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The "Wh" Questions of *Visual Phonics*: What, Who, Where, When, and Why

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Visual Phonics is a reading instructional tool that has been implemented in isolated classrooms for over 20 years. In the past 5 years, several experimental studies demonstrated its efficacy with students who are deaf or hard of hearing. Through a national survey with 200 participants, this study specifically addresses who, where, how, and why a sample of teachers use *Visual Phonics* in their everyday reading instruction. Through checklists of teaching practice, rating scales, and open-ended questions, teachers self-reported their use of *Visual Phonics*, reflected upon its efficacy, and what they think about using it with students with a diverse set of instructional needs. The majority reported that *Visual Phonics* was easy to use, engaging to students, and easy to integrate into a structured reading curriculum. The majority of respondents agreed that it helps increase phonemic awareness and decoding skills, build vocabulary, as well as increase reading comprehension. The implications of these findings in bridging the research-to-practice gap are discussed.

Learning to read is a complex process that is acquired with little effort by many children when there is a convergence of optimal conditions, most importantly strong language skills, during their early years. In contrast, learning to read can be a daunting prospect for some young children, particularly those identified with special needs. Effective reading instruction requires a strong theoretical knowledge base; for typically developing children, teaching reading can be straightforward and implemented according to state-prescribed standards and district curriculum. However, teaching reading can be daunting if there is not an alignment between the instructional approach and the language skills of the students. Teachers of students with special needs, like their counterparts in general education, frequently find creative ways to adapt, modify, and supplement the curriculum to make it most accessible to their students. This process of modifying and supplementing materials is particularly frequent for teachers of deaf or hard-of-hearing (DHH) students.

The use of *Visual Phonics* is an important example of how teachers have adapted phonics-based reading instruction for DHH students. See-the-Sound/*Visual Phonics* is a multisensory system of hand cues and written symbols used to supplement any reading curriculum or reading method. The hand-cues are visual and tactile representations of phonemes and are used to convey phonemic information about phonemes within words. For example, the spoken word *toe* would be represented using the hand cues for the phonemes /t/ and /o/. The /t/ is represented by flicking the index finger off of the thumb, in the area near the mouth, with palm facing forward. This "flicking" movement of the index finger kinesthetically represents what the tongue does in the mouth when articulating the phoneme /t/. That said, articulatory production (voiced or unvoiced) is helpful but not required to perceive the hand cues. The written symbols can be used to demonstrate spelling patterns or phonetic word structure. Teachers learn to use *Visual Phonics* through professional development provided by licensed trainers sanctioned through International Communications Learning Institute (ICLI), the organization that owns the rights to *Visual Phonics*.

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Visual Phonics is a tool that has been implemented in isolated classrooms for over 20 years, but until recently, used without the support of empirical evidence. Its attraction and implementation has instead been based largely on anecdotal support. Although teachers are taught to use it through formal training, little published information reports the efficacy of *Visual Phonics* with DHH students. Recent experimental and quasi-experimental studies demonstrate the potential positive impact that *Visual Phonics* has on reading achievement when it is used with systematic and explicit reading instruction (Narr, 2008; Trezek & Malmgren, 2005; Trezek & Wang, 2006; Trezek et al., 2007). Although this research evidence adds significantly to our understanding of how *Visual Phonics* can be used in specific situations with specific curricula, it does not describe the range of everyday use and teachers' perceptions of its effectiveness with a diverse student population.

Theoretical Perspective

Although teachers of DHH students use a variety of strategies to teach their students to read and spell, approaching literacy instruction from a perspective that includes phonemic awareness and phonics instruction is challenging with this population (Mayer, 2007; Musselman, 2000; Wang et al., 2008). The first prerequisite of learning to read is acquisition of strong expressive and receptive language skills, either spoken or signed (Chamberlain & Mayberry, 2008; Mayer, 2007). Once a foundation is built, subsequent skills necessary for reading can be taught and acquired (Cummins, 2006; Mayer, 2007). DHH students often come to school with language delays and limited or inconsistent exposure to spoken language. As a result, they are frequently faced with learning the multiple and complex elements of English while trying to learn to read at the same time.

In discussing "What matters most in the literacy development of young deaf children," Mayer (2007) asks researchers to focus "attention to the ways in which we can help children to solve the phonologic problem of spoken language in ways that make sense for children who are deaf" (p. 424). Wang et al. (2008) support the instruction of teaching phonemic awareness and phonics, citing recent intervention studies demonstrating the effectiveness of using *Visual Phonics* in phonics-based reading instruction. *Visual Phonics* can be used as the tool to help address the problem of making English text (inherently based on spoken language) more transparent to DHH students. At the same time, however, other researchers are providing evidence that suggests phonemic awareness and phonics-based strategies may not be critical for the reading success of deaf learners (Allen et al., 2009). In the context of these continued questions, teachers and researchers need to explore and use a variety of strategies that meet DHH learners' needs.

In a comprehensive review of the literature on reading development and reading instruction, Schirmer and McGough (2005) found only one study that sought to *teach* phonemic awareness and examine its effects on reading with DHH students. That study provided no information about the strategies used to teach phonemic awareness; therefore, no conclusions were possible (Schirmer & McGough, 2005). Schirmer and McGough also found no studies to include in their review that examined phonics instruction with DHH students. Since that 2005 publication, Trezek and colleagues have published several studies providing strong correlational evidence between phonics instruction and reading skills for DHH students (Trezek & Malmgren, 2005; Trezek & Wang, 2006; Trezek et al., 2007). Luckner et al. (2005/2006) specifically examined literacy research in deaf education and found obstructed access to the phonological code as one of the five most frequently cited challenges in the field. It is clear that even though teachers may have evidence that shows teaching phonological awareness and phonics skills are important in developing literacy skills for DHH students, how to do that with DHH students is a consistent challenge.

