VISUAL PHONICS: AN ENGLISH CODE BUSTER?

VISUAL PHONICS is an instructional program to provide print awareness, alphabet knowledge, and sound-letter correspondence for children with hearing loss who experience difficulty developing a foundation of phonemic awareness skills. Its purpose is “to clarify the sound symbol relationship between spoken English and print” (Waddy-Smith & Wilson, 2003, p. 15). It is implemented in numerous school districts, particularly in California and Florida, and can be learned in a 2-day workshop. Administrators, teachers, and speech pathologists see potential benefit in using Visual Phonics to help students with hearing loss raise their achievement scores in reading and spelling. However, it is critical to note that Visual Phonics has virtually no research base. Researchers, teachers, and speech pathologists are called upon to collect their data and begin research on the effectiveness of Visual Phonics. This is a case in which the research-to-practice gap must be closed.

The impetus for the present article is the large-scale adoption by many school districts in Florida of a visual and tactile system used to teach phonics to deaf or hard of hearing students. See the Sound: Visual Phonics is a program developed to provide a systematic way for children with hearing loss to learn the phonemes of English. It is not sound based. It is a visual system including handshapes and written symbols.

Visual Phonics was designed more than 20 years ago by a mother to give her three deaf children access to a visual, written, and tactile form of the sounds they could not hear. Success in the last two decades has been steady but quiet. People who implement Visual Phonics rave about the benefits; however, there is little information about Visual Phonics or how to implement the program. There is no research on the program that could pass the rigorous scrutiny expected by researchers in the field.

According to the National Reading Panel, phonemic awareness and alphabetic knowledge are the two biggest predictors of reading success in the first 2 years of school (National Institute of Child Health and Development, 2000). Although Narr (2006) has noted that “the concept of the sound is the root of the alphabetic principle,” neither phonemic awareness nor alphabetic knowledge has been a staple
in the teaching of reading to deaf or hard of hearing students. Even in the absence of explicit instruction, skilled deaf and hard of hearing readers do demonstrate their ability to access phonological information through visual codes. "Deaf readers appear to be able to use these visual codes, particularly the better readers, but the research provides no evidence for the effectiveness of the codes in word recognition and no proven strategies for teaching deaf readers to use visual codes" (Schirmer & McGough, 2005, p. 109).

Perhaps in response to the rigorous expectations of the No Child Left Behind Act of 2001, numerous large school districts in Florida have adopted the program for incorporation into their deaf education classrooms. All three authors of the present article attended a 2-day workshop designed to teach participants how to implement the system. The first author attended an additional 3-day workshop at Gallaudet University and is collecting data in one of the districts. Since the popularity of Visual Phonics is growing, teacher trainers should become aware of its existence and its extended use. Since it has no research base, Visual Phonics is an open arena for the research that should follow the growing adoption of this program.

**Visual Phonics: What It Is**

There are 26 letters in the alphabet, and typically 45 phonemes. In Visual Phonics, the 46th moving hand cue represents silent /c/. There is a one-to-one correspondence between each English sound, the specific hand cue, and its written symbol. The hand cues were designed to resemble the look and tactile feel of the sounds they represent; however, each cue is unique and looks different from a finger-spelled letter or any sign. For example, the sound of /c/ could be a hard /c/ as in *cookie*, /k/ as in *king*, or a soft /c/ as in *cereal*. The hand cue for the beginning sound of both *cookie* and *king* begins at the side of the mouth in a C-like cue moving slightly forward. The first sound in *cereal* is an /s/ cue, a wavy index finger moving slightly out from the lips. Like hearing students, deaf students learn that /c/ has two sounds. The word *cookie* has four phonemes. The second phoneme in *cookie* is the /oo/ sound. (The shape and symbol are different from the sound one hears in the word *booy*.) The third phoneme in *cookie* is a hard /c/. The word ends in a long /e/ cue. In this example, the child learns that one cue for /c/ is a hard sound.

Although memorizing 46 hand cues may seem daunting, the Visual Phonics system is relatively easy to learn. Developing fluency, however, requires continual practice. One important factor in learning Visual Phonics is the finite set of speaking and spelling rules for English. There are 396 ways to spell all the words in English (Nussbaum, Waddy-Smith, & Wilson, 2004). Among those 396 ways to spell the words, the rules of phoneme combinations can help deaf and hard of hearing students eliminate some impossible combinations of sounds. For example, the sound combination of /...tp/ does not exist in English, while other sounds such as /...te/ are frequently used. Professionals working with children who master the Visual Phonics system report that these children are better spellers, writers, and readers (Narr, 2006; Nussbaum et al., 2004).

Although it is a visual and written system, Visual Phonics cannot be categorized into sign, speech, or cueing. It is not a communication system. It is a system that provides a visual, written, and kinesthetic cue to what hearing children hear when exposed to phonics. Its design lends itself to supplementation of reading programs and speech programs. Because of its flexibility, the program can supplement any reading, speech, or auditory training program.

