The Impact of Phonological Awareness on Reading Acquisition: Discrepancy Between Research and Practice

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THE IMPACT OF PHONOLOGICAL AWARENESS ON READING ACQUISITION: DISCREPANCY BETWEEN RESEARCH AND PRACTICE

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ABSTRACT

Twenty years of research has shown the impact that lack of phonological awareness has on a child's ability to learn to read and ultimately his chance for success in school. However, teachers have not used this important information to teach and assess students for these necessary skills. This study looked at the possible reasons why there is such remarkable discrepancy between research and practice. The reasons of research being too new, research results being contradictory and research being difficult to duplicate in educational settings were eliminated as probable causes of the discrepancy between research and practice. The study suggested that universities and colleges are not emphasizing phonological awareness instruction in great enough detail (if at all) in their reading methods courses. Over 85% of the elementary teachers (48 participants) surveyed in the study reported that they did not remember receiving any training in this area. Of the 9 university instructors who responded to a survey, five had a difficult time even defining phonological awareness. This study suggested that universities and colleges need to look at the research and revamp their teacher preparation programs to include instruction on what phonological awareness is and how to teach and assess for the skills young readers need to be successful in school.
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CHAPTER ONE
THE PROBLEM

Introduction

Last January, I presented a workshop at the Michigan Collaborative Early Childhood Conference in Dearborn. The topic was promoting literacy learning in the Early Childhood Classroom. There were 110 teachers at the workshop, most with at least a bachelor’s degree in Early Childhood Education.

Intending to start the presentation with ideas of activities that promote phonological awareness in children, I was startled to find that not one person in the audience was able to give a definition of phonological awareness or even guess what it might relate to. One brave soul finally ventured, “Something to do with phonics?”

I decided to “back the train up” to discuss this very important element of early literacy education. With so many current journal articles and workshop presentations devoted to phonological awareness, I wondered how so many educators were unaware of what it is and the significance it holds to helping students become literate.

What Are Phonological Awareness and Phonemic Awareness?

According to Torgesen, a leading researcher in the field, phonological awareness is “generally defined as one’s sensitivity to, or explicit awareness of, the phonological structure of the words in one’s language” (Torgesen, Wagner, & Rashotte, 1994, p.1). It is the understanding of different ways that oral language can be divided into smaller components and manipulated. Phonemic Awareness, a step
in phonological awareness, is the understanding that the speech stream consists of a sequence of sounds — specifically phonemes, the smallest discernible unit of sound in speech. For instance, the word shop has three phonemes: /sh/ /o/ /p/.

There are many operational tasks (skills) associated with phonological awareness. Various studies have shown that the difficulty level increases in the following order: (a) single phoneme isolation (i.e., being able to repeat an individual sound in a word — say the first sound heard in the word “dog”), (b) phoneme blending (i.e., being able to put the sounds /d/ /o/ /g/ together to form the word “dog”), (c) phoneme deletion (i.e., being able to delete a sound from a word — say “brat,” now say it again without the /b/), and (d) phoneme segmentation (i.e., being able to say the individual sounds in a spoken word — hear “dog,” say /d/ /o/ /g/).

Why is Phonological Awareness Important?

Phonological awareness is important because it strongly supports our learning of how the words in our language are represented in print. Many studies have found that phonemic awareness among pre-readers is a powerful predictor of future success in reading and spelling; more powerful than IQ or mental age (Torgesen, 2000). The results of a study done by Stahl and Marray (1994, as cited in Poskiparta, Niemi, & Vauras, 1999) suggested that single phoneme isolation, the easiest of the skills, is crucial to reading. Nearly all children in their study who could not adequately perform this task had not achieved a pre-primer instructional level.

The importance of phonological awareness has been studied and proven to be important for skillful reading by such leading researchers as Liberman, Torgesen,
Wagner, Rashotte, Vellutina and Shankweiler. "It is now widely accepted that the primary cause of reading disability for a majority of children lies in phonological processing inefficiencies that interfere with the development of phonological skills, such as phoneme segmentation, verbal memory, and name retrieval" (O'Shaughnessy & Wanson, 2000, p. 1). Deficits in phonological awareness cause problems in reading in three key ways. First, in order for a child to learn to translate oral language to print, he must be sensitive to the internal structure of words; the sounds within each word. If he is unable to hear those individual phonemes, the alphabetic principle (i.e., how print translates to speech sounds) that underlies our system of written language will never make sense (Chard & Dickson, 1999). Children who possess phonological awareness can pick off and think about the sounds in spoken words, which helps them to remember the correspondence between sound and symbol as they learn about letters of the alphabet. When children have this awareness, discovering ways in which spoken language is encoded by print becomes meaningful (O’Connor, 1999).

Second, children with low phonological awareness find it hard to remember which letter represents which sound. This difficulty with phonological decoding can lead children to misread words. If those word-reading errors are not corrected, reinforced but incorrect print-to-sound associations will become permanent and interfere with the student’s attempts to read similar words later (Wise, Ring, & Olson, 2000).
Third, poor phonological skills can indirectly affect reading comprehension, the ultimate goal of reading instruction. If a child misreads important words in a passage, he may miss the main ideas being relayed. Also, if the reader is spending excessive energy trying to decode each word of a sentence, his comprehension will be jeopardized (Wise, Ring, & Olson, 2000).

It is vital to detect deficits in phonological awareness skills early to help keep students in a preventive model, rather than a remedial model of intervention. As Juel found in her 1988 study, the probability of a first-grade child who was a poor reader remaining a poor reader in fourth grade was .88 (Dwyer, 1997). "If we wait for children to fall seriously behind at any point during early elementary school, we are moving to a ‘remedial’ rather than a ‘preventive’ model of intervention" (Torgesen, 2000, p. 58). Once that happens, it may require much more intensive intervention to bring them back up to adequate levels of reading accuracy, and reading fluency may be even more difficult to restore because of the large amount of reading practice that is lost by children each month and year they remain poor readers (Torgesen, 2000).

There are many long-range problems associated with the lack of phonological awareness and its link to reading disabilities. Difficulty with reading is one of the prime considerations in making the decision to retain children or place them in remedial and special education programs. For this reason, many researchers are urging schools to focus on early intervention to prevent reading problems (Dwyer, 1997). Also, research indicates that early reading skills are linked closely with both school success and graduation rates. Some schools that have implemented programs
to reduce the dropout rates of their students most at risk of school failure have used early literacy intervention programs that include phonological awareness training (Denti, & Guerin, 1999).

Because research has highlighted the importance of developing students' phonological and phonemic awareness, many states in the U.S. are addressing phonemic awareness in standards documents and even in legislation governing the funding of professional development activities and the content of teacher training programs. Moreover, professional organizations such as the International Reading Association and the National Association of the Education of Young Children are publishing position statements on phonemic awareness and its role in teaching reading in a developmentally appropriate way (Yopp, 2000).

Statement of Purpose

Phonological Awareness, the recognition of different ways that oral language can be divided into smaller components and manipulated, is an important concept for students to understand before they begin the process of learning to read print.