Purpose of Study

The purpose of this study was to investigate how a sample of teachers use *Visual Phonics* in their everyday reading instruction. The study attempted to better understand teachers' perceived benefits of its use for students with diverse characteristics. The specific questions that guided this inquiry were

1. What is the professional background of teachers who use *Visual Phonics*?
2. In what ways do teachers use *Visual Phonics* to teach reading to their students?
3. What are the characteristics of students for whom *Visual Phonics* is thought to be most beneficial?
4. What are teachers' perspectives on the strengths and weaknesses of *Visual Phonics*?

Methods

This study used a mixed-methods survey to collect information from teachers who use *Visual Phonics* with their students. The survey was initially available for 4 months, between October 1, 2008, and January 31, 2009, with a later extension of the survey to increase the response rate, until May 2009.

Recruitment and Sample Size

The survey instrument was administered online via the Internet using http://surveymonkey.com. Survey participants were recruited through e-mails to *Visual Phonics* trainers, with a focus on national dissemination to the teachers they had then trained. It is likely that many of the participants did not know who was specifically conducting the survey research as trainers were requested to send an email and a short note asking their trainees to participate in the survey. No other directions were provided. The survey was also disseminated on a more limited basis by the primary author who is a *Visual Phonics* Trainer on her web site and through emails to teachers she has trained. Participants provided informed consent and were informed that all their personal information would remain anonymous. In no cases were any responses matched with a particular individual. An incentive for participation was entry in a random drawing for one of two $50.00 gift cards upon completion of the survey. Initially, 230 participants completed the survey. Inclusion criteria included provision of consent and responses demonstrating they actually used *Visual Phonics* in their instruction. Those who did not meet all the criteria were removed from the sample. In the end, responses from 200 participants were used for analysis.

Survey Instrument

The survey format included multiple choice, checklist, Likert scale, and open-ended response items. The demographics section of the survey focused on the participants' own training, including their role, credentials they held, and years of experience both overall and specifically using *Visual Phonics*. Participants responded to additional questions about the kind of *Visual Phonics* training they received. Demographics questions also focused on participants' students. Participants completed a checklist of characteristics of students that they had used *Visual Phonics* with, both in the current school year (2008–09) and in previous years. Student demographic characteristics included grade range (e.g., pre-K, elementary grades), disability status, and English Language Learner status.

Visual Phonics–use variables were obtained using a series of checklists with specific instructional areas. For example, one question asked participants to indicate a range of tasks used while teaching reading, such as phonemic awareness, phonics, spelling, vocabulary, and speech development. Participants could check off any or all these activities or add an "other" category with a description. Participants indicated whether they used activities for a number of different student groups, including DHH, English Language Learners, students with disabilities, or students without disabilities.

Teacher perspectives on what motivated them to use *Visual Phonics* and related challenges were obtained through checklists, Likert scale, and open-ended questions. The checklists were focused on evidence that teachers use to determine the effectiveness of *Visual Phonics*, such as improvements in reading comprehension, decoding, performance on curriculum-based measures, or level of student engagement in reading. These checklists also allowed participants to delineate between students with different characteristics, using the same designations as in the activities description, above (e.g., students who are DHH). Likert scale items focused on teacher ratings of *Visual Phonics* as an instructional approach, with items ranging from ease of use, effectiveness in building vocabulary, and helping with classroom management. Finally, teachers responded to three open

ended questions: (a) What do you like most about *Visual Phonics*?; (b) What do you find challenging about *Visual Phonics*?; and (c) What would you change about *Visual Phonics*? The intent of these questions was to elicit "real-life" perspectives from teachers beyond responses to the checklist and Likert scale items they provided in the previous sections.

Data Analysis

Data analysis approaches varied depending on the nature of the survey question format, with an emphasis on descriptive data. For items such as the checklist or multiple-choice items, analysis focused on frequencies across the participant sample and subtotals along demographic categories. For the Likert scale items, instead of using mean scores, we treated the scores as a categorical variable. We aggregated responses by "agreed strongly or somewhat strongly" as well as by "disagreed strongly or somewhat strongly." Again, frequencies and percent of responses in each category were run to look at distribution of responses across rating points.

The final step was to analyze the qualitative data. The first author first reviewed all the responses to the three questions about what they liked most, what challenged them, and then recommended changes to *Visual Phonics*. The first author created a set of initial categories for each of the three questions. An iterative process of deleting, revising, and renaming categories ensued until no new ideas or themes emerged. A subset of 15% of the responses was given to a second rater who is a reading specialist and had been previously trained in *Visual Phonics*. She evaluated the coding scheme and worked with the first author to establish interrater reliability. The second rater was blind to each item that was initially coded by the first author. The first author provided definitions and examples of codes for the second rater to use in her review of the reliability sample. The second rater coded the reliability sample and made notes as issues arose or where she thought a different or additional code might be needed. Initial coding reliability for each of the three qualitative questions was ranged between 70% and 84%. After the initial round of reliability coding, the PI and second rater discussed discrepant items as well as changes to the coding categories. These discussions resulted in changes to the emergent categories, and the second round of coding yielded increased reliability ranging from 90% to 100% for each of the three questions.

