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A Play Based Intervention to Develop Literacy: Using Foundations for Literacy to Help Students with a Developmental Delay Learn to Read

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A Play Based Intervention to Develop Literacy:

Using Foundations for Literacy to Help Students with a Developmental Delay Learn to Read

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Abstract

Kindergarten students with a Developmental Delay need to learn in a way that is developmentally appropriate through play and experiences. This study investigated the use of *Foundations for Literacy*, a play based and experiential based literacy intervention, to allow Kindergarten students with a Developmental Delay learn to read in a developmentally appropriate way. Students were taught code based and meaning based literacy skills through play and experiences using *Foundations for Literacy*. The results prove that a short five-week intervention using *Foundations for Literacy* increased letter sound identification and phonemic awareness at a faster rate than a traditional guided reading approach.

Dedication and Acknowledgements

To Frankie, Jackson, and Clara. You make me want to better myself, thank you for your unending support. To my parents and sisters. Thank you for showing me I am capable of anything through your example.

Chapter One

Introduction

General Problem/Issue

Developing early literacy skills begins at a young age. Parents or caretakers are typically the main source of developing early literacy skills by singing songs, reading with their children, and developing language and vocabulary through conversations. A problem arises when children enter Kindergarten and are delayed in one or more developmental domains. Many children with Developmental Delays are not prepared to learn early reading skills such as vocabulary development and phonemic awareness in the way that typically developing peers are prepared to learn. According to Minnesota 2019 Child Find data, 52% of 5-year-old and 38% of 6-year-old children receiving special education services qualified under Developmental Delay. That means that in the Kindergarten population of 5 and 6-year old children with special needs, 45% are served under Developmental Delay. This is a large number of children that would greatly benefit from differentiated and developmentally appropriate early literacy instruction.

The purpose of this study is to determine the impact that experiential, play-based learning has on the ability to retain and utilize of vocabulary, alphabetic knowledge, and phonemic awareness for students who have a Developmental Delay based on a norm-based screener of developmental age. I plan to implement the experiential learning intervention through the *Foundations for Literacy Intervention* which uses experiences to develop both code-based and meaning-based early literacy skills.

I have observed in the past two years that students with Developmental Delays that enter Kindergarten do not excel with the standard literacy instruction as quickly as developing peers. This may be due to the instruction not being developmentally appropriate for the students'

current developmental level and amount of exposure to early literacy skills. I feel that this is a problem that could be solved using a developmentally appropriate intervention such as *Foundations for Literacy*, which uses experiences to give students something concrete in which to relate early literacy. Children first learn through play and linking what they learn in play to concrete experiences.

If we can use a research-based literacy intervention such as *Foundations for Literacy* to teach children with Developmental Delays early literacy skills it will close the gap between where they are and where they are supposed to be faster. In recent years the standards for what children are expected to learn have increased. Since the implementation of higher standards after No Child Left Behind there has been a shift in Kindergarten that children are now expected to leave Kindergarten reading, while in the past they were expected to leave Kindergarten prepared to read (Repko-Erwin, 2017). This high standard does help children achieve high results but if a child is not developmentally ready for reading, it cannot be forced through direct instruction. Finding an alternative route to teaching children who have a developmental delay can allow them to learn to read and be ready for first grade. This will teach students without demanding them to read in a way that will not work best for the students and increase engagement.

Subject and Setting

Description of subjects. Participants in this study were selected from the population of special education students in Kindergarten, ages 5-6, at an elementary school in the Midwest. The student population was multicultural with a range of different backgrounds to represent the growing population of different multicultural groups in the area. A sample of 6-8 students in Kindergarten were chosen prior to the start of the school year, who had been identified to have a delay in early literacy skills and have a Developmental Delay based on their evaluation and

Individualized Education Plan. Students were split into two groups; one group received the Foundations for Literacy intervention while the other group were taught using the standard Jan Richardson Next Step in Guided Reading intervention.

Selection of criteria. The students were selected based on the Kindergarten population that have qualified for special education services in pre-school under the category Developmental Delay. Students were selected based on evaluation data and Individualized Education Plans that demonstrate a need in the development of cognitive skills, specifically early literacy skills. The demographics of the case study will depend on the demographic of incoming Kindergarten students but will likely represent the population of the school and area.

Description of setting. The study took place in a special education classroom in a K-4 elementary school in the Midwest. The school was one of four elementary schools in a regionally large city. The city also contained two middle schools and a high school. Demographics in the school district was 23.4% minority, with 39.5% eligible for free or reduced-priced lunch. There were 6.6% students with limited English Proficiency and 16.7% of students receiving special education services. The demographic breakdown of students according to data from 2015-2016 school year was: 4.7% American Indian, 1.8% Asian, 8.4% African American, 8.5% Hispanic, and 76.6% white.