The purpose of Chapters Two and Three is to determine the full impact of phonological awareness on a student's chance for success in today's schools and whether teachers are prepared to provide the proper intervention if the skills are found deficient. Research is included that shows the long-range effects of phonological awareness interventions on retention, special education referrals, and dropout rates. Also included are studies that address the concern of transfer of
learning when interventions are tried, and research that shows the impact of teacher professional development.
CHAPTER TWO

THE RESEARCH

This chapter will present research that shows the long-range effects of good early phonological awareness interventions. Studies that show the impact of these interventions on retention and drop-out rates and special education referrals will be included.

Also included will be research that tries to explain why there appears to be a discrepancy between phonological awareness research and teacher practices in the elementary school classrooms.

The Long-range Effects of Early Phonological Awareness Interventions

Research shows that having phonological awareness is a prerequisite to being able to understand how the English language is represented in print. Phonological Awareness is the cornerstone to learning to read, but it also has long-range effects on a student's success in school.

What Are the Effects on Retention and Special Education Referrals?

In the 1990's, Dwyer researched the effects of a kindergarten prevention program on Special Education referrals, classifications and retentions in a small school district in New York State. The 1200 students who participated were mostly middle class white students. Minorities constituted six percent of the district population.

A program called Steps into Reading (STIR) (Dwyer & Rule, 1997), that had been instituted for first grade, was extended to kindergarten for this study. STIR is a
comprehensive prevention program that includes student screening, teacher training, parent education, parent communication, general education classroom congruency, continuous program evaluation, and continuous student assessment.

At the end of September, kindergarten students were screened on the Dwyer/Pittman Screening Test. It is used to determine a child’s level of phonological awareness and speed of naming objects and colors. Based on this screening test, the lowest performing 20% of students were identified for STIR. After the teachers were trained to teach the program, they met with small groups of students (about five students) four times a week for 20 minutes. The sessions usually took place in the general education classroom and included skills in phonological awareness (e.g., rhyming, alliteration, and segmentation), concepts about print, alphabet and sounds, and writing skills. These skills were introduced through literature, such as nursery rhymes. Every two weeks, the STIR teachers, classroom teachers and speech pathologists met to talk about the program and to ensure that there was congruency between STIR and the kindergarten program.

Parent participation was an important part of the program, also. Parents were invited to an introductory meeting about STIR and then encouraged to attend a four-hour workshop about the program. Communication between school and home was deliberate, with teachers sending home weekly newsletters about skills being taught and parents writing in a notebook about what was working at home.

The effects of the program were remarkable. After examining the records from seven years prior and five years after STIR was initiated, Dwyer found that the
initiation of the kindergarten STIR program had a major impact on the primary grades in this school. Special education referrals and classifications dropped. Reports showed that there was a 19.7% decrease in special education enrollments in this district, while 11 of the 12 other county districts posted increases ranging from 1.7% to 50%. Students began to receive support before they failed; a preventative model was used rather than a remedial one. In addition, the pre-first program that the district used for retention was abolished. A byproduct of this model was that by reorganizing and reducing the amount of time on evaluations for special education, more time could be spent on working with students before they failed (Dwyer, 1997).

What Effect Can Poor Reading Skills Have on High School Dropout Rates?

Researchers, Denti and Guerin (1999), were interested in the role teacher preparation programs play to ensure all students are literate by the end of the primary grades. They were motivated by research that indicated that early reading skills are linked closely with both school success and graduation rates. They were concerned that students with the lowest academic achievement within the learning disabled population are one of the groups of students with the highest dropout rates.

Denti and Guerin pointed out that years ago, Kelly, Veldman and McGuire (1964) and Lloyd (1978) determined that future dropouts could be predicted with remarkable accuracy by examining students’ third-grade reading skills. Those observations were reaffirmed by more research (Slavin et al, 1990) that showed that a child who has not been taught literacy skills in the primary grades begins a downward spiral that often ends in dropping out of school.
Denti and Guerin (1999) reviewed research that showed positive effects on the dropout rate of students with learning disabilities (and other groups with high dropout rates) and discovered that these programs: (a) had focused literacy instruction in kindergarten through second grade, with the goal of successful reading by the third grade; (b) increased parent involvement; (c) had more intensive service to students who have been having difficulties in literacy; (d) increased time spent reading; and (e) intensified instruction of proven literacy acquisition strategies for phonological awareness, phonics, syntax and semantic clues. These researchers felt that "without background in research on reading, new teachers tend to experiment until they 'land on' something that seems to work. In terms of early literacy, primary-grade teachers can no longer afford to experiment (p. 234)."

These researchers also believed by advocating for early literacy programs and making early literacy a priority in teacher and administrator training programs, they could make dropout prevention an issue for preschool, kindergarten, and first- and second-grade teachers. They felt teachers of young children needed to be aware of the importance of their role in educating and ensuring students start on (and stay on) the road to school success.

There is much research that shows how important reading is to a child's success in school. Without a good foundation in reading skills, a child is much more likely to be retained in a grade, need special education services, or even drop out of school. Research also solidly shows that in order to acquire that solid foundation in reading, a student must have the prerequisite knowledge of phonological awareness.
Explaining the Discrepancy Between Research and Practice

There is much research on phonological awareness and its impact on a student’s ability to learn to read and succeed in school. Because of this research, one would expect to find all preschool teachers doing activities to promote this development and that all kindergarten teachers would be assessing students to see if any were in need of intervention. Experience at teaching, assessing and remediating phonological awareness skills should be an important part of training for primary school educators. However, teachers seem to lack knowledge of its importance or ways to provide early intervention. Why? The purpose of the following section is to determine why practitioners are not using the extensive research available to drive their literacy curriculum in the early grades.

Is it That the Research is Just Too New?

One explanation for why teachers lack this knowledge is that the research is too new. However, as early as 1936, Orton, a psychiatrist, along with Gillingham and Stillman, proposed corrective reading techniques that incorporated a concern for the smallest units of sound (phonemes) to help students with specific language disability. Orton’s wife, J.L. Orton, modified those techniques in 1964 (Jerger, 1996).

Rawson did reviews of the literature available in 1966 and 1974 and discussed the roles of both visual and auditory perception in language processing (Rawson & Duane, 1975, as cited in Jerger, 1996). Her longitudinal study with boys with dyslexia suggested to her that there were some auditory and visual perception
and memory problems, especially noticeable in sound discrimination faults, even though the boys’ hearing and vision were not questionable (Rawson, 1968, as cited in Jerger, 1996).

Researchers since that time have worked hard to understand how phonological awareness impacts reading ability and have tried to find the best ways to remediate the deficits. Chard and Dickson reported that “no area of reading research has gained as much attention over the past two decades as phonological awareness (1999, p. 1).”

So, if extensive research has been going on for over twenty years, why have elementary teachers not used reading instruction curriculum containing phonological awareness instruction and assessment, developed by the researchers?

Are the Research Results Contradictory?

