A Resource Manual for Kindergarten Teachers of Phonetic Components of Sounds

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A RESOURCE MANUAL FOR KINDERGARTEN TEACHERS
OF PHONETIC COMPONENTS OF SOUNDS

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Introduction

As children develop, strong foundations are necessary to be successful readers and writers. One important foundation is having phonemic awareness. Phonemic awareness involves an understanding that words are composed of phonemes, or sounds. It also includes an understanding that letter sounds have distinct features, and that words and syllables are a sequence of phonemes. With a foundation of phonemic awareness, one has the ability to detect, blend, segment, and manipulate the sounds present in words (Sterling-Orth, 2004).

When children begin the early stages of reading and writing, the alphabetic principle is introduced. The alphabetic principle explains how the letters of the alphabet become associated with the sounds of speech. With a strong foundation of phonemic awareness, the alphabetic principle is understandable, and children begin to decode and encode words by individual sounds (Johnson & Roseman, 2003).

Children bring their mouths to reading and writing, so having foundational skills with letter-sound associations is imperative when decoding and encoding words. Gentry and Gillet (1993) explain how phonemic awareness directly affects children's abilities to move through the five stages of invented spelling (i.e., precommunicative, semiphonetic, phonetic, transitional, and conventional stages). At the kindergarten level, children often begin within the semiphonetic stage, where they spell a word with any sounds identified within the word. As the year progresses, they move into the phonetic stage of spelling where they are able to map a letter to each sound when writing. Near the end of kindergarten, some students are spelling at the transitional stage where they can adhere to basic conventions of the English orthography system and progress into morphological and visual spelling of words (Gentry & Gillet, 1993). Considering this transition occurs relatively quickly, having a strong foundation of phonemic

awareness that supports a child's understanding of the alphabetic principle is imperative. It is important for teachers to have sufficient language knowledge to facilitate this learning by children as they progress through these stages.

The English language has 26 letters that are used to represent 44 unique sounds. Considering the difference between the number of sounds compared to letters, there can be confusion when reading and writing words containing sounds that do not have a 1:1 letter-sound correspondence. There are multiple sounds associated with some letters, and letter combinations can create new sounds that are not made up of the individual letters' sounds (i.e., the sound /t/ and /h/ do not make up the sound for "th").

Teachers are expected to teach children letter sounds and letter names, along with reading and writing skills to children via whole group, small group, and individual instruction. Teachers typically gain this knowledge through an established curriculum selected by district personnel and some undergraduate coursework focused on literacy. Currently, there are no requirements for undergraduate teachers to take a language course focused on phonology, despite being required to teach the skills listed in the Common Core State Standards (CCSS) for English Language Arts (ELA). Undergraduate coursework for language and literacy courses briefly introduce the foundations of phonetics, but only see phonetics as a small component of reading and writing instruction (Angleton, 2019). Within the CCSS for ELA, teachers are expected to deliver instruction on standards that are focused on phonological awareness, phonics, word recognition, decoding and writing skills that are necessary for completion of Kindergarten (CCSS, 2019).

In Illinois, there is professional development for teachers regarding unpacking and defining the standards at the district and county level. Typically, a school district has adopted curriculum with CCSS embedded for teachers to follow for each lesson. When no formal

curriculum is adopted, the educator is required to provide lessons with materials that facilitate

attainment of standards. If professional development is not available, teachers must

independently unpack and understand standards in order to provide effective instruction.

Effective early education requires competency of the structures of language. Troia (2004)

explains that language instruction within early education, including phonemic awareness and

phonics, needs to be explicit and intensive beginning at the preschool level. Instruction should

target the linguistic foundations of literacy and be comprised of explicit letter-sound

associations, sound segmentation, and blending. Teachers must provide a print-rich environment

to incorporate many kinds of print materials including a variety of children's books that

encompass the alphabet, story books, predictable sound and rhyming books, and nursery rhymes.

The environment should also provide hands-on materials including letter blocks, magnetic

letters, and tools for writing.