Research Ethics

Informed consent. Institutional Review Board (IRB) approval was obtained before beginning the research to guarantee confidentiality, informed consent, and no more than minimal risk to students. IRB approval was obtained from Minnesota State University Moorhead, the college associated with the research. Permission was obtained by school principal and superintendent before beginning research to make sure it follows the school procedures.

Letters of informed consent were sent to parents describing the purpose of the study, study information, time allotted, risk, benefits, and confidentiality. Within the informed consent the parents had access to the names of all investigators as well as the IRB board. The parents were informed that they could withdraw at any time without consequences. Assent was gotten from children and they were made aware that they did not have to participate in the collection of data if they do not want.

The protection of human research subjects is the highest priorities with the study having no more than minimal risk to students. The confidentiality of the participants was managed. Subjects were only be identified by codes (e.g., IG1, CG2) and no identifying information was ever used that could link the student to the study. Data was collected and kept in a locked file in the Co-Investigator's office for one year at which time data will be destroyed.

Chapter Two

Literature Review

Introduction.

According to the Minnesota Department of Education Child Find Numbers from 2019, a large population of special education students that are entering kindergarten are receiving services under the category Developmental Delay. This means that they have a delay in at least two developmental domains. Oftentimes there is a delay in the area of cognitive and language development. Research shows that many children with disabilities demonstrate that they do not have the kindergarten readiness skills to enter the elementary school with ease (Pears, Kimm Fisher, & Yoerger, 2016). Therefore, they may struggle to make progress in the same manner as their peers. Students with developmental delays can be entering kindergarten but are developmentally at the level of a younger student. It is the job of an Early Childhood Special Education (ECSE) to meet the children at their developmental levels and teach in a way that meet the developmental needs to help children to learn early literacy skills.

An impactful quote from Mary Montessori is that “Play is children’s work” (Woolfolk, 2007). This is true and the work of Piaget demonstrates that children in different stages learn in different ways, but that play is a strong way for children to learn (Woolfolk, 2007). This is true for children with developmental delays because some may not have the play experience that helps them prepare for the shift to direct literacy instruction (Roessingh & Bence, 2018). The experiential and play based learning are ways to help children with delays develop literacy and language skills through a means in which is more appropriate given their developmental age. Mary Montessori is insightful that children work while playing and they can also learn through

play if given the opportunity. The intervention Foundations for Literacy can give students the opportunity to learn through experiences and play.

Development of literacy skills.

When children are learning literacy skills they are taught code-based skills and meaning-based skills. Code-based skills help to develop the ability to decode and read text, and this includes phonemic awareness, syllable segmentation, and blending. Meaning-based skills are skills that help a reader understand the story, and this includes vocabulary development. Both skills are needed to read and write fluently, which is the end goal of literacy instruction. It has shown that an increased amount of code-based skills instruction increases the amount of letter-word identification, and the increased amount of meaning-based skills correlated with increased vocabulary development (Wan Har, Moore, Nonis, Tang, Koh, & Wee, 2014). The children that enter kindergarten and have a developmental delay need to develop pre-reading skills before they can begin to learn to read. Some of these skills are: letter recognition, phonological awareness, and concepts about print. A strong development of these skills early will lead to an increase in reading proficiency later in their academic career (Pears et al., 2016).

Students with developmental delays face a struggle in at least two developmental domains, one that may be speech and language delays. Students who develop phonological and phonemic awareness are likely to be more successful when reading (Isakson, Marchand-Martella, & Martella, 2011). These skills are difficult for some students with delays due to a struggle in auditory processing and have “difficulty distinguishing sounds in spoken language” (Isakson et al., 2011). The difficulty for students with developmental delays is that they typically do not have a strong development of either code-based skills or meaning-based skills. These students need to learn to phonological and phonemic awareness if they struggle to differentiate

sounds. They need an intervention that explicitly teaches both types of reading skills in a variety of ways and meets their needs. Implementing literacy resources into play activities have shown to improve exposure to early literacy (Pyle et al., 2017)

Experiential and play based learning.