A second explanation for why teachers lack or do not use this knowledge could be that the research is contradictory. There have been a large number of studies that have shown that it is possible to improve average levels of phonological awareness in young children through explicit training (Torgesen & Davis, 1996). Additional evidence from controlled remediation studies indicated that, with focused and systematic intervention, measurable progress in phonological reading skills can be achieved throughout the elementary school years even with the most severely disabled readers of a clinical sample (Lovett, Steinbach, & Frijters, 2000). A meta-analysis of 13 training studies of children ranging in age from kindergarten to late
elementary age reported an average effect size on phonological awareness of 1.23 SD units (Torgesen, Wagner & Rashotte, 1993).

Phonemic awareness development does not seem meaningful in and of itself, however. It is only one part of a much broader literacy program (Yopp, 2000). There seems to be agreement that phonemically explicit approaches should include careful instruction to help children apply their phonological awareness and phonetic decoding skills to real words and should provide many opportunities to read connected text for fluency and meaning (Torgesen, 2000).

What researchers are still debating is how much time and what intensity of training on phonological awareness is needed to show significant long-term improvements that will actually generalize into daily reading skills. Investigators have found that training gains did not generalize to other aspects of reading acquisition when the remediation involved only phonological skills training. Children who, after phonological intervention, could sound out new words or non-words were not reliably improved relative to comparison groups in their word identification and text-reading skills (Lovett, Steinbach, & Frijters, 2000).

These investigators have suggested that children with more severe reading disabilities may require intervention that exceeds that furnished by most explicit phonological awareness and decoding programs. Disabled readers should not be expected to be able to automatically transfer these newly acquired phonological awareness skills to other areas of reading. They need a systematic approach to
incorporate the skills into the reading and understanding of connected text (Lyon & Moats, 1997, as cited by Lovett, Steinbach, & Frijter, 2000).

Torgesen (2000) reviewed five recent studies of interventions used to prevent reading difficulties, all having the goal that every child should acquire adequate word reading skills during early elementary school. He found that even the best current methods, if applied broadly, would leave anywhere from 2% to 6% of children, what Torgesen calls “treatment resisters,” with inadequate word reading skills in the first and second grades. However, Torgesen relayed that educators should not feel discouraged, because the studies showed that a large proportion (always more than 50%) of children who are most at risk for reading failure could be helped to learn at roughly normal rates in early elementary school by applying the best of what we know right now about reading instruction. The 2-6% that would remain poor readers in spite of interventions, was immeasurably better than the 30-60% failure rate in reading that often is cited for entire school populations that have similar risk factors operating.

Most researchers seem to agree that phonological awareness is vital to the process of reading. The only debate seems to be whether interventions can not only improve phonological awareness, but also help students transfer this knowledge to the actual reading and comprehension of text.

Resolving the problem of transfer of learning. At The Hospital for Sick Children, Lovett, Lacerenza and Borden (2000) have spent many years studying the effects of phonological remediation and the relationship to future reading skills of
young children at risk of reading problems. They were particularly interested in the
generalization and transfer-of-learning issues, especially as these issues affect the
remediation of reading disabilities and disabled readers' response to instruction.

Lovett and her colleagues have done several studies to address this problem. In one study, children with severe reading disabilities were randomly assigned to one of two remedial reading programs or to an active control treatment that worked on helping children acquire better study, organizational, and problem-solving skills (Lovett, Borden, DeLuca, Lacerenza, Benson & Brackstone, 1994 as cited in Lovett, Lacerenza, & Borden, 2000). Both of the reading programs targeted the problem of transfer and generalization of treatment gains in word identification learning, but they approached this problem with quite different instructional approaches and at different levels of print-to-sound segmentation.

Using the first program, called the Phonological Analysis and Blending/Direct Instruction Program (PHAB/DI), teachers trained students in phonological analysis, blending and letter-sound association skills in the context of word recognition and decoding instruction (Engelmann & Bruner, 1988). This program was developed for readers with severe disabilities by Engelmann and his colleagues at the University of Oregon. The program addresses phonemic awareness and subsyllabic segmentation deficits by direct instruction of letter-sound correspondences.

The second remedial reading program was the Word Identification Strategy Training Program (WIST), which has a strong metacognitive focus. Teachers train
children how to use and monitor the application of four metacognitive decoding strategies. This program was developed at The Hospital for Sick Children and was based in part on the original Benchmark School Word Identification/Vocabulary Development Program developed by Gaskins and her colleagues (1986). WIST differs from the Benchmark Program in its inclusion of three additional word identification strategies, its direct training focus on the subskills necessary for strategy implementation and its provision of a metacognitive “Game Plan” to train flexibility in strategy choice and evaluation of the success of those choices.

PHAB/DI and WIST work on subsyllabic segmentation using subword units of different sizes: PHAB/DI focuses on the smallest spelling to sound units (letter-sound) and WIST trains recognition of larger subsyllabic units, particularly the rime. Every lesson in both programs included practicing new skills by reading connected text with controlled vocabulary and at carefully selected levels of difficulty.

At the end of the interventions, the children in both programs were found to be significantly improved on several standardized and experimental measures and achieved generalization on a set of word-reading measures. Although both approaches were associated with large positive effects (especially in comparison to the control group program of study skills lessons), different patterns of transfer were observed following the two programs, confirming the existence of some treatment-specific effects. PHAB/DI resulted in broader based and deeper generalization within the phonological skill domain; and WIST, with its metacognitive focus,
resulted in broader based generalization for real English words (i.e., regular and exception word identification was improved for WIST-trained participants).

Researchers were encouraged with these results because they showed that (a) these programs can help students generalize decoding skills to uninstructed words of varying types and, (b) that intensive remediation of this type could improve phonological processing skills and letter-sound learning of readers with severe disabilities at the 5th- and 6th-grade levels.

After these encouraging studies, researchers wanted to see if combining phonological and metacognitive approaches would produce superior outcomes. They also wanted to see what would be the most effective sequence for these instructional approaches. Subsequent studies found that generalization from phonological skills to real-word identification can be best achieved with a combination of effective remedial components.

With this background, researchers developed their own remediation program, called the Phonological and Strategy Training Program (PHAST) (Lovett, Lacerenza, & Borden, 2000). This program begins with PHAB/DF’s program of phonological remediation and uses it as a framework on which each of the four WIST strategies are introduced and scaffolded. PHAST systematically integrates all of the instructional components used in the two other programs, ensuring that the pre-skills needed to implement a given strategy are allocated sufficient training time and attention prior to the strategy’s introduction.
The PHAST Program was developed as part of a multisite, NICHD-funded intervention grant and is currently being field tested in laboratory classrooms in Toronto, Boston, and Atlanta. It was not designed for the exclusive use of children with reading and learning disabilities, but is designed to be appropriate for the needs of all students in the early elementary years. PHAST is intended to be offered to an entire class as part of an integrated, systematic program of reading, spelling, and writing instruction. Training for new PHAST teachers is offered over a period of 3 to 5 days, with continued mentorship advised over the first year of PHAST teaching.

