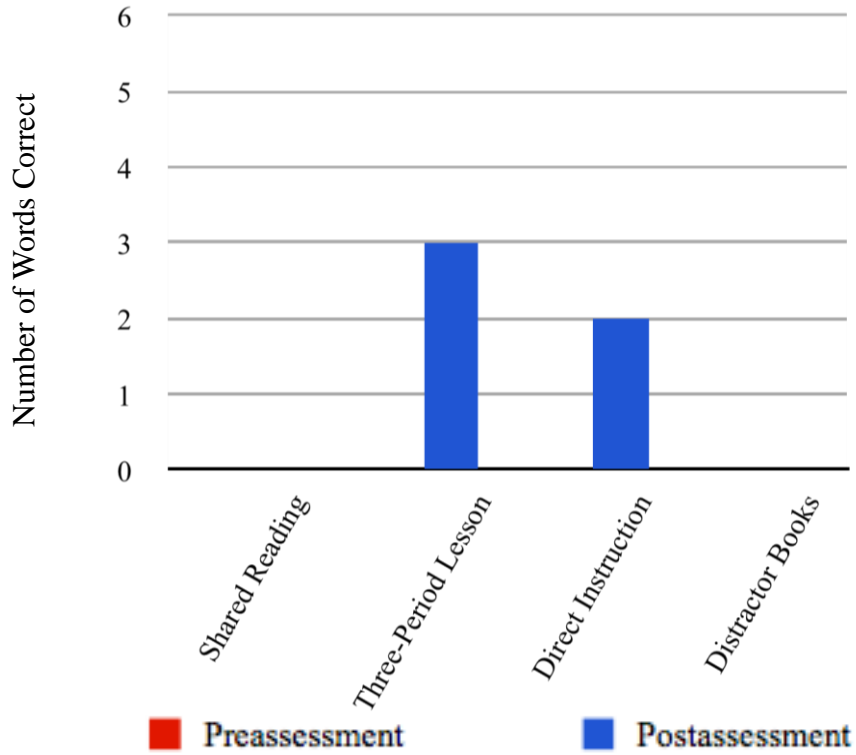


Figure 31. Participant B2 Pre- and Post- Assessment Data

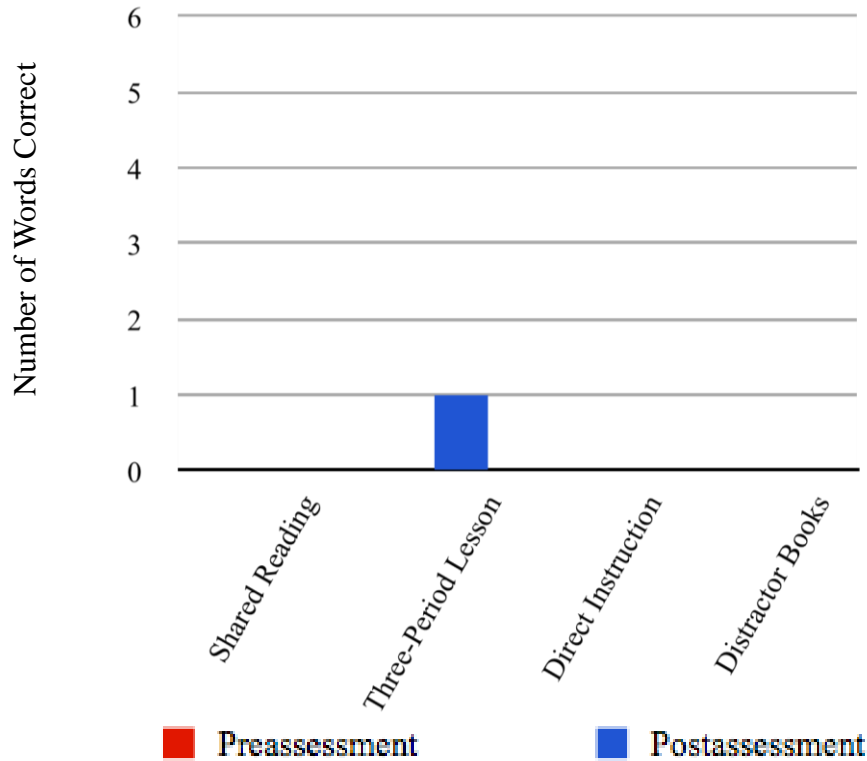


Figure 32. Participant B3 Pre- and Post-Assessment Data

### Word Learning

Almost all of the words involved in the study were unknown by the participants prior to the vocabulary instruction and Shared Reading sessions (A3 and B1 each knew one of the twenty-four words during pre-assessment). When the researcher asked participants to tell her what they knew about each word on the first day of vocabulary instruction each week, the most common response was “I don’t know.” Participants also guessed at the meaning of the words. The participants with higher reading levels seemed to use their word knowledge to hypothesize about the meaning of certain words. For example, B1 gave the following response to the word ‘cement’: “Camel. It’s dry, there’s no water. It has trees and sun.” This response seemed to be evidence that, based on the visual similarities between the printed words ‘cement’ and ‘camel’, B1 attempted to

construct meaning for the word ‘cement’. Other participants seemed to use the sign for the word to construct meaning. A2 gave the following response to the word ‘soldier’: “Woman. Crown.” This response confused the researcher, so she consulted the classroom teacher. The teacher immediately understood that A2 was likely confusing the sign for ‘soldier’ with the sign for ‘Statue of Liberty’. The class had been studying the symbols of America, and the signs for ‘soldier’ and ‘Statue of Liberty’ are very similar. Another example of this came from A1. In response to the word ‘laundry’, he said, “A car drives into a pole. The ambulance and the police come.” In this case, it seems that A1 was making a connection between the signs for ‘laundry’ and ‘ambulance’, which are similar. There were also participant responses that seemed to be arbitrarily selected in an attempt simply to provide a response to the researcher. A2 has these types of responses to each word for Book D. For the word ‘chimney’ he responded, “Apple.”, for the word ‘pipes’, he responded, “Cup.”, and for the word cement, he responded, “Eat.”. None of these responses seemed to have any connection to the written word or the sign for the word.

While participants did show evidence of word learning after Shared Reading sessions and vocabulary instruction, most of this learning seemed to be specific to the book in which the word was included. When students responded to these types of words, their responses tended to be more retelling of the events in the book than a definition of or information about the word itself. When asked to tell the researcher about the word ‘laundry’ on the third day of data collection related to the book *Come Out and Play, Little Mouse* (Kraus, 1987), B3 responded, “L-A-U-N-D-R-Y (fingerspelling the word while looking at the card) The mouse ran. The cat chased it.” Another example of this type of



response came from B1. When asked about the word ‘whiskers’, he responded, “A cat has whiskers. The cat chased the bird.” These responses, which were more retelling than definitional, could be evidence of a lack of multidimensional learning for these words.

During the post-assessment probe, participant A1 correctly identified one of the six words from books shared during his Three-Period Lesson intervention and was unable to identify any of the words from the Shared Reading (only) intervention books, the Direct Instruction intervention books, or the distractor books. Participant A2 correctly identified two of the six words from the Three-Period Lesson intervention books, three of the six words from the Direct Instruction intervention books, and no words from the Shared Reading (only) intervention books or distractor books. Participant A3 correctly identified one of the six words from the Shared Reading (only) intervention books, five of the six words from the Three-Period Lesson intervention books, three of the six words from the Direct Instruction intervention books, and two of the six words from the distractor books (one of which she correctly identified during pre-assessment probe). Participant B1 correctly identified one of the six words from the Shared Reading (only) intervention books, all of the six words from the Three-Period Lesson intervention books, five of the six words from the Direct Instruction intervention books (one of which he correctly identified during pre-assessment probe), and none of the six words from the distractor books. Participant B2 correctly identified three of the six words from the Three-Period Lesson intervention books, two of the six words from the Direct Instruction intervention books, and no words from the Shared Reading (only) intervention books or distractor books. Participant B3 correctly identified one of the six words from books shared during his Three-Period Lesson intervention and was unable to identify any of the

words from the Shared Reading (only) intervention books, the Direct Instruction intervention books, or the distractor books.

The qualitative data gathered during post-assessment regarding the participants' word learning was similar to the data gathered on the final day of each week of Interventions Two (Three-Period Lesson) and Three (Direct Instruction). Most of the information that participants gave regarding the words that they correctly identified was linked to the storybooks from which the words came. Their responses were almost all slightly less detailed versions of the answers they had given on the final day of vocabulary instruction for each word. For example, A3 gave the following response to 'hopscotch' on the third day of vocabulary instruction for that word: "It's a game. There are squares on the ground. You jump - one leg, two legs, one leg. There are numbers - 1, 2, 3...". When asked about the same word during post-assessment, she replied, "It's a game with squares on the ground." Another example of this type of change in answer came from B2 when he was prompted about the word 'soldier'. On the final day of vocabulary instruction, he said, "They stood in a line. Pete [The main character from the book]. They marched.", and during post-assessment his response was reduced to, "Marching."

