PHONOLOGICAL AWARENESS INTERVENTIONS TO PROMOTE

READING SUCCESS IN KINDERGARTEN

LESLIE IRVINE-APPS

B.Ed., University of British Columbia, 1978

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Abstract

A significant challenge facing educators is the task of understanding how children learn to read. While the variables that contribute to reading success are many and diverse, phonological awareness deserves attention. In this study, a literature review was conducted, relating recent findings to the development of a phonological awareness intervention plan. This plan complemented the classroom teacher's reading program and incorporated oral language and print models, concrete supports, scaffolded skills, explicit language and motivational games. A case study of one kindergarten student experiencing phonological challenges ensued. The research and case study reveals the value of an understanding of current research developments and sharing of information between professionals, and the importance of understanding the unique needs of each child in the classroom.

Table of Contents

List of Figures

Introduction

Children entering kindergarten bring diverse skills, knowledge, and experiences. Each child's prior experiences will support the quest to become a successful reader. As stated by the National Institute of Child Health and Human Development (NICHD) (n.d.), "Most children will learn to read, no matter what method is used to teach them. But unless they receive special help, at least 20 percent of them can not master this simple task that the rest of us take for granted" (p. 21). This 20 percent of the population, the at-risk children, are of most concern. The 2001 BC Foundations Skills Assessment (Steffenhagen, 2001) shows that 22 percent of Grade 4 students in B.C. read below grade level. A deeper understanding of reading and the factors that affect attainment of this skill are necessary in order to effect change. One factor worthy of consideration is phonological awareness. Trehearne (2000) elaborates on the significance of phonological awareness.

> Phonological awareness is an understanding of the sound structure of language – that is, that language is made up of words, syllables, rhymes, and sounds (phonemes). Students do not have to know how to name letters or their corresponding sounds to demonstrate phonological awareness; it is first learned through oral language. Phonemic awareness is one component of phonological awareness. Phonemic awareness is an understanding of words at the level of individual sounds – how to segment, blend or manipulate individual sounds in words. Phonics is an understanding of sound and letter relationships in language. Phonological awareness is necessary for effective use of phonics in reading and writing (p. 118).

1

Educators have many opportunities to reflect upon current research and instructional practices. Dewey (1916) was one of the first educators to promote reflection as a means of professional development for educators. He believed critical reflection to be one of the more important qualities a teacher must have, and that its impact on the quality of schools and instruction was greater than the transmission of teaching techniques.

This paper will include a discussion of recent research developments and issues related to phonological awareness and reading success. As well, the process of developing intervention plans will be analysed, with a focus upon a specific plan involving a kindergarten student, identified as having phonological awareness challenges.

Method

Research Questions

For my Ed 6000 project, I chose to reflect upon the process of planning

phonological awareness interventions. This project had three main components: (a) a

literature review consisting of data gathered from a variety of sources; (b) development

of a phonological awareness intervention plan; and (c) performance of a case study of one

kindergarten student's progress through a phonological awareness intervention plan.

This paper was originally conceptualised to be a comparison of three case

studies of kindergarten students. The original research question asked: What are some

factors that affect phonological awareness interventions provided to three kindergarten

students diagnosed with a phonological disorder? It quickly became apparent that in order

to do a good case study, I needed far more information and expertise than I had in this

area. This directly affected the research question to be explored.

The research question posed in this paper became: What factors are important

for a phonological awareness intervention plan and the interventions provided to one

kindergarten student diagnosed with a phonological disorder?

Literature Review Method

Research resources were collected from university libraries, district curriculum

guides, and internet sources. Leading authors' published works were researched and

issues relating to this project were reviewed, analysed and detailed.

Phonological Awareness Intervention Plan Development and Case-Study Method

Participant environment. The elementary school used for this project has a high

incidence of students with communication challenges. The Speech and Language

Pathologist's (SLP) screening of kindergarten students revealed a need for early intervention language development support including phonological awareness. The school district in question had one SLP and a potential caseload of 400 students. In order to meet the demands of such a large caseload, I was hired to support student language development. This new position was a welcome challenge. I was excited to pursue this area of education and further my experiences with oral language teaching.

Methodology. A variety of descriptive methods helped me understand some of the conditions I studied. Elements of both quantitative and qualitative research were selected for this study. Quantitative research considers variables and statistics whereas qualitative research considers an understanding of words or actions.

Quantitative research. Quantitative research was used to provide data for this case study. Pre- and post-assessment data have been graphed. McMillan and Schumacher (1989) note that a variety of quantitative research instruments can be used for data collection.

Two pre-assessments were completed (see Appendix A). The first of these assessments, which had been developed by an unknown author, was provided by the school learning assistance teacher. This assessment provided information about a student's awareness of the concept of *word*. The SLP suggested the use of The Phonological Awareness Test by Robertson and Salter (1997) to measure the student's awareness of beginning sounds. This second assessment was administered after Day 7 of the case study. The pre-intervention assessment results provided baseline data that was later compared to post-intervention assessment results. The comparison of these results provided one measurement of the student's learning at the end of the case study.

The pre-intervention data were analysed to determine appropriate intervention goals. Two goals were established and rubric score for each of these two goals were developed. Rubric scores were recorded at the end of each intervention session. A rubric score of *one* represented the student's emerging or developing understanding of the goal; a rubric score of *four* represented the student's mastery of the goal.

Assessment activities were designed for each intervention session and provided a second measure of the student's learning. Assessment activity data were collected on informal checklists and used to plan future instruction.

Qualitative research. Qualitative data were collected to develop an understanding of the phonological awareness plan and the case study interventions. Plan data were collected over five months and case study data were collected over six weeks.

The case study provided detailed examination of the phonological interventions used with one kindergarten student. This is an appropriate use of a case study. As Borg and Gall (1983) suggest, a case study can involve an examination of a single subject or group. Data were kept in the form of a portfolio.

I employed action research strategies as I formulated a question and sought an answer in the place where I lived and worked. Townsend (2000) suggests action research as an effective tool for professional development in schools.

Narrative inquiry, also known as "living and telling stories" (Clandinin & Connelly, 2000, p xiv.), was used as well. Polkinghorn (1988) cited Clandinin and Connelly when he said that narratives "are concerned with people's stories: they work with case histories to understand why the people they work with behave the way they do" (p. 15). Connelly and Clandinin (1988) illustrate how we learn more about how to teach

through the process of teaching:

> Teachers tell us that much of what they learn about teaching and what it means
>
> to teach is learned through being a teacher. They tell us they learn through the
>
> process of teaching, from students they work with in and out of their classes, and
>
> from other teachers. (p. 202).

Metacognitive reflections about my own teaching were considered in preparing this

paper. I used a narrative inquiry approach to understand the factors that affect my

practice and the student I taught. The classroom teacher's impressions were also

recorded.

In addition to my reflective journal, I used the following tools to gain an

understanding of my teaching practice in relation to phonological awareness throughout

this study: observational and anecdotal records recording student progress and patterns of

success or challenges over time; document analysis (assessments, term previews, unit

plans); and, reflections regarding the videotaped intervention sessions.

Literature Review

Research Relating Phonological Awareness to Early Reading Success

Bennett and Ottley (1996) cite research on reading that consistently reveals a relationship between phonological awareness and early reading success. As Fitzsimmons (1998) states, "The research is clear and substantial, and the evidence is unequivocal: Students who enter first grade with a wealth of phonological awareness are more successful readers than those who do not" (p. ii). Torgesen (1998) concludes "The most common cause of difficulties in acquiring early word reading skills is weakness in the ability to process the phonological features of language" (p. 2), demonstrating the association of reading difficulties with lack of phonological awareness.

Subsequent research and longitudinal studies validate the above conclusions. Juel, cited by Trehearne (2000), followed 54 children from first through fourth grades and found that the probability that a child who is a poor reader at the end of Grade 1 will remain a poor reader at Grade 4 is 0.88. Trehearne (2000) also cites a longitudinal study in which children from the ages of four to five who received phonological awareness interventions maintained gains until the third grade.

Catts (1999) described three ways that phonemic awareness contributes to the growth of early reading skills. He explained that phonemic awareness helps children understand the alphabetic principle, notice the regular ways that letters represent sounds in words and makes it possible to generate possibilities for words in context that are only partially sounded out.

The positive effects of phonological awareness training, although quite consistent, are only moderate in strength, and do not extend to comprehension. Torgesen

(1998) illustrates that word identification correlates positively with phonological awareness, while reading comprehension is dependent upon other factors. This demonstrates that phonological awareness training contributes to, but is not sufficient for, reading success.

Unfortunately, our understanding of the impact that phonological awareness has on reading is far from complete. Torgesen, as cited by NICHD (2000) observes, "It is possible to bring the reading scores of at-risk children solidly into the average range through properly focused instruction, however three to seven percent remain significantly impaired in critical word reading skills" (p. 10). This research suggests a need for additional understanding in many areas. Many educators realise there is still much to learn.

Progression of Language, Phonological Awareness, and Reading

Phonology (sound structure) is the one of the four areas of oral language. Pragmatics (function), semantics (content), and syntax (form) are the other three (Trehearne, 2000, p. 186). There is a relationship between the development of language and reading. Reading builds upon oral language, including an awareness of sound. In turn, language and sound awareness (phonology) become more developed because of experience with reading.

Models of development illustrate predictable progression and that knowledge of typical development is important. Educators use this knowledge to plan appropriate instruction and to identify children with delayed or disordered development.

Language. Children learn language by listening to the language around them and practising what they hear. In this way, over time, they process and produce language.

Parents, caregivers, and educators informed about language development are in a position to effect change on that learning process. *Milestone* is the term used to describe a language development stage; *receptive language development* to describe the child's understanding of language; and, *expressive language development* to describe how a child speaks. There are multiple factors in the development of language disorders discussed on the Speech-Language Pathology Website. One factor is the often-changing nature of language disorders thought to influence a given child's development. At different stages of development, children have different demands on their language systems. Children with language challenges in the pre-school years may appear to catch up to peers by age five or six years, but then, in later years, when demands change and children begin to learn to read, difficulties become apparent.

Proper understanding of the child's language development is critical to ensure appropriate intervention. This includes an appropriate knowledge of the child's level of phonological awareness.

Phonological awareness. The development of phonological awareness involves a progression from spoken word and syllable identification to blending and segmenting phonemes. Appendices B and C provide two models of this progression. Typically, children develop an awareness of larger chunks of sound before developing an awareness of smaller sound pieces. Trehearne (2000) notes that children learn to manipulate language by segmenting (breaking a word into sound units), blending (combining sound units to make a word), deleting (removing sound units from a word), and substituting (replacing one sound unit with another sound unit making a new word). Manipulation of

language is a phonological awareness task.