There is not a lot of research to determine that play based learning and experiential learning is the best way for young children to learn literacy because, as it is pointed out by Pyle, Poliszczuk, & Danniels, 2018, it is difficult to balance play-based learning and direct instruction in kindergarten. Kindergarten teachers agree that play is important for the social and emotional development of children, but not all educators agree that play can be used to improve literacy knowledge. Research has shown that there is a direct correlation in schools performing better in numeracy, literacy, and other cognitive outcomes if they are used play-based pedagogies in their classroom (Pyle et al., 2018). This does not mean that free play will allow children to learn literacy on their own, it means that a balanced approach between guided, scaffolded play and directed instruction will allow for larger literacy progress to be made.

Ontario, Canada changed their Kindergarten program to implement a Full-Day Early Learning-Kindergarten Program (FDK) for 4- and 5- year-olds which uses full day schooling for two years before entering elementary school (Becker & Mastrangelo, 2017). According to Becker et al. (2017),

> To maximize the benefits associated with play, the FDK curriculum requires educators to provide opportunities for both child-initiated free play and more structured play-based learning opportunities while encouraging children to think creatively, explore, investigate, problem solve, share their learning with others, and engage in inquiry. (p. 21)

Although the long-term benefits of a play and inquiry-based Kindergarten program is not yet known, early research shows that children in FDK were ahead in areas of vocabulary, early reading meaning, and phonological awareness than their peers (Becker et al., 2017).

Free Play

During free play children choose what they play with and how they will play. This develops social, emotional, and oral language development (Pyle et al., 2017). A study was done on the choices children made in free play based on gender. Play stations that were enriched with literacy integration were 31% more likely to be chosen by girls than boys (Prioletta & Pyle, 2017). In this study girls were more likely to play in areas such as art/writing centers that naturally develop early literacy skills than boys. The benefit of a literacy rich environment is strong, but we should consider whether we can use guided play to develop early literacy in all children equally.

Guided Play

Guided play is play that includes facilitation with adults or teachers. This gives a teacher more teachable moments to promote literacy development. According to Pyle et al., “guided play has been found to support children’s academic learning”. (p. 118) When guided play is implemented in a classroom to balance the use of free play a higher frequency is observed of children interacting with literacy stations in a meaningful way. (Pyle et al., 2017). This is also shown that including literacy in the environment is not enough, “teacher involvement during play was observed to contribute to rich and targeted literacy practices during play” (Pyle et al., 2017, p. 125) Using play as a way to teach literacy skills would be a way to reach not only the most vulnerable population, but all students.

Foundations for Literacy is an intervention that was developed for children who are deaf or hard of hearing (D/HH) with functional hearing. The difficulties that children who are D/HH have include "incomplete phonological representation of phonemes and words" (Lederberg, Miller, Easterbrooks, & McDonald Connor, 2014). These are similar challenges that a student with a developmental delay or language delay may exhibit. Foundations for Literacy is an intervention that uses experiential learning to develop a concrete example for children to link to when thinking about a letter sound. These experiences are tied to an entire lesson and a shared reading throughout the week. Students use meaning-based and code-based skills to learn throughout the week, while using a fun and engaging curriculum which uses play and experiences to teach literacy. The intervention uses the balance of scaffolded play and direct instruction that is needed according to Pyle et al., 2018. The research shows that using Foundations for Literacy the intervention group gained more code-based and meaning-based skills that the comparison group.

Play is a powerful tool when teaching young children. Oftentimes you are able to see the use of experiential learning in a children's museum. Children learn in a museum through interacting with their surroundings. The Ipswich Art Gallery in Queensland, Australia used experiential learning to teach about the different aspects of light. In 2013 children under the age of 8 learned about how to manipulate light and different aspects of light through different exhibits in the *Light Play* exhibition (Piscitelli & Penfold, 2015). Light is a complex idea, but through experiences and interaction the children were able to better understand the light. Piscitelli et al., 2015 observed that the children learned best because the museum valued children's creativity and allowed them to learn through experiences.

Developmentally appropriate practices.

The National Association for the Education of Young Children (NAEYC) released a position statement in 2009 that discussed what developmentally appropriate practices need to be considered when teaching young children. These developmentally appropriate practices (DAP) are currently being updated through a revision of the NAEYC's DAP position statement which is being reviewed on July 15, 2019. Both the 2009 and the draft of the 2019 position statements show the importance of play in the learning of children. This is a particularly important aspect of development that needs to be considered when teaching children who are developmentally at a younger level. These children should not be expected to only learn through direct instruction if they are developmentally at a 4-year old level. Instead these children should be given guided instruction to increase their developmental level so that they can reach their highest potential and close the gap of achievement early in their school-age career.

