ASSESSING THE NEED OF PHONEMIC AWARENESS IN PRE-KINDERGARTEN

By

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ABSTRACT

This study was conducted to find if there is a difference if pre-kindergarten children were taught using systematic phonemic awareness lessons. It included eight randomly selected pre-kindergarten children, all entering kindergarten in the fall of 2014, split into a control group of four and an experimental group of four. The experimental group had one letter-naming, one first sound, and one rhyming systematic phonemic awareness lesson taught each week for six weeks. At the end of the six weeks, each of the eight children took three post-tests; DIBELS Letter-Naming Fluency, DIBELS First Sound Fluency, and an assessment of Rhyme Choice/Rhyme Supply. The control group and experimental group’s scores were then compared using a t-Test analysis. The t-Test analysis showed that the DIBELS Letter-Naming Fluency and Rhyme Choice/Rhyme Supply did not have a significant difference in scores, but the DIBELS First Sound Fluency had a significant difference in score between the control and experimental groups. Further studies should be extended over a greater period of time than six weeks, possibly a semester or year-long study would provide greater findings.
INTRODUCTION TO THE STUDY

Background, Issues, Concerns

Early childhood education teachers base their curriculum around early learning standards, much like primary school grades. These vary per state and include a range from early mathematics to socio-emotional standards. Early literacy has few to if any standards on phonemic awareness. In Missouri, they are to know beginning letter sounds and identify that letters or words have sounds. These are very basic and some parents feel as if it is not preparing their child for Kindergarten. Most teachers incorporate basic early reading into their everyday pre-kindergarten classroom experiences, but few children are intentionally taught phonemic awareness before Kindergarten.

Practice Under Investigation

The practice under investigation is whether pre-planned phonemic awareness activities implemented in pre-kindergarten are as beneficial as intentionally incorporating phonemic awareness into the daily project work curriculum.

School Policy to be Informed by Study

The early learning standards are a guideline for schools to create their preschool and pre-kindergarten assessments. On the pre-kindergarten assessment there are standards to assess a child’s ability to identify letter names, beginning rhyming, and identifying that all letters have a sound. This study will work together with these assessments to see if the children involved that are meeting these standards are ready for more early reading instruction.
**Conceptual Underpinnings for the Study**

Instruction in early education tends to be looked at as curriculum that focuses around fairy tales and storybook characters. Until recently, most states have not been required to have early learning standards. These standards set a guideline for teachers to follow in order for their students to be ready when they enter primary school in kindergarten. Within these standards, there is very little to if any, introduction to phonemic instruction for pre-kindergarten children. Once these children enter kindergarten, they are introduced to a program that is adopted by their school district to teach phonics and reading. The No Child Left Behind Act (NCLB) restricts school districts to only implement programs that have a systematic and predominant emphasis on phonics (Wilson, Martens, Arya, & Altwerger, 2004.) The pressure on these school districts to implement these programs to receive federal funding is tremendous. These feelings are can then be felt in early education centers around the school districts. The pressure for the early education centers is placed on administrators and teachers from parents whose children enter these systematic, predominated phonics programs. They do not feel as if their child was adequately prepared for the demands of the reading programs. Teaching pre-kindergarten children early reading skills such as letter names, rhyming, and beginning phonemic awareness could prepare these children for the systematic, predominated phonics programs and could increase student achievement.
Statement of the Problem

Parents feel that there is a lack of phonemic instruction during project-based learning when phonemic awareness is not taught by using intentional pre-planned activities.

Purpose of Study

The purpose of this study is to find whether there are benefits in systematically teaching phonemic awareness to children enrolled in a pre-kindergarten program. There will be two groups with mixed genders; four in each. These children will all be in pre-kindergarten, going to Kindergarten in the year 2014. They will have been able to identify their upper and lower case letters in the alphabet before starting the program. One group will have pre-selected phonemic awareness activities three days a week from mid-September 2013 to November 2013. The other group in the study will be taught with the already set curriculum in the early education center, one that unintentionally incorporates phonemic awareness instruction. There will be three pre-tests conducted in September 2013 evaluating their ability to segment, rhyme, and blend. The post-tests will be given in November 2013.

Research Question

The research questions posed in this study was:
Is there a difference between pre- and post-test scores in the DIEBELS Letter Naming and First Sound Fluency assessments and a rhyming assessment during a two-month
study of phonemic awareness with pre-kindergarten children after the implementation of phonemic awareness activities?