O'Shaughnessy and Swanson (2000) were inspired by Lovett's study on the two different approaches to teaching phonological awareness and word attack skills. They did a study to evaluate the effectiveness of two reading intervention approaches in a public school setting with mostly lower class children in second-grade identified with reading disabilities. The students were referred by their teachers for the intervention because of significantly below grade-level reading achievement in reading. All children attended three elementary schools with historically low achievement in reading, in a school district in southern California. Forty-five children were included in the final sample; 64.4% white and the rest minorities. The children at each elementary school were randomly assigned to a treatment condition or comparison group. The interventions were taught by paraprofessionals, who received about ten hours of training, and were done in small groups of five children.

The first intervention, Phonological Awareness Training (PAT) (Torgesen & Bryant, 1994), used direct instruction of oral language activities. Students were then
taught how to generalize their newly acquired skills to analyze words in spelling and reading. Their instruction was at the phoneme level.

The second program, Word Analog Training (WAT) (Gaskins, Downer, & Gaskins, 1986), used written language activities to increase the phonological awareness of the students. They worked at the rime level and taught frequent spelling patterns.

The interventions occurred over the course of six weeks and were implemented 30 minutes a day, three times a week. The goals of the interventions were to help children acquire a deeper awareness of the sounds of speech, an improved understanding of the connection between the sounds of speech and the letters of the alphabet (PAT) or the sounds of rimes and frequent spelling patterns (WAT), and an increased ability to analyze words.

After much evaluation on specific word attack and phonological awareness skills, the results showed that both PAT- and WAT-trained children displayed significantly improved word attack skills after training, in comparison to students in the control group. Both treatment groups demonstrated sizable intervention gains in acquisition of specifically trained content and in generalization of word identification skills to uninstructed word lists with regular spelling patterns. The advantage of PAT training in comparison to the other conditions was on the Test of Phonological Awareness (TOPA) – being able to identify the ending sounds in words and tell which words ended in the same sound. The advantage of WAT training when compared to the other conditions was on the WAT word list (words used in the WAT
program). Both PAT and WAT interventions yielded statistically comparable effects on the PAT word list and the phonemic deletion task (being able to repeat a word with a specific sound or sounds deleted).

Children in the control group acquired improved math computation skills as a result of their specific training in math. These results add discriminant validity to the present study because PAT- and WAT-trained children acquired measurably improved skills only in areas related to reading, which was the focus of their training, and not in areas related to math.

One of the limitations of the study was the short period of time of instruction. All students still needed intervention after the six-week program; some more than others. Also, the duration of intervention was probably too brief to determine whether the two reading intervention approaches would lead to differential treatment outcomes. Like Lovett and her colleagues, O'Shaughnessy and Swanson believed that a combination of the two approaches together would prove to be an effective way to stimulate the development of phonological awareness and an understanding of the alphabet principle in even our poorest readers.

Another limitation of the study was the use of paraprofessionals to teach the interventions. Although paraprofessionals showed that they could successfully implement research-based reading interventions with supervision, researchers felt a better model for future study would be one in which classroom teachers are trained in empirically validated reading interventions and provided ongoing consultation while they implement interventions in their classrooms. Under this model, children
would more likely benefit from incidental teaching and reinforcement of previously taught skills throughout the school day.

While early research might cause concern that students who receive intervention in phonological awareness might not be able to transfer this knowledge to reading skills, more recent research shows that this problem can be overcome. The issue of transfer of learning can be resolved with good interventions that include phonological awareness within the context of a strong reading, writing and spelling program. By integrating phonological awareness instruction into a comprehensive reading program, teachers will be able to help students use their phonological awareness skills to become better readers.

Can the Research be Duplicated in Classroom Settings?

A third reason why teachers are not using the research may be the setting demands. Unfortunately, much of the research done on phonological awareness has been done in clinical settings with much one-on-one tutoring. Reading this type of research has a low palatability with elementary teachers working in the nation’s classrooms. Working one-on-one with an individual student is a real luxury for teachers, and unfortunately, not a daily reality.

O’Connor (1999) wanted to see if the practical applications of phonological awareness research would show the same positive results when teachers used the information to teach pre-reading skills in kindergarten classrooms. She invited teachers who taught children with high incidence disabilities in a variety of kindergarten settings to field test whole-class activities developed from those used in
small-group and one-on-one experiments. Prior to the study, extensive program development had occurred. Teachers were involved in the process to increase the validity and sustainability of models for instructional change.

Once researchers had the program developed, they conducted two studies to see if how the staff development was presented (either in an intensive year-long format or in a more typical 3 day session format) would affect the reading outcomes for the students involved in the program.

Four schools involved in the first study were in a large urban district that commonly included children with high-incidence disabilities in the general education kindergartens and represented a low socioeconomic population. The year began with a meeting with teachers and their administrators to discuss the research base in phonological awareness and reading acquisition, and to determine whether any of the teachers wanted to participate in a year-long series of meetings to fine-tune activities and to test the effect of the activities on the reading development of their children. All of the kindergarten teachers, in both general and special education, at two of the schools agreed to the year-long intensive professional development. All of the teachers at the other two schools agreed to be in the control classrooms in return for a contribution to their school libraries.

Teachers in the experimental group met once every three weeks with researchers. They were trained to give assessments to the children and taught activities that could be used during large and small group times. At subsequent trainings, teachers discussed how the implementation of the activities went and
helped each other with any problems that occurred. New activities, which were selected based on the progress of the children noted in weekly classroom observations, were then modeled and rehearsed.

Throughout the year, classes of the teachers receiving in-service were visited weekly, and control classrooms were visited monthly. Teachers in the in-service condition were videotaped, and clips from these tapes were shown and discussed during training to highlight particularly effective strategies teachers had discovered for introducing lessons, drawing in lower skilled children and for managing materials.

Two years later, a second group of kindergarten teachers participated in a replication of this study; however, professional development was undertaken in a more traditional manner — through three half-day sessions spaced across the school year. All the kindergarten teachers in a large rural mid-western district participated (17 classes; 311 children) and were assigned to an in-service or control condition by geographical location. Eight classes were in a kindergarten center in one school and they became the control group. (To make up for lack of random assignment to condition the author did a second wave experiment the following year that supported the results of the study.)

The study done with shorter in-service training was an attempt to show that the results obtained in the first study could be replicated in more “real-world” conditions. The content of the in-service was similar, in that each meeting included time for teachers to discuss implementation, problem solve materials, and share data
on the progress of their children. It also provided teachers with modeling and rehearsal of upcoming activities. There was, however, less time spent working with the researchers and observing in the classrooms (only twice during the year) to help determine appropriate timing of activities. The teachers were told which activities to try next, rather than helping to determine what was the next appropriate step from observing their own students.

The results of both studies showed that children in the in-service classrooms made greater gains in blending, segmenting, rapid letter naming and standardized measures of reading and spelling than the students in the control classrooms. A separate multivariate analysis of variance between outcomes for the children at risk (with high-incidence disabilities or pretest scores less than 85) in in-service and control classrooms also demonstrated significant treatment effects for these low-skilled children. Analysis was conducted to determine whether the differences between intensive and traditional levels of in-service would affect the outcomes of children who attended treated classes across years. An ANOVA of outcomes revealed no significant differences in blending or segmenting, but children whose teachers received intensive in-service achieved higher outcomes in letter naming, word identification and spelling.