Some would argue that the increased number of standards did not consider what is developmentally appropriate for children. According to Repko-Erwin (2017), early childhood curriculum should continue through when a child is eight years old and these curriculums should consider what is developmentally appropriate. In the case of Ontario's FDK program, they are trying to use play as a way to balance out the direct instruction that occurs in Kindergarten in order to keep high standards for children's learning. There should be a continuum of approaches between direct instruction and free play, which includes guided play to learn early academic skills. (Repko-Erwin, 2017)

Kindergarten is becoming an increasingly challenging task for young children, and children should be challenged but in a developmentally appropriate way. In Finland children who delay entering school are given the option to play in a meaningful and language filled way and it

closes the gap in literacy. They are one of the highest performing countries in literacy in the world (Roessingh et al., 2018). The typical range for child development has not changed and "Despite the knowledge of child development research, which maintains that 5-year-olds learn from concrete, hands-on experiences, many teachers are providing fewer opportunities for this type of learning." (Owens, 2002, p. 329). This means that in kindergarten students should be learning more from play while they are transitioning into direct instruction to prepare for first grade. If children can learn through play and experiences it is developmentally appropriate, and this is truer for children with a developmental delay. According to the NAEYC's DAP position statement, play does not take away from learning, it helps learning and is essential to academic success.

Conclusion. Children with developmental delays that are entering kindergarten demonstrate that they typically do not have the code-based skills nor the meaning-based skills to begin to learn literacy instruction without the use of developmentally appropriate teaching practices. A 5-year-old child learns best through experiences and play and that can be used to help them learn early literacy skills. Foundations for Literacy was developed for students who are D/HH with functional language in preschool, but many children entering kindergarten with a developmental delay may be functioning at a preschool level with similar issues differentiating sounds. Using a literacy intervention for children with developmental delays which includes experiential and play based learning is a developmentally appropriate way to allow children to learn code-based and meaning-based literacy skills and close the gap of achievement before it grows larger.

Definition of Terms

For this research study the following terms are identified. *Phonological awareness:* being aware that there are sounds, rhymes, and syllables in words (Gunning, 2013). *Phonemic awareness:* detecting the individual sounds in words (Gunning, 2013). *Developmentally Appropriate Practice*: teaching as a practice that promotes every individual child in achieving their best learning and development (NAEYC, 2019). *Experiential and play-based learning:* There are differences in the way children play and learn. *Free-play* is child-directed and allows children to develop social and oral language skills without the addition of adults. It is facilitated by the children. *Guided play* is still child-centered play, but it includes teachers or adults to facilitate more learning in the play (Pyle, Prioletta, & Poliszczuk, 2018)

Hypothesis.

Kindergarten students who have a Developmental Delay and receive targeted intervention using experiential, play-based learning through the F*oundations for Literacy* intervention will increase their early literacy and vocabulary skills at a faster rate than using a standard guided reading model of literacy intervention.

Chapter Three

Methods

Research questions. I have a unique outlook on early elementary classrooms as I am studying Early Childhood Special Education (ECSE). ECSE typically goes from birth to ages 7 or 9, depending on the state regulations. This makes me wonder if it is best to be teaching these children, who have qualified for services under Developmental Delay in a different manner than the developmentally appropriate practices of ECSE. I have seen kids who have a true delay because of at-risk factors such as low exposure to early learning struggle to learn and they fall further and further behind their peers. It has been shown that early intervention is key, but we need to determine if our early intervention is the best way to intervene for the children's needs. Due to the need I see in the Kindergarten classroom with children with a Developmental Delay I have formulated the following research questions:

1. How did an experiential and play-based literacy intervention like *Foundations for Literacy* help students with a Developmental Delay learn early literacy skills and decrease their likelihood of having a developmental delay based on the Brigance Screener?
2. How did a non-traditional literacy intervention such as *Foundations for Literacy* show results on curricular based measures?

Methods. The research design used for the following was an action research design. The intervention group of 4 students were given a 30-minute *Foundations for Literacy* lessons each day, following their guidelines for the reduced time lessons. *Foundations for Literacy* is a program that has students learning an hour, 4-days a week. The purpose of the adjusted time was to replicate the 30-minute small group literacy instruction model used in the *Jan Richardson*

Next Step in Guided Reading model of the control group. The intervention group used an experiential and play-based approach while the control group of three students used a traditional guided reading approach to learn the same code-based and meaning-based literacy skills.