One exception to this simplification of responses was B1. Of the words that he retained, several of his responses during post-assessment were either more detailed or more accurate than those he gave on the last day of vocabulary instruction for those words. For example, on the third day of vocabulary instruction for the word 'soldier', when the researcher asked B1 what he had learned about that word, he said, "Marching." After he correctly identified 'soldier' during the post-assessment, the researcher again

asked him what he had learned about that word. In this case, B1 replied, “They have guns, hats, and green shirts and pants.” When B1 had been asked about the word ‘cement’ on both the first and last day of vocabulary instruction for that word, his responses had shown evidence that he was making a connection between the word ‘cement’ and the word ‘camel’. During post-assessment, however, B1 said that ‘cement’ was, “For the people building the house.” Interestingly, this type of positive change in response occurred only for words that were taught to B1 during Intervention Two (Three-period lesson). His post-assessment responses to words taught during Intervention Three (Direct Instruction) either remained the same as or were slightly simplified versions of the responses he gave on the final day of vocabulary instruction.

### **Additional Analyses**

**Book choice.** While observing the Book Choice sessions and analyzing the Book Choice data, the researcher noticed that there seemed to be a trend in the number of books participants were choosing during each Book Choice session. Data regarding the total number of books chosen by each participant per Book Choice session were averaged across Baseline and each week of Interventions One (Shared Reading), Two (Three-Period Lesson), and Three (Direct Instruction). These data were examined in order to provide further information about participants’ engagement with books. A participant who chose a total of six books in a fifteen-minute book choice session spent considerably less time with each book than a participant who chose two books in one book choice session. Figures 33-38 illustrate the average total books chosen by each participant across the study.