Results

Demographics: Who Uses Visual Phonics

Professional roles. A summary of the professional role for each participant is show in Table 1. Participants could choose one or more options to describe their professional roles. Nearly half of the participants self-identified as teachers of the deaf (n = 113, 57%) and 44 (22%) chose special education teacher. Additional roles included regular education teacher (n = 33, 16%), reading specialist (n = 12, 6%), speech-language pathologist (n = 24, 12%), and interpreter (n = 6, 3%). Just over 10% of participants (n = 22) chose "other" and described themselves as "parent," "home hospital teacher," "program specialist," or "volunteer." Totals exceed 100% because participants had the option of identifying more than one role.

Professional experience. Participants described the length of their professional experience across several categories related to education, special education, and use of *Visual Phonics*, specifically. Participants indicated one of four categories of experience: 1–2 years, 3–5 years, 6–10 years, and more than 10 years. A summary of the experience of study participants is shown in Figure 1. The most striking contrast is in

Table 1 Professional role of Visual Phonics Survey participants

Professional role	Number of participants (%)*
Special education teacher	44 (22)
Deaf educator	113 (57)
Regular education teacher	
Preschool	7 (3)
Elementary	25 (13)
Secondary	1 (.5)
Reading specialist	12 (6)
Speech language pathologist	24 (12)
Interpreter	6 (3)
Other	24 (12)

*The total sums to more than 100% because participants could select more than one role.

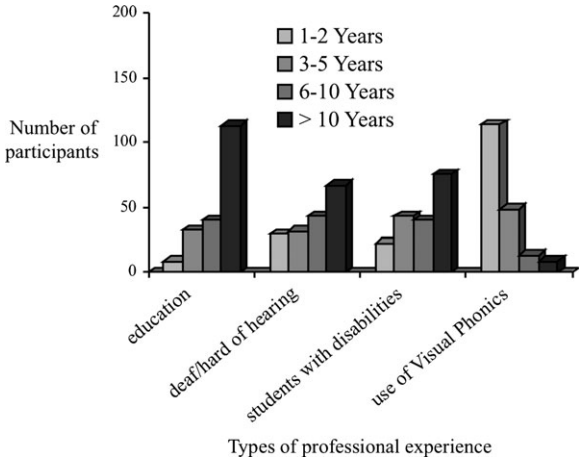

Figure 1 Participant's length of professional experience.

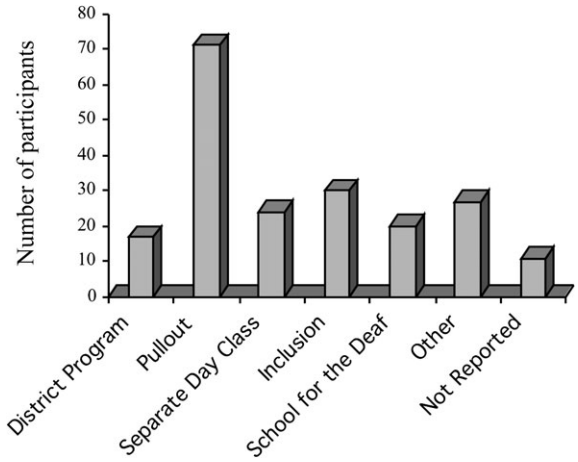

Figure 2 Types of settings where respondents used *Visual Phonics.*

the relative level of experience in education compared with how long participants had been using *Visual Phonics.* Half of the participants (n = 105) indicated that they had more than 10 years of experience in the field. On the other hand, a similar proportion (n = 102) had only 1–2 years of experience *with Visual Phonics.* The participant pool was not new to education but had not necessarily worked with students who are DHH or students with disabilities for their entire teaching career. More relevant to this discussion, the majority of participants were relatively new to *Visual Phonics.* In the discussion section, we examine this further in relation to the nature of these participants' responses to the questions.

Setting. Participants represented 21 states, with higher concentrations of individuals from Colorado (n = 18, 9%) North Carolina (n = 23, 12%), and Virginia (n = 24, 12%). Participants worked in a variety of educational settings across the continuum of placement options. Figure 2 summarizes the types of educational settings in which the study participants used *Visual Phonics.* Those individuals who noted multiple settings are in the "other" category. The majority of participants (n = 71, 35%) worked with students with special needs (including DHH) that spent part of the day in a "pull-out" setting. The second most prevalent setting was an inclusion (i.e., regular education only) setting (n = 30, 15%).

Source of visual phonics training. Although ICLI attempts to regulate how individuals are trained in *Visual Phonics*, we asked participants to identify the range of contexts where they received their training. This question was in a checklist format, with options including from "Preservice Teaching" to "Professional Development" to "No Formal Training." As part of the data analysis process, we created a new variable, "Trainer" from the responses to the "Other" option. Not surprisingly, the most prevalent source for *Visual Phonics* training, by far, was a professional development opportunity (n = 170, 85%). The only other widespread source was one's colleagues (n = 44, 22%), also an in-service resource. Only 5% of the participants (n = 10) indicated they were using it but were not formally trained.