Teachers are often unprepared for efficient instruction needed in these early education

classrooms in regards to language (Moats, 1994). Undergraduate coursework for language and

literacy is limited to reading comprehension instruction (Angleton, 2019). Moats (1994)

highlighted how basic language elements are not determined to be critical for teachers to know

before completion of degree programs. These elements include an understanding of phonemes,

syllables, and morphemes, how each are represented in print, and how children best learn

phonemes, syllables, and morphemes. Moats further explained most reading and spelling

difficulties are due to an impairment of language processing, not visual-perceptual deficits, an

inability to construct meaning from context, or other general problems with attention and/or

memory. This emphasizes why teachers should have this knowledge of the English Language to

provide effective instruction. Often, the basis of reading and spelling deficits is due to lack of

phonemic awareness, spelling-sound rules, and syllable patterns in addition to spelling patterns

of morphemes (Moats, 1994). When teachers have gaps in their knowledge of language, they

may quickly refer students for intervention or special education when they could provide

intervention within the classroom.

Speech-language pathologists (SLPs) can provide integral support for teachers to better

student success since they are language experts. The SLP can be a great resource and provide

support for teachers by conducting in-services on phonemic awareness. The SLP can work to

implement and integrate goals that are agreed upon with ways to incorporate carryover

techniques into the classroom (Bauer, Iyer, Boon, & Fore, 2010). Since teachers are often less

familiar with evidenced based practices (EBP), the SLP can locate current sources of information

to highlight effective intervention for teachers to utilize within the classroom. The SLP can help

to identify when intervention is necessary, including the duration and intensity necessary, as well

as the order that skills should be targeted for effective intervention. (Schuele & Boudreau, 2008).

The following literature review will present studies concerning the roles of the teacher

and SLP within the school system, effective collaboration between general education teachers

and SLPs, and evidence-based intervention models. An exploration of CCSS will outline what

teachers are expected to teach at the kindergarten level. Next, the roles and responsibilities of the

SLP from the American Speech-Language and Hearing Association (ASHA) will be reviewed to

define what SLPs are expected to do within schools. Then, four articles will be reviewed to

explain how teachers are missing an understanding of basic elements of the English Language

necessary for effective instruction at the kindergarten level. An article will explain teachers'

opinions about speech-language pathology services in schools, followed by an article reviewing

effective collaboration between teachers and SLPs. Finally, two articles will review effective

intervention models that promote letter-sound correspondence based upon EBP.

Literature Review

Roles of Teachers and SLPs in Schools

Established in 2009, CCSS are academic standards in Mathematics and English Language

Arts (ELA). They outline what a student should know at the end of each grade while attending

public schools. The purpose of the CCSS is to build upon previous grades' standards, starting at

kindergarten and continuing through 12th grade. They are intended to ensure that high schoolers

have the skills and knowledge necessary to succeed in college, career, and life.

The ELA standards include expectations for reading literature and informational texts,

foundational skills, writing, as well as speaking and listening. For the purpose of this review, the

focus will remain on foundational skills for the kindergarten level. Strands within the

foundational skills include print concepts, phonological awareness, phonics, word recognition,

and fluency. Print concepts include how to follow words from right to left and from top to

bottom within a page and throughout the book. Print concepts also involves recognizing that

spoken word is represented by letters and words in print are separated by spaces. It includes

being able to recognize and name all upper- and lowercase letters. Phonological awareness

focuses on manipulating sounds at the sentence, word, syllable, and phoneme level. Phonemic

awareness (PA) includes counting, blending, and pronouncing sounds in words. PA also targets

blending and segmenting the onsets and rimes of words. Having an understanding of adding or

substituting individual sounds in simple, one-syllable words to make new words is also expected.

For phonics and word recognition, students are required to decode words using phonics and

word-analysis skills. Students must also demonstrate knowledge of letter-sound correspondence and associate the long and short sounds with common spellings for the five major vowels. Additionally, students should be able to demonstrate the ability to read high-frequency words by sight and be able to identify the different sound between similarly spelled words (i.e., cat vs bat). Regarding fluency, students are expected to read emergent-reader texts with purpose and understanding (CCSS, 2019).

Teachers play a primary role when implementing CCSS. They conduct lessons based on CCSS via whole group, small group, and one-on-one instruction. When students are labeled at risk, teachers are responsible for bridging gaps utilizing response to intervention (RTI) models and grouping children based upon skill levels. RTI groups consist of students meeting, exceeding, and approaching grade level standards.