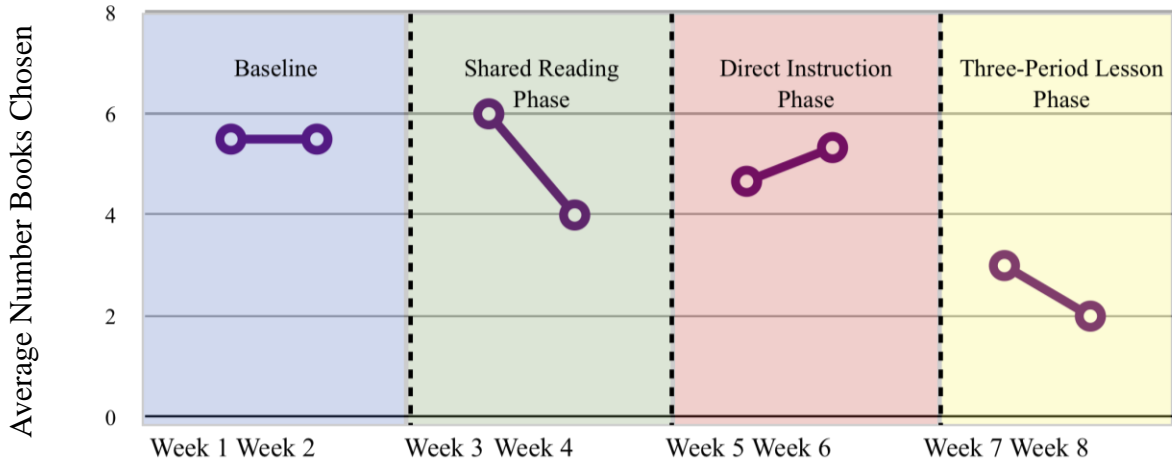


Figure 33. Participant A1 Average Number of Books Chosen

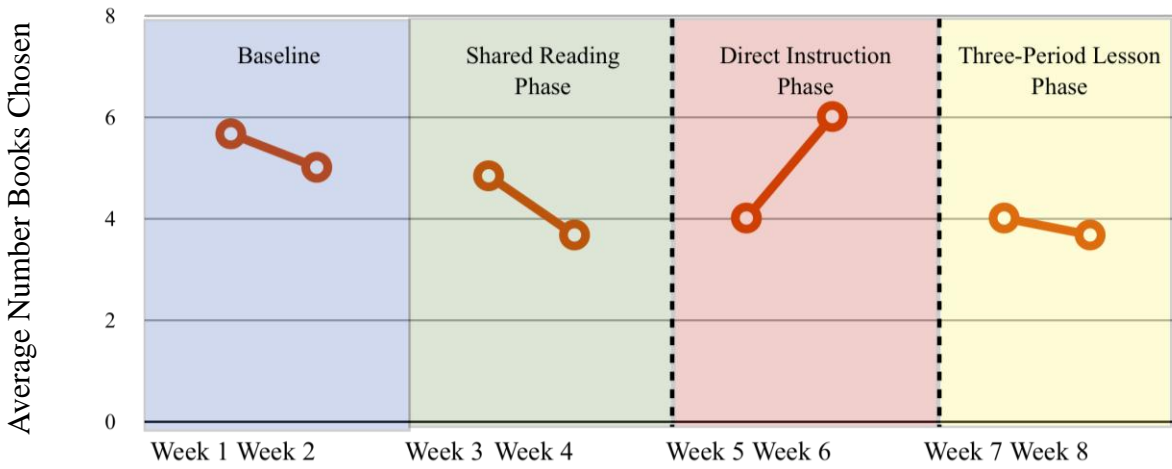


Figure 34. Participant A2 Average Number of Books Chosen

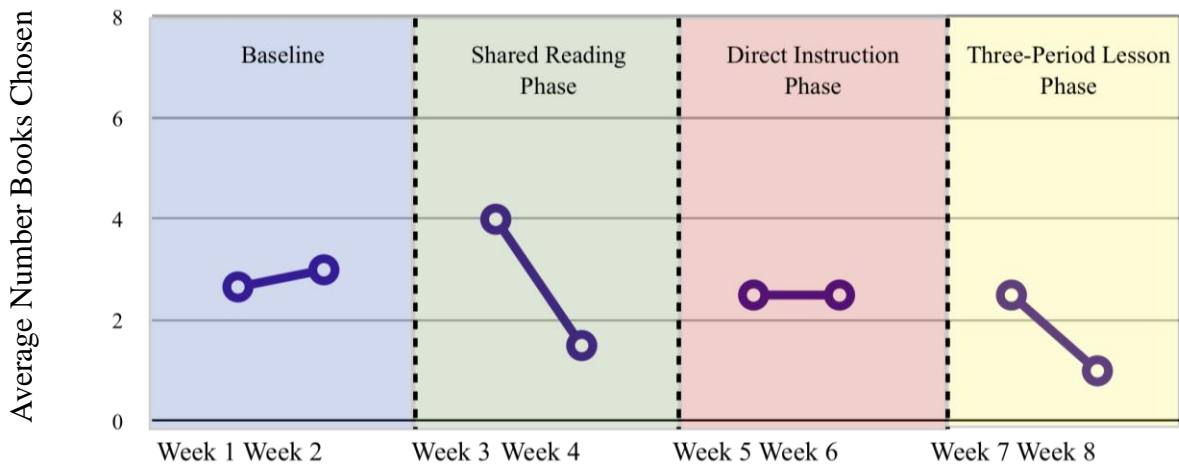


Figure 35. Participant A3 Average Number of Books Chosen

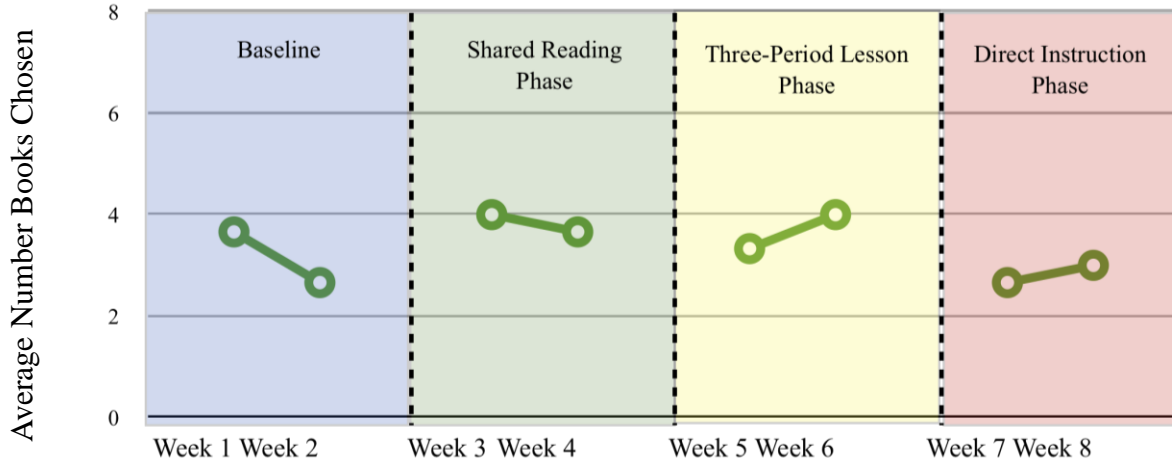


Figure 36. Participant B1 Average Number of Books Chosen

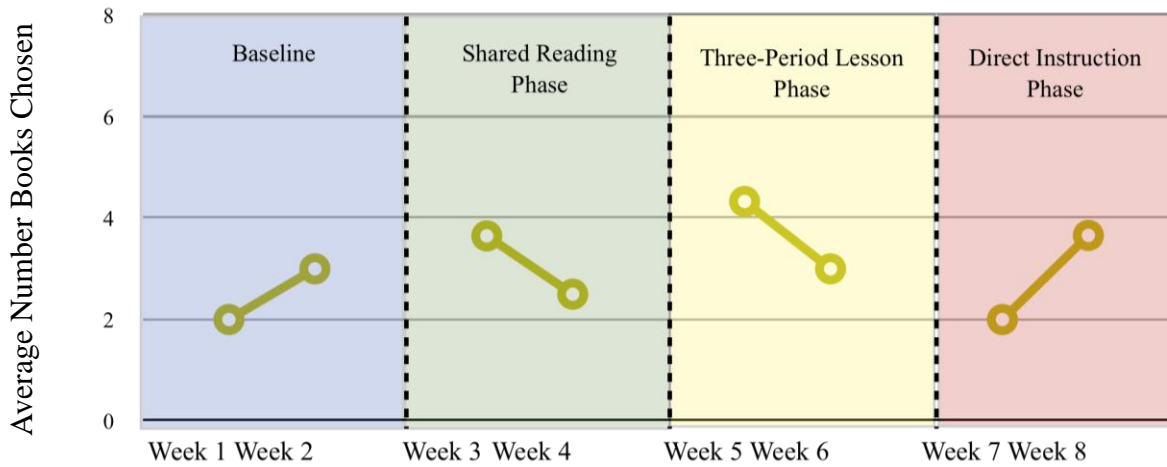


Figure 37. Participant B2 Average Number of Books Chosen

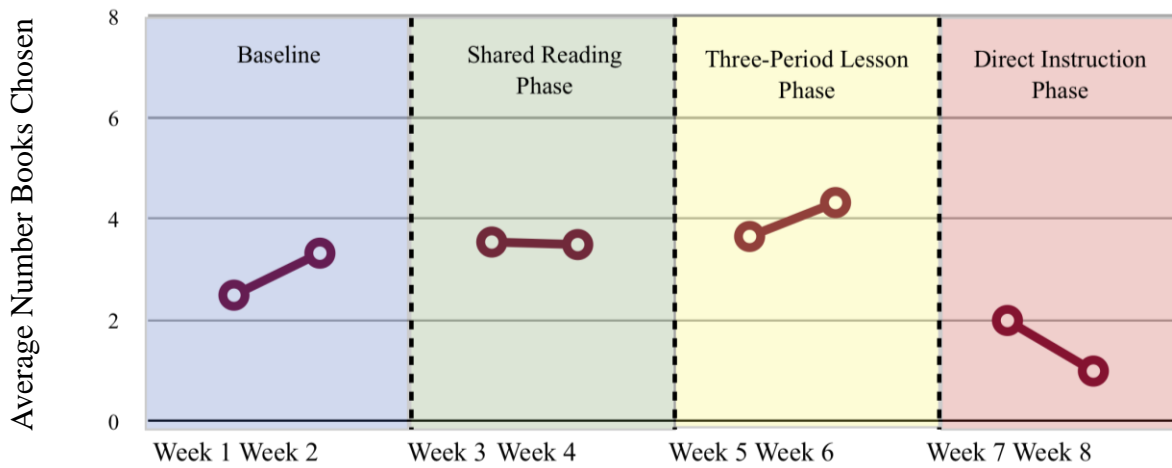
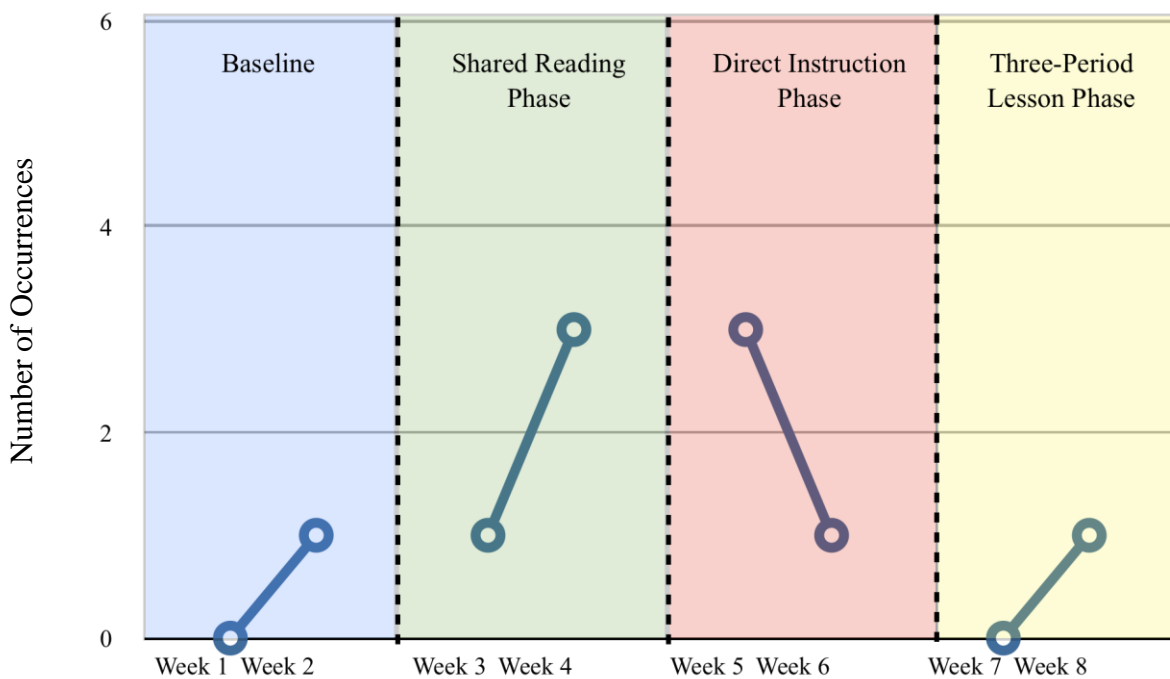


Figure 38. Participant B3 Average Number of Books Chosen

During the Book Choice sessions, the researcher also took notes about various aspects of the participants' behavior related to the books. These notes were coded and a trend emerged. Participants in both groups exhibited several types of behavior that appeared to demonstrate a lack of interest in the books. These behaviors included choosing or asking to choose books not involved in the study, spending Book Choice time arranging and organizing the books on the shelf, and making statements such as, "I've already finished all of these." These types of behaviors were coded and quantified. Figures 39-40 illustrate the occurrence of these behaviors during book choice sessions for Groups A and B.



*Figure 39.* Group A Books Avoidance Behavior