Student characteristics. Participants described with whom they had used *Visual Phonics*, both during the current (2008–09) academic year and in previous academic years. Data from the current academic year and previous academic years were reasonably similar. Teachers used *Visual Phonics* primarily with students who were DHH and students that had other disabilities (not including DHH). With less frequency, teachers reported using *Visual Phonics* with students who were English Language Learners. The majority of teachers reported using *Visual Phonics* with elementary-age students, which makes sense because this is typically when students are learning to read. A much smaller number of teachers used it with middle school and high school students.

Generally speaking this validates what is known about the target population from whom *Visual Phonics* is most widely used. Additionally, it demonstrates that its use is not exclusive to the DHH population.

How Is Visual Phonics Used?

Breadth of use. Curious to understand the breadth of use within a school environment, we asked participants who else at their school site uses *Visual Phonics*. Slightly over half of the participants indicated several colleagues are also using *Visual Phonics* (n = 108, 54%). A small percentage (n = 36, 18%) worked in a setting where *Visual Phonics* was used program-wide, and only n = 34 (17%) were alone in their *Visual Phonics* use. The remaining participants chose "other" or did not respond to this item (n = 21, 11%). The responses describe the experiences of each teacher relative to his/her peers; therefore, teachers from one site may be reporting information related to the same site. Approximately half of the participants made their own decision to use *Visual Phonics* with their students, whereas roughly 30% made the decision with colleagues and 20% indicated it was an administrative decision.

Written symbols. Consistent with anecdotal reports from trainers, less than half of the participants reported they use the written symbols that accompany *Visual Phonics* (n = 79, 40%). Participants were given the opportunity to comment on this question, which yielded varied and opposing responses. Many use them with upper-grade primary students after students had mastered the alphabet and simple spelling patterns. Others commented that the symbols were useful for younger students as they were learning sound/letter relationships. Still other teachers reported using the written symbols or markings that accompanied other programs (e.g., Wilson Language) instead of the *Visual Phonics* written symbols, even though they used the *Visual Phonics* hand cues. Several teachers commented that the written symbols were confusing to children who were also learning the alphabet.

Reading curriculum and methods. Participants provided information about the kinds of reading curricula and methods they used with their students, both with and without *Visual Phonics*. For the quantitative portion of this question, choices included Reading Recovery, Success for All, Open Court, Houghton Mifflin for Reading, Systematic Instruction in Phoneme Awareness, Phonics, and Sight Words (SIPPS), and a Combination of Resources (such as Explode the Code and Reading Rockets). For each item, participants indicated whether they (a) used the curriculum/method, (b) used the curriculum/method with *Visual Phonics*, or (c) did not use the curriculum/method. Figure 3 provides a summary of the curricula by the number of participants who responded to this portion of the question. The most commonly reported method used was actually the Combination of Resources category (29% used them alone and 35% used with *Visual Phonics*). The next highest curriculum reported overall was the Houghton Mifflin for Reading series, with 31% using it alone and 13% using with *Visual Phonics*. Use of SIPPS was evenly split between those who used it without *Visual Phonics* (19%) and those who used it with *Visual Phonics* (18%). It is surprising that more popular and heavily based phonics instructional methods such as that Reading Recovery, Success for All, and Open Court were used very little with *Visual Phonics* (3%, 2%, and 4%, respectively).

Over half of the participants wrote in responses that either elaborated upon their choices or added information to the question. Those responses were categorized according to whether the curriculum identified was a general education curriculum, remedial curriculum, or whether it was a reading resource.

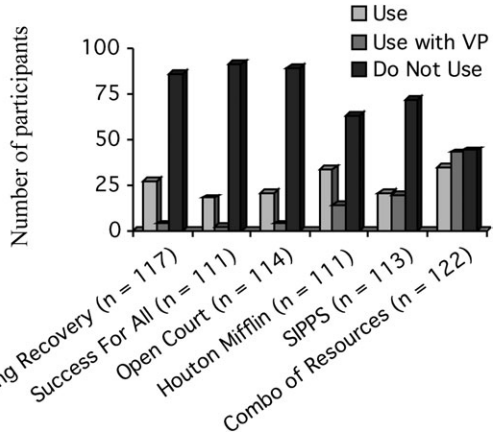

Figure 3 Reading curricula used.

Although several curricula or resources were identified by more than one person, none exceeded even the lowest choices in the quantitative section above. Some of the more frequently cited general education curricula included SRA Reading Mastery, Harcourt (part of Houghton-Mifflin), MacMillian-McGraw Hill Reading, and Scott-Foresman. More specific information related to the particular series of publishers or curricula was not obtained. Frequently identified remedial curricula included Reading Milestones, Fundations (Wilson Language Basics), and Language!. A variety of reading resources and materials were identified, with no one source identified more than others. Regardless of the curriculum or method used, teachers self-report that they are using a variety of standard curricula and methods to teach reading to their DHH students. This finding may be predictable given the requirements of No Child Left Behind Act (NCLB 2001). NCLB mandates that reading materials must include the five essential components of reading instruction: phonemic awareness, phonics, vocabulary, fluency, and comprehension. Reports from these teachers are substantially different than what was reported over 10 years ago in a national survey of reading instruction for DHH students that found whole-language and Reading Milestones to be in predominate use (LaSasso & Mobley, 1997). Prior to NCLB, when Reading Milestones and a whole-language approach were in use, phonemic awareness and phonics were not required to be taught.