Smith, Simmons, and Kameenui (1995) elaborate on two factors that affect the degree of success children encounter when performing phonological awareness tasks. The first of these factors is short term or working memory: Children who have difficulty coding and temporarily storing phonological information are not successful with reading and spelling. These authors describe a segmentation task that requires the use of short-term memory (see Appendix D). The second factor affecting success in performing phonological awareness tasks is the characteristics of the phonological units themselves. The initial and final position units in words are less difficult to identify and manipulate than middle units. Word tasks are easier than phoneme tasks. Smaller units of sound, such as phonemes, are more difficult to identify and manipulate than larger units. Phonological properties of phonemes, such as stops and blends, also affect the difficulty of the task; blends (*tr, pr, bl, cl, sm, sk*, etc.) are easier to identify and manipulate than stops (*t, d, p*) (Smith, Simmons, & Kameenui, 1995).

Catts (1999) discusses three areas of phonological awareness linked to reading achievement. These are phonological retrieval (the ability to get sounds from memory), phonological memory (the ability to retain sound knowledge) and phonological production (the ability to make speech sounds). Catts considers that there is a possible association between expressive language disorders and reading abilities. "These children have difficulties with sound segments in both complex and simple contexts" (p. 116).

Phonological disorder. It has been difficult to develop an understanding of the diagnosis *phonological disorder*. As Bowen (2001) explains in her website, Synonyms for Developmental Phonological Disorders, all of the following terms are referred to in

literature as synonyms of *developmental phonological disorder*: *phonological disability,*

phonomotor disability, phonological syndrome, phonological disorder, and *expressive*

phonological impairment. Other referenced terms for this diagnosis are variations of the

following, with or without the word *learning*: *functional articulation disorder, non-*

organic phonologic(al) disability(ies), developmental intelligibility impairment(s), and

child(hood) phonetic delay(s). Bowen's (2001) website, Speech Book Notes for Parents

and Caregivers, provides the following definition.

> Developmental phonological disorder is a language disorder in learning the *rules*
>
> about where speech sounds are placed within words. Children with developmental
>
> phonological disorders have difficulty learning and organising all the sounds
>
> needed for clear speech, reading and spelling (p. 1).

Bowen (2001) in her website, Speech Disorders in Children, suggests five possible causes

of phonological disorder which may occur singly or in combination.

1.   The child is overwhelmed by the complexity of the sound patterns of

        language.

2.   The child's speech maturation (readiness) may be severely delayed.

3.   The restricted speech system becomes *habit* holding back speech

        maturation.

4.   The child has poor perception and awareness of how their speech

        sounds, and the difficulty other people have understanding them.

5.   The child has a specific difficulty initiating changes in their sound

        system, and knowing how to organize their sound system in a consistent

        way. (p. 3)

Bowen (2001) also comments on the complexity, in noting that each childhood speech sound disorder receives a different type of treatment, and each treatment program is individually tailored to the needs of the particular child in therapy. According to Winzer (1999), "A guaranteed method to correct speech and language difficulties simply does not exist, and diversity in remediation programs characterizes the status quo" (p. 138).

Reading. Snow, Burns, and Griffin (1998) describe the developmental stages through which children progress when learning to read (see Appendix E). There is much to learn about the relationship between the development of language and reading. Roth, cited by NICHD (2000), contends "Certain language skills may be predictive of literacy problems at one age of a developmental stage but not at another" (p. 7). Further understanding of this complex and fluctuating relationship will help to maximize reading success.

Emerging research. Emerging research suggests that present models of language development are unsatisfactory. Scarborough, cited by NICHD (2000), states that "Oral language proceeds nonlinearly (in spurts and plateaux)" (p. 9). This conclusion is indicative of a new way of looking at language development. Scarborough elaborates on this non-linear model. "Language disorders decreased over time giving the impression of a *Recovery* by age five. However, the majority of the children evidenced reading disabilities by Grade two" (NICHD, 2000, p. 9). While the child's symptoms appear to be resolved, the underlying factors remain which will become apparent at another stage of development. Future research will hopefully help educators utilize these findings. Instruction and intervention plans could then be developed to maximize success in

literacy and language.

Environmental and Biological Variables Affecting Phonological Awareness

Environmental factors. Early life experiences affect the development of phonological awareness skills. Wetherby and Prizant (2001) refer to the "use it or lose it" principle. The developing brain responds to stimulation. If a child does not have adequate emotional, physical, cognitive and language stimulation, neurons can be permanently lost. Young (1999) considers oral language, print/book awareness, and phonological awareness the areas that parents, caregivers, and early childhood educators can develop to promote future reading success. Young implies that children need to have extensive experiences with oral language from birth onwards to acquire understandings of the meanings, structures, and functions of language.

Gabriel (2001) suggests that as early as two or three months, a child becomes familiar with the sounds of language and how to separate and reproduce them. Early awareness of language becomes a building block for future language. A traditional belief is that each step is dependent on the successful completion of previous steps. Biological factors join environmental factors in shaping future potential for phonological awareness.

Biological factors. Our individual and distinct biological make-up affects our future language development, including our phonological awareness. New understanding of biological factors may help explain why children raised in environments that would generally nurture positive language development have had trouble in the areas of language learning, and, in particular, phonological tasks. New technology is providing fascinating information about the inner workings of the brain. Emergent research is revealing that brain activation patterns differ between people with reading disabilities and

people who are skilled readers (Shaywitz & Shaywitz, 1999). Similar results, cited by

NICHD (2000), show a relationship between specific functions of the brain and

phonological task performance. There is great potential that future research will

determine the biological factors that may improve our ability to identify and intervene

with at-risk children.

<u>Prevention, Early Identification and Intervention</u>

Research has demonstrated that children with delayed language do not catch up

to typically developing peers without intervention. The *wait and see* approach may result

in missed opportunities for early identification and intervention. Arlington and

Cunningham, as cited by Trehearne (2000), state that, "Waiting for development to

emerge from biological readiness only further delays literature and language learning" (p.

353). This intervention is critical for the development of a child's necessary language

foundations, including phonological awareness, in order for the child to have reading

success.

Several studies have documented a parallel finding. Torgesen (1998) cites

studies to show that the poor first-grade reader invariably continues to be a poor reader.

He discusses the exponential accumulation over time of the consequences of a slow start

in reading. Reference is made to a syndrome known as "The Matthew Effect" ("the rich

get richer and the poor get poorer"; coined by Keith Stanovich, a well-known

psychologist who has done extensive research on reading and language disabilities).

Torgesen (1998) argues that the best solution to the problems of language and reading

challenges is to allocate resources for early identification and prevention.

<u>Prevention.</u> Parents, caregivers, and birth-to-age-five program staff have the best

opportunity to prevent a majority of phonological awareness challenges. Rich interactive language opportunity is the only prevention needed by most children. Experience with literature and print complement childrens' early experiences with language, and further prepares them for kindergarten and early reading instruction. According to Catts (NICHD, 2000), "It is harder to remedy than prevent reading difficulties" (p. 6). Clearly, the emphasis should be on prevention.

Prevention opportunities that will prepare the child for formal reading instruction include: print awareness, knowledge of letters and frequently used words, playing with and analysing sounds, and literacy motivation (Snow, Burns, & Griffin, 1998).

Part of the prevention process involves ensuring families and birth-to-five program settings offer these opportunities. Snow, Burns, and Griffin (1998) suggest areas where young children benefit from parent and caregiver support. These include one-on-one conversations, reading books, providing writing materials, supporting dramatic play, demonstrating the uses of literacy, and maintaining a positive and playful atmosphere around literacy activities.

The awareness of the important relationship between pre-school development and later reading success is growing. If this results in increased resources for prevention, more children will enter kindergarten with the skills necessary to learn to read.

Early identification. It is possible to identify children who are at risk for future language and reading challenges before they begin to talk. Infant behaviour can reveal future learning challenges. Wetherby and Prizant (2001) suggest seven language predictors: use of emotion and eye gaze, prelinguistic communication, gesture, sound

production, use of words and objects and understanding of words. Wetherby and Prizant

(2001) elaborate further, stating that children who are delayed only in the use of words

are very likely to catch up on their own, while children who are delayed in several of the

other predictors are likely to have persistent problems.

Early intervention. Early intervention is critical, according to Snow, Burns, and

Griffin (1998). who suggest that intervention beginning during infancy or pre-school age

has a greater impact on outcomes for children and families than providing services at

school age. Instruction in phonological awareness is critical to early reading success and

should begin soon after birth. As previously discussed, a two or three-month-old baby has

the ability to develop a sense of phonological awareness by identifying and reproducing

small sound segments. Opportunities to play with the sounds of language encourage

future learning.

Parents and caregivers must understand the relationship between the

environment and early brain development. Early intervention programs teach families

about vital interactive language and literacy skills. Spending valued resources on birth-to-

age-five programs is one way to support early reading success. It would be very

beneficial for the public school system to have fewer children who needed additional

reading-related instruction.

Assessment

Assessment involves gathering information or evidence about student learning.

Assessment is only useful if it contributes to educational decision-making (Cooper,

1999). Torgesen (1998) suggests that the use of tests of phonemic awareness will provide

a new confidence in being able to identify children at-risk for reading failure before

reading instruction begins.

Generally, screening is the preliminary step of the assessment process (Winzer, 1999). This process can help identify children who have challenges in the area of phonological awareness. A sampling of what children *know* and *can do* can be obtained from multiple sources including parent reports, teachers and other worker reports, tests, informal tools that augment tests, and checklists. These data present a relatively complete picture of the child's current functioning. Screening is inexpensive, brief and easy to administer, and it utilizes easy-to-interpret tools (Hills, 1999).

According to Chard and Dickson (1999), screening alone is not sufficient for decisions about a child's placement. Screening tools gather general data and are therefore less reliable than diagnostic assessments. Diagnostic assessments can identify the specific learning needs of those children identified as at-risk for reading difficulties through the screening process. This identification of specific student needs, in turn, allows identification of target areas for intervention. There are a number of commercial tests for the assessment of phonological awareness and/or phonemic awareness that are available for use with kindergarten children.

Adams, Foorman, Lundberg, and Beeler (1998) recommend assessing groups of two or three, administering the test before instruction to predict level of phonological awareness and subsequent intervention, providing some instruction in phonological awareness before testing with kindergarten students, repeating the assessment at intervals of one to two months, assessing children with lower scores on a broader basis to reflect causal factors such as attention span or lack of self-control and using relevant games and materials as indicators of a child's performance.

Torgesen (1998) recommends testing two areas of knowledge: knowledge of letter names or sounds and phonemic awareness. Lack of letter knowledge is the best predictor of reading difficulties. Phonemic awareness contributes additional predictive accuracy. Smith, Simmons, and Kameenui (1995) cite Yopp who suggests that a combination of tests provides greater and more significant predictive validity of beginning reading success than a single test. Others, such as Adams, Foorman, Lundberg, and Beeler (1998), appreciate the value of minimal formal assessment and advocate basing educational decision-making on daily informal assessment. In either case, the types of errors produced by a child give insight into the strengths and weaknesses of that child's phonological awareness.