SLPs facilitate and support students whose communication needs affect their abilities to successfully achieve CCSS standards in public schools. ASHA has outlined specific roles within the *Roles and Responsibilities of SLPs in Public Schools.* SLPs work across many ages with a range of communication disorders to determine if any educational impacts are occurring. Specific to this project, the school SLP provides ample contribution to building linguistic and metalinguistic foundations for students with disabilities, students at risk of failure, and students who are struggling with school achievement. SLPs can contribute to CCSS within the strands for listening, speaking, reading, and writing focused on language and literacy within each grade level. Knowledge and skills of SLPs in language rationalizes their important role to support curriculum learning within schools across CCSS (ASHA, 2019).

ASHA defines the responsibilities of the SLP within schools as helping to meet performance standards determined by the district and state. SLPs utilize evidence-based practice

(EBP) in intervention programs to inform instruction while also identifying delivery models within the least restrictive environment (LRE) for students. The SLP is an advocate for students, teachers, and effective programs based on EBP. They also collect and analyze data to identify students with communication disorders or those who are at risk. The SLP can determine academic strengths and weaknesses related to speech, language, and communication disorders to develop appropriate intervention plans for students.

Another role of an SLP is that of a collaborator and a leader within a school. SLPs collaborate with general education teachers to support the linguistic areas where many have less experience. SLPs also work closely with reading specialists, literacy coaches, and special education teachers to support instruction of language and literacy. When Individualized Education Plans (IEPs) are implemented for communication disorders, there is collaboration between the general educator, parents/guardians, and the SLP (ASHA, 2019).

Lack of Teacher Preparedness

Considering the roles of teachers when implementing CCSS for ELA, teachers should have specific knowledge of language to effectively teach the foundational skills required for reading and writing. Researchers have highlighted gaps in teacher knowledge regarding specific aspects of the English Language. Moats (1994) assessed abilities of teachers regarding their knowledge of how phonemes and morphemes are represented in print. Participants were 89 teachers including reading teachers, classroom teachers, special education teachers, SLPs, classroom teaching assistants, and graduate students enrolled in a course entitled "Reading, Spelling, and Phonology" at a variety of colleges. The course was not required by any program; participants self-selected to enroll in the class based upon interest in the topic and/or recognition of their own knowledge gaps.

Data were collected through a 15-question survey administered at the first meeting of class. The survey was designed to assess participants' prior knowledge of speech sounds, speech sounds in words, correspondence between sounds and symbols, concepts of language, and the presence of morphemic units within words. The survey was also intended to highlight any misconceptions that were apparent in language and any missing information within the participants' knowledge.

Results indicated concepts of language, including terminology, knowledge of phonics, phonemic awareness, and morphemic awareness were underdeveloped in all participants, specifically teachers. Participants indicated they were aware of phonological awareness, but were unaware of the difference between phonetics, phonology, and phonics. Participants were unable to identify what the term phoneme meant, to count the number of phonemes within a word, and thought letters were equivalent to phonemes. Participants' knowledge of phonics was underdeveloped with limited knowledge of consonant blends. Results also indicated teachers were unaware that a combination of letters can represent a single sound (i.e., letters "ng" represent a blend of /n/ and /g/ and not the unique speech sound /ŋ/). Participants could not identify the reasoning behind spelling word patterns, such as when to double a consonant in regards to the vowel sound of a word.

Another study regarding teacher preparedness was conducted by Spencer, Schuele, Guillot, and Lee (2008). They examined the phonemic awareness skills of a diverse group of teachers. Participants included 541 professional teachers, including kindergarten teachers, first-grade teachers, special education teachers, reading teachers, and SLPs. The participants' years of experience ranged from 0 to 38 years with the majority having earned a master's degree.

Data were collected across a 5-year period at six sites in conjunction with both mandatory and non-mandatory workshops that were offered. A survey was used to measure participants' knowledge of phonemic awareness in the following tasks: phoneme segmentation, phoneme identification, and phoneme isolation. Phoneme segmentation included 21 items where participants counted the number of phonemes in a variety of words from two to five phonemes in length, varying in syllable shape and in letter-to-sound correspondence. Phoneme identification included five items where participants identified the sound associated with an underlined letter and chose a word from a list with the same sound. Phoneme isolation included six items where participants were asked to give a letter that represented the third phoneme of a given word.