Reading skills and visual phonics. Participants were asked to identify whether they use *Visual Phonics* for specific reading-related activities or skills including teaching phonemic awareness, phonics, spelling, and vocabulary. Although not necessarily a reading-related skill, participants were also asked if they use *Visual Phonics* for articulation practice and speech development. Figure 4 shows the relative usage for specific skills. For DHH students, teachers indicated using *Visual Phonics* for all the above activities with the majority of respondents indicating they use it for phonics (n = 134, 67%) and then spelling (n = 136, 64%), phonemic awareness (n = 123, 61.5%), vocabulary (n = 100, 50%), and articulation (n = 111, 55%). The trends were similar in use for students with other disabilities and English Language Learners, although there were fewer total number of responses for those students.

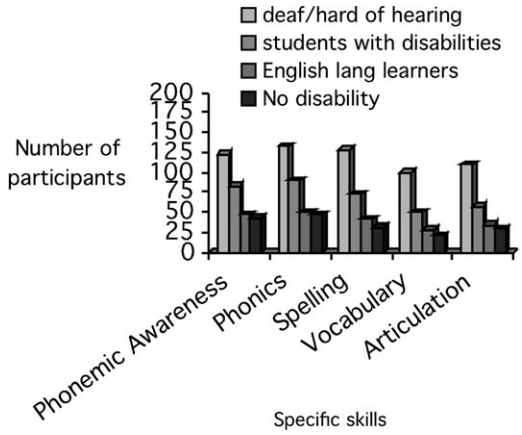

Figure 4 Specific skills taught using *Visual Phonics.*

Why Use Visual Phonics?

Evidence of effectiveness. We asked participants to indicate how they knew if *Visual Phonics* was effective with their diverse students. Options included improvement on reading-related tasks (reading comprehension, word recognition, decoding, engagement in reading) and assessment measures (curriculum-based measures and standardized assessments). Participants were also given the option to write-in responses.

A summary of participant responses to this question is in Figure 5. Sources of evidence for effectiveness appear to vary across items. The most commonly cited source of evidence is an improvement in student decoding capabilities, particularly for DHH students (n = 126, 63%) and students with disabilities (SWD) (n = 74, 37%). Participants also identified improvement in word recognition tasks for DHH students (n = 108, 54%) and for SWD (n = 61, 30.5%). Perhaps surprising is the similarity in prevalence of reading comprehension and student engagement as a source of evidence, with similar distributions across DHH, SWD, English language learners, and students without disabilities. Participants indicated assessments less frequently as a source of evidence for the effectiveness of *Visual Phonics*; this result may not be not surprising given that many standardized assessments

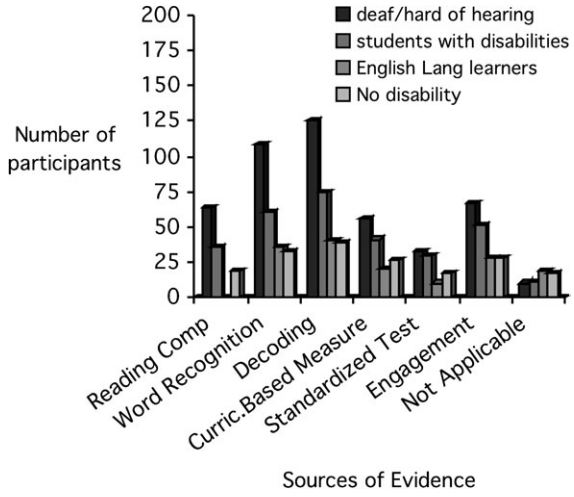

Figure 5 Evidence of effectiveness.

are not developed for administration with DHH learners. Another finding was less than a third of the participants noted performance on curriculum-based measures as a source of evidence for any type of student with whom they worked. This de-emphasis on curriculum-based measures is perhaps to be expected in an era with significant emphasis on standardized assessment in measuring student proficiency in academic subjects. When viewed from an accountability perspective, curriculum-based measures play a small role in evaluation of either student performance or the efficacy of curriculum models (Cawthon, 2007).

Twenty-seven participants wrote-in responses that were examined for recurring patterns or information that differed from the responses identified above. Eight participants specifically indicated they do not feel they have been using *Visual Phonics* long enough to see improvement. This makes sense given the demographic data reporting approximately half of the participants had only had 1–2 years of experience with it. Two participants, both DHH teachers, indicated specifically that they feel *Visual Phonics* does not benefit the students with whom they work. Seven participants wrote-in that they notice their students' articulation (speech production) has improved with the use of *Visual Phonics*. Consistent with the quantitative findings for this question, improvement in some aspect of decoding recurred in the write-in responses. For example, one speech-language pathologist who works with DHH students made the following comment related to the use of curriculum-based measures, "We use curriculum based measures for fluency, e.g., timed repeated readings. These have improved indirectly from visual phonics as a result of improved decoding skills." There were also several recurrent comments related to improved spelling skills.