Participants in a recent conference session noted some similarity in Visual Phonics to the Northampton Symbol system many teachers used decades ago. The Northampton system, developed by the late Caroline Yates, uses the numbers 1 and 2 to differentiate between sounds that are identical in written form but sound different when spoken. For example, /oo/ in the word *boot* is coded as a 1 and the /oo/ sound in *foot* is coded as a 2. The Northampton Symbol system provides a systematic organization for learning phonemes based on frequency of use. Visual Phonics is not as structured as the Northampton Symbol system. Unlike the Northampton system, Visual Phonics has no clearly explained implementation system.

Although the Visual Phonics codes are placed near the mouth, the similarity to Cued Speech ends there. Cued Speech is a communication system. It has no written symbols. Visual Phonics is not a communication system but does have written symbols. The sole purpose of teaching Visual Phonics is to make the sounds of English accessible visually through hand coding, seeing, or writing the symbols, and tactically through coding of the symbols.

It appears that Visual Phonics can provide a usable framework for teaching decoding skills. Deaf children, like hearing children, must learn the rules of English and use content cues to be able to discern which sounds match specific words. It also appears that Visual Phonics can provide a usable framework for teaching the rules for decoding print. Remember this phonics rule: "The first vowel does the talking, and the second one does the walking." Silent letters can be treated in two ways: indicated or not indicated.
In Visual Phonics, silent sounds in English can be represented by crossed hands covering the mouth when one is demonstrating, or, when one is writing, by use of an /x/ under the letter. The written symbol can be typed or written under new words to facilitate decoding. Once the student has memorized the symbols, he or she can read the written cues and access the complete English phonetic system. Once the cues are mastered, many students drop them and simply read the words in the same way as their hearing peers (D. Moores, personal communication, December 28, 2005).

Because of its flexibility and ease of learning for both teacher and student, Visual Phonics appears to have potential for incorporation into a wide variety of reading, speech, and language programs. It was designed as a tool to facilitate decoding and improve spelling skills. As an additional benefit, the system also provides a visual representation to sounds that are hard to discern, and thus could assist in the development of articulation skills. Visual Phonics can be individualized, used with various populations, and used with children who employ a variety of communication methods.

**Visual Phonics: What It Is Not**

Visual Phonics is not a signed system. People do not communicate in Visual Phonics. To do so would be slow, laborious, and cumbersome. Comprehension would be impeded by the inability to hold too much information in short-term memory. Visual Phonics cannot replace any communicative language or system such as American Sign Language, Simultaneous Communication, or Cued Speech. Visual Phonics is not a reading curriculum, nor is it simply a speech program. It is not a program meant to be continued after the student has developed phonemic awareness skills and phonics. Once the skills are memorized and stored in long-term memory, they are just as accessible as memorized math facts, and, like the practice of counting on one’s fingers, are often dropped after memorization (D. Moores, personal communication, December 28, 2005).

Visual Phonics is not like Cued Speech, although they have been compared. The two systems are quite different in structure and intent. Cued Speech is a communication system; Visual Phonics is not. Cued Speech has eight handshapes in four locations near the mouth. Those combinations visually differentiate the sounds of spoken English (National Cued Speech Association, n.d.). The intent of the Visual Phonics program is “to clarify the sound symbol relationship between spoken English and print” (Waddy-Smith & Wilson, 2003, p. 15).

**Table 1**

A Comparison of Cued Speech and Visual Phonics

<table>
<thead>
<tr>
<th></th>
<th>Cued Speech</th>
<th>Visual Phonics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication system</td>
<td>Visual communication system often used for teaching and interpreting</td>
<td>Program of instruction for clarifying the sound/symbol relationship between English and print</td>
</tr>
<tr>
<td>Number of handshapes</td>
<td>8, with 4 placements near the mouth</td>
<td>4, with all figurations of voice</td>
</tr>
<tr>
<td>Ease of learning</td>
<td>Easy</td>
<td>Easy</td>
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**Visual Phonics: A Brief History**

According to information from the International Communication Learning Institute (ICLI), the copyright holder for Visual Phonics, by 1989 more than 60,000 adults and children had been trained using Visual Phonics. Linda Wilhelmi, a representative of the nonprofit Visual Phonics Organization, stated in 2004 that there were 60 licensed Visual Phonics trainers, typically training 20 to 40 individuals in each session (L. Wilhelmi, personal communication, March 8, 2004). Several attempts by telephone to reach individuals from ICLI were not successful, but an Internet search in which the phrase “Visual Phonics” was used showed more than 15 training opportunities in spring 2006 alone. In the last few years, the training teams at the Kendall Demonstration Elementary School at Gallaudet University have taught Visual Phonics to more than 600 individuals working with deaf students.

The developers of Visual Phonics call the program a “grassroots” movement, and their intent as a nonprofit organization has been to recruit and train people who serve children, not the dollar. Seminars in the late 1980s were free. Sixty thousand children learned Visual Phonics by 1989. By 2006 people had lost count.