Typically, screening kindergarten students for risk factors associated with early reading difficulties occurs in the second semester of kindergarten (Chard & Dickson, 1999). Torgesen (1998) believes that testing at this time is the most efficient way to identify children who will require intensive preventive instruction in phonemic awareness and other early reading skills. He explains that testing in the first semester may not be accurate due to the fact that some students will be incorrectly identified as at-risk simply because they have had limited previous learning opportunities.

Assessment influences instructional planning. Educators who reflect upon data collected during phonological awareness interventions can use these assessment data to plan future instruction. Trehearne (2000) supports the practice of assessment-based instruction. Examples of informal daily assessment tools used to observe student progress and plan consequent strategies for subsequent instruction include checklists, observation and conferencing notes, and analyses of student work. Scarborough, as cited by Torgesen

(1998), believes that our ability to predict which children will have reading difficulties is still far from perfect. Almost one half of the children identified during kindergarten as *at-risk* turn out not to have serious reading problems by the end of first grade. Torgesen (1998) believes that current procedures also fail to identify the approximately 22 percent of children who eventually end up with serious reading difficulties. Snow, Burns, and Griffin (1998) are not satisfied with screening instruments for identifying children at-risk to ensure early, effective intervention. They advocate that classroom teachers need better assessment tools and strategies for day-to-day use to verify that children are reaching curricular goals on schedule, to identify children in need of extra help or opportunity, to specify the particular nature of their needs, and to recognize when difficulties have been adequately overcome. In addition to tools, educators need knowledge and skill to positively affect instruction.

Instruction and Curriculum Design

The knowledge base needed for effective instruction is impressive. Snow, Burns, and Griffin (1998) comment on several areas requiring skill and expertise, including phonological awareness. They propose that in addition to stimulating oral expressive language, language comprehension, and print awareness, pre-school and kindergarten teachers should know how to support phonological awareness and to link recognition of sounds with letters. Effective instruction should incorporate what we know about the role of phonological awareness. Fey, Catts and Larivee (1995) contend, "Phonological awareness can be taught to kindergarten and first-grade children" (p. 16). Catts (1999) states, "It is possible to have substantial impact on growth if proper instructional conditions are in place" (p. 147). Catts describes these conditions as being more *explicit,*

more *intensive*, and more *supportive* than is offered in most schools. Incorporating research results into design decisions will maximize the effectiveness of teaching reading success.

School District #44 (1999) and Trehearne (2000) support a balanced approach to reading instruction, as a single method of teaching reading cannot meet the needs of all children. Research does not support whole language only or phonics only instruction. Best practice occurs when both literature and phonics are valued. Balanced literacy is supported by the National Center to Improve the Tools of Educators (NCITE) (1996). Another proponent, The Wright Group (2001), suggests approaching reading instruction through a blending of strategies and methods, including phonics and basic skills instruction and immersion in meaningful literature and writing. Increasing numbers of educators now embrace a balanced approach to literacy instruction. Snow, Burns, and Griffin (1998) observe that while effective educators plan instruction with the individual needs of each student in mind, common materials and strategies are utilized to create an effective teaching environment.

Trehearne (2000) discusses the essential elements of effective kindergarten intervention programs. She recommends sessions of 15 to 20 minutes each day individually or in small groups, direct teaching of phonological tasks, strategy application immediately after instruction, planned instruction using ongoing assessment, and frequent home communication.

The Early Literacy Web site supports the argument that children at-risk need explicit instruction in phoneme awareness if they are to become skilled readers and spellers. This is consistent with Snow, Burns, and Griffin's findings. Hempenstall (1997)

discusses the drawback of using implicit instruction for at-risk readers. He concludes that explicit instruction is the recommended instructional strategy as implicit phonics methods are founded on the erroneous assumption that students possess the requisite skills necessary to enable the comparison of sound within individual words.

Phonological awareness research supports systematic, deliberate, and methodical instruction. Hempenstall (1997) supports the notions that that at-risk students require careful systematic instruction. Incidental or discovery instruction assumes students will learn to read without systematic instruction. Systematic instruction is required to support the unnatural process of reading.

Strategies exist which may help maximize reading and language success. In addition to props such as puppets or pictures to make teaching more concrete, the use of "concrete representations of sound," such as blank tiles, make "mental manipulations overt" (Smith, Simmons & Kaneenui, 1995). It is also suggested that the teacher should model sounds for the student to imitate. Instruction should emphasize letter-sound correspondence. Many beginning kindergarten students are unfamiliar with the alphabet. The use of written letters may distract students from the intent of the activities. Teachers are encouraged to use oral activities with these younger children. Second-semester kindergarteners with letter knowledge benefit from attaching the visual symbol to the oral stimulus, resulting in greater gains in phonemic awareness.

Scaffolding is an important strategy. "Taking students from where they are in their literacy development and scaffolding instruction is what all effective teachers do" (Trehearne, 2000, p. 548). The goal is for students to move from what they can do with support to working at that same level without support.

Phonological awareness skills affect reading success more than other skills, according to recent research. "Segmenting and blending correlate positively with beginning reading acquisition" (Trehearne, 2000, p. 119). Knowing when children will benefit from specific skill interventions is also important. Sensenbaugh (1996) notes that auditory blending and segmenting are precursors to formal reading instruction. While blending is generally a skill more easily grasped than segmentation, they are complementary processes and should be taught together.

What is the nature of the relationship between phonological awareness and reading? Do children need to be phonologically aware before they can begin to learn to read? Does learning to read facilitate phonological awareness? Correlation does not imply causation. Many studies have attempted to develop an understanding of reading and the dimensions of phonological awareness. Smith, Simmons & Kameenui (1995) in their study of good and poor readers reveal that phoneme segmentation training is only successful when implemented after letter-sound instruction. Blending and segmenting phonemes closely relates to reading, more so than blending and segmenting syllables.

Tower (2001) suggests, "The language of literacy is learned through effective teaching" (p. 8). Early concepts such as *top/bottom, same/different, first/last, beginning/ending, before/after* need instruction along with vocabulary such as *word, sound,* and *letter*. Tower (2001) implies that a metaphonological approach to instruction supports children as they learn language necessary to reflect and analyse phonological tasks. Bowen (2001) relates poor phonological awareness and metalinguistic skills to difficulties in acquiring pre-literacy skills. In her website, Encouraging Pre-Literacy

Skills in Children with Speech and Language Disorders, Bowen lists the following

examples of the metalinguistic skills needed for children to become proficient readers.

1. Understanding of the *word sound* meaning *speech sound.*

2. Understanding of the *word* meaning spoken *word.*

3. Understanding that words have meanings and that they can *make sense* or not.

4. Understanding there is a connection between *spoken* sounds and words and *written* sounds and words.

5. Understanding that you have to say the *right* word to make sense (knowledge of communicative adequacy or communicative effectiveness).

6. Understanding that you have to say the word the *right* way to make sense.

7. Awareness of and the ability to perform revisions and repairs (self corrections), and metalinguistic knowledge of when or why we make revisions and repairs.

8. Judging when a word sounds *right* and when it sounds *wrong.*

9. Metaphonological knowledge of phoneme-grapheme (word-to-letter) correspondences or sound symbol relationships (e.g., recognising that the letter *s* corresponds with the speech sound |s|.)

Phonological awareness instruction should not take place in isolation. A study

by Hatcher, Hulme, and Ellis, as cited in Stackhouse and Wells (1997), is instructive for

the educator considering a student's literacy development. Included in this study were 65

children who were non-readers and who tested below average on phonological awareness tasks when starting school. Four groups were followed: Group A received only phonological awareness training; Group B received only reading instruction; Group C received phonological awareness training and reading instruction; and Group D received no training outside of the classroom experience. Group C was the only group to make significantly more progress than the control group D. The conclusion of this study is that phonological awareness training alone does not necessarily facilitate literacy development. Literacy development is dependent on a child's ability to link phonological awareness skills to letter knowledge and reading experience. According to Stackhouse and Wells (1997), Hatcher, Hulme and Ellis termed this the *phonological linkage hypothesis*.

Snow, Burns, and Griffin (1998) reviewed the well-known *Reading Recovery* program developed in 1979 by Marie Clay. Their review demonstrates the value of linking areas of reading instruction. According to Snow, Burns, and Griffin, the original *Reading Recovery* program was modified to include a phonologically oriented component. They concluded that first grade participants in the modified program were more successful in reaching their reading goals. Catts (1999) cites a carefully controlled study by Iversen and Tunmer where explicit training in phonological decoding was added to the *Reading Recovery* program. Results demonstrated that explicit instruction in phonics increased the efficiency of the *Reading Recovery* program by approximately 37 percent.

According to Cole (1995), curriculum models can have a significant impact on a child's language development. Three topics: programs, service delivery, and service

providers deserve discussion.

Snow, Burns, and Griffin (1998) question the benefits of packaged phonological awareness instruction programs. Sequentially laid out instructional tasks simplify the complex nature of supporting students who are at-risk. One drawback of relying on packaged phonological awareness programs is that the program follows an instructional sequence not determined by a student's individual instructional needs. Given that reading instruction should be tailored to fit the individual learner's needs, phonics instruction should be systematic and paced accordingly. One wonders if educators with an up-to-date knowledge base would be well served by these programs. The specific needs of each child should shape the design of the intervention. No two children share the same set of strengths or weaknesses. An effective intervention is one that utilizes a child's strengths in order to build on the specific areas in need of development. Ongoing monitoring and true reflection of daily student assessment should ensure that student instructional needs set the instructional agenda, not the prescribed activities from published programs.

Traditionally, pullout models have provided interventions for students needing support in language development, including phonological awareness. Currin and Penner (1995) consider control over visual or auditory distractions an advantage of this type of model. However, lack of generalization of new skills to daily communication situations, the reduced naturalness of pullout settings, negative effects of removing children from the class and the political push for inclusion are considerations that discourage the use of a pullout model. Classroom-based or collaborative programs are examples of alternative service models that attempt to move the setting of intervention from a separate room into the classroom environment.

Edelen-Smith (1997) advocates integrating phonological awareness activities in meaningful contexts and in conjunction with the reading approach used in the classroom. Material used actively in the classroom, such as a story or picture book just read and discussed may also be used effectively to target phonemic awareness of specific words.

Whitney (2001), in her web site, points out that it is sometimes more effective and less distracting to instruct students with language challenges outside of the regular classroom. Nevertheless, the Speech and Language Pathologist (SLP) can offer special skills and perspectives inside the regular classroom. CASPA, The Canadian Association of Speech-Language Pathologists and Audiologists (1995), have prepared a paper endorsing the use of support personnel. However, I have not been able to locate information for this literature review which relates to phonological awareness intervention programs developed because of a shortage of SLP expertise, and designed to be provided by a teacher other than the kindergarten classroom teacher.