Perceptions of visual phonics. Also to address the *why* question, both quantitative and qualitative questions were used to understand participants' perceptions of using *Visual Phonics*. A set of quantitative questions asked participants to rate their perceptions of *Visual Phonics* as an instructional approach within three categories: aspects of implementation (e.g., easy to use, helps with classroom management), outcomes for students (e.g., improves phonemic awareness or student achievement in other subject areas), and applicability to student grade level (e.g., elementary vs. middle grades). Participants rated items on scale of 1 to 7 that allowed them varying degrees of agreement with the items in each category (1 = agree strongly, 6 = disagree strongly, and 7 = not applicable or unsure). Figure 6 shows the ratings for aspects of implementation in terms of percentages of agreement. The reader is cautioned when reviewing this figure as the total number of participants for each perception varies. A combined 83% of the participants agreed strongly or somewhat that *Visual Phonics* was easy to use as an instructional approach, 87% agreed strongly or somewhat that it engaged students, and 84% agreed strongly or somewhat that *Visual Phonics* was easy to integrate into a structured curriculum. Only 68% agreed strongly or somewhat that it was effective for all students and only 46% agreed strongly or somewhat that it helped with classroom behavior. We included "classroom behavior" as a potential response category because anecdotally *Visual Phonics* is reported to be highly engaging. When students are engaged, maladaptive classroom behaviors tend to be minimized. We looked specifically at how years of experience (1–2 years or 3+ years) with *Visual Phonics* impacted perceptions and found only one significant difference ($M = 1.93$, $M = 1.57$, respectively) in aspects of implementation related to ease of use ($t = 2.289$ [$df = 174$], $p < .05$). Novice users

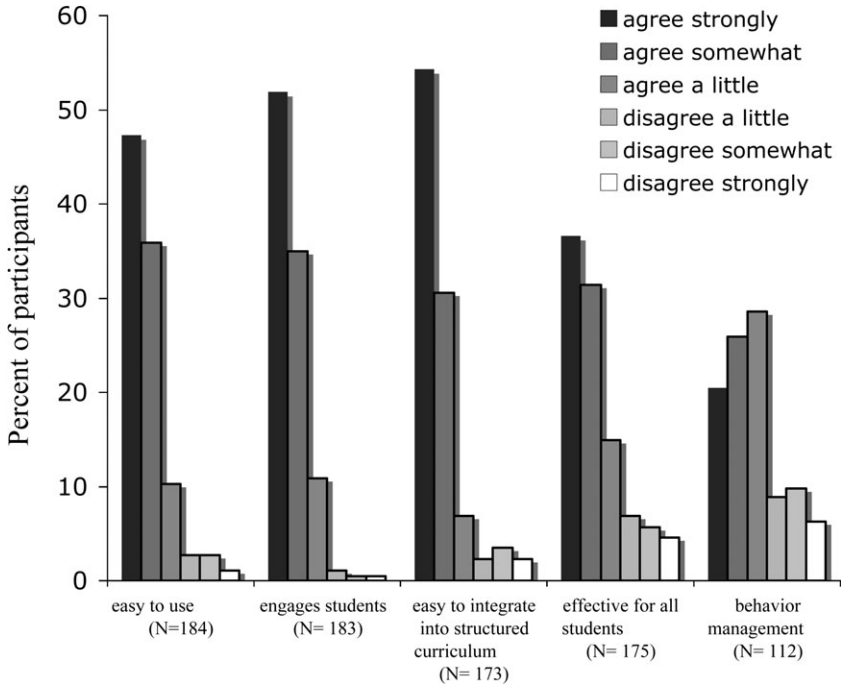

Figure 6 Participants' perceptions of implementation.

(1–2 years) found *Visual Phonics* harder to use than more experienced users.

Figure 7 shows participants' perceptions related to outcomes for students. Not surprisingly, 95% of participants agreed strongly or somewhat that *Visual Phonics* improves phonemic awareness; however, here again a significant difference was found between novice and more experienced users. The reader is cautioned when reviewing this figure as the total number of participants varies across the items. More experienced users agreed more strongly that the use of *Visual Phonics* helps improve phonemic awareness. Ninety-three percent of the participants agreed strongly or somewhat that it increases decoding skills. Perhaps not immediately understood might be the finding that 71% agreed strongly or somewhat that it is effective in building vocabulary. Vocabulary learning and retention seems to be a "by-product" of learning words phonemically through *Visual Phonics*. Teachers have reported this informally; however, there is no empirical evidence that examines this specific aspect of reading and word learning using *Visual Phonics*. From a wider perspective, the relationship between vocabulary knowledge and reading comprehension is particularly pertinent here. Research with both hearing children and DHH students clearly indicates that a broad and deep knowledge of words is inextricably linked to reading comprehension (see National Reading Panel, 2000; as well as Garrison, Long, & Dowaliby, 1997; Kelly, 1996). That noted, 64% of these participants agreed strongly or somewhat that students improve in their reading comprehension skills when *Visual Phonics* is used. Curiously, a larger percentage of teachers with 3 or more years of experience agreed more strongly with this statement. Seventy-two percent of the participants agreed strongly or somewhat that it increases student achievement in other subject areas.

As expected, a much greater percentage of participants (94%) agreed strongly or somewhat that *Visual Phonics* was most appropriate for elementary age students and 74% agreed strongly or somewhat it was appropriate for students in middle school grades. On the whole, participants were positive about the perceived benefits of *Visual Phonics* for their teaching practice and their students, with very small differences in the mean ratings across criteria.