Each student in the control group and the intervention group were given a Brigance screener to determine if their developmental age would meet cutoff score set based on age to likely detect a Developmental Delay at the beginning and end of the research study. Baseline data was taken using a curricular based measure "Let's Play with Sounds: Phonemic Awareness Development Tool". This is a tool administered to every kindergartener in the district. Progress was monitored using the "Let's Play with Sounds Phonemic Awareness Development Tool" every two weeks for both the intervention and control groups. Progress was also be monitored using an untimed letter identification assessment and untimed letter sound identification every two weeks to demonstrate validity. The three assessments were chosen based on being curricular based measures and one standardized tool. In addition, to protect the fidelity of using the *Foundations for Literacy* intervention, progress was monitored every 9 weeks using the *Foundations for Literacy* progress monitoring tools. Final data using the Brigance Screener and the progress monitoring tools were taken to determine if the student's skills and developmental age increased throughout the interventions. Data was analyzed to determine which group makes gains faster in each data collection tool.

Ethical Issues. Possible ethical issues that could have arisen during the research project would be a decreased amount of time with each group due to absences, field trips (one in October), district sweeps testing, and interruptions of groups due to behavior. In response to the possible ethical issues, the co-investigator has documented the occurrences to keep the number of meetings with groups the same. Incentive programs were used to increase student compliance

and reduce behavior occurrences as in accordance with the classroom behavior management plan.

Chapter Four

Data Analysis and Interpretation

Description of Data

The purpose of this study was to discover whether or not *Foundations for Literacy*, a play and experience-based literacy intervention directed towards preschool students with hearing deficits, helped kindergarten students learn early literacy skills at a faster pace than a tradition guided reading approach. Data was collected at the beginning and end of the study using the Brigance Screen Early Childhood Screen III (Brigance, 2019) to determine if the students fell below the cutoff that would likely detect a developmental delay. A score that fell below 61 for a child who is 5-0 through 5-5 and 70 for a child who is 5-6 through 5-11 would warrant look into a developmental delay. Students were also assessed using an *Untimed Letter Identification*, *Untimed Letter Sound Identification*, and the *Let's Play with Sounds: Phonemic Awareness Development Tool* in the beginning of the study, every two weeks of the study, and at the conclusion of the study. This was to determine their growth in curricular based measures of assessment towards early literacy skills.

Students were split into two groups based on scheduling in the classroom. The intervention group using the *Foundations for Literacy* received a modified 30-minute lesson daily due to the typical lesson format being one hour, four days a week. This would have skewed the comparison, so the modified 30-minute lesson was used. The intervention group consisted of four students (three girls and one boy). Students are named to keep confidentiality. Pseudonyms were based on which group the student was in (intervention or control) and gender (boy or girl). The intervention group students were as follows: IB1, IG2, IG3, IG4. In the control group, students received intervention for 30 minutes a day using the *Jan Richardson Next Steps at*

Guided Reading. The control group consisted of three students (two girls and one boy) and was named to keep confidentiality and identify gender as CB1, CG2,CG3.

Results/Findings:

Research Question 1: How does an experiential and play-based literacy intervention like Foundations for Literacy *help students with a Developmental Delay learn early literacy skills and decrease their likelihood of having a developmental delay based on the Brigance Screener?*

Brigance Screen III Results

The participants in the study began and ended the study by doing a quick screener that is used to determine if there is a likelihood that a child has a Developmental Delay. The Brigance Screen III is meant to be a quick look at the whole child, and it assesses the Cognitive Development (math and literacy), Physical Development, and Language Development of the child. It is meant to be a quick screener. Each participant completed the screener one on one with the researcher with few distractions. It should be stressed that the cutoff score for the likelihood of a developmental delay differs based on age. Students who are 5-0 through 5-5 have a cutoff of 61, while students who are 5-6 through 5-11 have a cutoff of 70. In the following table the age of the participants of the study was noted at the beginning and end of the study.

Table 1
Brigance Screen III Score: Gains or Loss

Student	Age at Start	Score at Start	Age at End	Score at End	Gain/Lost
IB1	5-4	59	5-5	67	+8
IG2	5-7	53.5	5-8	57.5	+3
IG3	5-5	58	5-6	59	+1
IG4	5-9	53	5-10	55.5	+2.5
CB1	5-4	54	5-5	58	+4
CG2	5-0	41	5-2	39	-2
CG3	5-2	54	5-3	57	+3

Results indicate that there was overall growth in development in the five weeks of the study at a rate of eight points increase to -2 points decrease. All scores are out of a total possible 100 points and prompts include being able to count, represent quantities with numbers, identification of letters, fine motor tasks, gross motor tasks, and speech language ability. The mean score at the beginning and end of the intervention for each group, as well as the group as a whole is noted in Table 2. These scores show that the intervention group as a whole grew a mean of 3.9. Whereas the control group grew a mean of 1.6. This is compared to the whole group mean increase of 2.9. It demonstrates that the developmental level of the students increased as a whole in the five-week intervention period.