Results indicated SLPs possessed the greatest knowledge of language. Performance between the groups of teachers was nearly identical, refuting the authors' hypothesis that special education teachers and reading specialists would outperform kindergarten and first-grade teachers. Phoneme segmentation with hard-to-segment words was determined to be the most difficult for all participants while phoneme identification was least difficult.

Researchers have also measured the effects of educating teachers about phonological awareness and how to implement appropriate instruction to build students' phonological awareness. McCutchen et al. (2002) sought to assess the depth of teacher knowledge about phonological awareness to determine the effects of a 2-week summer institute focused on understanding phonology that utilized regular collaboration with researchers. The study focused on teachers' own understanding of phonological awareness and how to deepen that knowledge so that instruction could improve student learning. Participants included 44 teachers and 492 kindergarten students from the United States.

Participants were divided into two groups. The experimental group consisted of 24 teachers, and the control group consisted of 20 teachers. The *Informal Survey of Linguistic Knowledge* developed by Moats (1994) to assess teacher knowledge of phonology and orthography was administered to the experimental group as a pretest before a 2-week institute training during the summer prior to the upcoming school year. A posttest was conducted at the end of the 2-week training for the experimental group. During the training, researchers taught teachers about phonology, phonological awareness, and the role each plays in reading instruction to the experimental group. The experimental group left the institute with instructional suggestions and a compilation of lessons developed by the group through collaboration with each other. Throughout the school year, researchers consulted with teachers from the experimental group regarding implementation of recommended strategies. The control group was administered only a pretest survey during the beginning of the school year and taught curriculum as it would typically be implemented. Current teacher practice for all participants was observed for ways phonological awareness was presented within literacy activities that included sounding out words in isolation versus within text and how students were grouped for lessons. Student learning was assessed for phonological awareness and orthographic fluency four times during the school year using summative assessments.

Results from the pretest indicated comparable linguistic knowledge of both groups of teachers as measured by the Moats survey. Teachers within the experiment group were determined to have a deeper understanding of linguistic knowledge compared to the control group as measured by the posttest data. Results of teacher practice indicated the experimental group spent more time on phonological awareness activities with more explicit instruction. Student gains indicated a correlation between the amount of time their teachers spent on

phonological activities had a direct effect on student growth in phonological awareness. Results

for orthographic fluency indicated that children in the experimental group gained more letter

skills when compared to children in the control classrooms.

Another study investigated teacher preparation for effective instruction at the college

level. Joshi, Binks, Hougen, Dahlgren, Ocker-Dean, and Smith (2009) examined the linguistic

knowledge of teacher educators to determine how well pre-service teachers have been prepared

to teach early reading skills. The authors conducted two studies to analyze educator knowledge

and their opinions of best practices when teaching skills for reading. For the purpose of this

review, only the first study will be summarized. Participants included 78 college and university

instructors located in the United States. All participants were responsible for teaching reading

education to preservice elementary teachers.

A survey was administered with 43 questions assessing 68 items. Questions included

how well the instructors felt prepared to teach both typical and struggling readers the literacy

skills necessary for reading. The survey assessed the instructors' understanding of linguistic

terminology by participants identifying the number of phonemes and morphemes within words.

The survey also inquired about the participants' self-perceptions of teaching vocabulary, reading

comprehension, and metacognition. Items included a Likert-type scale for self-perceptions and

multiple choice for the phonology-, phonics-, morphology-, comprehension-based items.

Results indicated that the participants' self-perception scores showed the greatest

confidence when teaching reading comprehension. Scores showed participants felt least

confident when teaching literacy skills to English-language learners. Participants scored

moderately on phonology-based items. On the phonics-items and comprehension items,

participants only knew about half of the questions. Participants were unsure of the spelling-

sound patterns that determine pronunciation of specific phonemes and often could not identify

the correct amount of phonemes within a word. Participants had greater knowledge of syllables

when compared to phonemics. The least amount of knowledge was identified for morphology-

based items.

Interdisciplinary Collaboration

Multidisciplinary teams work together to support student learning within the school

system, and opinions about professional roles within a school system can vary. Sanger, Hux, and

Griess (1995) examined the opinions of school personnel about the role and performance of

school-based SLPs and the services provided for students. A survey regarding education level,

years of experience, and opinions of SLPs within the school system was completed by 628

participants. Participants included elementary teachers, school principals, school psychologists,

and special education teachers across the United States. Each completed a background history

through a multiple-choice format, and opinion questions were in a Likert scale format to

determine the agreement or disagreement with a statement.