Null Hypothesis

There is no difference in phonemic awareness between students who participate in pre-selected phonemic awareness activities and those who do not participate in the pre-selected phonemic awareness activities.

Anticipated Benefits of the Study

One of the groups that would benefit from this study would be the early education center. This gives the center a reason to say yes, this is why we teach phonemic awareness or no, this is why we do not intentionally teach phonemic awareness. It would also benefit the teacher in having a set phonics curriculum, if the center was to adopt a phonics program. Last, it would benefit the children. If there is a program that the center would consider adopting, the children are more likely to be prepared for kindergarten and their next steps into early reading.

Summary

The research for this study will help to provide a guideline for the early education center’s phonemic awareness instruction. The research will be completed in one semester time-frame and will compare the results of a control group and a test group. The control group will have four children who will enter Kindergarten in the fall of 2014. This group will be taught with the already set project-based learning curriculum in the early
education center, one that unintentionally incorporates phonemic awareness instruction.
The test group will have four children who are will also enter Kindergarten in the fall of 2014. This group will be participating in pre-planned phonemic awareness activities from September to November 2013. The study will compare the results of the children’s pre- and post-tests and will make a recommendation to the early education center as to whether they should stay with their current project-based learning curriculum or look into purchasing a systematic phonemic awareness curriculum.
REVIEW OF LITERATURE

Phonemic awareness seems to have always been an issue within education, but only recently has it become one of misconceptions. It has been recognized for its importance as a precursor for reading development (Torgesen, 2002), but educators have misinterpreted what phonemic awareness is exactly or are unsure themselves. There has been pressure placed on primary grades, even in pre-kindergarten, for educators to assess a child’s phonemic awareness and then for them to intervene if needed. This literature review will look at what phonemic awareness’s definition is exactly, when developmentally it should be expected of students, and what must be implemented and assessed because of it.

The National Institute of Child Health and Human Development (2000) define phonemic awareness as “teaching children to focus on and manipulate phonemes in spoken syllables and words” (p. 7). Blachman (1991) indicates that much of the phonemic awareness activities that are taught to children are taking an individual sound and manipulating it by isolation, blending, or segmenting words into phonemes (as cited in Goffreda & DiPerna, 2010). Phonemic awareness is often times confused with phonics, but where phonemic awareness focuses on the individual sound in spoken word, phonics focuses on those sounds in written word. Chaney (1992) stated that they are both subsets of phonological processing; phonemic awareness specifically is where individuals are able to identify, discriminate between and/or produce the smallest unit of sound in words (as cited in Cummings, 2011). Throughout the years, researchers have found that phonemic awareness has a moderate to large predictive relationship for later literacy development. They believe that fluency is a vital component of this relationship.
Literacy development has long had a place in first-grade classrooms, but there has been more of a push on starting a child in kindergarten on reading. Teachers have been concerned whether or not this is an appropriate time developmentally to move from more academic goals for children in kindergarten. The more kindergarteners know about phonemic awareness and the alphabet, and the stronger their oral language skills, the more easily they will learn to read from systematic and explicit instruction in first grade (Hall, 2006). Hall indicates that if a child does not know how to read by the end of first grade, it could jeopardize their entire academic career. These indicators such as alphabetic knowledge, phonemic awareness, and fluency must be seen as a priority than for each child’s future literacy performance (Torgesen, 2002).

