VISUAL PHONICS: AN EFFECTIVE INSTRUCTIONAL TOOL FOR d/DEAF AND HARD OF HEARING STUDENTS

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ABSTRACT

This paper considers existing literature in the field of education for d/Deaf and Hard of Hearing (DHH) students on current educational trends and approaches with the goal of identifying the effectiveness of Visual Phonics as an instructional tool for this population. The specific criteria examined were: 1) accessibility to students across the spectrum of communication modalities 2) difficulty for educators to learn and implement in various educational settings and 3) effectiveness in addressing specific literacy goals with a focus on phonological awareness development. This research synthesis provides evidence to support the use of Visual Phonics in developing phonological awareness skills in DHH student regardless of modality used. Implications for further research on evidence-based curriculum options for DHH children are also outlined.

INTRODUCTION

In the field of education for d/Deaf and Hard of Hearing (DHH) students, there is often controversy surrounding how to instruct these students, what modality and/or language should be used, and what modifications to curriculum should be made. Some professionals believe in an oral-only approach with no visual or tactile stimuli, while others believe in an American Sign Language (ASL) only approach, and still others fall somewhere in between. These issues are emphasized by the lack of evidence of best practices of instruction for this population.

Visual Phonics is an instructional approach that is highly debated in the field of deaf education in literacy instruction for DHH students. See the Sound/Visual Phonics is an instructional strategy used for supplementing phonemic awareness and phonics instruction (Narr and Cawthon, 2011, p. 66). Visual Phonics "is not a program or a curriculum, but rather a strategy for representing sound in a visible, concrete way." (Montgomery, 2008, p. 177). The strategy consists of handshapes that represent every sound in the English language as well as written symbols to represent these sounds. These handshapes and symbols were carefully developed to kinesthetically represent the movement of the articulators in creating these sounds when using speech (Montgomery, 2008, p. 177). The multimodality features of Visual Phonics are especially helpful in giving students an opportunity to interact with phonemes in several ways, including visually and kinesthetically, in addition to or in replace of auditorily. Visual Phonics is a helpful tool for supplementing existing phonics and phonological awareness instruction for DHH students. The advantages of using Visual Phonics focus on the accessibility to the whole population, ease of implementation among deaf education settings, and how it addresses specific literacy goals.

LITERATURE REVIEW AND DISCUSSION

Visual Phonics presents itself as a useful tool for teaching literacy skills to students who otherwise may not have access to the phonological aspects of spoken language. Specifically, Visual Phonics is accessible to DHH students in that it creates a way to visually access and manipulate the sounds of spoken language without depending on auditory means (Montgomery,

2008, p. 178). Since "Visual Phonics' hand-shape cues are tied kinesthetically to the production of the sounds of English—what actually happens in the mouth" (Montgomery, 2008, p. 177), the cues have been found to be able to help DHH students differentiate between sounds that look the same when lipreading, such as /g/ and /k/ (Beal-Alvarez, Lederberg, and Easterbrooks, 2012, p. 55; Woolsey, Satterfield, and Roberson, 2006, p. 454), which improves the effectiveness of conveying phonemic awareness in phonological and phonics instruction non-auditorily (Narr and Cawthon, 2011, p. 66). Additionally, despite the typical debates in deaf education concerning communication modes or amplification options, Visual Phonics has been found to be able to be used with students who differ in these ways (Woolsey et al., 2006, p. 454). Studies consistently suggest that type or lack of amplification, degree of hearing loss, or preferred communication mode do not influence the effectiveness of Visual Phonics with DHH students (Beal-Alvarez et al., 2012; Smith and Wang, 2010; Trezek, Wang, Woods, Gampp and Paul, 2007; Trezek and Wang, 2006). Therefore, Visual Phonics has shown to be accessible and useful across many factions of the population of DHH students. However, the use of Visual Phonics is rejected by proponents of "traditional oral approaches" (Paul, 2009, p. 128), in which the sole focus is on learning through listening without the use of visual supports. Supporters of ASL-only approaches, where non-ASL manual markers are considered to devalue Deaf culture, also reject incorporating Visual Phonics into deaf education (Miller and Clark, 2011). Evidence supports that Visual Phonics provides accessibility to phonology for DHH students regardless of degree of hearing loss, which is not true of the auditory-only inputs given to children in strict, oral-only programs. Likewise, in programs that solely use American Sign Language, no English phonology is presented. Therefore, a balanced approach should be considered to meet the needs of DHH students. Visual Phonics, then, is a viable middle-of-the-road option for accomplishing phonological awareness and literacy instruction.