Trehearne (2000) observes, "The major prevention strategy is excellent instruction" (p. 72). Instruction can be provided by an individual or a team consisting of the SLP, the teacher, and the support worker. Currin and Penner (1995) suggest that teacher characteristics affect the success of intervention. Considering the complex nature of instruction, one wonders if the strongest support would come from a service provider who understands the theory behind the interventions and is motivated to keep current with research findings.

Synthesis of Literature Review

Current literature related to phonological awareness and early reading success was reviewed. It is not surprising that our current understanding of teaching practices

relating to the acquisition of reading skills is far from complete. Biological factors, environmental factors, and the fluid inter-relationship of these factors during the child's literacy development further complicate the instructional process.

Despite the complexity of the challenge, research indicates that certain strategies are more likely to enhance literacy development. Emphasis on phonological awareness training tasks has led to positive developments for both oral and reading skills. While current research is not conclusive, there is an established causal relationship between mastery of phonological tasks and literacy development. While phonological awareness training in isolation is not an appropriate intervention, one cannot underestimate its significance.

The Development of a Phonological Awareness Intervention Plan

In order to develop an effective phonological awareness intervention plan, it was important to examine the policies and practices within the school district in question. As well, an understanding of the kindergarten classroom-reading program was necessary. This understanding was furthered by the sharing of information between the classroom teacher, the SLP, and me. My knowledge base and understanding of best practice was also furthered through literature review and professional development. Based on all of these factors, an intervention plan was developed which would provide intensive and explicit phonological awareness interventions to kindergarten students identified as at-risk for reading failure.

District Policies and Practices

The school district in which this study took place has a history of supporting the language needs of its students. Recorded history dates back thirty years. According to Hodgson and Irvine (2001), student support has often occurred outside of the regular classroom. Historically, the SLP has been responsible for speech and language support in the elementary schools. Recently, the SLP's responsibilities have also included phonological awareness development. The school district has made a decision to have the SLP focus efforts on programming designed for children from birth to age three. This is consistent with research findings indicating the value of early intervention. However, a lack of available professional staff has left a void in available professional support for students from kindergarten through high school. A need for kindergarten language and phonological support was recognized by the district and additional funding was provided

Developing an Awareness of the Classroom Reading Program

Research suggests that intervention programs should complement the classroom-reading program (Edelen-Smith, 1997). Accordingly, time was spent observing the kindergarten classroom reading program in order to determine the strategies, materials, routines, and terminology employed by the teacher and the students' attitude towards reading.

Many researchers emphasize the value of explicit instruction and training (Ball & Blachman, 1991; Snow, Burns & Griffin, 1998). The classroom teacher in question does use explicit instruction. In order to maximize effectiveness and complement the classroom programs, the phonological awareness intervention plan should also incorporate the use of explicit teaching strategies including the purposeful use of language and literacy terms and concepts.

Reading success is affected by the students' attitudes towards reading. In this kindergarten class, many students come to school without a love for literature. While students are eager to begin reading activities, many do not choose to go to the book centre. Reading is not a natural process and children may have come from homes where reading is not valued (NICHD, n.d.). These students are fortunate the value of reading is demonstrated by the teacher, who shows them how to share literature in enjoyable and meaningful ways. An intervention plan that incorporates the element of fun and relates reading to daily activities in meaningful ways should help students achieve greater success.

Sharing of Information

A meeting with the SLP and the classroom teacher was held to determine which

students would benefit from support, to learn about specific student goals and needs, and to discuss assessment tools and procedures. This meeting proved very informative and was instrumental in the planning process. Roles and responsibilities for programming took shape and scheduling needs were taken into account. It was realized that an ideal programming schedule would not be possible as this meeting was held one month after students' kindergarten program began and school timetables were already set.

Bobby was identified as a potential candidate who could benefit from phonological awareness interventions. Intervention strategies discussed included reinforcement of class program and concepts. It was felt that intervention sessions could occur ahead of class lessons, providing Bobby with an opportunity for a head start, or after class, providing an opportunity for review. Bobby's participation during class time was also suggested as a possibility, based on the rationale that distractions would be minimized.

<u>Professional Development</u>

A professional development in-service was organized for teachers. The SLP presented research and teaching practices related to instruction of phonological awareness and early reading success. Catts (1999) states, "It is possible to have substantial impact on growth if proper instructional conditions are in place" (p. 147). Many kindergarten and learning assistance teachers were appreciative of this opportunity to receive professional development relating to effective interventions, and to learn of research findings that could support their students' reading success. The information shared at the professional development session complemented the literature review findings detailed earlier in this paper and provided a common base of information upon which to base

intervention plans.

       While valuable information about instruction relative to phonological awareness and reading success was shared, barriers to intervention plans became apparent. Transition from pre-school to kindergarten is not seamless. Because parents have to provide written consent in order for pre-school information to reach the kindergarten teacher, many kindergarten teachers are unaware that their students have been receiving speech and language support in pre-school. There is a need for open communication between pre-school program staff and early primary school staff. It was not possible, in this instance, to obtain such consent as the professional development in-service occurred six weeks after kindergarten programming began.

Student and Environment Profile

Student Profile

Bobby was chosen as the participant for this case study from a group of 10 students who had been identified by the kindergarten classroom teacher and the SLP as being candidates for language and phonological intervention. Three factors were considered in selecting Bobby as the participant in this six-week case study. First, Bobby was diagnosed with a phonological disorder and would be a good candidate for intensive intervention. Second, his supportive family would allow his participation in a research project, and third, his attendance at school was regular.

Bobby's mother indicated that there is a history of speech problems within Bobby's family. The cause is unknown. She was eager to have Bobby receive support and mentioned the social stigma faced by children with speech problems. Bobby has a sister in Grade one who received speech support during pre-school. Her therapy was less intense and her speech challenge less severe. Now, she articulates clearly, reads, and writes at, or above, grade level. Early life experiences for these two children have included a great deal of exposure to literature. Their home provided appropriate emotional, physical, cognitive and language stimulation, factors Wetherby and Prizant (2001) list as critical for brain development. This case study has not delved into factors relating to home environment, as they are not considered seriously influential in Bobby's phonological disorder development.

Bobby was referred for speech and language services at the age of three. At that time, Bobby had one consonant sound $|h|$ and one vowel sound $|a|$. He had not attained the speech and language milestones typical for children his age as described in Appendix

F. At age four, Bobby did not pass any of the items when screened for phonological awareness. Fitzsimmons (1998) is one of many authors cited in the literature review who discuss the relationship between phonological awareness and reading success. Today, Bobby's speech and language milestone development is typical for a child of his age. However, his speech sounds are disordered and very difficult to understand. His phonological awareness development is emerging. At the midway point in kindergarten, he can recognize and produce words, use rhyme, and segment words into parts. These are three phonological awareness skills described in Appendix B. Bobby has not mastered other areas of phonological awareness. Bobby is able to articulate all vowel and consonant sounds but his ability to monitor his speech is poor and correct sound production is not generalized into speech. Self-corrections are included in Bowen's (2001) list of metalinguistic skills necessary for children to become proficient readers. Continued articulation therapy and phonological awareness interventions in kindergarten were recommended by the SLP.

Bobby is eager to learn and looks forward to daily reading centres when students switch from *have to* to *choice* activities. During reading centre time, the classroom teacher and a support staff member work with small groups on selected skills. Bobby likes to participate in reading centres and is a positive participant, who displays pride in his accomplishments.

Bobby does not choose to look at books when given a choice of activities in the classroom. He says he does not like to read, although he can list many favourite books that have been shared with him during large group reading sessions. Bobby handles books appropriately for a child of his age. This is evidenced by data gathered from an

assessment completed by the classroom teacher (see Appendix G).

In his words, Bobby states that he does not "speak very good." He also states that his Mom has told him to "say stuff slowly" so people understand him. His speech is very difficult to understand. Bobby does not articulate all word sounds accurately and sometimes substitutes sounds at the beginning, middle, and end of words. Examples of his speech include the following:

"suit" is pronounced "duit"

"helicopter" is pronounced "helatopder"

"alligator" is pronounced "alltegator"

"camel" is pronounced "mamel" or "tamel"

Bobby has a well-developed receptive language, vocabulary, and knowledge of general concepts.

While Bobby is an active student, his behaviour is not an issue. Bobby knows and respects the classroom rules. Bobby interacts appropriately with his classmates, is thoughtful and fun loving, and has many friends.

School staff have set goals, listed strengths, and identified needs for Bobby. The goals set for Bobby include:

1.   Improve speech intelligibility;

2.   Improve pre-reading skills including phonological awareness; and

3.   Improve self-monitoring of speech sounds.

School staff see Bobby's strengths to be:

1.   Having a cooperative, independent and confident attitude; and

2.   Having well-developed social skills, vocabulary and language concepts.

Bobby's needs are seen to be for:

1.   Intensive, small group phonological awareness intervention;

2.   Opportunities to develop an awareness of metalinguistic concepts; and

3.   Continued articulation support.

Kindergarten Program

Bobby attends kindergarten two full days each week. On alternating weeks he

attends a third day. Class is in session from 9:00 A.M. to 2:30 P.M. with a fifteen-minute

recess break in the morning and a half-hour lunch break at noon. There are 19 other

students in Bobby's class. Students come from a variety of socio-economic backgrounds

and have had varying exposure to language and literature. Several of the students have

attended pre-school programs. Five students, including Bobby, have received early

speech and language interventions at the local Child Development Centre. I am working

with nine of the students, providing either individual or small-group intensive language

development or phonological awareness interventions.

Bobby's classroom provides a balanced approach to literacy instruction.

Elements of an effective kindergarten program as described by Trehearne (2000) are

evident. Large and small group instruction, abundant literature opportunities, scaffolding,

use of concretes (physical props), direct teaching of phonological skills, letter-sound

correspondence, and opportunities to apply strategies directly after instruction are some

examples of the recommended practices which are of benefit to Bobby.

Articulation Therapy

Bobby receives one individual 30-minute articulation therapy session each week.

A support worker trained by the SLP provides this therapy. The specific, written short-

term goals are to improve speech intelligibility and phonological awareness skills. Recent sessions have focused on |f|, |k|, |c|, |l| sounds and |s| blends. Letter and sound associations and use of modelling are two strategies used in these sessions. These are strategies recommended by Smith, Simmons and Kaneenui (1995) who state that the teacher should model sounds for the student to follow and the instruction should emphasize letter-sound correspondence. Therapy has been held outside the classroom, isolated from the classroom kindergarten program. The support worker has noted that Bobby can produce most sounds but his self-monitoring is poor. An unwritten goal for Bobby was to slow down when speaking so he could be understood. A homework book has been set up to encourage Bobby to practice speech sounds at home.