If phonemic awareness has been found to influence a child’s literacy development, then there are questions as to when systematic and explicit instruction should start and how much instruction should be given. Al Otaiba, S., Puranik, C. S., Ziolkowski, R. A., & Montgomery, T. M. (2009) say that phonemic awareness instruction should begin in preschool and can be started with children as young as four years of age. However, there should be no more than 20 total hours of instruction (National Institute of Child Health and Human Development, 2000). Instruction is said to begin as early as preschool, but assessment of these phonemic awareness skills is not appropriate at this age. Screening for phonemic awareness is not appropriate at the beginning of kindergarten or before as most typically developing children do not have phonemic awareness at this time in their life (Au, Ayres, Stahl as cited in Chapman, 2003). Instruction can begin as early as preschool, but Yopp and Yopp (2000) give guidelines as to what this instruction should look like during these early years. They say
that it should be child appropriate and keep a sense of playfulness and fun in informal activities. Informal activities are more appropriate than formal, rote memorization or drill activities. Phonemic awareness is part of a much broader literacy program and should be viewed as this; the instruction must be deliberate and purposeful, not accidental. When we begin instruction at this early of an age we are also promoting comprehension and primarily, confidence as future readers. Yopp (2002) also suggest introducing phonemic instruction using group settings that allow children to interact with their peers. Phonemic awareness is being able to manipulate individual sounds in spoken language, interacting with their peers allows for communication and spoken language that they may have not been introduced to previously. The explicit and systematic instruction involved in phonemic awareness involves the educator modeling and practicing the skill with the children (Santi, Menchetti, & Edwards, 2004). Instruction modeled and practiced with these children can move from simple to more complex. One simple instructional method frequently used in preschool-aged children is through alphabetic knowledge. Byrne and Fielding (1989) defined alphabetic knowledge as associating letters with corresponding sounds (as cited in Goffreda & DiPerna, 2010). Phonemic awareness would not involve the use of the actual letter, but rather just the spoken sound. Once the alphabetic symbol is presented, it becomes phonics as phonics is the sound of written word. Hasbrouck (1998) refers to fluency as the automaticity or reading at an appropriate pace with little cognitive feedback (as cited in Goffreda & DiPerna, 2010). This is important in phonemic awareness, especially in the building block of being able to become fluent in the alphabetic principles before manipulating their individual sounds. Last, one of the most essential aspects of phonemic awareness is the ability to focus on segmenting and
blending phonemes. The National Institute of Child Health and Human Development (2000) supports segmenting and blending, combined with the individual sounds of the letters representing those phonemes, to contribute greatly to the beginning of reading and spelling. Additionally, Yopp (2002) recommend educators to be open to children’s curiosity about language and how they experiment with its intricacies and oddities.

Although Au, Ayres, and Stahl (as cited in Chapman, 2003) stated that it is not always developmentally appropriate to screen children earlier than midway through their kindergarten year for phonemic awareness, it can be used as a tool to find out what phonemic awareness skills a child has developed. This allows educators to differentiate instruction to best serve all of the children in their classroom. According to Cummings (2011) an assessment tool that measures phonemic awareness could be use formatively to enable educators to identify students early and provide them with additional intervention when needed. This could be a possibility for children who may be gifted and have developed these skills during their prekindergarten years or shortly after. One curriculum-based measurement tool, the Dynamic Indicators of Basic Early Literacy Skills also known as DIBELS, can guide instructors to assist children in meeting early literacy goals (VanDerHeyden, Snyder, Broussard, & Ramsdell, 2007). The DIBELS have many tools to screen many different areas of phonemic awareness such as: Initial Sound Fluency, First Sound Fluency, Letter Naming Fluency, Phoneme Segmentation Fluency, Nonsense Word Fluency, and Oral Reading Fluency (Goffreda & DiPerna, 2010). Two of the components of the DIBELS, Letter Naming Fluency and First Sound Fluency are explained in more detail. Goffreda & DiPerna (2010) state that Letter Naming Fluency is used to assess knowledge of the alphabetic letters, the student is
presented with a page of upper- and lowercase letters, and verbally name as many as possible. Cummings (2011) looked at the difference between Initial Sound Fluency and First Sound Fluency. Initial Sound Fluency requires the child to look at three pictures and the assessor asks the child to pick the picture that starts with the sound. First Sound Fluency assesses the child’s ability to say the beginning sounds in words and instead of picking from pictures, the child must produce a response. Chapman (2003) says that one of the best ways to truly assess a child’s phonemic awareness, especially before it is required in kindergarten and beyond, is through ongoing, informal assessments. These ongoing, informal assessments look at a child’s language and literacy activities instead of through the use of tests. One example of an informal assessment that can be ongoing throughout a school year would be through invented spelling. Chapman (2003) says an educator can ask a child in almost any setting to write about something that matters to that child in no more than a sentence then revisit the sentence they wrote throughout the year to see how the child progresses. Invented spelling is when a child spells an unfamiliar word and is required to use their phonemic awareness skills to manipulate the individual sounds that they hear.

Chapman (2003) asserts that educators have been riddled with research throughout their careers that has led to confusing and conflicting information about phonemic awareness, its role in early literacy development, how to address it, and when to address it. It can be even more confusing now as the expectations for literacy development are changing in primary grades through the implementation of Common Core. As standards are increasingly beginning to be introduced earlier in a child’s schooling, educators must be aware of the misconceptions and find what phonemic
awareness research supports. Phonemic awareness is going to be ongoing throughout a child’s primary grades, it is essential they are being introduced to this form of literacy development whether formal or informal. In the end Weaver (1998) says it best, phonemic awareness helps children learn to read and in turn write, and learning to read and write helps children to develop phonemic awareness (as cited in Chapman, 2003).
RESEARCH METHODOLOGY

Research Design

Comparative research in the form of a t-test was conducted in order to determine the significance at the 0.25 Alpha levels to challenge the null hypothesis. Data was collected from one preschool classroom. The overall mean of the pre and post-test total scores of each child were compared according to paired sample t-tests. The independent variable for the t-test was the control and experimental groups. The dependent variable for the t-test were the post-test scores from the control and experimental group.