Finally, we asked three open-ended questions requesting participants to offer what they like most, what they find most challenging, and what they would

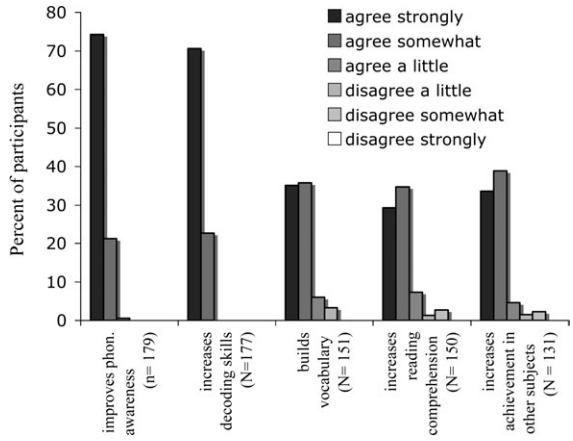

Figure 7 Perceived outcomes for students.

change about *Visual Phonics*. *What do you like most about Visual Phonics?* Eight-two percent (n = 163) of the participants wrote in responses to this question. Throughout the analysis it was clear that many responses contained elements that fit into more than one category. Seven well-defined categories emerged from responses. Overwhelmingly, the largest category (50%, n = 82) pertained to appreciating *the purpose* and functionality of *Visual Phonics*. For example,

> … it helps my students learn decoding skills and improve with word recognition. It is a tool that can be incorporated with an existing literacy curriculum.
>
> I love that my students are able to increase spelling accuracy, decode more fluently, manipulate phonemes, and understand the concept of sound-to-print ratio.

The *visual nature* of *Visual Phonics* was an element of 20% (n = 33) of the comments. Making sounds visible, allowing DHH children to *see* what hearing children hear defined the general sentiment within this category. Less frequently emerging categories for why teachers use *Visual Phonics* included *it's easy* (11.5%), *it's tactile* (9%), *it's engaging* (8%), *it's flexible* (6%), and *it's multi-modal* (5%). Comments based upon the perceptual reasons for using *Visual Phonics* accounted for a combined 34% of the comments (it's visual, tactile, and multimodal). The remaining categories (easy, engaging, and flexible) were also addressed as a distinct question within the survey (see Figure 5), which may explain why these particular themes emerged less frequently as general comments.

We also asked participants: *What do you find challenging about Visual Phonics*? Seventy-four percent (n = 149) of the participants responded to this question. Although some responses did fit multiple categories, most responses were distinct in their meaning. Nine categories initially emerged from these responses; however, four of the categories had less than 5% of comments. By far the most frequently occurring comments (33%) related to *the use* or implementation of *Visual Phonics*. For example,

> What to do when a student may rely on *Visual Phonics* too much with their decoding . . . encouraging them to expand past their decoding and become more automatic. Fluency becomes an issue.
>
> Using visual phonics becomes challenging when you, the teacher, are unsure of what the sound should be or what the blend is.
>
> Sometimes the pace of a mainstream classroom is challenging to demonstrate the sounds as quickly as they are presented. I find that slowing down and not trying to present so much material is better than doing it badly—quality is better than quantity.

Learning and *remembering* the hand cues and/or written symbols accounted for 26% of the comments. The *time* involved in integrating *Visual Phonics* into instruction was the third most frequent comment, accounting for 10% of the responses. For example,

> Having enough time to teach & practice using it with students as I'd like to—too many things we have to cram into our short sessions!
>
> The amount of material that needs to be taught at 2nd grade makes it difficult to fit this in. It is vital for students who have not had this training, and who arrive at our program with a deficit in phonemic awareness. For them it is a good, fun catch up tool that can bridge gaps in their learning and help with spelling, decoding and listening skills."

Isolation was another recurrent theme (6%), likely in occurrence with the 17% of participants that are the only ones using it at their site. *Confusion* with or lack

of use of the written symbols was a distinct category (6%) that differed significantly from comments related to "remembering" the symbols. One participant commented, "Students learning the written code. Some of the symbols are very similar and the children get confused."

The other categories that accounted for less than 5% of the comments individually were thoughts related to how instruction with *Visual Phonics* can be linked to vocabulary (3%, i.e., "A child may be able to blend the syllables together to correctly pronounce a word, but the word still lacks meaning."); preparation of materials (3%); consistency in use (2%, i.e., "I find that it is challenging to make sure that all of the teachers are giving the same directions on the hand cues."), and general confusion not specifically related to the cues or symbols (2%).

The last question related to desired change about the tool: *What would you change about Visual Phonics*? Sixty-six percent ($n = 133$) of the survey participants wrote in responses to this question. Six categories were identified from these comments. The largest category of written responses (28%) specified participants would not change anything about *Visual Phonics*. The next most frequently occurring responses (24%) related to changes with the written symbols and/or hand cues. For example,

> Convert the symbols to standard phonemic symbols so that carry over to dictionary use and mainstreaming situations is easier.

> I have already added my own symbols and handshapes for r-controlled vowels such as /or/ and /ar/. Also, I would also add another component in the program that deals explicitly with spelling patterns e.g. long/a/can be spelled like /ai/, /ay/, /a___e/, etc.

These comments make sense given that many participants also commented that some aspect of the cues or symbols challenged them.

Changes or additions of curriculum and materials to accompany *Visual Phonics* accounted for 16% of these comments. For example,

> I think the training should focus more on varying ways to use the program. I use it mostly for spelling purposes taking a "back door" approach to transferring spelling into reading and decoding skills.

> Have a video or something to show my interpreters who don't know the program—maybe a modified short training for interpreters to just teach handshapes and not really all the 'teacher' part of the training.