The power of groups of teachers working together to solve learning problems emerged as a consistent theme across the interviews with the teachers involved in the year-long intensive professional development program. Because they met every three weeks, they were able to help each other work through problems they were
experiencing. They collaborated on making teaching materials and by seeing video tape of themselves teaching, could improve upon their teaching techniques. The more traditional in-service teachers reaped the benefits of this intensive professional development, because the researchers heard what was important or troublesome from these first teachers and included this information in the future trainings.

Also, the traditional professional development occurred over three 3 ½ hour sessions spaced across the year of implementation. This allowed the teachers to see how the implementation of the activities would work in their own classrooms and be able to come back to the next sessions with questions or concerns.

The author was impressed with all the teachers’ concern for improving their students’ reading outcomes. One hundred percent of the teachers involved in both studies volunteered to continue the implementation of the activities in the following year.

This study seems to indicate that positive research findings can be duplicated in classrooms. That with training, teachers can provide the necessary assessment and implementation of strong phonological awareness interventions as part of their comprehensive reading programs. However, professional development is needed in the area of phonological awareness. This study points to the fact that continuous training over a period of time is important for teachers to work through the logistics and individual problems inherent in implementing a new program in classrooms. It highlights the fact that teachers learn from each other’s skills and experiences.
Where should this training take place? Should teachers that graduate from college and universities’ education programs have this training as part of their undergraduate work?

Are Universities Preparing Teachers to Address This Problem?

A fourth reason why teachers may not be using the research that clearly shows the importance of phonological awareness in the process of reading may be that they have not received training in this area and are unsure of how to assess or use interventions for phonological awareness. Teacher training and educational leadership programs that create coursework aimed at decreasing reading problems can begin to stem the rising tide of special education referrals and the continuing dropout problem. Because of this, lowering the risk of reading disabilities becomes the explicit responsibility of local educational agencies and professional preparation programs (Denti & Guerin, 1999). Since phonological awareness has been proven to be an important skill needed for reading ability (Lovett, 2000), teachers should be made aware of its importance and instructed in strategies for assessing and remediating students’ deficits in this area. Many teachers, however, report they lack the knowledge and skills needed to teach a classroom of diverse learners. They are unsure of “best practices” in reading instruction (O’Shaughnessy, & Swanson, 2000).

Unfortunately, colleges and universities may be largely at fault for this lack of knowledge. Current teacher training methods too often omit instruction on phonological awareness, with the result that even experienced teachers are found to
lack insight both about the underlying reasons for the difficulties demonstrated by
their students and even about the phonological composition of words (Moats, 1994).

In 1994, Moats tested 89 graduate students, all experienced teachers of
reading, language arts and special education, to see if they had the requisite
awareness of language elements (e.g., phonemes, morphemes) and of how these
elements are represented in writing (e.g., knowledge of sound-symbol
correspondences). She was quite dismayed to find that teachers generally have
insufficient grasp of spoken and written language structure and would be unable to
teach it explicitly to either beginning readers or those with reading/spelling
disabilities. With all the research showing the importance of explicit, intensive
phonological awareness programs, teachers' content knowledge is critical to
successful instruction. Moats charged that teacher education programs are to blame
for the lack of knowledge in today's teachers. She believed that professors
themselves are uneducated in the importance of phonological awareness in the
remediation of reading problems in children. Moats proposed changes in
competency lists and licensing practices to include demonstrated knowledge in
phonemic awareness, a working knowledge of the speech sound system and how our
orthography represents spoken English. She would like to see teacher programs
include in-depth study of phonological awareness and allow for clinical practice of
the skills learned. She has stated that “lower level language mastery is as essential
for the literacy teacher as anatomy is for the physician” (Moats, 1994, p. 99).

27
At the informal observation level, this author encountered findings similar to Moats'. At a recent meeting of a professional education organization, I asked board members present if they had ever had any formal education in teaching phonological awareness to young children. None of the members present could remember any such training as part of their undergraduate education programs. Three of the members are instructors in Early Childhood Education programs from universities in Michigan.

Conclusions

Extensive research shows the importance of phonological awareness to the reading process. Numerous studies show how good interventions can not only produce better readers, but can have an impact on special education referrals, retention and school drop-out rates. Researchers have been able to resolve the problems of transfer of learning and developing programs that teachers can use in classroom settings. Yet teachers are still not aware of the impact of phonological awareness and how to teach these skills.
CHAPTER THREE
PHONOLOGICAL AWARENESS INSTRUCTION AT THE UNIVERSITY/COLLEGE LEVEL

Introduction

The previous chapter highlighted research showing the long-range impact of phonological awareness on students’ chances for success in today’s schools. Research was provided to try to answer the question of why there is discrepancy between research and teacher practices. Through provided studies, the reasons of research being too new or contradictory and the inability of research to be duplicated in classrooms were eliminated as explanations for this discrepancy. The one question remaining is whether universities are preparing teachers to teach phonological awareness skills.

The purpose of this chapter is to determine what pre-service and in-service teachers are being taught about phonological awareness at colleges and universities in Michigan.

Participants

The first group of participants was instructors who taught reading methods courses at Michigan universities and colleges. In order to locate those participants, a web-site was found that listed all the colleges and universities in Michigan and had direct links to the individual web-sites for those schools. By accessing each web-site, a determination was made as to whether the school had an undergraduate teacher education program. If they did, descriptions of the courses offered to
undergraduate education majors were investigated. When reading methods courses were found, registration information for the classes was sought to determine whom the instructors would be. If a name was found, the faculty directory was used to locate e-mail addresses for the instructors. Some web-sites were very easy to use in locating the information; others did not have directories, descriptions of classes, and/or registration information on-line. General information addresses, education departments or undergraduate advisors were e-mailed to get the information needed. If the information was unavailable by e-mail, the university or college education department was telephoned. A total of 19 colleges or universities with teacher education programs were located in Michigan, and the names and e-mail addresses for 47 instructors who have taught reading methods courses were acquired.

The second group of participants was pre-kindergarten through third-grade teachers, along with reading and special education teachers, in two local school districts. The first group of teachers was located at an elementary school in a nearby school district on the last day of the school-year, June 12, 2001. The surveys were filled out and collected in a period of one hour. The second group of teachers was from the researcher’s school district and was mailed the surveys with a stamped, return-addressed envelope several days after the school-year ended.

Measures

Two surveys were created to obtain the information needed. The first survey, the University Survey (see Appendix A), was intended to survey instructors of reading methods courses at Michigan colleges and universities to find out what they
knew and taught about phonological awareness. The most important thing to find out was if the instructor really understood what phonological and phonemic awareness are. The survey needed to ascertain whether the instructor was aware of the significance phonological awareness has on reading acquisition and what age children should be assessed for it. If the instructor had a good knowledge base of what is currently known about phonological awareness, it helped validate the answers to the rest of the questions asked. The survey inquired how much class time was spent on learning to assess for phonological awareness and if pre-service teachers actually got to practice the assessments on elementary-age students or on their fellow classmates. The survey asked if specific strategies were taught to help remediate deficits in phonological awareness and if these strategies were practiced on children and/or fellow classmates.