In addition to being accessible, Visual Phonics is easy to learn and implement. In a survey of 200 participants, including educators and speech pathologists, who use Visual Phonics, 83-84% of participants agreed that Visual Phonics was "easy to use as an instructional approach" and "easy to integrate into a structured curriculum" (Narr and Cawthon, 2011, p. 73). Tucci and Easterbrooks (2015) explained that Visual Phonics "has social and economic validity in that it is relatively easy to teach and learn, is not grade specific, can be a supplement to existing reading/language curriculums, and requires little to no materials after the initial training" (p. 280). One concern that is prevalent in discussions about Visual Phonics is the use of the written symbols. This is evident in that less than 40% of participants in a comparatively large study use the Visual Phonics written symbols in instruction (Narr and Cawthon, 2011, p. 71). Many educators feel that the written symbols may add confusion (Montgomery, 2008, p. 179; Narr and Cawthon, 2011, p. 71), and several studies omitted the use of written symbols in their studies altogether (Beal-Alvarez et al., 2012; Trezek et al., 2007; Trezek and Wang, 2006). However since "Visual Phonics is connected naturally and logically to the production of sound" and "The written symbols associate strongly with the hand-shape cues", Montgomery (2008) claims that the written symbols lessen confusion when used conservatively and "help students move past processing print as individual letters, and to begin to recognize chunks to which a morphological connection can be made" (p. 179-180). Thus, the flexibility to selectively use the components of Visual Phonics that meet the needs of each individual child is critical in considering its implementation.

Explicitly, flexibility is a key aspect of Visual Phonics. It can be used to supplement many literacy curriculums or phonological awareness instructional activities (Montgomery, 2008, p. 178; Woolsey et al., 2006, p. 454), as was evidenced by several studies in which Visual Phonics was used as a support to various literacy curriculums with DHH students (Beal-Alvarez et al., 2012; Smith and Wang, 2010; Trezek et al., 2007; Trezek and Wang, 2006). Furthermore, Visual Phonics is flexible to meet the individual needs of students. For example, when its use was studied in a school that utilized Total Communication teachers tailored their use of Visual

Phonics to be paired with certain communication modes based on the students' needs and the content of the lesson (Trezek and Wang, 2006). In another study, teachers' "use of Visual Phonics seemed to be applied flexibly and in contexts where children needed extra support in recalling a phoneme" (Beal-Alvarez et al., 2012, p. 57). On the other hand, some researchers have found the system's lack of guidelines to be a challenge. Specifically, teachers are tasked with figuring out how to incorporate the system into their instruction, and a survey found that "teachers struggle with this adaptive process" (Narr and Cawthon, 2011, p. 77). Woolsey et al. (2006) similarly claimed that because Visual Phonics lacks a "clearly explained implementation system" implementation is challenging (p. 453). However, it should be considered that "The ability to cue students with 'just what they need' to process print more meaningfully is a powerful aspect, and allows the instructor to choose the type, frequency, and intensity of multisensory cues" (Montgomery, 2008, p. 179). It is the teacher's responsibility to find practices that work for their students and to be flexible enough to find ways to incorporate those practices into their instruction to meet their students' needs. When teachers successfully incorporate Visual Phonics into literacy instruction, it can be used to target specific phonological skills.

Most notably, research supports the effectiveness of using Visual Phonics to target literacy skills and address phonological instructional needs for DHH students. Specifically, evidence shows that Visual Phonics can be used to teach and support phonemic awareness and decoding skills in DHH students (Montgomery, 2008; Narr and Cawthon, 2011; Narr, 2008). The conclusions of the study by Narr and Cawthon (2011) suggest that Visual Phonics helped DHH students improve their decoding skills in both reading and writing, while Trezek and Wang (2006) also found that DHH students improved in "word reading" and "pseudoword decoding" after Visual Phonics was incorporated into their phonics curriculum (p. 211). Similarly, in another study, it was stated that "that Visual Phonics used with a phonics-based curriculum significantly increased phonological awareness" (Smith and Wang, 2010, p.124) and the student "improved the most in phonemic awareness" (Smith and Wang, 2010, p. 129). Additionally, DHH students with varying degrees of speech perception "benefited from explicit instruction in the grapheme–phoneme relationship using multimodality support" (Beal-Alvarez et al., 2012, p. 39). However, there are some areas that research shows disagreeing or weak evidence for, such as rhyme judgement (Montgomery, 2008, 178; Narr, 2008, p. 405) or vocabulary building (Beal-Alverez et al., 2012, p. 39; Narr and Cawthon, 2011, p. 72). More research should be done before dismissing the effectiveness of Visual Phonics in these areas. Overall, evidence suggests that Visual Phonics supports many phonological skills, as mentioned above.