Phonological Awareness Interventions

As part of this case study, Bobby received two or three 15-minute phonological awareness intervention sessions each week. These intervention sessions, and the phonological awareness plan developed to provide them, as well as the factors that affect their success, are the subject of this project.

Analysis

Two assessments were administered over the course of this case study (see

Appendix A). These assessments helped determine two intervention goals (see Figures 1

and 2). The rationale for using more than one assessment tool was based on the work of

Smith, Simmons, and Kameenui (1995), contend that a combination of tests will provide

greater and more significant predictive validity of beginning reading success than single

tests. In order to minimize the testing process, only selected portions of assessments were

administered. This decision was based on the works of researchers such as Adams,

Foorman, Lundberg, and Beeler (1998), who advocate the value of using minimal formal

assessment and basing educational decision-making on daily informal assessment.

Case Study Student Goal # 1 Concept of *Word*

Rationale:

"Without argument, learning how to read or write depends on a relatively secure notion of what is and is not a word. Yet, research affirms that young children generally possess only the vaguest awareness of words and their nature." (Adams, Foorman, Lundberg, & Beeler 1998, p. 39)

Criterion for Success: The student understands the concept of a *word*.

Rubric Score

1.   The student is developing an understanding of the concept of a *word*.

2.   The student is able to accurately count the number of words in an oral and printed sentence.

3.   The student can demonstrates one-to-one correspondence between the spoken and written word.

4.   The student demonstrates one-to-one correspondence between spoken and written word and leaves space between words during thinking writing.

Figure 1. Case Study Student Goal # 1 Concept of *Word*. Intervention Goal # 1 was formulated and an intervention plan was developed to provide Bobby with opportunities to develop his concept of *word*.

Case Study Student Goal # 2 Beginning Sounds

Rationale: Research shows that the ability to judge whether words have the same first sound is a critical first step in the development of phonemic awareness (Adams, Foorman, Lundberg, & Beeler, 1998, p. 117).

Criterion for Success:

The student understands the concept of beginning and is able to use this information to identify beginning sounds in words.

Rubric Score

1.   Student is developing an understanding of the concept of beginning sound in words.

2.   Given a concrete object student is able to identify the beginning sound.

3.   Student is able to match concrete objects and with the same beginning sound.

4.   Student is able to identify the beginning letter name and sound for the concrete objects.

Figure 2. Case Study Student Goal # 2 Beginning Sounds. Intervention Goal # 2 was formulated and an intervention plan was developed to provide Bobby with opportunities to develop an awareness of beginning sounds.

Assessment and Intervention Plan for Goal # 1 the Concept of *Word*

The first assessment was recommended by the school learning assistance teacher and provided information about Bobby's awareness of individual words in sentences. Results of the pre-intervention assessment showed that Bobby did not have the concept of *word* (see Figure 3). When asked to "repeat a sentence and point to each word" (See Appendix A, Assessment # 1), Bobby ran his finger across the printed text without stopping at individual words. Intervention Goal # 1 was formulated and an intervention plan was developed to provide Bobby with opportunities to develop his concept of *word*.

The intervention plan included strategies, activities, and games designed to teach the concept of *word* (see Figure 4). These included the use of concrete cubes and objects, stepping on mats, clapping, counting, cutting, and explicit talk about the concept of *word*. Oral language and print examples were used. Activities were modelled and games were designed to motivate students.

After seven days of intervention, Bobby did not yet understand the concept of *word* (see Figure 5). He appeared to be successful with this concept when one-syllable words were used (Days 1 to 3). However, when two-syllable words were introduced on Day 4, Bobby reverted to counting word sounds and syllables as words. Bobby experienced some success with two-syllable names and nouns including two-syllable classmate names and the multi-syllable word *caterpillar*. The word *helper* was a continual challenge for Bobby. He consistently classified it as two words, probably because it has two syllables.

Treheane's (2000) research was considered in the development of Goal # 1: "Knowing where individual words begin and end is not important for oral communication
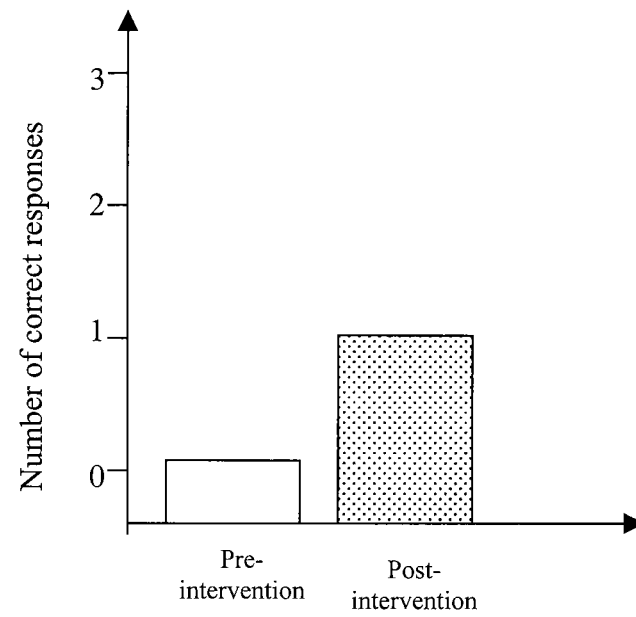
Figure 3. Assessment Results Concept of *Word*.

	Assessment Activity	Notes
Day 1 Goal 1 Score 1	Student places one cube in each square on grid for each word heard while repeating modelled sentence. Student counts the number of words.	Support needed to match cube to word. Counted words correctly.
Goal 1 Score 1	Student takes one step on mat for each word heard (or polysyllabic name) while repeating modelled sentence.	Easily distracted and unfocused. Do not recommend large body movement tasks. Continue with smaller manipulatives.
Additional Comments: Continue grid activity, Discontinue mat activity.		

	Assessment Activity	Notes
Day 2 Goal 1 Score 2	Student places one cube in each square on grid for each word heard while repeating modelled sentence. Student counts the number of words.	Completed task with minimal prompting. Counted words correctly.
Goal 1 Score 2	Student places cube onto print words in response to each word heard while repeating modelled sentence. Student counts the number of words.	Completed task with minimal prompting. Pleased with his success.
Goal 1 Score 2	Student uses scissors to segment (cut) sentences into words while repeating modelled sentence.	Student liked cutting words.

Figure 4. Case Study Assessment Activities and Notes Day 1 to 7 and Day 15 (con't).

	Assessment Activity	Notes
Day 3 Goal 1 Score 3	Student places cube onto print words in response to each word heard while repeating modelled sentence. Student counts the number of words.	Student remembered task. Tended to rush through and was prompted to listen. Once focused student was successful.
Additional Comments: Student has been working with familiar one-syllable sentences taken from class calendar. Next day try familiar sentences that contain two-syllable words. An example of a familiar sentence would be *He is the helper.*		

	Assessment Activity	Notes
Day 4 Goal 1 Score 1	Student places cube onto print words in response to each word heard while repeating modelled sentence. Student counts the number of words.	Two-syllable word helper was included. Student continually counted helper as two words. Student focuses on syllables and has not understood the concept of *word.*
Goal 1 Score ?	Student uses scissors to segment (cut) sentences into words while repeating modelled sentence.	Student cut the sentence into words correctly including the word helper. (This task did not measure the student's ability to count oral words.)

Figure 4. Case Study Assessment Activities and Notes Day 1 to 7 and Day 15 (con't).

	Assessment Activity	Notes
Goal 1 Score 1	Student cuts sentence strips into words, places strips into pocket chart, repeats modelled sentence while finger pointing to each word.	Student did not correctly match two-syllable words.
Additional Comments: Student is very aware of syllables and generally counts syllables when asked to count words. This could be a result of intensive articulation focus on small sound segments. He is not aware of the concept of *word* which is concerning as this will greatly affect his ability to be a successful reader. Further research for intervention suggestions.		

	Assessment Activity	Notes
Day 5 Goal 1 Score 1	Student places cube onto print words in response to each word heard while repeating modelled sentence. Student counts the number of words (cubes) then claps out words in sentence.	Two-syllable names okay. Two-syllable words still considered two words. Student tended to clap out syllables not words
Goal 1 Score 1	Student spins spinner to land on printed sentence, places cubes onto words, counts words, and moves equal number of spaces on game board while repeating modelled sentence. Student claps words.	Two-syllable words used. Student tended to clap out syllables not words.
Additional Comments: Keep working on this goal. Vary activity by moving a marker on a game board when counting words in sentence.		

Figure 4. Case Study Assessment Activities and Notes Day 1 to 7 and Day 15 (con't).

	Assessment Activity	Notes
Day 6 Goal 1 Score 1	Student places one cube in each square on grid for each word heard while repeating modelled sentence. Student counts the number of words.	I would like some direction, as student does not identify two-syllable words as one word unless the word is a noun.
Goal 1 Score 1	Student places cube onto print words in response to each word heard while repeating modelled sentence. Student counts the number of words.	We talked about words having more than one sound. Possibly, try (picture) rebus sentences.
Goal 1 Score 1	Student picks up card with sentence, finger points and repeats modelled sentence, identifies number of words, and move equal number of spaces on game board.	Student was correctly using terminology such as word and sentence.
Additional Comments: Seek out advice about continuing with this goal. I am concerned about confusing and frustrating student as he is still counting syllables not words. Possibly articulation therapy is working at cross-purposes with this goal. Not sure who I should consult about this issue.		

Figure 4. Case Study Assessment Activities and Notes Day 1 to 7 and Day 15 (con't).

	Assessment Activity	Notes
Day 7 Goal 1 Score 1	Student picks up card with sentence, finger points and repeats modelled sentence, identifies number of words, and move equal number of spaces on game board.	Used one-syllable words and generally student pointed one-to-one correctly.
Goal 1 Score 1	Student finger points words in story	Student did not generalize task to story print.
Additional Comments: Discussed lack of success with a resource teacher who is knowledgeable about reading but does not have intimate knowledge of student or program goals. She suggested leaving *word* task and pursuing beginning sounds. The classroom teacher also made this suggestion. Realizing this student is struggling to understand the concept of *word*, I have decided to leave formal teaching of this task and focus on beginning sounds.		