To help with the validity of the survey created, feedback was requested from colleagues in the researcher's school district and from members of a local professional education association. Many of the teachers that read the survey were unable to give a definition of phonological awareness and were unable to remember learning about the topic in their teacher preparation classes. They were interested in seeing the results of the survey.

A second survey was then created to be sent to early elementary teachers in grades pre-kindergarten through third grade, along with special education and reading teachers whom work with students in those grades. Questions were asked regarding the teachers' knowledge of phonological awareness, its importance, how to
assess for and teach needed skills. Teachers were also asked whether their knowledge was obtained through college coursework.

**Procedures**

After creating the University Survey and locating the participants, the next step was to send out the e-mail surveys. The initial mailing took place on April 10, 2001. Seven instructors responded to the surveys. Four replied that they were not currently teaching reading methods courses or that someone else in their department would be better able to answer the survey. Names and addresses of the appropriate instructors were requested and all four sent at least the name of a person to contact. Four new surveys were sent out and one person responded to the request.

Because the initial mailing occurred as the winter semester was ending, a busy time for instructors, the researcher decided to send a second request for survey responses after the semester was over, when instructors would hopefully have more time. The second survey mailing which went out on April 30, 2001, resulted in two responses.

During the first two weeks of May, telephone calls were then made to education departments and messages left for instructors to please call or e-mail the responses to the survey. One more response came in by way of fax machine. A total of 47 instructors were contacted and 19 responded. Nine instructors from eight universities felt they were the appropriate people to fill out the surveys and sent back completed surveys. Three others filled out the survey incompletely, saying they did not teach phonological awareness instruction in their reading methods classes, but
that students studying elementary education were exposed to it in other required courses.

After determining that more responses probably would not be forthcoming, the next step was to format how the information from the surveys would be presented. Graphing the information was considered, but after consulting with a fellow colleague with strong computer graphic knowledge, the researcher decided to present the information in the survey format that it was obtained in. The survey was duplicated with space under each question to show the number of instructors who gave each response. After reading the surveys, those numbers were calculated and added to the survey questionnaire.

Because of the small sample size of returned University Surveys, the researcher decided to try to acquire the needed information from another source. The Teacher Survey was developed to give to kindergarten through third grade teachers, as well as special education and reading teachers, asking about their knowledge of phonological awareness and if this knowledge was obtained through college coursework. This survey was delivered in person to teachers on the last day of school (after students were already finished for the year) at one local elementary school. Twenty teachers were asked to complete the survey and eighteen teachers responded.

The survey was then mailed with a stamped-return-addressed-envelope to all kindergarten through second grade teachers and special education and reading
teachers in the researcher’s school district. Forty-one surveys were mailed or hand-delivered. Thirty teachers responded to the survey.
SURVEY RESULTS

University Survey

Number of colleges/universities sent surveys: 18
Number of colleges/universities whom returned surveys: 8

Number of instructors sent surveys: 47
Number of instructors whom responded: 16
Number of instructors whom sent back completed surveys: 9

1. Position with the university:

   Full Professor: 2
   Associate Professor: 3
   Assistant Professor: 3
   No Answer: 1

2. Education:  

   Degree Earned in MI Earned outside MI
   BA/BS: 3 1
   Masters: 2 2
   PhD: 2 1
   Ed.D: 1 2
   Working on Ed.D. 2

3. Number of years teaching reading methods class:

   Less than one year: 0
   Two to three years: 2
   Four to seven years: 3
   More than seven years: 4

4. Instructors giving an accurate definition of phonological awareness:

   Fully correct definition: 3
   Partial definition: 5
   Incorrect definition: 0
   No definition given: 1
5. Instructors giving an accurate definition of phonemic awareness:

- Fully correct definition: 5
- Partial understanding: 3
- Incorrect definition: 0
- No definition given: 1

6. On a Likert-like scale ranging from 1 (not very important) to 5 (very important), how would you rate the importance of phonological awareness to reading success?

```
1 2 3 4 5 NA
1 6 2
```

7. On a scale of 1 to 5 with 1 being “not much emphasis” and 5 being “strong emphasis,” how much emphasis do you place on phonological awareness in your reading/literacy program?

```
1 2 3 4 5 NA
1 1 2 4 1
```

8. How much of your class time is spent on phonological awareness during the semester?

```
0 hours 1-3 hours 4-6 hours 7 or more hours NA
3 3 2 1
```

9. At what age do you think children should be assessed for phonological awareness?

- 2-3 years old: 0
- 4 years old: 1
- 5 years old: 5
- 6-7 years old: 5
- 8-9 years old: 0
- older than 9:
  - continuously: 1
  - depends on reason: 1

10. Do you teach your students how to assess for phonological awareness?

```
Yes Just Introduce No
5 2 2
```
If yes, what assessment do you teach?

- YOPP 1
- Blevins 1
- Basic Phonics Inventory 1
- Basic Reading Inventory 1
- Improving Reading 1
- Michigan Literacy Progress Profile 2
- Authentic Assessment 1
- Running Records 1
- Individual Reading Inventories 1

11. If yes, do your students get to practice the assessment on children?

<table>
<thead>
<tr>
<th>Yes</th>
<th>Some in Own Classrooms</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

On fellow students?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>5</td>
</tr>
</tbody>
</table>

12. Do you teach specific remediation strategies?

<table>
<thead>
<tr>
<th>Yes</th>
<th>Just Introduce</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

If yes, what types of strategies do you teach?

- Packaged program (such as Cunningham’s) 2
- Reading books with lots of rhyming & alliteration 3
- Teaching rhyming skills 3
- Playing with alliteration 1
- Blending sounds 3
- Segmenting words into sounds 3
- Sound deletion games 1
- Clapping out sounds/parts of words 1
- Using manipulatives to represent sounds in words 1
- Listening for a particular sound when reading 1
- Singing songs/fingerplays 1
- Encouraging inventive spelling 1
13. If yes, do your students get to practice these remediation strategies on children?