Study Group Description

The early education center selected for this research study is located in a suburb of a large metropolitan area. The center is a private, parochial early education program that educates approximately 175 children ages six weeks to five years. Ninety-five percent of the children are Caucasian and the socioeconomic status could be described as middle to upper class income levels. Eight children participated in this study, five aged four and three aged five. The ratio for children ages four and five is one adult for every ten children. The certified teacher from the children’s classroom will be implementing the pre-planned phonemic awareness activities to the test group, three times a week for six weeks. The control group will receive instruction as normal as whole group or small group during project-based learning.
Data Collection and Instrumentation

A pre-test of letter identification, rhyme choice and supply, and beginning letter sounds was given in September of 2013. This pre-test was administered to all eight children in the study group. The study was conducted over a six week time frame, September to November 2013. The control group received instruction as normal in whole or small group settings during project-based learning. The test group received instruction from pre-planned phonemic awareness activities three times a week for six weeks. At the conclusion of the study, a post-test was given. The post-test asked the same of the children as the pre-test given six weeks prior.

Statistical Analysis Methods

Data collected was in the form of individual children’s pre and post-test scores. The independent variable was the control and experimental groups of four children each. Pre and post-test scores were entered into Excel to be used in A Statistical Program (ASP). ASP was used to compute the mean, standard deviation, t-test, df, and to compare each child’s pre and posttest scores. The Alpha level of significance used for this study was .25.
FINDINGS AND RESULTS FROM DATA ANALYSIS

*Findings*

**t-Test Analysis Results for DIBELS Letter-Naming Fluency Post-Test**

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<tr>
<th>Source</th>
<th>Mean</th>
<th>Mean D</th>
<th>t-Test</th>
<th>df</th>
<th>p-value</th>
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Note: Significant when p<=0.25

Eight pre-kindergarten students were randomly selected from a preschool classroom of 18 to participate in a study. Four were in the control group; four were in the experimental group. Each group took a pre- and post-test using the DIBELS Letter-Naming Fluency assessment. The experimental group received a lesson once a week for six weeks on letter names. The post-test scores from each child were then analyzed to find the mean for each group. As seen in figure 1, the mean of the control group was 94 and the mean of the experimental group was 87.75. The Mean D, or difference between the two groups, was 6.25. The t-test result was 0.85 and the df was 6. The null hypothesis states that there is not a significant difference between the control and experimental groups post-test scores. This null hypothesis was not rejected because the p-value is 0.43 compared to the alpha level of 0.25.
As seen in Figure 2, the control group’s post-test scores were consistent and had a mean of 94%. The experimental group’s post-test scores were an improvement from the pre-test (the pre-test score for child four was 47%), but the six-weeks of activities did not significantly make a difference on their post-test scores and had a mean lower than the control group’s with 87.75%.

### Figure 3

<table>
<thead>
<tr>
<th>Source</th>
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<th>Mean D</th>
<th>t-Test</th>
<th>df</th>
<th>p-value</th>
</tr>
</thead>
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<td></td>
<td></td>
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<tr>
<td>Experimental (n=4)</td>
<td>77.5</td>
<td>-29.25</td>
<td>-1.73</td>
<td>6</td>
<td>0.13</td>
</tr>
</tbody>
</table>

Note: Significant when p<=0.25
Eight pre-kindergarten students were randomly selected from a preschool classroom of 18 to participate in a study. Four were in the control group; four were in the experimental group. Each group took a pre- and post-test using the DIBELS First Sound Fluency assessment. The experimental group received a lesson once a week for six weeks on first sounds. The post-test scores from each child were then analyzed to find the mean for each group. As seen in figure 3, the mean of the control group was 48.25 and the mean of the experimental group was 77.5. The Mean D, or difference between the two groups, was -29.25. The t-test result was -1.73 and the df was 6. The null hypothesis states that there is a significant difference between the control and experimental groups post-test scores. This null hypothesis was rejected because the p-value is 0.13 compared to the alpha level of 0.25. This shows that the six-weeks of activities did significantly make a difference in the experimental group’s post-test scores on the DIBELS First Sound Fluency assessment.
As seen in Figure 4, the control group had a child with a significant difference in score. This contributed to the control group and experimental group’s significant difference in means. The control group had a mean of 48.25% and the experimental had a mean of 77.5%. Due to these scores, it has been concluded that the six-weeks of activities did significantly make a difference on the experimental group’s post-test scores.