In considering that Visual Phonics promotes the development of phonological skills in DHH students, it is critical to address that some researchers oppose the idea that such skills are necessary for these students. In summary, Miller and Clark (2011) argued that phonemic awareness drill practice should not be the sole focus of reading programs for DHH students, instead they asserted that reading and literacy should be approached visually and without disregarding sign language and Deaf culture. The argument includes that approaches to teaching reading skills to DHH students should focus on the use of visual learning using alternative, nonphonological strategies of instruction. This belief is at least in part grounded in that using Visual Phonics to build phonological awareness may lead to a rejection of sign language and Deaf culture (Miller and Clark, 2011). However, as stated earlier, research has found that Visual Phonics can be used to accommodate DHH students regardless of communication mode, including those who use sign language as their primary mode of communication (Beal-Alvarez et al., 2012; Smith and Wang, 2010; Trezek et al., 2007; Trezek and Wang, 2006; Tucci and Easterbrooks, 2015). Additionally, Visual Phonics is "an instructional tool rather than a communication system" (Trezek et al., 2007, p.377), which is noted in other publications as well (Paul et al., 2009, p. 351; Smith and Wang, 2010, p. 126; Woolsey et al., 2006, p. 453). Therefore, it has no ability to take the place of communication through sign language.

Additionally, Allen et al. (2009) also advocate the use of alternative, nonphonological strategies in literacy instruction for DHH students. In response, Paul et al. (2009) point out, "there is no clear description of an overall framework to explicate what they mean, specifically, by 'alternative cognitive and linguistic pathways to reading success'" (p. 346); this specificity is also missing in Miller and Clark's (2011) argument. Paul et al. (2009) also stress in their counterargument that evidence supports the claim that "phonological awareness is necessary, but not sufficient, for reading comprehension" (p. 350). They also argue that "Phonology cannot simply be abandoned, even for children with limited or no access to it" (Paul et al., 2009, p. 348). The belief that phonological awareness is considered critical for acquiring efficient literacy skills is widely held among researchers in the general field of education and in the field of deaf education (Beal-Alvarez et al., 2012; Narr and Cawthon, 2011; Paul et al., 2009; Smith and Wang, 2010). As discussed, there is evidence to support the use of Visual Phonics as a strategy to develop many of these critical phonological awareness skills in DHH students.

CONCLUSION

Altogether, evidence supports the use of Visual Phonics as an effective tool for supporting phonics and phonological awareness instruction for DHH students. It was shown that Visual Phonics is accessible, easy to use and implement, and targets specific literacy skills. Although DHH students may not have complete access to the phonological aspects of spoken language, Visual Phonics is an instructional tool designed to provide visual access to phonemes that are otherwise only accessible through auditory means. Visual Phonics has also been found to be effective for DHH students regardless of communication mode, degree of hearing loss, or type of amplification. It can then be argued that this strategy is accessible to the whole population. Similarly, Visual Phonics has a reputation for being convenient, especially when utilizing only the hand cues. A key aspect of Visual Phonics is that it allows for flexibility and fluidity in that educators can, and should, choose to use only the features that will support each child's individual needs in each context. Additionally, Visual Phonics was found to be effective in targeting specific phonological skills within literacy instruction for DHH students. Improvement in phonemic awareness and decoding skills given the use of Visual Phonics as a supplement to literacy curriculums were the major findings discussed. Therefore, research supports that Visual Phonics is a valuable instructional tool in developing literacy skills in DHH students.

However, there is controversy over the validity and amount of research regarding Visual Phonics. Considering the emphasis placed on the role of language in the education of DHH students, not enough information about Visual Phonics has been published (Narr and Cawthon, 2011, p. 67). Narr and Cawthon (2011) expressed their concern that of the information that has been published, many articles focus exclusively on its application and anecdotal evidence, as supplied by educators who use it. Similarly, Woolsey et al. (2006) states that "professional intuition is a far cry from empirical evidence" (p. 456) and that research conducted on this basis is not sufficient. Despite claiming that there are too few publications on the effectiveness of Visual Phonics, Narr (2008) states that several of the studies discussed (Trezek et al., 2007; Trezek & Wang, 2006) provided strong correlations between Visual Phonics and improvement in reading skills. Furthermore, Trezek et al. (2007) admitted that they faced challenges in their research and called for further research to be conducted to confirm their findings.