<table>
<thead>
<tr>
<th>Yes</th>
<th>Some in Own Classrooms</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

On fellow students?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>
Teacher Survey

Number of teachers sent surveys: 60
Number of teachers completing surveys: 48

1. Education: Degree Earned in MI Earned outside MI

<table>
<thead>
<tr>
<th></th>
<th>Earned in MI</th>
<th>Earned outside MI</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA/BS:</td>
<td>38</td>
<td>10</td>
</tr>
<tr>
<td>Masters:</td>
<td>23</td>
<td>4</td>
</tr>
</tbody>
</table>

Currently taking graduate classes: 34

2. Current grade(s) taught:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-K:</td>
<td>1</td>
</tr>
<tr>
<td>Young 5’s</td>
<td>4</td>
</tr>
<tr>
<td>K:</td>
<td>9</td>
</tr>
<tr>
<td>1st:</td>
<td>12</td>
</tr>
<tr>
<td>2nd:</td>
<td>12</td>
</tr>
<tr>
<td>3rd:</td>
<td>3</td>
</tr>
<tr>
<td>Reading:</td>
<td>5</td>
</tr>
<tr>
<td>Special Education:</td>
<td>6</td>
</tr>
</tbody>
</table>

3. Teachers giving an accurate definition of phonological awareness:

<table>
<thead>
<tr>
<th></th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully correct definition:</td>
<td>4</td>
</tr>
<tr>
<td>Partial understanding:</td>
<td>27</td>
</tr>
<tr>
<td>Incorrect definition:</td>
<td></td>
</tr>
<tr>
<td>(a.) Phonological awareness is phonics:</td>
<td>15</td>
</tr>
<tr>
<td>(b.) Other:</td>
<td>2</td>
</tr>
</tbody>
</table>

4. Teachers that at least partially understood what phonological awareness is and feel that it is an important part of the reading process:

<table>
<thead>
<tr>
<th></th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>30</td>
</tr>
<tr>
<td>no</td>
<td>1</td>
</tr>
</tbody>
</table>

5. Teachers who were taught how to teach phonological awareness skills during their college coursework:

<table>
<thead>
<tr>
<th></th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>9</td>
</tr>
<tr>
<td>no</td>
<td>37</td>
</tr>
<tr>
<td>don’t remember</td>
<td>2</td>
</tr>
</tbody>
</table>
Activities learned to teach phonological awareness skills:

- Rhymes/fingerplays 5
- Songs 2
- Repetitive text books 2
- Blending/segmenting activities 2
- Deleting activities 1
- Substituting sounds 1
- Elkonin boxes 4
- Making words 3
- Integrated reading 1
- Writing 2
- Journals 2
- Flash cards 1

6. Teachers who were taught how to assess for phonological awareness skills:

<table>
<thead>
<tr>
<th>yes</th>
<th>no</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>41</td>
</tr>
</tbody>
</table>

If yes, type of assessment used:

- MLPP 2
- Yopp-Singer 1
- DRI 1
- Barbara Taylor (ERI) Survey 1
- TAAS 1
- Phonological Awareness Profile 1
- Language samples 1
- Flash cards 1
- Journal writing 1
- Don’t remember 1

7. Teachers who were taught in college coursework how to remediate for low phonological awareness skills:

<table>
<thead>
<tr>
<th>yes</th>
<th>no</th>
<th>not sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>42</td>
<td>1</td>
</tr>
</tbody>
</table>
If yes, type of remediation used:

- TAAS activities: 1
- Lindamood LIPS Program: 1
- Elkonin boxes: 1
- Working with sounds in sequence: 1
- No answer: 1

8. Teachers who would be interested in learning more about phonological awareness during an in-service day:

<table>
<thead>
<tr>
<th></th>
<th>yes</th>
<th>maybe</th>
<th>no</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>33</td>
<td>3</td>
<td>12</td>
</tr>
</tbody>
</table>
Discussion

Of the 9 university instructors who responded to the surveys, five had a difficult time defining phonological awareness. They understood that it had something to do with the sounds of our language, but some believed it included a letter-sound connection also. For example, one instructor explained it as “speech and letter-sound relationships.” Most did not talk about the ability to manipulate, blend, or delete sounds in words, or hear parts of words, such as syllables and chunks. Defining phonemic awareness seemed easier (5 correct definitions). Two instructors believed phonological awareness and phonemic awareness were the same.

Only one instructor rated phonological awareness as not very important to reading success. Six instructors felt it was very important. However, half of the instructors did not place strong emphasis on this area in their curriculum. Some just introduced the topic and some mentioned that students learn more on this topic at the graduate level in their training. Two instructors spent seven or more hours on the topic, but one of them did not teach his students how to formally assess for phonological awareness. Three instructors spent between four and six hours on the topic; two commented that they incorporated it into other areas.

Only five of the instructors taught their students how to assess for phonological awareness and all five reported that their students got to practice these assessments on elementary-age children. However, two of the instructors taught their students to use running records and/or individual reading inventories, which would not give an assessment of phonological awareness. This again ties into the
fact that some instructors believe that phonological awareness involves printed language instead of just oral language. Five instructors also taught strategies to strengthen phonological awareness and some of their students got to practice these strategies with children.

Some instructors were almost apologetic about the time they spent teaching phonological awareness, with terms like "unfortunately, sorry to say" written next to responses regarding how much time was spent on this area. "Limited time" and the topic being covered more thoroughly at the graduate level were reasons mentioned for the short amount of time devoted to phonological awareness.

When teachers working in the field were surveyed, it was obvious that there was a problem in the area of teacher preparation regarding phonological awareness. Of the 48 teachers responding to the survey, only four were able to give a fully correct definition of phonological awareness. Twenty-seven teachers had a partial understanding of what it was, but like the university instructors, were more in tune with phonemic awareness and did not understand the bigger picture of being able to manipulate sounds and parts of words. Fifteen teachers thought phonological awareness was just a new term for phonics. For example, one teacher wrote, "just a fancy new way to say phonics" and another called it "the latest trend in reading."

Teachers reported that they were not taught how to assess (86%) or teach (82%) phonological awareness skills during their college coursework, neither at the undergraduate or graduate level. Fortunately, some teachers have had training or attended workshops that covered phonological awareness and how to teach those
skills. The four teachers who were able to give a complete definition of phonological awareness all had had special training or done research on their own. Only one teacher who partially understood what phonological awareness was felt that it was not important to the reading process; all thirty of the other teachers felt it was important. Seventy-one percent of all the teachers surveyed were very interested in learning more about phonological awareness and several others were possibly interested. Of the twenty-five percent who were not interested in an in-service, half of them believed phonological awareness was phonics.

Summary

Phonological Awareness is not a new idea. It is not the “latest trend” in teaching children how to become strong readers. Extensive research has been around for over twenty years showing how important this awareness is to students learning to read. Research has also shown that children lacking in these skills are more likely to be retained, be referred for special education services or drop out of school. Excellent programs have been developed to help children achieve phonological awareness in kindergarten and first grade, before they start to fall behind other students who reach this awareness at a more typical rate and with less intensive training. Researchers have worked hard to make sure that the interventions they developed were embedded in strong integrated reading and writing programs to limit the transfer of learning problems that some researchers discovered in earlier studies. Researchers have also made sure that the interventions they developed could be used
Researchers have done their part to make the importance of phonological awareness known to the educators in our country. It is of great concern that teachers graduating from our colleges and universities are entering the teaching profession unprepared for the formidable task ahead of them – teaching their young students to become proficient readers. The results of the University Survey are inconclusive, since most of the instructors report teaching at least one to three hours of phonological awareness; most more than that. However, some of the instructors confused decoding printed language with phonological awareness, so it is difficult to judge how much instruction is really related to phonological awareness.

The results of the Teacher Survey, however, suggest that our colleges and universities are not emphasizing phonological awareness instruction in great enough detail (if at all) in their reading methods courses. Over 85% of the teachers reported that they did not remember receiving any training.