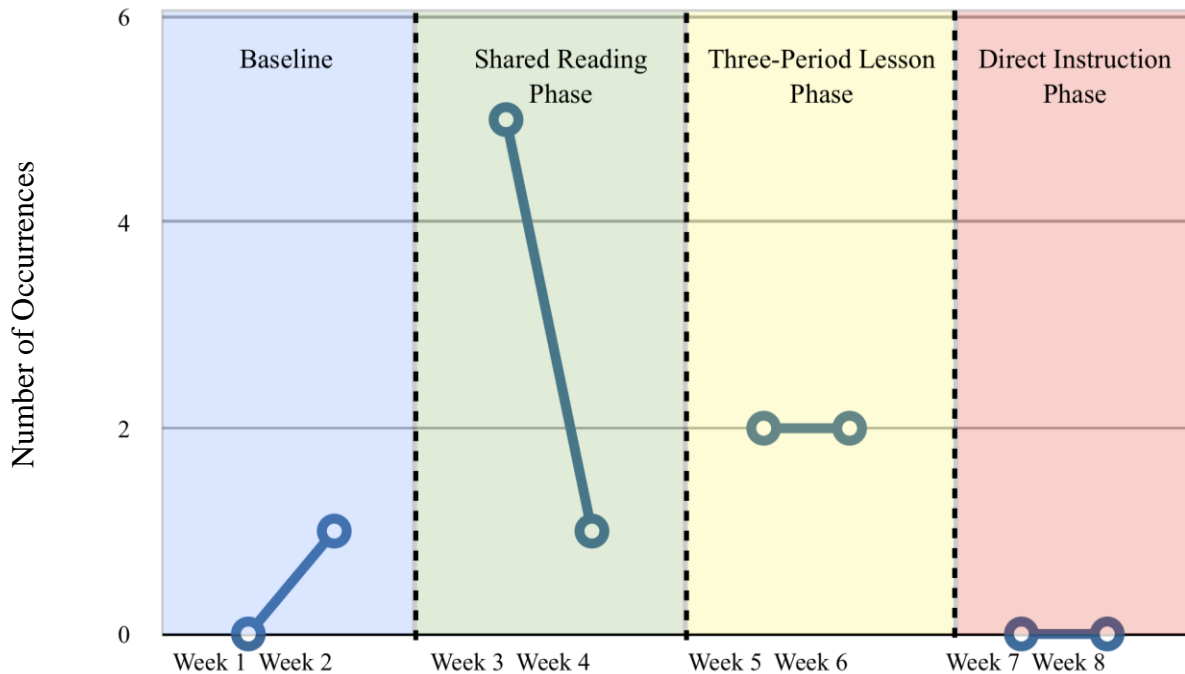


Figure 40. Group B Books Avoidance Behavior

**Vocabulary instruction.** During the one-on-one vocabulary instruction portion of the study, it became apparent that there was an interesting difference in the time required to complete the two different types of instruction. It is important to note that there were no time constraints assigned to either type of vocabulary instruction. The sessions continued either until the participant successfully responded to all three word prompts in the third period, or until several repetitions of each word had been prompted in the second period and the participant showed continued difficulty in providing the correct response. Figures 41-46 below illustrate the session lengths across Intervention Two (Three-Period Lesson) and Intervention Three (Direct Instruction) for each of the six participants. These data are important because they illustrate the amount of time required to complete a session that includes feedback and reinforcement as compared with a session that does not include feedback or reinforcement. All of the one-on-one sessions

across both Interventions Two and Three were conducted by the researcher and followed the same procedures, with the exception of the absence (Three-Period Lesson) or presence (Direct Instruction) of reinforcement in the form of stickers and verbal feedback provided by the researcher.