Results indicated that teachers were generally satisfied with school-based SLPs'

performance. Responses showed the SLP was present in school multiple days per week,

interacted with teachers regularly, and utilized the pullout model of delivery. SLPs supplemented

services with consultation, co-teaching, or a combination of both. SLPs were believed to be

enthusiastic workers and advocates who provided services for students with complex

communication needs, articulation disorders, and difficulties that resulted from traumatic brain

injuries. Participants indicated the SLP should be involved in multi-disciplinary teams for

students with learning disabilities, language-based reading problems, second language

acquisition, or behaviors. Collaboration between the SLP and school personnel was indicated as

important. Respondents were unsure of certain roles and responsibilities of the SLP, and

behavior management was thought to be a weakness. Participants indicated SLPs were not

considered overqualified or underqualified for their jobs and were adequately trained. Responses

indicated differences of opinions when making appropriate referrals for students with

communication problems, and students were often under identified for necessary services.

SLPs can provide support for teachers with language knowledge weaknesses. An SLP

can facilitate collaboration and lead teams to effectively target skills for intervention. Glover,

McCormack, and Smith-Tamaray (2015) investigated the needs of teachers and SLPs, and their

preferences for service delivery when working with children. The study was made up of two

phases, and for the purpose of this review, the focus will be on the first phase. Phase 1 included

14 teachers and six SLPs.

During Phase 1, teachers and SLPs completed an online questionnaire consisting of open

and closed questions. The open questions included perceptions of need and preference for service

delivery for students with communication needs. The closed questions asked for descriptions of

current practice and background information.

Results from Phase 1 reported that teachers felt there were more children with speech and

language needs than were currently receiving services. SLPs reported conducting therapy within

schools, outside of schools, and worked directly with parents to implement therapy at home.

Teachers reported utilizing a teacher's aide to provide one-on-one support when the teacher was

not available. Participants reported feeling inadequately prepared to provide appropriate support

for children with communication disorders. Participants indicated the need for more

collaboration with the SLP within the classroom to provide modeling for the teacher. Lack of

time and resources were indicated to impede the progress of children with communication needs.

Finally, teachers reported that the current system failing children due to an increase in numbers of children requiring services.

Effective Intervention for Letter-Sound Acquisition

Intervention may be necessary for students who have a communication disorder, as well as students who are at risk. Effective intervention can be performed by the teacher within the classroom or a specialist utilizing a pull-out method of delivery. Wolf (2015) examined the effects of an intervention to improve children's abilities to decode single letters. Participants included 41 children with a low socioeconomic status from rural preschool settings with a mean age of 4;8.

The participants were divided into two groups. The experimental group consisted of 21 participants, and the control group consisted of 20 participants. A baseline assessment of letter-sound knowledge was administered to each participant of the following letters: m, s, o, a, r, n, t, v, f, and c. The experimental group participated in lessons focused on letter naming, phonics, phonemic awareness, and language. A three-step lesson for an individual letter was used when providing intervention to the experimental group. Three letter cards were chosen from the target letters and placed in front of the participant. The first step determined if the participant could pronounce a letter's sound after given by the teacher. The second step included the teacher making a letter sound and the participant pointed to which letter sound was heard. The third step involved the teacher pointing to a specific letter and the participant responding with the letter's sound. Each intervention session took roughly three to four minutes and was conducted for three sessions per week across 8 weeks. The control group was given one-on-one and group phonics instruction within the preschool classroom.

Results of the intervention indicated the experimental group learned more sounds each week compared to the control group. Children who knew no letter sounds in the experimental group demonstrated greater growth of letter sounds as a result of the intervention when compared to children who knew no letter sounds in the control group. Children who began with some letter-sound knowledge in the experimental group improved their knowledge across the 8 weeks at a much faster rate than the control group's participants who began with some letter-sound knowledge. Those with some sounds in the control group maintained their letter sound knowledge overall but did not learn new letter sounds. At week eight, four children in the experimental group could independently decode between two and eight CVC words based upon letter sounds introduced, whereas no children in the control group could decode any consonant-vowel-consonant (CVC) words.