Figure 5

<table>
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<tr>
<th>Source</th>
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<th>t-Test</th>
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<tr>
<td>Experimental (n=4)</td>
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<td>-9.5</td>
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<td>0.27</td>
</tr>
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</table>

Note: Significant when p<=0.25

Eight pre-kindergarten students were randomly selected from a preschool classroom of 18 to participate in a study. Four were in the control group; four were in the experimental group. Each group took a pre- and post-test using an assessment for Rhyme Choice and Rhyme Supply. The experimental group received a lesson once a week for six weeks on rhyming. The post-test scores from each child were then analyzed to find the mean for each group. As seen in figure 5, the mean of the control group was 83 and the mean of the experimental group was 92.5. The Mean D, or difference between the two groups, was -9.5. The t-test result was -1.21 and the df was 6. The null hypothesis states that there is not a significant difference between the control and experimental groups post-test scores. This null hypothesis was not rejected because the p-value is 0.27 compared to the
alpha level of 0.25. This shows that the six-weeks of activities did not significantly make a difference in the experimental group’s post-test scores on the rhyme choice and rhyme supply assessment.

As seen in Figure 6, both the control and experimental groups had consistent scores on the post-test rhyme choice and rhyme supply assessments. The control group and experimental group did not have a significant difference in means, the control group’s mean was 83% and the experimental group’s mean was 92.5%. Due to these scores, it has been concluded that the six-weeks of activities did not significantly make a difference on the experimental group’s post-test scores.
The outcomes of this study were different than initially anticipated. Initially, it was thought that with the implementation of intentional, pre-selected lessons the children in the experimental group would perform better on their post-tests. However, the mean post-test scores on the DIBELS Letter-Naming Fluency assessment stated that the control group had a higher mean of 94 rather than the experimental’s of 87.75. As well as the rhyme choice and rhyme supply assessment showed an increase in the control group’s mean and the null hypothesis was not rejected with a p-value of 0.27 compared to the alpha level of 0.25. The most significant difference was found on the post-test scores of the DIBELS First Sound Fluency assessment. Implementation of lessons focusing on the first sound in words showed a difference in the post-test scores. The null hypothesis was rejected with a p-value of 0.13, lower than the alpha level of 0.25.
CONCLUSIONS AND RECOMMENDATIONS

Early education centers are increasing their expectations of what the children should be taught in pre-kindergarten based on the expectations in kindergarten. The conceptual underpinning that most programs are being challenged to implement explicit and systematic lessons that have a predominant emphasis on phonics is seen throughout this study.

This study was conducted to evaluate the phonemic awareness needs in a pre-kindergarten classroom. Parents had previously questioned if their child would be ready for the demands of kindergarten. Pre-kindergarten children may or may not be developmentally ready to proceed in those explicit and systematic lessons on phonics. Differentiated instruction must be in the classroom, but more so if there is implementation of systematic, predominant phonics lessons.

This study was only conducted utilizing phonemic awareness activities as most of the children were not yet ready for phonics. Developmentally it was seen that only one or two could possibly be ready to move to the systematic, predominant phonics lessons, but the majority of the children needed their instruction differentiated to meet their needs. This does not need to be done within whole or small groups, but can also be taught in different moments throughout their day. If systematic phonemic awareness or phonics lessons are going to be incorporated into the daily lessons, these need to be conducted for a time period beyond what this study covered.

A further study could be done by implementing these systematic phonemic awareness lessons over 12 weeks or longer. The results from that study could then be
compared to the results from this study to reject these findings or to be in conclusion. It would also be imperative to not only know what needs to be taught, but comfortable enough to change instruction as needed. Thorough knowledge on the DIBELS assessments and how to administer them is also essential. Professional development for pre-kindergarten teachers regarding early childhood standards and even the kindergarten common core standards would allow teachers to be more prepared in teaching phonemic awareness and phonics at an earlier age. These teachers would then feel more comfortable helping to educate parents on the standards and how they are being addressed within their classrooms.
REFERENCES