	Assessment Activity	Notes
Day 15 Goal 1 Score 1	Student thinks of sentence to match picture. Student represents words with cubes. Student uses thinking writing to record sentence-leaving spaces between words.	The sentence, A boy is pulling a bear away, was written A ~ ~ l a B ~ ~`

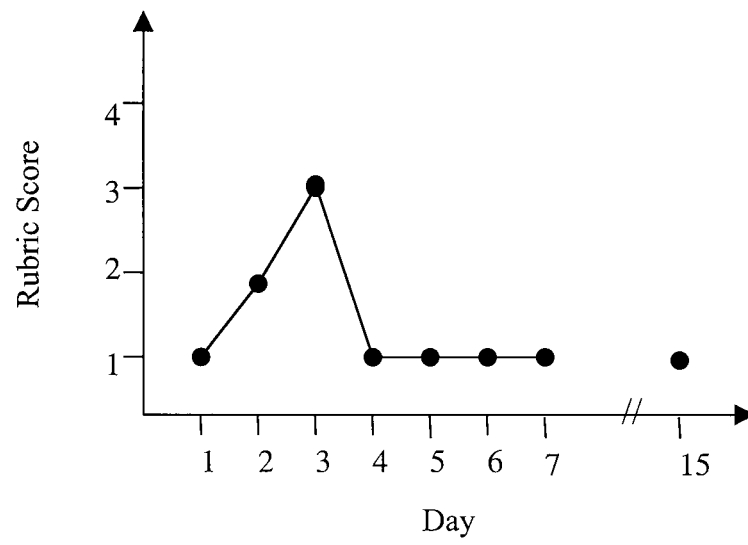Figure 4. Case Study Assessment Activities and Notes Day 1 to 7 and Day 15.

Figure 5. Intervention Rubric Scores Concept of *Word*.

but becomes relevant when considering word boundaries in reading and spelling" (p.

134). As my research progressed, other relevant information was discovered. Adams,

Foorman, Lundberg, and Beeler (1998) suggest that intervenors "use only monosyllabic

words until the children have learned to distinguish words from syllables" (p. 41).

Trehearne (2000) further suggests, "as students learn to track print, word segmentation

will improve" (p. 122). Considering this information, I was uncertain if I should continue

to pursue Goal # 1. After discussions with peers, it was decided that this goal should not

be the major focus of Bobby's intervention plan.

After seven days of intervention for Goal # 1, a post- intervention assessment

was administered (see Figure 1). The results of the post-intervention assessment # 1

confirmed the intervention rubric scores (see Figure 2) and verified the conclusion that

Bobby had not yet developed an awareness of the concept of *word*. The post-intervention

assessment did show some growth as Bobby pointed to individual words when repeating

one-syllable statements (in the pre-assessment, individual words were not recognized).

However, consistent with the intervention plan rubric scores, this skill had not been

generalized to two-syllable words. This demonstrates the extent to which Bobby is aware

of the concept of *word.*

Assessment and Intervention Plan for Goal # 2 Beginning Sounds

A second assessment was administered after Day seven of the case study (see

Appendix A). The Phonological Awareness Test (Robertson & Salter, 1997) was

suggested by the SLP. It demonstrated that Bobby would benefit from activities designed

to develop an awareness of beginning sounds. Pre-intervention assessment results showed

that Bobby was able to identify four out of ten beginning sounds (see Figure 6). The

initial sounds for *dinosaur, fudge,* and *nose* were correctly identified, while the beginning

sounds for *bite, toy, happy, laugh, garage,* and *chalk* were incorrectly identified during

the pre-intervention assessment. Goal # 2 was formulated and an intervention plan was

developed to provide Bobby with opportunities to develop an awareness of beginning

sounds.

Bobby's first beginning sound intervention session occurred on Day eight of the

case study (see Figure 7). On this day, 10 objects were introduced to Bobby. These were

cup, toilet, Santa, light bulb, mop, cake, turkey, scissors, lettuce, and *moose* (see Figure

8). Bobby was asked to identify beginning sounds for these 10 objects. Bobby was able to

correctly identify the beginning sounds for four of these objects. As well, Bobby could

match these four objects to the printed letter that represented their beginning sound. The

four correctly identified objects were *toilet, mop, lettuce,* and *moose.* The beginning

sounds for the previously mentioned 10 objects |c|, |t|, |s|, |l| and |c| became the focus of

the next five intervention sessions. Strategies, activities, and games (see Figure 7)

included the use of concretes, games such as I Spy, teacher modelling and picture

colouring. The strategy of *explicit talk* was also used. New objects that began with the

targeted beginning sounds were introduced, and photos of classmates who had names

beginning with the targets sounds, were used. The rationale for introducing new objects

was to have Bobby focus on hearing the sounds at the beginning of words rather than

memorizing them.
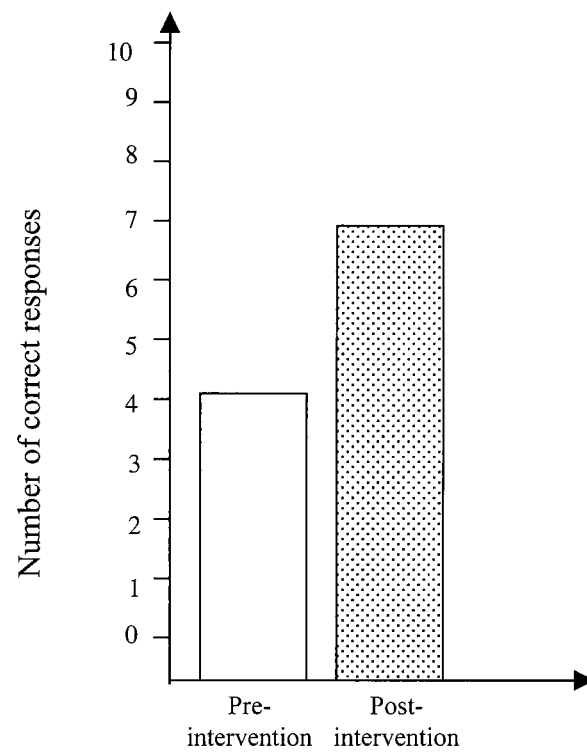
Figure 6. Assessment Results Beginning Sounds.

Assessment Activity   Notes

	Assessment Activity	Notes
Day 8 Goal 2 Score 1	Student names concrete objects and matches beginning sound to printed letter. Student states letter name and letter-sound. (*Santa, scissors, toilet, turkey, light bulb, lettuce, moose, mop, cup, cake*)	Student accurately named and matched 4 out of 10 objects. These were *toilet, moose, mop, and lettuce.* Good knowledge of basic vocabulary. This activity provided baseline data for next series of lessons.
Goal 2 Score 1	Student plays Concentration, identifying beginning sound then locating concrete with same beginning sound from game box. (*Santa, scissors, toilet, turkey. light bulb, lettuce*)	Lots of repetition of sounds modelled and practiced. Beginning sound substitutions included *t-scissors.*
Additional Comments: Student relied on support and modelling of sounds. Student was focused.		

Figure 7. Case Study Assessment Activities and Notes Day 8 to 14 (con't)

	Assessment Activity	Notes
Day 9 Goal 2 Score 1	Student labels concrete object and their beginning sounds. New concrete objects (*mop, moose, cup and cake*) were added.	Student knows labels of concretes. "Cake" is pronounced, "take." Student attempts to self-corrects after initial prompt. Self-correction requires concentration and effort.
Goal 2 Score 1	Student plays Concentration with 10 concrete objects after identifying and matching beginning sounds.	Student quickly named all 10 objects (many substitutions).
Additional Comments: Would like to locate a source of information that expands upon teaching beginning sounds to students with expressive language challenges. Will add letter-sound component to next day's interventions.		

	Assessment Activity	Notes
Day10 Goal 2 Score 1	Student plays I Spy with 5 out of the 10 concrete objects. When he correctly guesses object he places the object on the lid with corresponding letter and name the letter and letter-sound.	Student is very proud of his accomplishments.
Additional Comments: Need to change objects as Bobby has memorized pairs that start with the same beginning sound. Next session modify activity by using classmate's photos. Research supports the use of varied props and concretes.		

Figure 7. Case Study Assessment Activities and Notes Day 8 to 14 (con't)

	Assessment Activity	Notes
Day 11 Goal 2 Score 1	Student matches classmates' photos to the letter, which has the same beginning sound.	Used classmates' photos (students whose names began with the same sounds as the objects we used).
Goal 2 Score 1	Student plays I Spy using five classmates' photos identifying beginning sounds. When he correctly guesses photo he places the photo on the lid with corresponding letter and names the letter and letter-sound.	Added letter |B| so Bobby's photo could be used. Discussed *bear* and *boat* as having the same beginning sound. Bobby had no trouble with this concept.
Additional Comments: Continue to talk about language and literacy concepts and terminology.		

	Assessment Activity	Notes
Day 12 Goal 2 Score 1	Student colours picture that begin with the beginning sound spoken by teacher. Student draws a line to connecting pictures with like sounds.	New sounds introduced. Student needed support to complete task. "Dack in the box" for "Jack in the box." Correctly matched *log* and *lock*. Many errors including *horn* to *doll*. Student was not motivated to complete this task.
Additional Comments: Student became silly and distracted. I feel this behaviour signifies frustration.		

Figure 7. Case Study Assessment Activities and Notes Day 8 to 14 (con't)

	Assessment Activity	Notes
Day13 Goal 2 Score 1	I Spy with beginning sounds. Use 10 objects with different beginning sounds. Choose objects with beginning letters and sounds taught this year (*boat, bear, water, whistle, log, light*)	Student was much focused and was successful four out of five turns. Student identified the correct letter and letter-sound four out of five times. Student forgot the letter name for |l|.
Additional Comments: Student forgetting the letter |l| in itself is not a concern, however, I realize how little I understand about the role of memory and phonological challenges. I am frustrated by my lack of background knowledge.		

	Assessment Activity	Notes
Day 14 Goal 2 Score ?	Student names concrete objects and matches beginning sound to printed letter. Student states letter name and letter-sound. (*Santa, scissors, toilet, turkey, light bulb, lettuce, moose, mop, cup, cake*)	Student accurately named and matched 10 out of 10 objects. Substitutions still occurred including *dissors* for *scissors*.
Additional Comments: Student has memorized many beginning sounds for these familiar words and relies on memory rather than his sound awareness.		

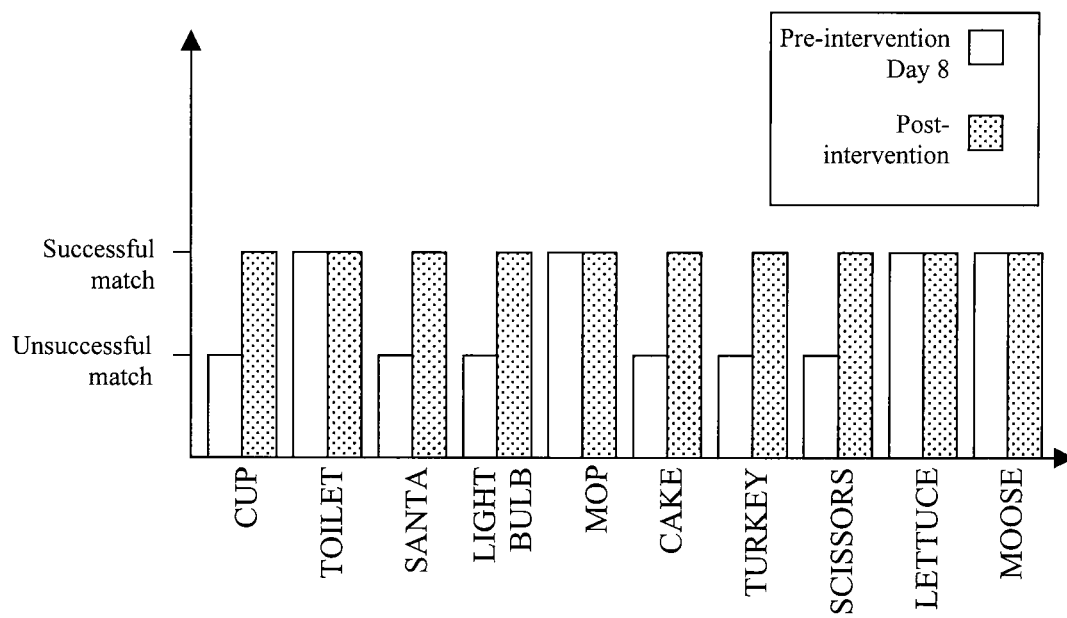Figure 7. Case Study Assessment Activities and Notes Day 8 to 14

Figure 8. Intervention Results Beginning Sounds.