As the previous study revealed, phonological awareness can be stimulated in typically developing preschool children, but what about children with communication disorders? Gillon (2005) investigated if early phonological awareness could be prompted in children with phonological disorders, and if stimulating early phonological awareness will help prevent reading and writing difficulties that may be present with these children in the future. Participants included 31 children with a mean age of 41 months.

The participants were divided into two groups. The experimental group consisted of 12 children with a moderate speech delay and no other disability who had typical receptive language. The control group consisted of 19 randomly selected children from a kindergarten or preschool program who received typical instruction. An articulation baseline was collected measuring the percent of consonants correct (PCC). The experimental group's mean PCC was 33%, whereas the control group's mean PCC was 89%. The intervention consisted of individual

and small group lessons targeting speech intelligibility, facilitation of phonological awareness at the phoneme level, and knowledge of letter-names and letter-sounds. Intelligibility therapy centered on the Cycles Approach with auditory bombardment and drill play activities specific to the participant's needs. Phonological awareness was targeted through activities for phoneme detection, phoneme categorization, initial phoneme matching, and phoneme isolation. Letter-name and letter-sound knowledge were targeted through recognition activities that included games focused on lowercase letters. Intervention consisted of two to three sessions per week. Assessments of rhyme, phoneme matching, and letter recognition were collected at 3 and 5 years of age. Participants' PCC were measured at the end of each year. Speech production skills were assessed periodically using the Goldman Fristoe Test of Articulation (GFTA).

When analyzing gain scores, results indicated all participants improved across assessments of rhyme, phoneme matching, and letter recognition. The GFTA indicated rapid growth of speech production skills during the first 8 to 12 months of the study. The experimental group demonstrated significantly more growth between the first and second assessment for each subtest when compared with the control group. The experimental group's PCC average increased from 33% to 71% from age 3 to 5. At the time of school entry, the experimental group's PCC was 79%. Phonological awareness skills of participants were assessed one year after school entry and were determined to be similar to those of children without speech impairment. All children within the experimental group were reading at or above grade level upon the end of their first year of schooling.

Conclusion

Teachers are required to teach CCSS and deliver instruction on foundational skills; however, teachers have gaps in their knowledge of language, as highlighted by Joshi et al.

(2009), McCutchen et al. (2002), Moats (1994), and Spencer et al. (2008). Skills that are required

to be taught during direct, language-focused instruction are difficult for teachers to understand

when they have not themselves been explicitly taught. All subjects require reading and writing

skills to be successful. In order to be successful across subjects, children need a base of

foundational reading and writing skills. Foundational skills taught at the kindergarten level set

the groundwork from which to build on in order to be academically successful in the subsequent

years. Linguistic knowledge that is necessary to effectively deliver instruction is neither required,

nor understood by both teachers and the teacher educators who teach them at the college level

(Joshi et al., 2009).

Early childhood education teachers need a better understanding of linguistic instruction in

order to provide explicit instruction regarding letter-sound knowledge for students. By having a

stronger understanding of phonetics, classroom teachers can better support students with and

without language difficulties within the general education classroom. Providing explicit

instruction within the classroom to students at risk can bridge gaps in order to facilitate success

prior to those gaps increasing (Sanger et al., 1995).

In order to generate success with a child, a team approach may be effective to deliver

instruction. If the teacher possesses gaps in their linguistic knowledge, it would be important to

collaborate with the school SLP in order to clarify teachers' understanding of important elements

of language (ASHA, 2019). The SLP can work with early elementary teachers to plan

instruction, push into the classroom, and model explicit instruction. When the SLP pushes into a

classroom, opportunities arise for students to generalize targeted skills within their LRE. The

SLP can lead lessons to provide modeling for the teacher to use in subsequent lessons. SLPs can

co-teach after leading lessons to increase the confidence of teachers and give opportunities for

the SLP to provide feedback on the teacher's delivery of instruction (Lorio, 2019). The SLP can

benefit from these interactions by improving their own classroom management skills and having

exposure to the demands of teachers in order to build effective, collaborative relationships

(Sanger et al., 1995). This collaborative approach can improve practices at the individual and

interprofessional level which could have potential to impact at the organizational level. When

teams report effective collaboration with documented student learning, other school personnel

may be motivated to implement collaborative approaches to student learning.