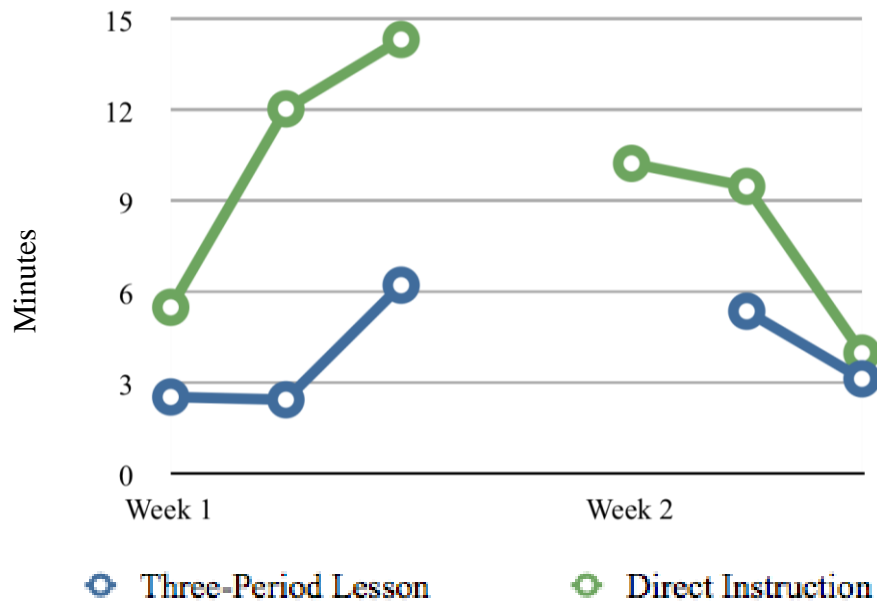


Figure 41. Participant A1 Time Required to Complete Session

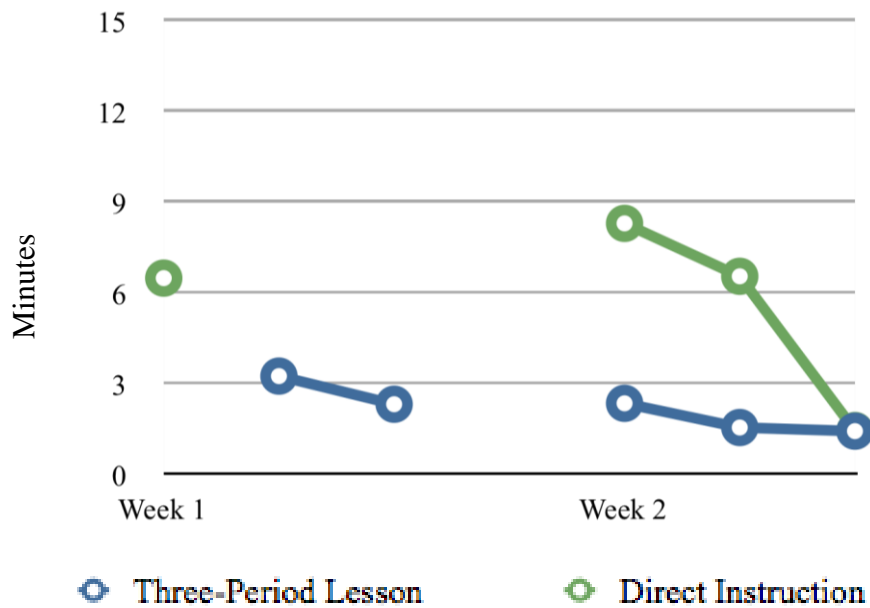


Figure 42. Participant A2 Time Required to Complete Session



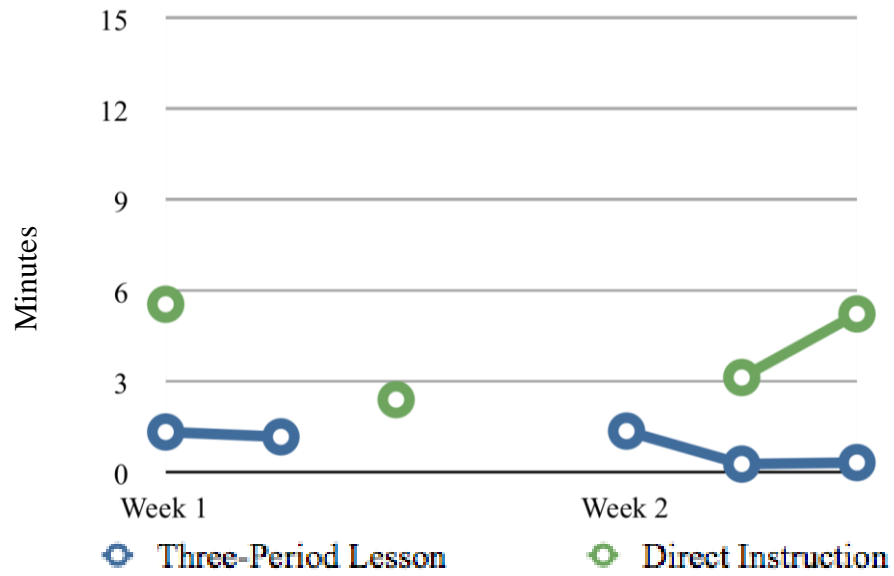


Figure 43. Participant A3 Time Required to Complete Session

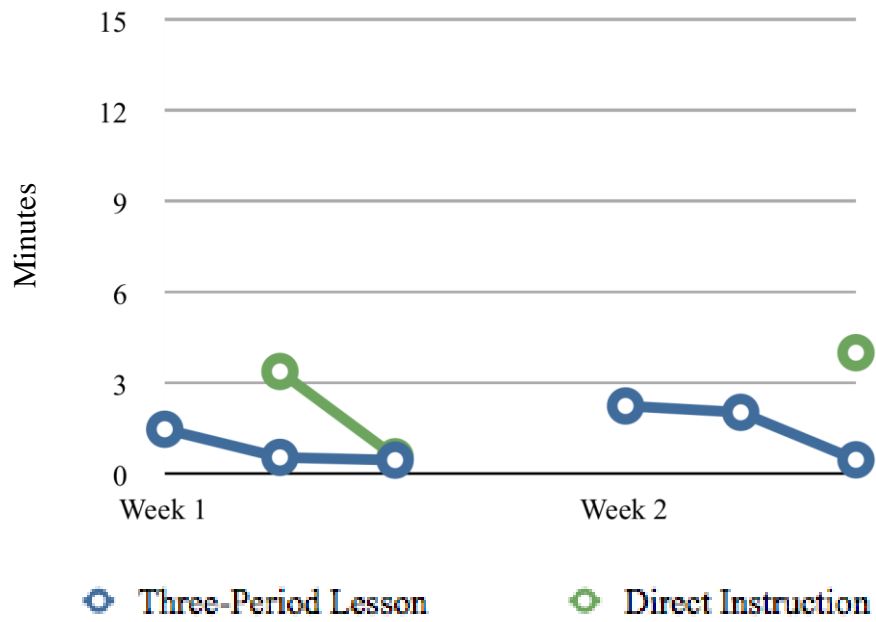


Figure 44. Participant B1 Time Required to Complete Session

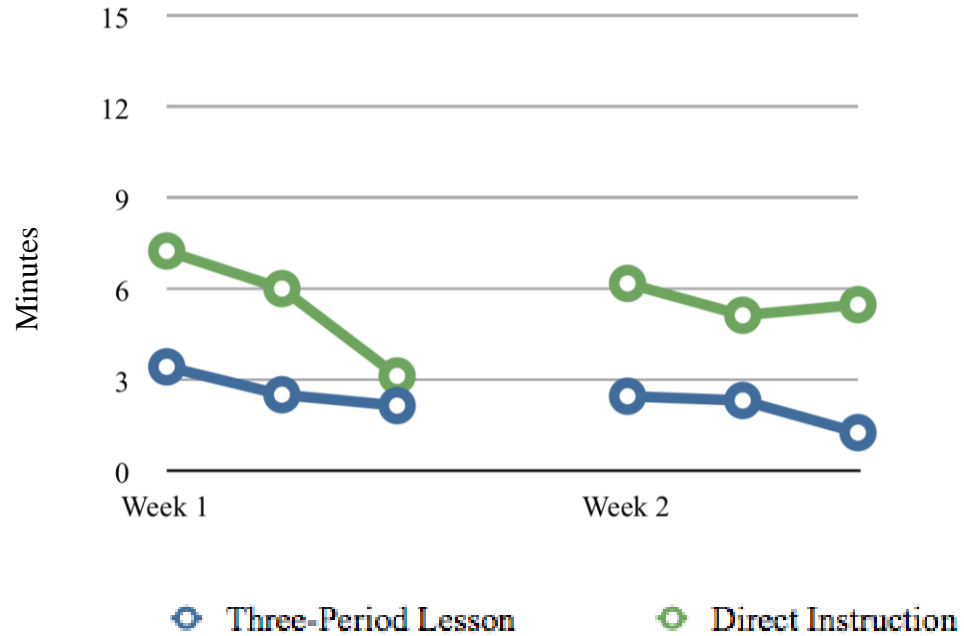


Figure 45. Participant B2 Time Required to Complete Session

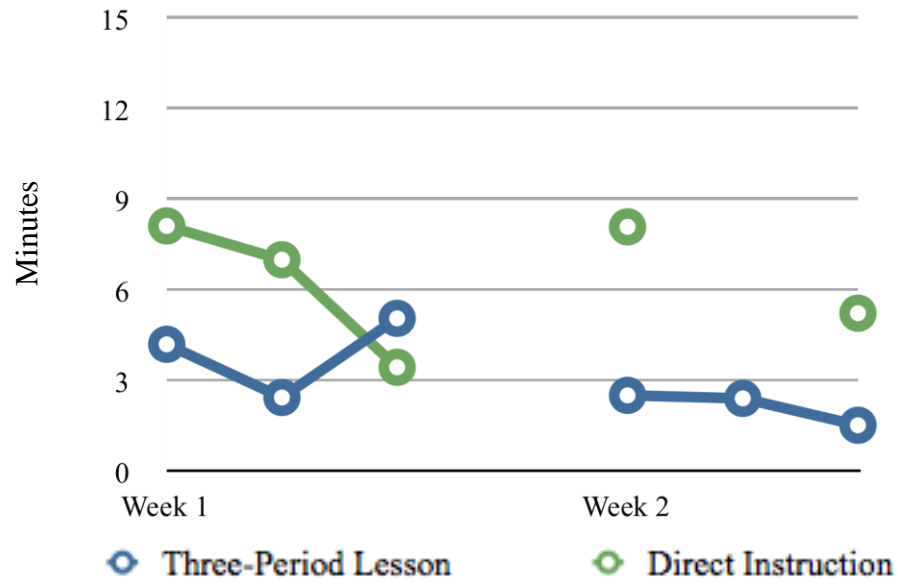


Figure 46. Participant B3 Time Required to Complete Session

**Fidelity of Implementation**

To ensure the reliability of the Shared Reading and vocabulary instruction sessions, two certified deaf educators were consulted. Each educator watched videos of

ten randomly selected vocabulary instruction sessions from Interventions Two (Three-Period Lesson) and Three (Direct Instruction). Based on a description of the two types of vocabulary instruction used during the study, the educators labeled each of the ten videos as either Three-period lesson or Direct Instruction. This information was compared with the researcher's data regarding the vocabulary instruction method used for each session, and the reliability was found to be one hundred percent.

The two deaf educators also watched three Shared Reading videos from each of the Interventions. They were provided with the list of agreed-upon features that were expected to be a part of the Shared Reading sessions. While the researcher's field notes and qualitative data showed that not every feature was present in every Shared Reading session, each feature was present in at least one of the three readings for each book. These data were compared with the two deaf educators' results and reliability was found to be one hundred percent.

## **Chapter V**

### **Discussion**

#### **Research Questions**

- 1) Will the use of Shared Reading increase the probability of students choosing the book being shared?

Based upon the graphical representations of Book Choice data, there was no evidence that there was an increase in the probability of participants choosing the book used during Shared Reading.

- 2) Will the use of the Three-Period Lesson in conjunction with Shared Reading increase the probability of choosing the book being shared, compared with the use of Direct Instruction in conjunction with Shared Reading, and the use of Shared Reading alone?

Again, no compelling evidence was garnered that would demonstrate that participants favored the books that were related to either type of vocabulary instruction.

- 3) Will the use of the Three-Period Lesson in conjunction with Shared Reading lead to greater word recognition retention than the use of Direct Instruction in conjunction with Shared Reading, and the use of Shared Reading alone?

The use of the Three-Period Lesson in conjunction with Shared Reading did lead to greater word recognition retention for five of the six participants compared with Direct Instruction in conjunction with Shared Reading. The use of Direct Instruction in conjunction with Shared Reading did lead to greater word recognition retention than

Shared Reading alone for all participants.

- 4) Will the use of the Three-Period Lesson in conjunction with Shared Reading lead to greater vocabulary learning than the use of Direct Instruction in conjunction with Shared Reading, and the use of Shared Reading alone?

During the Three-Period Lesson and Direct Instruction interventions as well as during post-assessment, qualitative data regarding participants' word learning was gathered. Based on this data, only one participant demonstrated a difference in word learning between the Three-Period Lesson and Direct Instruction conditions. All participants demonstrated some degree of word learning from the Three-Period Lesson condition that exceeded that of the Shared Reading (only) condition.

### **Discussion of the Main Findings**

**Book Choice.** The participants' book choices during Baseline demonstrated that the students showed no evidence of partiality to any book(s) before any of the Interventions were implemented. Participants' book choices across Interventions One, Two, and Three demonstrated that neither the Shared Reading sessions nor the one-on-one vocabulary instruction sessions had any noteworthy impact on the selections participants made during the Book Choice sessions.

However, the data regarding the average number of books selected by each participant during each week of data collection did seem to show a trend. Four of the six participants were selecting fewer books per session by the end of data collection than they were in the beginning. This decline was most notable for A1 and B3, who had the lowest reading levels of the participants. During Baseline and the first weeks of

Interventions, some participants, particularly A1 and B3, tended to select several books during each fifteen-minute book choice session and spend very little time with each book. The videos recorded during these sessions showed that these participants generally would select a book, sit down, and flip through it quickly, seeming to only glance at the pictures and showing little evidence of focusing on the text before returning the book to the shelf and making another selection. By the last weeks of Interventions, these same participants were choosing fewer books per fifteen-minute session and spending more time focused on each book. The video data recorded during these sessions show the participants looking closely at the pictures, retelling the story using voice and/or sign language, and focusing not only on the pictures, but also on the text. One explanation for this decrease in the number of books selected and corresponding increase in engagement with the books is simply that the participants were more familiar with the books by the last weeks of the study than they were in the beginning. Perhaps the initial Book Choice sessions served as a period of exploration of the books, which led to eventual engagement with those books once the participants had sufficient opportunity for exploration of unfamiliar books. If this is the case, it stands to reason that this change would be most notable in those participants whose reading levels were the lowest. For a student who is able to access text on an A or B level, spending time with an unfamiliar level H book could be understandably frustrating. This frustration could explain these participants' lack of engagement with the books in the first weeks of the study. However, after some of the books had been read to them by the teacher three times each, and after they had been exposed to some of the unfamiliar words in the books, it seems that they were more likely to engage with these books independently. Although the data show that participants were

no more likely to choose the books used in the Interventions than the books that served as distractors, perhaps raising participants' comfort level with some of the books available during book choice time had the effect of making all of the books more accessible to them. At the same time, it could be simply that the participants' repeated experiences with the books, whether through shared readings and vocabulary instruction, or just through book choice sessions, made them more comfortable with the books.

The data regarding the participants' attempts to avoid the study books also shows a change in the participants' behavior during the book choice sessions over the eight weeks of data collection. No book avoidance behavior was observed until the sixth day of Baseline. After that, these types of behaviors increased until they declined in the sixth week, disappeared in the seventh, and showed one occurrence in the final week. It is not surprising that after five book choice sessions, during which the same twelve books were rotated and available in various combinations, the students could have become bored with the books and might attempt to avoid them by choosing books not involved in the study or appealing to the teacher or researcher that all of the books had already been read. The decrease in these types of behaviors during the final weeks of the study may be further evidence that the participants were more engaged with/interested in the books. This data supports the research of King and Quigley (1985) discussed in Chapter One, which found that high levels of student interest made text difficulty less important while low levels of student interest made text difficulty more important. Perhaps the Shared Reading sessions and vocabulary instruction raised participants' interest levels enough to make the difficulty of the text less important during Book Choice sessions. This theory is supported by the following statement made by the teacher during an interview: "I feel

that some of the students enjoy the books more than others. Because the books are at a difficult level for most of the students, they become bored with reading the same text several times a week because they cannot read the print. Analyzing the pictures to tell a story can be difficult as well. Those who have more sight vocabulary and reading behaviors are able to get more out of this independent reading time. I feel others are choosing books because that is what they are supposed to do. I do, however, feel that the students enjoy the books a little bit more after we have used it in a read aloud because they are able to understand the story.” Whatever the explanation for the changes in participants’ Book Choice behaviors, it seems safe to conclude that their Book Choices were not related to any of the Interventions, but to the level of familiarity with the books. Triangulation of the quantitative book choice data with the qualitative field notes and teacher interviews provided helpful insight into the change in participants’ Book Choice behaviors.