At the end of these intervention sessions, Bobby could correctly match all 10 objects to the letter that represented their beginning sound. It can be concluded that during the period of this case study, Bobby correctly learned the beginning sounds heard at the beginning of the tested objects. The results of post-intervention assessment # 2 (see Figure 6) provide evidence that some growth in the awareness of beginning sounds occurred during this case study. Bobby correctly identified the beginning sounds for seven out of the ten test words. He was unable to identify the beginning sounds for *garage, chalk*, and *laugh*. It is difficult to isolate the factors that contributed to Bobby's awareness of beginning sounds. Bobby receives many educational opportunities, both in the classroom and at home. Isolating the effects of the impact of the phonological awareness plan interventions is not possible, as many of the educational opportunities for Bobby are designed to focus on complementary student goals. While these results can be interpreted to reflect growth toward awareness of beginning sounds, a close look at Bobby's phonological disorder reveals potential for future reading and spelling challenges. Bobby is not aware of the sound errors he is making; he thinks he is saying *camel* when he is actually saying *mamel*. Bowen (2001), in Encouraging Pre-Literacy Skills in Children with Speech and Language Disorders, suggests that children with developmental phonological disorders have difficulty learning and organising all the sounds needed for clear speech, reading and spelling. This will affect Bobby's future reading and spelling success, as initial sound correspondence will be confused by his articulation substitutions. For example, if he tries to spell the word *camel* while pronouncing the word *mamel*, he will most likely spell a written word corresponding to *mamel*. During intervention sessions, Bobby would say *dissors* for *scissors* then correctly

match the object *scissors* to the letter |s|. I believe his match was a result of learning that *scissors* begins with |s|, and not due to awareness of the beginning sound. It would be of more benefit to Bobby if I had additional knowledge relating to disordered phonology and effective interventions.

In summary, throughout the six-week intervention sessions, Bobby struggled to understand the concept of *word* (Goal # 1). His awareness of sound within spoken words developed and his ability to identify beginning sounds increased (Goal # 2). His level of success was impacted by his ability to organize speech sounds (his phonological disorder).

Discussion

As I gathered answers to the question, "What factors are important for a

kindergarten phonological awareness intervention plan and the interventions provided to

one kindergarten student with a phonological disorder?", three recurring themes became

apparent. These themes are:

1.   Understanding Complex Learning Challenges;

2.   Acquiring Knowledge of Best Practice; and,

3.   Information Sharing.

<u>Understanding Complex Learning Challenges</u>

Each child's learning challenges are unique and complex. An understanding of

the idiosyncrasies of each child receiving intervention is critical when planning

phonological awareness interventions. Each childhood speech-sound disorder requires a

different type of treatment, and each treatment program needs to be individually tailored

to the needs of the particular child in therapy (Bowen, 2001).

My developing understanding of the specific learning challenges of the student

in question was a factor in the phonological awareness intervention plan. Data collected

during the six-week case study revealed areas where Bobby lacked phonological

awareness, but did not provide information as to the reasons for the deficiencies or which

strategies would best support Bobby's unique learning needs. As there was an absence of

student-specific information, it was not possible to design an intervention plan tailored to

Bobby's unique needs. However, information gleaned from the literature review was

helpful in developing appropriate interventions.

Concept of *word* was selected as Goal # 1. It is an early skill on the scope and

sequence chart (see Appendix C) and a recommended area of intervention (Virginia Department of Education, 1998). But was this an appropriate goal for Bobby?

Early into the intervention sessions, I became concerned about the appropriateness of focusing on Goal # 1. Bobby's speech therapy required him to break words into small sound segments. The strategies being used to attain Goal # 1 required Bobby to consider words as whole units. I questioned whether the two programs were working at cross-purposes. My developing understanding of Bobby's learning challenges and my growing awareness of other programming strategies caused me to change the intervention focus of Goal #2.

Goal # 2, Identifying Beginning Sounds, became the focus during the second half of the case study. Intervention strategies for this second goal complemented the articulation therapy strategies, reinforcing an awareness of the individual sounds in words. I wondered if the difficulties I encountered as I developed intervention strategies for Bobby's unique needs might have been avoided if more student-specific information had been available at the outset.

Resource material and professional training are required to support educators as they develop individual intervention plans. Our school and district have minimal resources to assist a teacher in developing an understanding of, and providing interventions for, a child with a phonological disorder. A collection of information relating to phonological disorders is now being compiled. Journal and book titles lists will also be sent to the district resource centre.

Acquiring Knowledge of Best Practice

Individualized instruction has a significant impact upon phonological awareness

interventions. However, the educator's knowledge of best practice and recommended instruction is also important. While Snow, Burns, and Griffin (1998) propose that while effective educators develop a special mixture of instructional ingredients for every child they work with, there are common materials, strategies and environments from which effective teachers make choices.

I required additional training in order to become an effective teacher in this new curriculum area. Trehearne (2000) cites Snow, Burns, and Griffin, (1998) when she states, "the major prevention strategy is excellent instruction" (p. 72). Professional development opportunities provided me with basic instructional strategies and a review of relevant research. Peers became mentors, provided encouragement, and constructive coaching. An intensive literature review was undertaken and topics related to my teaching practice were researched. As my knowledge base increased, important examples of best practice were demonstrated. These included: the use of assessments to guide goals and instruction; planning interventions to complement the classroom reading program; the use of metalinguistic language and concepts; scaffolding of intervention tasks; use of concrete objects and cubes; and, explicit instruction.

It is also important to recognize the factors that became barriers to effective phonological awareness intervention planning. Best practice suggests that interventions need to be intensive. Trehearne (2000) suggests daily intervention. The kindergarten phonological awareness interventions discussed in this project did not occur on a daily basis. Many of the kindergarten students identified as needing intensive interventions attend school only every second day. Catts (1999) states, "It is possible to have substantial impact on growth if proper instructional conditions are in place" (p. 147). He

describes these conditions to be more explicit, more intensive, and more supportive than those offered in most schools. Snow, Burns, and Griffin's (1998) research review revealed that the potential for gains in reading acquisition is greater when the phonological training is more intense and explicit. The issue of full-time attendance for students who need assistance has been discussed with the SLP and a request for additional funding will be made. This issue will be one of the needs presented to district administration.

Downing (1996) discusses the value of receiving important transitional information about a child before the start of the subsequent school year. In this school district, there is no transition plan in place to pass pre-school information to kindergarten teachers. As stated earlier in this paper, many kindergarten teachers are unaware that their students have been receiving speech and language support during preschool. Transition into kindergarten proved to be an important issue in this case study. Transitional information was received after kindergarten programming had already started. Valuable instructional time was lost because student background information, diagnoses, intervention history, current assessment data, and goals were not available. A transition plan would ensure that intervention in the kindergarten classroom occurs at the earliest opportunity. Transition was an issue discussed at a recent meeting between the classroom teacher, the SLP, and myself.

Sharing of Information

Sharing of information includes clarification of roles and responsibilities, team building, opportunities for collaboration with a support group and frequent opportunities to communicate with others who are providing student support.

Lack of clarification of the roles and responsibilities of people who support children receiving phonological awareness interventions was an important consideration in the planning of the phonological awareness interventions. Educational roles and responsibilities are in a state of transition. The shortage of SLP services has required creative solutions. My role as a provider of phonological awareness interventions is still developing and relatively undefined. Valuable programming opportunities were lost in September as I spent time trying to understand my job rather than doing my job. In addition to the changes caused by my new role, the SLP's role has changed. The SLP now has limited opportunity to provide that position's traditional services, which have included acting as a liaison between the local child development centre and the schools. This has made it difficult to access prior student histories which are critical for the identification of individual student needs. Future funding and expertise availability may once again shift the roles and responsibilities that affect student programming opportunities and outcomes.

Team building will enhance the development of effective intervention plans. Before September, the researcher had minimal contact with the classroom teacher and SLP. As intervention planning took shape, interdependence developed; however, the building of working relationships requires time. As expectations and understandings were being developed, intervention opportunities were not maximized. Downing (1996) suggests, "the most effective support for a given student will probably be a combined effort from a number of people who share a common goal for the student's success" (p. 148).

Access to a support group when planning interventions is important.

Opportunities to collaborate and to share resources and expertise are needed. An impressive amount of interest for in-service training relating to phonological awareness and reading success has been shown by educators in the district, deepening my conviction that other educators also feel the need for a support group. Accordingly, a support group is being formed which will recommend areas of interest and need for in-service training. The SLP would provide this training.

Frequent communication between the providers of student support is important. Ongoing communication will provide clarity on student progress and challenges. As of this writing, a communication plan has not been explored.

Recommendations

The researcher recommends:

1. Funding to allow full-time attendance for specific kindergarten students.

2. Daily (15-30 minute) individual or small group intervention opportunities for students in need of intensive phonological awareness instruction.

3. The development of a process that ensures transitional information is provided to kindergarten teachers (prior to the beginning of school year). Specific background information concerning students who received speech and language support during preschool should include diagnoses, intervention history, current assessment data, and goals.

4. The continued collection and compilation of information relating to

phonological disorders. This could include journal and book resources organized within the structure of the district resource centre.

5.   Clarification of the roles and responsibilities of the people who support children receiving phonological interventions and act as a liaison between the local child development centre and the schools.

6.   Frequent communication between the providers of student support, through the organization of the developing support group. This organization will recommend topics for in-service training.

7.   The ongoing assessment of early intervention (preschool and kindergarten) programming needs and funding potential.

<u>Final Words</u>

The processes of learning to speak and to read are extremely complex and variable. The skills required to recognize, process and ultimately understand the written and spoken word are numerous and demanding. Research supports the use of intervention plans for students at risk. To maximize student development, educators must have knowledge of current research and an understanding of language related issues. As well, they must be equipped with the appropriate assessment and instructional tools.