Table 2
Brigance Screen III: Mean of the Groups

Group	Beginning Mean	Ending Mean	Gain/Loss
Intervention	55.9	59.8	+3.9
Control	49.7	51.3	+1.6
All Students	53.2	56.1	+2.9

Interpretation of Results

The results from the Brigance Screen III show that there was a larger increase of skills across developmental domains in the intervention group than the control group. It should be noted that the children in the control group are, for the most part, younger than the students in the intervention group. This was due to scheduling; however, the scores on the Brigance Screen III (Brigance, 2019) show that all of the students fell within the range to be likely to have a Developmental Delay. This shows that they are appropriate for the study and that the NAEYC's Developmentally Appropriate Practice (NAEYC, 2019) of using play in learning would be the most appropriate way of reaching the students.

The increase of skills, and therefore, the scores on a developmental screening tool shows an overall increase of developmentally appropriate skills. This cannot be directly linked to the sole use of the intervention, because the students increased on other areas of development, mainly the ability to match a bare number with a quantity. These are skills that often develop based on exposure to skills. Looking solely at the numbers show that the intervention group made more gains than the control group, but it cannot be directly linked to literacy instruction without looking further into the rest of the literacy specific data.

Research Question 2: How did a non-traditional literacy intervention such as Foundations for Literacy *show results on curricular based measures?*

Untimed Letter Identification and Letter Sound Identification Results

Untimed letter identification and letter sound identification assessments were done every two weeks during the study. For a total of three data collection times. The assessment had the students recite the letters, both upper and lowercase, and then the sound. The lowercase letters included the use of an extra representation of the letters "a" and "g" in the form presented. Therefore, there was a total of 26 uppercase letters, 28 lowercase letters, and 26 letter sounds. Participants were assessed one on one in a quiet environment that still had few distractions. The results are in Table 3-5 below.

Table 3
Untimed Letter Identification: Uppercase

Student	Week 1	Week 3	Week 5	Gain/Lost
IB1	23	23	26	+3
IG2	9	14	16	+7
IG3	8	9	14	+6
IG4	9	16	18	+9
CB1	11	18	25	+14
CG2	2	2	4	+2
CG3	6	12	18	+12

Results show higher increase of knowledge of uppercase letters in the control group. Although the intervention group has increased their knowledge of uppercase letter identification. There is not a consistently significant increase between the data collection times, it was dependent on the student. Some increased more in the first two weeks and some in the last two weeks. When comparing the results to the lowercase letter identification below, students in the intervention group increased more in their lowercase than their uppercase, however IB1 only had three uppercase letters to learn at the beginning of the study. In the control group all but one student (CG3) increased more in their lowercase identification than their uppercase identification.

Table 4
Untimed Letter Identification: Lowercase

Student	Week 1	Week 3	Week 5	Gain/Lost
IB1	19	22	27	+8
IG2	10	13	20	+10
IG3	7	9	12	+5
IG4	5	7	11	+6
CB1	3	11	20	+17
CG2	2	3	7	+5
CG3	4	7	13	+9

Table 5
Untimed Letter Sound Identification

Student	Week 1	Week 3	Week 5	Gain/Lost
IB1	3	10	19	+16
IG2	0	8	11	+11
IG3	3	4	7	+4
IG4	2	4	9	+7
CB1	1	0	3	+3
CG2	0	1	7	+7
CG3	0	4	6	+6

The results show that two of the intervention group students increased their letter sound identification at a higher rate than the students in the control group. This is similar results to the Lederberg research from 2014 using *Foundations for Literacy* where a raw score in letter sound identification grew from 4.80 to 16.32 for the intervention group, where in the comparison group the raw scores grew at a lesser rate of 9.39 to 14.85 within the research time (Lederberg, 2014).

Phonemic Awareness Results

The phonemic awareness assessment consists of a total of 45 possible points, with each of the nine areas of phonemic awareness being worth 5 points. It assesses students' early, emerging, and advanced phonemic awareness abilities. These skills include the following: identify rhymes, produce rhymes, syllable awareness, identify initial sound, segment initial sounds, blend onset and rime, phoneme segmentation, phoneme blending, and phoneme manipulation.