**Vocabulary instruction.** The Direct Instruction sessions consistently took longer to complete than the Three-period lesson sessions. Much of this added time may be attributed to the use of stickers during the Direct Instruction sessions. Even if this is the case, these data seem to point to the efficiency of vocabulary instruction without material rewards. In the current climate of overscheduled classrooms, a more efficient method of one-on-one vocabulary instruction could prove a useful tool.

In addition, the students whose reading levels were the lowest consistently, showed evidence of being distracted from the Direct Instruction by the stickers, while the



students with the highest reading levels showed no evidence of sticker distraction.

Children with reading levels below their age/grade level are the students with whom it is especially crucial to spend more time on task rather than less. One interesting question that arises from this study is: Are these students easily distracted because they have low reading levels or do they have low reading levels because they are easily distracted?

Maria Montessori felt that when presenting a new word or concept to a child, it is important that the language used in the presentation be brief and simple in order to avoid confusing the child with extraneous information (Montessori, 1964). As discussed in Chapter One, this brevity and simplicity may be particularly important for students with language delays, such as students who are deaf or hard of hearing. During the introduction of a new word, if a teacher uses superfluous language that is unclear to a student, the student may be distracted by trying to ascertain the meaning of the superfluous language rather than expending that mental energy on acquiring the new word being presented. In theory, verbal feedback and reinforcement could fall into the category of superfluous language during vocabulary instruction.

A1 showed the most behavioral changes when switching from one type of vocabulary instruction to the other. While A1 and B3 behaved similarly in response to the stickers and had similar reading levels, B3 did not seem to experience the frustration and difficulty that A1 did when the groups switched Interventions. This is likely because A1 transitioned from receiving feedback and reinforcement to receiving none, while B3's transition was the opposite. In addition, during his two weeks of Three-Period Lesson, B3 was highly aware of the stickers, so finally having stickers added to his vocabulary instruction sessions seemed to be a welcome change. While it is difficult to generalize

based on one participant, it seems that the student whose reading level was the lowest was the most impacted by the loss of feedback and reinforcement. These behaviors observed by the researcher were in agreement with the following response given by the teacher during an interview: “The students who have less language and who are younger typically need more of an extrinsic reward than others for it to really have an impact. Others, who have greater language skills, intrinsically do better than others with verbal/sign feedback and praise.” The participants’ negative responses to the switch from Direct Instruction to The Three-Period Lesson were related to their reading levels. Further, participants’ tendency to become distracted by the stickers also seemed to be related to their reading levels.

**Shared Reading sessions.** Early in the process of coding the qualitative shared reading data, it became apparent that the number of comments a participant made, as well as the number of redirects a participant required to return their attention to the shared reading, were *both* useful measures of each participant’s engagement with/interest in the book being shared. Across all participants, Books D and F seemed to be the most engaging, receiving the most comments and requiring the fewest redirects. As discussed earlier, the practice of shared reading sessions was already an established part of the classroom routine. Therefore, it can be assumed that there was not an adjustment period for the participants during the first weeks of the Shared Reading sessions. However, the presence of the researcher as an observer, as well as the video camera, may have slightly repressed participants’ comments during the first weeks of shared reading data collection.

As discussed in Chapter Four, the three vocabulary words from Book D were commented on frequently by participants during each of the three shared reading sessions

of this book. This would seem to demonstrate an increased interest in this particular book, especially in light of the fact that there were no student-initiated comments about the words from any of the other books during the study. Interestingly, the Book Choice data showed that five of the six participants did not choose Book D more often than the other books. While A2 chose Book D more than any other book, he chose it only once more than Books A, B, and F.

While students only commented about vocabulary words from Book D, they made connections between the shared reading sessions and the vocabulary instruction sessions for shared readings of Books C, D, and F, three of the four books shared during the Interventions that included the vocabulary instruction component. This could be an indication that instruction of vocabulary words from a book may serve to increase students' awareness of the words during a shared reading.

A3 and B1, the participants with the highest reading levels, also made connections between the books included in the study, and A3 demonstrated knowledge of books that she had selected during Book Choice sessions but that had not been shared by the teacher. The former occurrences could be evidence that students' reading levels impact their ability to think critically about books shared by the teacher, while the latter could be an indication of A3's ability to independently access and understand the level H books in the study. This would be supported by information provided by the classroom teacher about A3's independent reading level. She informed the researcher that while B1's reading level was slightly higher than A3's, A3 had better comprehension skills than B1.

**Word learning.** As discussed in Chapter One, the purpose of the three-period lesson within the Montessori Method is to provide an initial introduction to

new words or concepts. This introduction is intended to be followed by multiple, varied experiences with those words or concepts. While the shared reading sessions provided participants with additional experiences with the words taught during the vocabulary instruction sessions, these experiences were limited and exposed participants to the word in only one context.

The post-assessment data showed that five of the six participants retained more words from Intervention Two (Three-Period Lesson) than Intervention Three (Direct Instruction). Not surprisingly, the total number of words retained was positively related to students' reading levels across all participants. Interestingly, in spite of A1's apparent frustration and lack of engagement during his Three-Period Lesson sessions, he retained one word from these sessions and no words from the Direct Instruction sessions.

It is not surprising that word retention related positively with the reading levels of participants. These data are a demonstration of the Matthew Effect, which has been observed in countless other research studies (Baker, Simmons, & Kame'enui, 1998; Stanovich, 1986; Walberg & Tsai, 1983). In the case of the participants in this study, A3's and B1's greater word retention as well as their higher reading levels are consistent with the research by Anderson and Reilly (2002) discussed in Chapter Two, which found that children with hearing loss who had parents who were deaf and used American Sign Language (ASL) tended to develop vocabulary at an age-appropriate level. The two participants with the highest reading levels each had two parents who were deaf and ASL was the primary home language for both. In addition, Paul (1998) found that a strong foundation in ASL resulted in better word learning for students who are deaf or hard of hearing. Because A3 and B1 have both been exposed to sign language since birth, while

the other four participants did not gain access to ASL until they entered school, it is safe to assume that their sign language foundation is stronger than that of their classmates. A3's and B1's post-assessment data support Paul's (1998) findings that better word learning occurs for students with a strong foundation in ASL.

### **Implications of the Findings**

The findings of this study have a number of promising implications for educators. First, the efficiency and effectiveness of the Three-Period Lesson, without feedback or reinforcement, as a means of vocabulary instruction could be a practical means of introducing new vocabulary words to students. Second, the qualitative data regarding students' responses to the switch from Direct Instruction to the Three-Period Lesson demonstrate the difficulty in transitioning students from extrinsic to intrinsic motivation once they have become accustomed to external reinforcement. The fact that students' reading levels were inverse to their ability to adjust to a lack of feedback seems to indicate that students who are already struggling academically may have the most to lose if there is a change in the reinforcement they receive. Finally, there seemed to be a relationship between participants' reading levels and their level of distraction when tangible reinforcement was involved in Direct Instruction. This could be an indication that the students who need to focus the most are the ones whose attention is most easily drawn away from a lesson.

### **Limitations of the Study**

One of the greatest challenges of conducting this study was selecting the books to be included. The highly varied reading levels of the participants made it challenging to

choose books that would be challenging enough for the participants with higher reading levels, yet not too challenging for the participants with lower reading levels. In addition, the books needed to be interesting enough to hold students' attention over three shared reading sessions, yet accessible enough to hold their individual attention during the book choice sessions. As the researcher observed prior to the onset of data collection, the books shared by the teacher tended to be a higher level (*A Chair for My Mother* (Williams, 1984) is a Fountas and Pinnell (2009) level M, and *The Polar Express* (Van Allsburg, 1985) is a level N), while the books available to students during book choice time were appropriate for their independent reading levels. After completing the Fountas and Pinnell (2010) reading assessment for each of the participants, the researcher concluded that books given a Fountas and Pinnell (2009) level of E would be appropriate, as E was the highest reading level of the participants. However, after selecting twelve level E books, two problems became apparent. First, there were not enough words in each book that were novel to the participants with the highest reading levels. In order to begin data collection, the researcher needed a list of words that were not known by any of the students. The second challenge was that the level E books were simple enough that there was concern that the students would become bored or disinterested during multiple shared reading sessions of these books. As mentioned in Chapter One, one of the main goals of shared reading is to give students access to books that they would not be able to access on their own (Bus, van Ijzendoorn, & Pellegrini, 1995). Therefore, books selected for use in shared reading sessions tend to be well above the independent reading levels of students. In order to solve this problem, the researcher and teacher looked at level F, G, H and I books. The level H books were determined be the best able to strike a balance

between challenging the participants with higher reading levels while not overwhelming those with lower reading levels. They also seemed to be lowest level books that were complex and interesting enough to hold students' attention across three shared reading sessions.