Universities and colleges need to look at the research and revamp their teacher preparation programs to include instruction on what phonological awareness is and how to teach and assess for the skills young readers need to be successful in school. Instructors need to make sure that they understand and are well-versed in the research about phonological awareness and are able to convey the information to our future teachers.
In the meantime, the task of educating teachers already in the field, will have to fall on individual school districts. Many teachers have completed their Master Degrees and do not plan to take more graduate level classes. Therefore, the school districts will have to provide in-service training to help their teachers learn about this important pre-reading knowledge.

It is the researcher's hope that this compelling information will cause instructors to take a look at their reading methods courses and determine if they are covering the topic of phonological awareness as thoroughly as they should. If there are weaknesses in that area, they will hopefully strengthen their classes to give new teachers a solid foundation to build their students' skills in the area of reading. This knowledge can equip teachers with a better understanding of a student's struggles in the reading process and lead to more theoretically sound instruction.
REFERENCES


Appendix A

University Survey
University Survey

Hello! I know this is a busy time of the semester, but I would really appreciate your help today. My name is Nancy Justin. I am a Grand Valley State University graduate student and am currently working to complete my master’s thesis. The purpose of my study is to learn about the information college and university faculty teach pre-service and in-service teachers about phonological awareness and its impact on reading. To gather this information I have constructed a survey on this topic. I am wondering if you would have approximately **10 minutes** to respond to the survey items. Your participation is solicited, but is strictly voluntary. You may withdraw your permission at any time during or after the study without fear of future prejudice or penalties. Do not hesitate to ask questions about the study. Please be assured that confidentiality will be maintained throughout the study. All information collected will be assigned a number so that names will not be used. Only the researcher compiling the data will be able to match names to numbers. At no time will any information be shared that would make identifying you possible. By completing the survey items you are agreeing to participate in the study.

**To respond to this survey you can:**
1. Print the survey off, write your answers on the paper, and then fax it to me at (616) 388-2015 c/o Bruce Justin, or
2. Type your responses to the questions, being sure to use the number of the question (you don’t have to retype the question), and send me an e-mail reply.

*Thank you for participating in my study. Do you have any questions or comments for me? If you would like a summary of my findings, please let me know. Thank you for your time!*

Survey Questions

1. Position with the University/College:

   - Full professor
   - Assistant Professor
   - Instructor
   - Adjunct
   - Visiting Professor
   - Other (specify please)
2. Education (check all that apply):
   Degree: BA/BS From where:
   Masters From where:
   Ph.D. From where:
   Other _________ From where:

3. Name of reading/literacy class you teach:

4. Number of semesters or years you been teaching this class:

5. For your students, how do you define phonological awareness?

6. For your students, how do you define phonemic awareness?

7. On a Likert-like scale ranging from 1 (not very important) to 5 (very important), how would you rate the importance of phonological awareness to reading success?

   1  2  3  4  5

8. On a scale of 1 to 5 with 1 being “not much emphasis” and 5 being “strong emphasis”, how much emphasis do you place on phonological awareness in your reading/literacy program?

   1  2  3  4  5

9. How much of your class time is spent on phonological awareness during the semester?

   0 hours  1-3 hours  4-6 hours  7 or more hours

10. At what age do you think children should be assessed for phonological awareness? ________________
11. Do you teach your students how to assess for phonological awareness?

   Yes  No

   What assessment do you use?

12. Do your students get to practice the assessment on children?

   Yes  No

   On fellow students?

      Yes  No

13. Do you teach specific remediation strategies?

   Yes  No

   If yes, what types of strategies do you teach?

14. If yes, do your students get to practice these remediation strategies on children?

   Yes  No

   On fellow students?

      Yes  No
Appendix B

Teacher Survey
Help!

My name is Nancy Justin and I am the Special Education teacher at Gull Road Elementary. I am trying hard to complete my thesis so I can earn my Masters Degree. I know you have filled out a hundred forms to complete this school year, but if you would take just 5 minutes to complete this survey, I would be so grateful!

The purpose of my thesis is to find out if teachers are trained to teach phonological awareness skills, assess for those skills and remediate if there is a problem.

Please be honest when you fill this survey out. Your name will never be used in reporting the results (you do not even have to put your name on it). All the data will be compiled into general information. Please take a couple minutes to fill out the survey right now and place it in the enclosed self-addressed stamped envelope and mail it right back.

I really appreciate your help! Thanks!

Nancy Justin
Phonological Awareness Survey

1. Your education:
   Where and when did you earn your Bachelor’s Degree?
   __________________________________________

   Are you currently taking graduate classes? If yes, where at?
   __________________________________________

   Do you have a Master’s Degree? If yes, from where and the year?
   __________________________________________

2. What grade do you currently teach? ________________

3. How would you define phonological awareness?
   __________________________________________
   __________________________________________
   __________________________________________

4. Do you feel phonological awareness is an important part of the reading process?
   _________

5. Were you taught in your college courses how to teach phonological awareness skills? ________ If yes, what types of activities do you use? ________________
   __________________________________________

6. Were you taught in your college courses how to assess for phonological awareness? _____ If yes, what type of assessment do you use?
   __________________________________________

7. Were you taught in your college courses how to remediate for low phonological awareness skills? ________ If yes, what type of remediation do you use?
   __________________________________________

8. Would you be interested in learning more about phonological awareness during an in-service day? _________

That’s it! Thanks so much for your time!
NAME: Nancy S. Justin

MAJOR: (Choose only 1)

- ____ Ed Tech
- ____ Elem. Ed
- X____ K-12 Sped LD
- ____ CSAL
- ____ Ed Leadership
- ____ G/T Ed
- ____ Middle/High School
- ____ Adult/Higher Ed
- ____ CSAL
- ____ Sec/Adult
- ____ Ed Leadership
- ____ Middle/High School
- ____ Adult/Higher Ed
- ____ Sec/Adult
- ____ Ed Leadership
- ____ Middle/High School
- ____ Adult/Higher Ed
- ____ Sec/Adult

TITLE: THE IMPACT OF PHONOLOGICAL AWARENESS ON READING ACQUISITION: DISCREPANCY BETWEEN RESEARCH AND PRACTICE

PAPER TYPE: (Choose only 1)  SEM/YR COMPLETED:

- ____ Project  Summer/2001____
- X____ Thesis

SUPERVISOR'S SIGNATURE OF APPROVAL

Using the ERIC thesaurus, choose as many descriptors (5-7 minimum) to describe the contents of your paper.

1. Phonological awareness  7. Special Education
2. Phonemic awareness  8. Remediation
3. Early Intervention  9. Outcomes of Treatment
4. Reading Readiness  10. Language Processing
5. Research Practice Discrepancy  11. Teacher Training

ABSTRACT: Two to three sentences that describe the contents of your paper.

Twenty years of research has shown the impact that lack of phonological awareness has on a child’s ability to learn to read and ultimately his chance for success in school. However, teachers have not used this important information to teach and assess students for these necessary skills. This study looks at the possible reasons why there is such remarkable discrepancy between research and practice.