Table 6
Let's Play with Sounds: Phonemic Awareness Tool

Student	Week 1	Week 3	Week 5	Gain/Lost
IB1	3	13	15	+10
IG2	6	7	13	+7
IG3	4	6	10	+4
IG4	7	12	16	+9
CB1	4	7	10	+6
CG2	2	2	7	+5
CG3	2	4	9	+7

The results in Table 6 show a higher increase of rate of learning phonemic awareness skills in the intervention group for 3 of the 4 students. This coincides with Lederberg (2014) using *Foundations for Literacy* where they had a big jump in the raw score of a phonological awareness assessment in the intervention group. In that study the raw sore jumped from 3.92 to

19.36 in the intervention group compared to 7.52 to 14.88 in the comparison group (Lederberg, 2014). The increase of phonemic awareness skills through the use of *Foundations for Literacy* could result in a better reader because a strong phonemic awareness has been shown in research to lead to increase in later reading success (Pears, et al., 2016).

Interpretation of Results

When studying the results of the letter identification assessments the control group and the intervention groups are similar. This could be due to the learning that has occurred in the general education classroom. The true test of the intervention would be whether there was an increase in letter sounds and phonemic awareness. There was a larger increase of phonemic awareness and letter sounds in the intervention group. This would make sense; however, it is up for discussion if the age of the students involved is necessary to take into consideration. The student who scored the lowest on all assessments was in the control group and was barely five-years-old. This and lack of exposure puts her in a large deficit when entering kindergarten.

The phonemic awareness assessment was largely above what would be developmentally appropriate for students in early kindergarten. This would explain why they scored so low when the assessment is out of 45 points. Most kindergartners cannot segment, blend, and manipulate sounds at the early stage. Due to the layout of the *Foundations for Literacy* intervention it would take an entire year to see the full results of the intervention due to the length of the planner. I believe that a play based, and experience-based intervention did show promising advances in the early phonemic awareness skills of students.

Conclusion

Participants in this study did not demonstrate a large deficit in language skills, which is an area that *Foundations for Literacy* is strongest . *Foundations for Literacy* may be an intervention that could be utilized to help build language and literacy because it is strong in both areas. This is due to the unique background in developing students' language who are Deaf/Hard of Hearing. This would be an excellent intervention for a student who has qualified for special education services under a Developmental Delay with a Speech and Language Disability secondary. *Foundations for Literacy* would definitely qualify as a developmentally appropriate intervention for these students.

The use of developmentally appropriate practices in kindergarten are vastly important, particularly when considering that students enter with a wide variety of backgrounds and skills. Students with a Developmental Delay need support at their level to be able to catch up before the rigor increases and they fall further behind. This study shows that in a brief intervention using a play-based and experience-based intervention improved students' phonemic awareness and letter sounds at a faster rate than a traditional guided reading approach. However, to fully see the benefits of *Foundations for Literacy* a longer intervention period would be necessary.

Chapter 5

Action and Plan for Sharing

Plan for Taking Action

In the short five-week study I am encouraged at the rate of growth in letter sounds, letter identification, and phonemic awareness. Although it is inconclusive if the intervention was significantly more effective for students with Developmental Delays, it did show significant growth in student progress. After analyzing the data, I would like to use the intervention on those students in the control group who have not made significant progress in the traditional guided reading approach. Students CG2 and CG3 are the two youngest students in the study, and this intervention would fit their developmental level. Based on their exposure to early literacy skills and their current level, these students would respond very well to a play-based and experience-based approach to literacy instruction. I would also like to see how much progress would be made when continuing to use the intervention over the whole 28-week cycle. A five-week study does not demonstrate the true power of the intervention.

This study has shown me that there are different ways to reach the students who come in with a variety of backgrounds and exposure. Students entering kindergarten have the unique ability to have vastly different pre-education experiences. Some come in prepared, but often many do not come in equipped to be taught in a traditional manner. This means that we need to find a way to reach them at their level. In the future, if I see that a student comes into kindergarten with little pre-literacy experiences and demonstrates language deficits, *Foundations for Literacy* would be the perfect intervention because it focuses so much on the language aspect of literacy.

Plan for Sharing

I plan to share the data with my building administrators, fellow special education teachers, kindergarten teachers, and literacy coaches through a professional development discussing the importance of building phonemic awareness in a developmentally appropriate way. In our building we are looking for ways to teach kindergarten in a manner that is developmentally appropriate while still preventing students from falling too far behind. I believe that if administrators, including district administrators, could see the benefits of using play and experience-based learning it could change the way we are teaching kindergarteners. Instead of allowing kindergarten students to get frustrated because they are not able to learn in a traditional sense, we can use developmentally appropriate practices to help them catch up before they get further behind.