This study has lead both to success and to the discovery of barriers. The following successes deserve recognition and celebration:

- Students received the benefits of small group interventions;

- Instructional strategies in use were supported by research;

- A successful professional development opportunity occurred; and,

- The early stages of team building are underway.

Therefore, there is realistic potential for additional development of the phonological awareness plan. Added to this success is the hopeful future for a young kindergarten student who will enter class full of confidence and a desire to learn. His growth over the six-week case study is but a small step towards the critical goal of independent reading. He is guided by a committed teacher, has the support of individualized articulation therapy, and enjoys the opportunity of benefiting from the intensive phonological interventions.

Some of the barriers need immediate attention and will probably require creative problem solving. They have stood in the way, blocking progress toward the ideal. Barriers related to scheduling, accessibility of resources, researcher inexperience, incomplete understanding of roles and responsibilities, and needs for additional transitional information, are not insurmountable. My recommendations, if adopted, could pave the way for a promising future. Collaborative team building could ensure that student programming is ready when students enter kindergarten in the fall. Access to a committed support group would help lessen the stress placed on an already overworked SLP. Critical and strategic opportunities to meet, frequent training opportunities and better availability of current resource materials would help support committed educators meet the diverse needs of their students.

Each child presents a unique challenge and a unique opportunity for an educator. The poet Robert Browning claimed that our aspirations are our possibilities. All educators hold aspirations that each child will learn to read. These aspirations may come closer to being realized with a commitment to a deeper understanding of the reading process and the factors affecting its attainment, one of which is phonological awareness.

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Appendix A

Case Study Pre-and Post-Assessment Results

Assessment # 1--Phonological Awareness Placement Guide

(Provided by Learning Assistance Teacher – Author Unknown)

Use this placement guide to determine the most appropriate level of phonological

awareness for your student to begin. Criterion are two of the three items correct in each

section.

Sentences to Words

Teacher Directions: Place page 9 in front of student. Say to the student, "I'll read this

sentence and point to each word." Read the example sentence (page 9, "Please check

your work"), and say to the student, "Now you repeat these sentences and point to each

word."

Name: Bobby	Pre	Post
1. Aunt Mary baked cookies.	No	No

(Pre - student ran finger left to right without pointing)

(Post - student matched finger to print except cookies was considered two words)

2. The ball is rolling down the steps.	No	Yes
3. I want cereal for breakfast.	No	No

(Post - student correctly matched first two words)

Assessment # 2

The Phonological Awareness Test (Robertson and Salter 1997)

Isolation Initial Sound

"I'm going to say a word, and I want you to tell me the beginning or first sound in the word. What's the beginning sound in the word cat?"

Item	Response	Pre	Post	Item	Response	Pre	Post
1. bite	/b/	0	1	6. apple	/a/	1	1
2. toy	/t/	0	1	7. garage	/g/	0	0
3. dinosaur	/d/	1	1	8. happy	/h/	?	1
4. fudge	/f/	1	1	9. chalk	/ch/	0	0
5. nose	/n/	1	1	10. laugh	/l/	0	?

Score 4/10   7/10

Appendix B

Stages of Phonological Awareness (Hempenstall 1997)

Recognition that sentences are made up of words.

Recognition that words can rhyme - then production thereof

Recognition that words can begin with the same sound - then production thereof

Recognition that words can end with the same sound -then production thereof

Recognition that words can have the same medial sound(s) -then production thereof

Recognition that words can be broken down into syllables - then production thereof

Recognition that words can be broken down into onsets and rimes – then production thereof

Recognition that words can be broken down into individual phonemes – then production thereof

Recognition that sounds can be deleted from words to make new words – then production thereof

Ability to blend sounds to make words

Ability to segment words into constituent sounds

Appendix C

Early Phonological Awareness Intervention: Scope and Sequence

(Virginia Department of Education, 1998).

1. Listening – *the ability to attend to and distinguish both environmental and speech*

sounds from one another.

- Alertness (includes location)

- Sequencing

- Discrimination

- Figure-ground

- Memory (sound pattern concepts)

- Sound-symbol

2. Rhyme - *the correspondence of ending sounds of words or lines of verse. Rhyming is*

the ability to identify words that have identical final sound segments.

- Exposure

- Judgment (identify same or different)

- Production (produce word with the same final sounds)

3. Word Awareness - *the knowledge that sentences consist of words and that these words*

can be manipulated.

- Pointing (words on page--notice spaces)

- Counting (number of words in sentence or phrase)

4. Syllable Awareness – *the ability to hear parts or segments of phonemes that comprise*

the rhythm of the word.

- Counting

- Segmenting

- Blending

- Deletion

5. Phonemic Awareness - *the ability to attend to, identify, and manipulate the sounds that are representative of graphemes in the English language.*

- Exposure to alliteration in text

- Initial sound identification/comparison

- Sound/symbol correspondence

- Final sound identification

- Phoneme counting (with and without visual aids)

- Phoneme segmentation

- Phoneme blending (synthesis)

- Phoneme deletion

- Phoneme substitution

While this scope and sequence reflects an increasing level of difficulty in phonological tasks and represents the approximate order that students develop specific phonological skills, it should be noted that overlap among areas does occur in the learning process. For example, a student could be working at the syllable level for segmentation and, at the same time, continue to address production of rhymes.

Appendix D

Segmentation Task (Smith, Simmons & Kameenui, 1995)

When asked what sounds are heard in fish (segmentation), the response requires one step

of pulling apart sounds: /f/ /i/ /sh/

When asked to delete the first sound from fish, the response requires two steps.

First, identify the beginning sound and segment the sounds. Second, the remaining

sounds need to be held in memory and then blended.

f ish /i/ /sh/, ish

Appendix E

Stages of Development in Reading (Snow, Burns, & Griffin 1998)

Birth to Three-Year-Old Accomplishments

*   Recognizes specific books by cover.

*   Pretends to read books.

*   Understands that books are handled in particular ways.

*   Enters into a book-sharing routine with primary caregivers.

*   Vocalization play in crib gives way to enjoyment of rhyming language, nonsense word play, etc.

*   Labels objects in books.

*   Comments on characters in books.

*   Looks at picture in book and realizes it is a symbol for real object.

*   Listens to stories.

*   Requests/commands adult to read or write.

*   May begin attending to specific print such as letters in names.

*   Uses increasingly purposive scribbling.

*   Occasionally seems to distinguish between drawing and writing.

*   Produces some letter-like forms and scribbles with some features of English writing.

Three- and Four-Year-Old Accomplishments

*   Knows that alphabet letters are a special category of visual graphics that can be individually named.

*   Recognizes local environmental print

*   Knows that it is the print that is read in stories.

*   Understands that different text forms are used for different functions of print

(e.g., list for groceries).

*   Pays attention to separable and repeating sounds in language (e.g., Peter, Peter,

Pumpkin Eater, Peter Eater).

*   Uses new vocabulary and grammatical constructions in own speech.

*   Understands and follows oral directions.

*   Is sensitive to some sequences of events in stories.

*   Shows an interest in books and reading.

*   When being read a story, connects information and events to life experiences.

*   Questions and comments demonstrate understanding of literal meaning of story

being told.

*   Displays reading and writing attempts, calling attention to self: *Look at my story.*

*   Can identify 10 alphabet letters, especially those from own name.

*   *Writes* (scribbles) message as part of playful activity.

*   May begin to attend to beginning or rhyming sound in salient words.

Appendix F

Speech & Language Milestone Chart

(Learning Abilities Association of America, n.d.)

By Age One

Milestones

*   Recognizes name

*   Says two or three words besides *mama* and *dada*

*   Imitates familiar words

*   Understands simple instructions

*   Recognizes words as symbols for objects: Car - points to garage, cat - meows

Between One and Two

Milestones

*   Understands *no*

*   Uses 10 to 20 words, including names

*   Combines two words such as *daddy bye-bye*

*   Waves good-bye and plays pat-a-cake

*   Makes the *sounds* of familiar animals

*   Gives a toy when asked

*   Uses words such as *more* to make wants known

*   Points to his or her toes, eyes, and nose

*   Brings object from another room when asked

Between Two and Three

Milestones

*   Identifies body parts

*   Carries on conversation with self and dolls

*   Asks *what's that?* And *where's my?*

*   Uses two-word negative phrases such as *no want.*

*   Forms some plurals by adding |s| book, books

*   Has a 450 word vocabulary

*   Gives first name, holds up fingers to tell age

*   Combines nouns and verbs *mommy go*

*   Understands simple time concepts: *last night, tomorrow*

*   Refers to self as *me* rather than by name

*   Tries to get adult attention: *watch me*

*   Likes to hear same story repeated

*   May say *no* when means *yes*

*   Talks to other children as well as adults

*   Solves problems by talking instead of hitting or crying

*   Answers *where* questions

*   Names common pictures and things

*   Uses short sentences like *me want more* or *me want cookie*

*   Matches three to four colours, knows *big* and *little*

Between Three and Four

Milestones

*   Can tell a story

*   Has a sentence length of four to five words

*   Has a vocabulary of nearly 1000 words

*   Names at least one colour

*   Understands *yesterday, summer, lunchtime, tonight, little-big*

*   Begins to obey requests like *put the block under the chair*

*   Knows his or her last name, name of street on which he/she lives and several

                nursery rhymes

Between Four and Five

Milestones

*   Has sentence length of four to five words

*   Uses past tense correctly

*   Has a vocabulary of nearly 1500 words

*   Points to colours red, blue, yellow, and green

*   Identifies triangles, circles and squares

*   Understands *In the morning, next, noontime*

*   Can speak of imaginary conditions such as *I hope*

*   Asks many questions, asks *who? And why?*

Between Five and Six

Milestones

*   Has a sentence length of five to six words

* Has a vocabulary of around 2000 words

* Defines objects by their use (*you eat with a fork*) and can tell what objects are made of

* Knows spatial relations like *on top*, "*behind, far* and *near*

* Knows her address

* Identifies a penny, nickel and dime

* Knows common opposites like *big/little*

* Understands *same* and *different*

* Counts 10 objects

* Asks questions for information

* Distinguished *left* and *right* hand in herself

* Uses all types of sentences, for example *let's go to the store after we eat*

Appendix G

Unpublished Assessment Provided by the Classroom Teacher

Assessment Score

3 = Most of the Time

2 = Some of the Time

1 = Not Yet

Name: Bobby		Pre	Post
1.	I know where the front of the book is	3	3
2.	I know where the back of the book is	3	3
3.	I know where the title is	3	3
4.	I know where the words are	3	3
5.	I know what a word is	1	3
6.	I know what a letter is	1	3
7.	I know where the beginning of a word is	3	3
8.	I know where the end of a word is	3	3
9.	I can tell a story to match the pictures	3	3
10.	I use my finger to point to the words as I tell the story	1	?