If teachers can utilize interventions from evidence-based practices, both instruction and

intervention can be more effective when teaching children phonemic awareness, letter names,

and letter sounds to promote decoding and encoding skills. The SLP can help to identify and

explain appropriate EBP in order to provide teachers with new and innovative practices to

achieve student success (ASHA, 2019).

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Rationale for the project

This project was created to provide elementary teachers with an understanding of phonetics in order to support reading and writing instruction for their students. By understanding a sound's phonetic components, teachers can describe sounds appropriately to students when associating a sound to a letter. Elementary Education Bachelor programs do not require undergraduate coursework in phonetics. The phonetic characteristics of a sound may be unknown to most teachers. Without this knowledge, teachers cannot connect children's knowledge of a sound and its production to an abstract letter.

Description of the intended audience

The intended audience for this manual is Kindergarten, 1st grade, English as a Second Language, and early childhood education teachers and teacher aides. Teachers play a predominant role in children learning to read but possess widely varying knowledge foundations as to how to teach letter-sound associations to children. Often, classrooms are full inclusion, which can include students with Individualized Education Plans (IEPs) and students whose first language is not English. Having a clearer understanding of the phonetic characteristics of consonants and vowels would aid any adult when providing instruction to all students. This instruction could be within a classroom environment, an RTI program, or when providing accommodations for students with IEPs and/or 504 plans.

Explanation for how the resource manual should be used

This resource manual may be used as a supplemental aid to existing reading curricula used by a school district. It is hoped that this manual can be referenced when introducing a letter and its sound to students in kindergarten or to reinforce an understanding of how to produce a letter sound appropriately in order to make letter-sound associations. Publishers of English

Language Arts curriculum neglect to provide instruction for the characteristics that make up a letter sound. This manual can also be used when conducting Response to Intervention groups that are focused on letter-sound associations and decoding words.

Potential benefits that might be derived from the use of the manual

Children bring their mouths to reading and writing. When teachers communicate what is happening in the mouth when a sound is produced, links between the sound being produced to the abstract symbol of the letter that represents the sound are established. This directly impacts a child's ability to link a sound to its visual symbol to improve phonemic awareness. By utilizing this resource manual, teachers gain an understanding of how a sound is produced based on characteristics of voice, place, and manner for consonants and tongue height and position, firmness of the tongue, and lip configuration for vowels. Having this knowledge, teachers may be more effective in assisting their students to connect a sound to a letter when learning to read and write. Students will benefit from receiving a comprehensive phonetic and phonemic background that can impact their ability to understand letter-sound association, decode a word, and map the sound to the spelling, which in turn will help them to read and write words effectively.

This manual also provides an orthographic representation of a sound with possible spellings depending on the position of the sound within a word. These orthographic representations can be utilized by the teacher to display on a sound wall. Teachers can provide explicit instruction for a letter's associated sound and possible spellings to build the sound-symbol correspondence necessary to decode and write words.

Resource Manual Organizational Framework

This resource manual provides kindergarten teachers with the sound characteristics of the most common sounds of English introduced in kindergarten. It begins with a diagram and explanation of the speech mechanism. A description of voice, place, and manner is given for consonant sounds. A chart then presents all consonant sounds and categorizes them by these characteristics. Each consonant sound is described on a single page with an orthographic representation of potential spellings at the beginning, middle, and end of a word. Each sound has a visual representation of the mouth during production. Visual representations were created by the author's niece under the direction of the writer based on well-known and common figures in various phonetic books. Each page has a letter-sound association script that the teacher can use when introducing a letter and its sound. Consonants included are letters Bb through Zz and zh, followed by digraphs (sh, ch, th). The letters X x and Q q are not included because these two letters are made up of a consonant sequence. A description of characteristics for vowels to describe lip configuration, tongue height and placement, as well as tongue firmness is included next. The vowel quadrilateral is presented as letters with their phonics' symbols to aid teachers with identifying which vowel is produced at a certain position in the mouth. The vowel quadrilateral is then presented within the speech mechanism to help illustrate vowel characteristics. Short vowel sounds are described first, followed by long vowel sounds, and additional vowels. Each page includes whether the vowel is a monophthong or diphthong with potential spellings, a chart of characteristics with a letter-sound association script, and a visual representation of the speech mechanism when producing the sound. Appendix pages follow the vowels that include a full-page visual of all speech sounds with corresponding letters for teachers to utilize during instruction.