Conclusion

In this study, a small portion of the intervention *Foundations for Literacy* was implemented to compare results to a traditional guided reading approach. This was to determine the effectiveness of play and experience-based learning with students with Developmental Delays in kindergarten. The results show increased phonemic awareness, letter identification, and letter sound identification. However, longer implementation of the intervention would be necessary to determine if these skills would carry over to reading. I would hope in the future to use this intervention for students who have little exposure to pre-academic skills, language deficits, and have a Developmental Delay to help them learn in a developmentally appropriate manner. The next steps I plan to do is to share the results of using play and experience to learn in kindergarten with my school and district to help build more developmentally appropriate teaching practices in kindergarten.

Appendix A: Let's Plan with Sounds Protocol

	RHYME			SYLLABLE		PHONEME WORK					
Student Code:	Identify Rhyme	Produce Rhyme		Syllable Awareness		Identify Initial Sound	Segment initial sounds	Blend onset & rime	Phoneme Segmenting	Phoneme Blending	Phoneme Manipulation

Let's Play with Sounds

Phonemic Awareness Development Tool

Phonemic Skills	**Sample Language**	**Probe**
	(Teaching) Let's play a game	Informal Assessment
Identify Rhyme	Hey! Cat / hat. They rhyme. They sound the same at the end. Mouse / Door. They don't rhyme. They don't sound the same at the end.	Say a pair of rhyming / not rhyming words. Do they rhyme? 1. cat/bat — 5. 2. boy/fan — 6. 3. tree/bee — 7. 4. dog/doll — 8.
Produce Rhyme	I am going to say a group of words that end the same way: bat, cat, fat. These words rhyme. Tell me another word that rhymes with bat, cat, fat. Now I am going to say more words.	Can you tell me another word that rhymes with these? 1. slug, bug, mug 2. mop, top, stop

	Tell me a word that rhymes with the words you hear.	3. might, kite, site 4. got, lot, cot 5. date, late, nate
Syllable Awareness	Say the word *engine***.** Say and clap *en/gine*.	Say the word. Have the student repeat the word and clap the syllables. Examples: *Happy, Saturday, Book, Sunshine, Experiment*
Identify Initial Sound by Pointing	Point to two pictures and say their names. Point to each picture individually and say the name again, identifying the onset sound. Bat. Mouse. Bat begins with the /b/ sound. Mouse begins with the /m/.	Show more than one picture. Point to the picture that begins with /m/. Pictures
Segment Initial Sound	This is a ____. The first sound is _____.	What is the first sound you hear in ____? 1. Turtle: /t/ 2. Man: /m/ 3. Sink: /s/ 4. Pudding: /p/ 5. Leg: /l/
Phonemic Skills	**Sample Language**	**Probe**
Blend Onset and Rime	Say the word *dig*. Repeat the word and say the first sound in the word, then say the rest of the word. The two parts of *dig* are */d/ /ig/*.	Can you say these words in two parts? 1. Cat: /k/ /at/ 2. Run: /r/ /un/ 3. Pop: /p/ /op/ 4. Hen: /h/ /en/ 5. Rid: /r/ /id/
Segment Sounds of a CVC Word	Let's say words slowly so we can hear all the sounds. Cat C-A-T.	Can you say the word slowly? (CVC Word) Student segments each sound. Examples: 1. Cat = /c/ /a/ /t/ 2. Top = /t/ /o/ /p/ 3. Said = /s/ /e/ /d/ 4. Jumps = /j/ /u/ /m/ /p/ /s/ 5. Rugs = /r/ /u/ /g/ /s/

Blend Sounds of a CVC Word	Let's listen to some sounds and try to blend them together to make a word. C-A-T. Cat.	Can you blend these sounds together to make a word? (one syllable word) Adult says the sounds segmented and child blends together. C-A-T = cat Examples: 1. /n/ /u/ /t/ : nut 2. /j/ /e/ /t/ : jet 3. /w/ /i/ /g/ : wig 4. /s/ /a/ /t/ : sat 5. /m/ /o/ /p/ : mop
Phoneme Manipulation	Example: I can change the /b/ in bat to /k/ to make the word cat.	Say the word. Ask the student to replace the first sound in the word with a new sound. Examples: 1. Tin: change /t/ to /b/ (bin) 2. Mug: change /m/ to /r/ (rug) 3. Hop: change /h/ to /p/ (pop) 4. Pen: change /p/ to /t/ (ten) 5. Lake: change /l/ to /c/ (cake)

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