Although there is a concern about the number of empirical studies that have provided evidence for the effectiveness of Visual Phonics, the above-mentioned studies provide a foundation that suggests Visual Phonics is effective as a supplemental tool in teaching DHH literacy skills and that it merits additional research to further validate its use as a research-based instructional method. As Tucci and Easterbrooks (2015) recently commented, there is "a growing evidence base of [Visual Phonics]'s effectiveness in teaching a variety of literacy skills to DHH students with various hearing losses across grade levels" (p. 281). As this evidence base grows, there is a need for studies with larger sample sizes and more longitudinal studies, however, these

are challenges commonly faced in research in deaf education being that the population of DHH students is relatively small compared to the general education population (Narr, 2008, p. 414). The research that has been published shows that Visual Phonics has great potential for being verified as or refined to be a preferred and evidence-based method of teaching phonics and phonological awareness to DHH students.

REFERENCES

Allen, T. E., Clark, M. D., del Giudice, A., Koo, D., Lieberman, A., Mayberry, R.,

& Miller, P. (2009). Phonology and Reading: A Response to Wang, Trezek, Luckner, and Paul. American Annals of the Deaf, 154(4), 338–345. Retrieved from http://ezproxy.tcnj.edu:2059/login.aspx?direct=true&db=aph&AN=47186933&site=ehost-live

Beal-Alvarez, J. S., Lederberg, A. R., & Easterbrooks, S. R. (2012). Grapheme–

Phoneme Acquisition of Deaf Preschoolers. Journal of Deaf Studies and Deaf Education, 17(1), 39-60. Retrieved from http://ejournals.ebsco.com/direct.asp?ArticleID=405FABAD07312E3AE975

Miller, P., & Clark, M. (2011). Phonemic Awareness is Not Necessary to Become a

Skilled Deaf Reader. Journal of Developmental & Physical Disabilities,

23(5), 459–476. doi:10.1007/s10882-011-9246-0

Montgomery, J. (2008). Dave Krupke: What Exactly is Visual Phonics?

Communication Disorders Quarterly, 29(3), 177–182. Retrieved from http://ezproxy.tcnj.edu:2059/login.aspx?direct=true&db=aph&AN=32692422&site=ehost-live

Narr, R. F., & Cawthon, S. W. (2011). The "Wh" Questions of Visual Phonics:

What, Who, Where, When, and Why. Journal of Deaf Studies and Deaf Education, 16(1), 66-78. Retrieved from http://ejournals.ebsco.com/direct.asp?ArticleID=453DAEC2264F0A84038D

Narr, R. F. (2008). Phonological Awareness and Decoding in Deaf/Hard-of-

Hearing Students Who Use Visual Phonics. Journal of Deaf Studies and Deaf Education, 13(3), 405-416. Retrieved from http://ejournals.ebsco.com/direct.asp?ArticleID=4D91B87C1DAA38BE5039

Paul, P. (2009). Language and deafness (4th ed.). Sudbury, MA: Jones and Barlett.

Paul, P. V., Ye Wang, Trezek, B. J., & Luckner, J. L. (2009). Phonology is Necessary, but Not Sufficient: A Rejoinder. American Annals of the Deaf, 154(4), 346–356. Retrieved from http://ezproxy.tcnj.edu:2059/login.aspx?direct=true&db=aph&AN=47186934&site=ehost-live

Smith, A., & Ye Wang. (2010). The Impact of Visual Phonics on the Phonological

Awareness and Speech Production of a Student Who Is Deaf: A Case Study. American Annals of the Deaf, 155(2), 124–130. Retrieved from http://ezproxy.tcnj.edu:2059/login.aspx?direct=true&db=aph&AN=53484051&site=ehost-live

Trezek, B. J., Wang, Y., Woods, D. G., Gampp, T. L., & Paul, P. V. (2007). Using Visual Phonics to Supplement Beginning Reading Instruction for Students Who Are Deaf or Hard of Hearing. Journal of Deaf Studies and Deaf Education, 12(3), 373-384. Retrieved from http://ejournals.ebsco.com/direct.asp?ArticleID=4E4CB9AF938F981A5BEA

Trezek, B. J., & Wang, Y. (2006). Implications of Utilizing a Phonics-Based Reading Curriculum With Children Who Are Deaf or Hard of Hearing. The Journal of Deaf Studies and Deaf Education, 11(2), 202-213. doi:10.1093/deafed/enj031

Tucci, S. L., & Easterbrooks, S. R. (2015). A Syllable Segmentation, Letter-Sound, and Initial-Sound Intervention With Students Who Are Deaf or Hard of Hearing and Use Sign Language. Journal of Special Education, 48(4), 279–289. https://ezproxy.tcnj.edu:2083/10.1177/0022466913504462

Woolsey, M. L., Satterfield, S. T., & Roberson, L. (2006). Visual Phonics: An English Code Buster? American Annals of the Deaf, 151(4), 452–457. Retrieved from http://ezproxy.tcnj.edu:2059/login.aspx?direct=true&db=aph&AN=23606786&site=ehost-live