> I agree it helps with improving phonemic awareness and decoding skills, but still needs to be incorporated with other resources. I personally think more materials need to be provided in using visual phonics and more training.

Nine percent of the comments written-in stated the participants "didn't know" what they would like to change. This is not surprising because a little more than half of the participants had been using *Visual Phonics* for less than 2 years. Other less frequently occurring categories included changes related to wanting more workshops for extending and building upon its use (7%, i.e., "I would like to take the next class developing lesson plans to use in the classroom to integrate in my curriculum.") and wanting more people to use it at their site for greater collaboration (4%).

Discussion

Significance

Understanding and describing teachers' reading instructional practices and documenting perceived efficacy is a necessary part of addressing the research-to-practice gap that exists in education. Schirmer (2001) calls on researchers to look at what teachers are doing in their classrooms to gain insight into strategies worthy of research, in addition to wondering why teachers do not implement evidence-based practices. In this study, teachers self-reported their practices and reflected upon the efficacy of those practices, specifically related to reading instruction and the use of *Visual Phonics*. Their responses and reflections provide insight into motivations to use *Visual Phonics*, as well as barriers to its consistent use. Although the empirical base examining *Visual Phonics* is growing, little is known about *how* and *why* teachers persist in

using it with DHH and other learners. This inquiry is a first step toward addressing these questions.

Teachers' instructional strategies for teaching reading have also largely omitted curricula that are heavily phonics based. Teachers reported here that they are using a variety of reading curricula, in addition to various resources and materials to teach complex reading skills. Although the focus of this paper was on DHH students, valuable information gleaned includes teacher reports of using *Visual Phonics* with diverse students (students with disabilities, English Language Learners, and those who are struggling readers but were not identified with a disability).

In addition, there is mounting evidence that suggests DHH learners can benefit from some kind of understanding and interaction with the alphabetic principle if they are to learn how to "crack the code" and become successful readers. *Visual Phonics* is a tool that utilizes the strengths of DHH students as visual learners and provides this unique information in a completely accessible way. Using *Visual Phonics*, teachers and DHH students are not required to produce spoken language to demonstrate phonemic awareness or the alphabetic principle. Outcomes from this study suggest that although the potential for using *Visual Phonics* is strong, teachers struggle with how to best implement it and incorporate it into their reading instruction.

As a tool, *Visual Phonics* is used to support existing curricula and resources. Aside from the hand cues and graphemes (the system itself), there are no guidelines or "best practices" that are associated with its use. Much of the integration and use of *Visual Phonics* is left to be determined by the creative teacher who reflects thoughtfully on how best to infuse it into her instruction. As shown in this study, teachers struggle with this adaptive process. They would like more workshops and guidance about how to use *Visual Phonics* most effectively. More fundamentally, they struggle with completely learning the system and using it accurately after exposure through a training seminar. Teachers indicated that "refresher" videos, more workshops on implementation, and additional resources would be helpful.

Despite the fact that teachers have used *Visual Phonics* for over 20 years, there are limited publications describing how and why teachers gravitate toward its use. Within Deaf Education, anecdotal evidence and word-of-mouth have perpetuated its use and propagated increased interest. From this study, it seems clear that further investigation is essential to better understand how teachers are using *Visual Phonics* in their day-to-day instructional routines by validating their self-reported practices. Longitudinal information will also provide valuable insights if teachers continue to use *Visual Phonics* and gain experience in implementation and see stronger outcomes for their students.

Limitations

There are a number of limitations to this study that impact the generalizablity and reliability of its findings. The sample of participants was skewed toward those who had used *Visual Phonics* for only a few years. It is possible that more advanced users of *Visual Phonics* would have different perspectives (though ad hoc analyses of this relationship proved not to show significant differences in teacher responses, with the exception of ease of use where novice users perceived it as harder to use). Second, there were some items that had high levels of missing data, calling into question the match between the intent of the survey and the experiences of *Visual Phonics* users. The most significant limitation related to reliability is that the survey was a self-report measure of teacher experiences with *Visual Phonics*. Although the survey was piloted and revised in light of participant feedback, the design did not allow for a follow-up on how teachers interpreted the items or if they would have answered them differently if the items had been phrased in another way. It is possible that wording regarding "effectiveness" of *Visual Phonics*, for example, took on different meaning depending on the teacher's context. Items also varied in the extent to which they are potentially verifiable. For example, items related to teacher perspectives are not directly observable, whereas items that focused on teacher practices could be matched against classroom implementation of *Visual Phonics*.

Another limitation includes more specific information describing the student population. Characteristics of the students such as hearing levels, family characteristics, and primary language use were not gathered.

There was an additional lack of specificity related to the categorization of students with disabilities. Although we wanted to know whether teachers were using *Visual Phonics* with a variety of students, we did not request information about the nature of the students' themselves or any unique disabilities.

Continued research in this area is required to validate and expand upon the current findings. Subsequent surveys with increased response rates and focused systematic classroom observation data that investigates teachers' instructional methods will provide validity data. Expanded investigation into student characteristics could also yield a more defined profile of the kinds of students that may benefit most from instruction using *Visual Phonics.*

Conflicts of Interest

The first author is a See-the-Sound/Visual Phonics trainer licensed by ICLI, the proprietors of Visual Phonics. No monetary compensation from ICLI is received in her role as a trainer, nor was any monetary compensation received as a part of this study.

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