Another difficult issue that was present throughout the development and implementation of this study was the use of one facet of one teaching philosophy within the greater context of a different teaching philosophy. The lack of reinforcement and feedback during a three-period lesson is a small component of the Montessori philosophy that is generally implemented within the culture and context of a Montessori classroom. For the purposes of this study, it was important to collect data in a non-Montessori setting in order to allow for a comparison of vocabulary instruction with and without feedback and reinforcement. At the same time, the contrived use of one component of a philosophy of teaching outside of the context of that philosophy has limitations. First, the participants in this study were accustomed to both verbal feedback and tangible reward as a part of their classroom experiences. This is in contrast to students in a Montessori classroom, who tend to *begin* their school experience in a Montessori classroom and therefore do not experience the culture of feedback and reinforcement typically used in a traditional classroom setting. As evidenced by A1's behavior during the vocabulary instruction sessions, the transition from feedback and reinforcement to a lack of extrinsic rewards may be difficult for students. Perhaps in the greater context of a Montessori classroom, the positive impact of Seguin's three-period lesson on word retention would be greater.

A related limitation was a result of the structure and constraints necessary to

conduct this study. In order to ensure validity of findings as well as to minimize disruption to the participants' classroom experiences, it was important to establish parameters for the frequency and timing of one-on-one vocabulary instruction sessions. In a Montessori classroom, the large blocks of time during which students choose activities on which to focus allow teachers to observe students and to present lessons to them on a flexible schedule. The structured schedule for the one-on-one sessions of this study were in contrast to this flexibility.

Another limitation of this study arose from the exclusion of concrete objects or pictures during the vocabulary instruction sessions. For early childhood students such as the participants in this study, the use of concrete learning experiences can be highly beneficial. This is especially true of students who have language delays, such as children who are deaf or hard of hearing. The types of vocabulary instruction used in this study may be more effective if they include concrete objects or pictures to assist students in making connections between the words that they are learning and the objects and concepts those words represent. This is supported by the research of Dubios and Vial (2000) discussed in Chapter Two, which found a correlation between the combination of spoken, written, and visual representations of words during direct vocabulary instruction and increased word recall.

When teaching vocabulary words from a storybook, photocopies of the representations of the words in the book may be helpful. In designing this study, the decision was made to exclude these types of concrete representations of the words in order to avoid the participants' simply making connections between the pictures and the signs for the words. While this was deemed appropriate and necessary for the validity of



this study, the use of concrete objects and/or pictures during vocabulary instruction would likely have a positive impact on the word learning of students who are deaf or hard of hearing. The combination of the spoken/signed word and the printed word were likely too abstract for the participants, particularly those with lower reading levels.

As discussed earlier, selecting books that were appropriate for all of the participants presented a challenge. In order to select books that contained words that were unknown to the participants with the highest reading levels and were complex enough to hold participants' attention across three shared reading sessions, books that were several levels above the lowest reading levels in the class had to be selected. Unfortunately, this made the vocabulary words included in the study more difficult than the spelling words typically assigned to the students with lower reading levels. While the researcher was aware that this was likely to result in little word retention for the students with the lowest reading levels, the decision was made to use this as an opportunity to examine the impact of the study on participants with varying reading levels.

As discussed earlier in this chapter, the Three-Period Lesson is not intended to be a student's only exposure to a new word or concept. Rather, it is meant to be an initial introduction, which would then be followed by numerous, diverse experiences with that word or concept. This study was purposely designed to limit participants' experiences with the words being taught in the vocabulary instruction, shared reading, and book choice sessions. While research has shown that this type of limited exposure to new words is not the most effective way for children to acquire vocabulary, it was necessary to design the study in such a way as to attempt to isolate any relationship between the components of the study and the word retention of the participants.

### **Directions for Future Research**

The findings of this study indicate possibilities for several further investigations. First, a similar study that examined the differences between a feedback versus no feedback condition, without any material reinforcement could be conducted. The results of such a study could either strengthen the findings of the current study or demonstrate that the use of verbal feedback in conjunction material reinforcement is less effective than verbal feedback only.

As discussed earlier, one of the limitations of the current study was the lack of multiple, varied experiences for the students with the words being taught. In order to further examine the role of the Three-Period Lesson in the word learning of students, a study could be conducted that involved two conditions: 1) multiple, varied experiences with vocabulary words, and 2) multiple, varied experiences with vocabulary words, preceded by the Three-Period Lesson.

Another limitation of the study was the high reading level of the books involved. While this was necessary for the purposes of the current study, a subsequent study could be conducted using books that are on, or slightly above, students' current reading levels. In addition, such a study could be designed to exclude a shared reading component, which would allow the books and vocabulary words to be individualized for each participant. This would make both the vocabulary instruction and book choice sessions more appropriate for the varied reading levels that tend to occur in a classroom of students who are deaf or hard of hearing.

Similarly, a study could be designed that included books of varying levels. It would be interesting to investigate whether students would show similar patterns of

becoming comfortable with books well above their reading levels, even if books on or near their reading levels were available to them during book choice time.

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## APPENDIX A

### English Informed Consent

**TEACHERS COLLEGE**  
COLUMBIA UNIVERSITY  
DEPARTMENT OF HEALTH AND BEHAVIOR STUDIES

SPECIAL EDUCATION PROGRAMS

Teachers College, Columbia University

#### INFORMED CONSENT

**DESCRIPTION OF THE RESEARCH:** Your child is invited to participate in a research study on two different kinds of vocabulary instruction and how they affect students' word learning and book choices. Your child will be asked to participate in a short pre- and post-test, whole class shared reading, free reading, and individual vocabulary teaching sessions, all of which will be videotaped. All videotapes will be viewed only by the research team and will be securely stored to ensure confidentiality. The research will be conducted by Rebecca Jackson. The research will be conducted at St. Francis de Sales School for the Deaf.

**RISKS AND BENEFITS:** The risks and possible benefits associated with this study are the same that a student will encounter during usual classroom activity. By participating in this study, students may increase their knowledge of the vocabulary words included in the study. If a student chooses not to participate in the study, the researcher will work with the classroom staff to find a suitable alternative activity.

**DATA STORAGE TO PROTECT CONFIDENTIALITY:** All data collected for this study will be kept in either a locked file cabinet or saved in a password-protected computer file.

**TIME INVOLVEMENT:** The entire length of you child's participation is three months. However, the time involved each week is only approximately one hour three days each week. First your child will get approximately 10 minutes of individual direct instruction on vocabulary items that come from the storybook being read in the classroom that week. Second, your child will participate in a whole-class teaching situation, conducted by the classroom teacher, that is a part of the normal curriculum and class routine. Primarily, the teacher will be videotaped to better understand how this group instruction in reading works. This will be followed by 15 minutes of free reading time. Your child will also participate in a pre-assessment at the beginning of the study. This will consist of approximately 15 minutes during which the researcher will display vocabulary words and ask your child to identify them. At the end of the study, the same assessment will be given again.

**HOW WILL RESULTS BE USED:** The results of the study will be used for the researcher's dissertation. Additionally the results of the study will be written up for submission to professional journals and professional conferences. Your child will never be identified specifically. Only the general findings of the study will be reported.

TEACHERS COLLEGE, COLUMBIA UNIVERSITY
INSTITUTIONAL REVIEW BOARD
Protocol # 11-0608
Present form approved until 12/19/2011
IRB Signature SHMB



**TEACHERS COLLEGE**  


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**COLUMBIA UNIVERSITY**  
 DEPARTMENT OF HEALTH AND BEHAVIOR STUDIES

SPECIAL EDUCATION PROGRAMS

- If video and/or audio taping is part of this research, I ( ) consent to be audio/video taped. I ( ) do NOT consent to being video/audio taped. The written, video and/or audio taped materials will be viewed only by the principal investigator and members of the research team.
- Written, video and/or audio taped materials ( ) may be viewed in an educational setting outside the research ( ) may NOT be viewed in an educational setting outside the research.
- My signature means that I agree to participate in this study.

Participant's signature: \_\_\_\_\_ Date: \_\_\_/\_\_\_/\_\_\_

Name: \_\_\_\_\_

If necessary:

Guardian's Signature/consent: \_\_\_\_\_

Date: \_\_\_/\_\_\_/\_\_\_

Name: \_\_\_\_\_

Teachers College, Columbia University

Assent Form for Minors (8-17 years-old)

I \_\_\_\_\_ (child's name) agree to participate in the study entitled: The Impact of Seguin's Three-Period Lesson on the Book Choices and Word Learning of Students who are Deaf or Hard of Hearing. The purpose and nature of the study has been fully explained to me by Rebecca Jackson (Investigator). I understand what is being asked of me, and should I have any questions, I know that I can contact Rebecca Jackson (Investigator) at any time. I also understand that I can to quit the study any time I want to.



**TEACHERS COLLEGE**  
**COLUMBIA UNIVERSITY**  
 DEPARTMENT OF HEALTH AND BEHAVIOR STUDIES

SPECIAL EDUCATION PROGRAMS

Name of Participant: \_\_\_\_\_

Signature of Participant: \_\_\_\_\_

Witness: \_\_\_\_\_

Date: \_\_\_\_\_

Investigator's Verification of Explanation

I certify that I have carefully explained the purpose and nature of this research to \_\_\_\_\_ (participant's name) in age-appropriate language. He/She has had the opportunity to discuss it with me in detail. I have answered all his/her questions and he/she provided the affirmative agreement (i.e. assent) to participate in this research.

Investigator's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

TEACHERS COLLEGE, COLUMBIA UNIVERSITY INSTITUTIONAL REVIEW BOARD	
Protocol #	11-068
Consent form approved date	12/9/2011
IRB Signature	JMB

## Spanish Informed Consent

Teachers College, Columbia University

### CONSENTIMIENTO INFORMADO

**DESCRIPCIÓN DE LA INVESTIGACIÓN:** El niño es invitado a participar en un estudio de investigación en dos tipos diferentes de enseñanza de vocabulario y cómo afectan a la palabra aprendizaje de los alumnos y las opciones de libro. Su hijo tendrá que participar en una breve pre-y post-test, la lectura de toda la clase en la residencia, la lectura libre, y sesiones individuales de la enseñanza de vocabulario, todo lo cual será grabado en video. Todos los videos serán vistos por el equipo de investigación y se almacena de forma segura para garantizar la confidencialidad. La investigación estará a cargo de Rebecca Jackson. La investigación se llevará a cabo en St. Francis de Sales Escuela para Sordos.

**RIESGOS Y BENEFICIOS:** Los riesgos y los posibles beneficios asociados con este estudio son los mismos que el estudiante se encontrará durante la actividad del aula habitual. Al participar en este estudio, los estudiantes podrán aumentar su conocimiento de las palabras del vocabulario incluidos en el estudio. Si un estudiante decide no participar en el estudio, el investigador va a trabajar con el personal del salón de clases para encontrar una actividad alternativa adecuada.

**ALMACENAMIENTO DE DATOS PARA PROTEGER LA CONFIDENCIALIDAD:** Todos los datos recogidos para este estudio se mantendrá, ya sea en un archivador bajo llave o guardados en un archivo informático protegido con contraseña.

**TIEMPO DE PARTICIPACIÓN:** La longitud total de que la participación del niño es de tres meses. Sin embargo, el tiempo que cada semana es sólo aproximadamente una hora tres días a la semana. En primer lugar su hijo recibirá aproximadamente 10 minutos de instrucción directa individual en vocabulario que vienen del libro de cuentos se leen en el aula durante la semana. En segundo lugar, su hijo participará en una situación de enseñanza de toda la clase, dirigida por el maestro, que es parte del plan de estudios normal y rutina de la clase. En primer lugar, el profesor será grabada en video para entender mejor cómo este grupo de instrucción en la lectura de las obras. Esto será seguido de 15 minutos de tiempo de lectura libre. Su hijo también participará en una evaluación previa al inicio del estudio. Este consistirá de aproximadamente 15 minutos durante los cuales el investigador mostrará palabras de vocabulario y pídale a su niño para su identificación. Al final del estudio, la evaluación del mismo se dará de nuevo.

**¿CÓMO SE UTILIZA LOS RESULTADOS:** Los resultados del estudio se utilizarán para la tesis doctoral del investigador. Además los resultados del estudio serán escritos para la presentación de revistas especializadas y conferencias profesionales. Su hijo nunca se identificó de forma específica. Sólo las conclusiones generales del estudio se informó.

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Consent form approved until	12/9/2011
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Teachers College, Columbia University DERECHOS DEL PARTICIPANTE

Investigador principal: Rebecca Jackson

Título de Investigación: El impacto de la lección de Seguin de tres periodos de las elecciones del Libro y la Palabra de aprendizaje de los estudiantes que son sordos o con problemas de audición

- He leído y discutido la descripción de la investigación con el investigador. He tenido la oportunidad de hacer preguntas sobre los propósitos y procedimientos relativos a este estudio.
- Mi participación en la investigación es voluntaria. Puedo negarme a participar o retirarse de la participación en cualquier momento, sin afectar a la atención médica futura, el empleo, la condición de estudiante o de otros derechos.
- El investigador me puede retirarse de la investigación a su discreción profesional.
- Si durante el curso del estudio, la nueva información significativa que se ha desarrollado esté disponible, que puede referirse a mi disposición a seguir participando, el investigador proporcionará esta información a mí.
- Toda la información derivada del proyecto de investigación que identifique personalmente a mí, no será publicado voluntariamente o divulgada sin mi consentimiento por separado, salvo lo específicamente requerido por ley.
- Si en algún momento tengo comentarios, o preocupaciones con respecto a la conducta de la investigación o preguntas acerca de mis derechos como sujeto de investigación, me contacto con el Teachers College, Columbia University Institutional Review Board / CRI. El número de teléfono de la IRB es (212) 678 a 4105. O bien, puede escribir a la IRB en el Teachers College, Columbia University, 525 W. Calle 120, Nueva York, NY, 10027, Caja 151.
- Yo debería recibir una copia de la descripción de Investigación y este documento participante Derechos.
- Si la grabación de video y / o audio es parte de esta investigación, ( ) el consentimiento en audio y video grabado. I ( ) NO consentimiento para video que se está / audio grabado. El escrito, video y / o materiales de audio grabado se puede ver sólo por el investigador principal y los miembros del equipo de investigación.
- Escrito, video y / o materiales de audio grabados ( ) puede ser visto en un entorno educativo fuera de la investigación ( ) NO se puede ver en un entorno educativo fuera de la investigación.
- Mi firma significa que estoy de acuerdo en participar en este estudio.

TEACHERS COLLEGE, COLUMBIA UNIVERSITY INSTITUTIONAL REVIEW BOARD	
Protocol #	11-068
Consent form approved until	12/9/2011
IRB Signature	SH/MB

## **APPENDIX B**

### **Participant Explanation Script and Pictures**

“I am a college student and I want to learn about how children learn words. I will be coming here for about 3 months to learn about this. On the days that I am here, we will be doing 4 things:

- 1) Your teacher will read storybooks to the class.
- 2) The class will have 15 minutes of free reading time.
- 3) I will have one-on-one teaching time with you and some of the other students. We will learn some new words.
- 4) I will videotape my teaching and your classroom.”



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Protocol # 11-068  
Consent form approved 12/9/2011  
Bill Scardina SH/MB



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## **APPENDIX C**

### **Classroom Teacher Interview Questions**

How do you choose books to read aloud to the class? What are the features of a book that you consider when choosing?

How do you approach the challenge of choosing books, considering the varied reading levels in your classroom?

How do you teach vocabulary to students? Do you pre-teach vocabulary from books you will read aloud?

Describe features of your shared storybook reading (i.e., emphasizing the picture on the cover, asking students for prediction, etc).

Do you utilize vocabulary from shared books for vocabulary instruction? If so, do you observe a positive impact on students' vocabulary?

What role do feedback and rewards play in your teaching?

How do different students respond to feedback/rewards?

How do you think the students are doing during the shared reading sessions? Do they enjoy the books?

How do you think the students are doing during the book choice sessions? Do they enjoy the books?



**APPENDIX D****Shared Reading Reliability Form**

<b>Features</b>	<b>Evident in Shared Reading? Y/N</b>	<b>Notes</b>
Prediction		
Inference		
Point of View /Feelings		
Problem/ Solution		
Title		
Author		
Illustrator/ Photographer		
Summary/ Main Idea		
Focus on Difficult Words/Signs		
Retelling		

**Vocabulary Instruction Reliability Form**

	Three-period lesson	Direct instruction	Notes
Video 1			
Video 2			
Video 3			
Video 4			
Video 5			
Video 6			
Video 7			
Video 8			
Video 9			
Video 10			

## APPENDIX E

## Pre- and Post-Assessment Form

Name: _____	Notes
pattern	
wheat	
valley	
soldiers	
garbage	
whiskers	
cement	
chimney	
pipes	
sled	
picnic	
desk	
ferry	
tire	
shop	
laundry	
hopscotch	
jacks	
camp	
whistle	
wedding	
dentist	
sofa	
shed	

## APPENDIX F

### Books Included in the Study

Study Letter	Book Title and Author
A	<i>Sun Up, Sun Down</i> by Gail Gibbons
B	<i>Caps Hats, Socks, &amp; Mittens</i> by Louise W. Borden
C	<i>Captain Cat</i> by Syd Hoff
D	<i>Building a House</i> by Byron Barton
E	<i>Pran's Week of Adventure</i> by Tina Athaide
F	<i>Come Out and Play, Little Mouse</i> by Robert Kraus
G	<i>My Tooth is Loose</i> by Martin Silverma
H	<i>When the TV Broke</i> by Harriet Ziefert
I	<i>The Father who Walked on his Hands</i> by Margaret Mahy
J	<i>Danny and the Dinosaur go to Camp</i> by Syd Hoff
K	<i>Sammy the Seal</i> by Syd Hoff
L	<i>A Kiss for Little Bear</i> by Else Holmelund Minarik