Although trainers may have lost count, the success stories of children learning to read add up one by one. Accolades for Visual Phonics abound. Promoted strongly by professionals working at the Kendall School and those trained on and using the program, Visual Phonics is quietly getting a strong foothold in deaf education. As with many programs used to teach deaf children, promotion of the program is sincere. Workshops on Visual Phonics are multiplying, and success stories are posted on the Internet (see, e.g., a report by Smith-Stubblefield and...
Guidi, 2005, on the use of Visual Phonics to improve the speech intelligibility of children with Down syndrome) and are the topic of lunchroom conversation. Given the current national emphasis on reading proficiency, it may be a good time for the Visual Phonics Organization, teachers, and speech pathologists to connect with researchers.

Visual Phonics: The Research Base

Empirical research on Visual Phonics is practically nonexistent, yet use of the system flourishes in school districts throughout the nation. A mere six articles on Visual Phonics and one presentation were found after an extensive literature search. Only two studies used any kind of research design (Trezek & Malmgren, 2005; Zaccagnini & Antia, 1993). In their case study, Zaccagnini and Antia investigated the efficacy of intensive multisensory speech training under two conditions: (a) integrated with the Visual Phonics program and (b) in isolation. Their data correlated positively with improved speech production in the student; however, the speech improvement could not be correlated with the intervention of Visual Phonics. Antia has noted the lack of empirical data to support Visual Phonics as an instructional strategy for reading for children with hearing loss and suggested its promise as an area of untapped research (S. Antia, personal communication, February 18, 2006).

In Trezek and Malmgren's 2005 quasi-experimental study with 23 deaf students, Visual Phonics was incorporated into an 8-week treatment package that included the first 20 lessons of the Direct Instruction series Decoding A, Baldi (a computerized talking head that shows the placement of sounds in the mouth), and Visual Phonics instruction. The results of the study demonstrated that students who received the phonics treatment package showed statistically significant higher mean scores on posttests and generalization tests than a matched comparison group that received no phonics treatment package. The z scores gathered from the students who received the treatment package were nearly three standard deviations higher than the scores of the comparison group. Since Visual Phonics was part of a treatment package, teasing out the direct effects of Visual Phonics is impossible. However, the results of the study can be viewed as a beginning of an empirical research base on the use of Visual Phonics.

Most recently, the benefits of Visual Phonics were presented at a conference of the Association of College Educators of the Deaf and Hard of Hearing. Narr (2006) presented an ethnographic look at the use of Visual Phonics in the classroom of a teacher intern. Narr reported the teacher intern felt that progress in reading occurred at a faster pace, students became more independent spellers, the quantity of vocabulary words increased, and word memory was enhanced.

Of the four remaining articles written on Visual Phonics, none contain data. Three of them were authored or coauthored by Vanessa Wilson (who has also written under the name Vanessa Wilson-Favors). Wilson-Favors (1987) listed the strengths and weaknesses of the Visual Phonics system. Marshall, Nussbaum, and Waddy-Smith (1999) described how audiolingualists can support Visual Phonics as it is integrated into literacy, auditory, and speech training at the Kendall Demonstration Elementary School at Gallaudet. Waddy-Smith and Wilson (2003) discussed the benefits of Visual Phonics in the development of reading skills. Finally, Wilson and Dennis (2005) presented Visual Phonics as a multisensory approach that can lead to better speech, reading, and spelling.

According to Nielsen and Luetke-Stahlman (2002), the Visual Phonics system has been tried at Gallaudet University and the Illinois School for the Deaf, and in public schools serving students with hearing loss in Texas, Kansas, and Arizona, but articles on successes or failures are absent from the literature. Does Visual Phonics work with students with hearing loss? Who is collecting data?

Visual Phonics: What It Could Be

Thousands of studies have shown the link between phonemic awareness and reading improvement in hearing children (Adams, 1990; Hammill, 2004; National Institute of Child Health and Development, 2000; Snow, Burns, & Griffin, 1998). Numerous studies have also shown this link in the development of skilled deaf readers (e.g., Dyer, MacSweeney, Szcerbinski, Green, & Campbell, 2003; Musselman, 2000; Nielsen & Luetke-Stahlman, 2002), although not all studies have shown robust results (Izzo, 2002). As a program, Visual Phonics shows potential, so much so that even without empirical evidence of success, Luetke-Stahlman and Nielsen (2003) recommend the incorporation of Visual Phonics into programs when student goals include reading proficiency.

Incorporating Visual Phonics Into Explicit Reading Instruction: On the One Hand

In the Visual Phonics workshops, several attendees and the presenters have stated that infusion of Visual Phonics into daily instruction is an easy process. Intuitively, Visual Phonics makes sense. If implemented correctly, the program apparently can provide access to the English phonological system for
students with hearing loss. Teachers and speech pathologists who use it praise its effectiveness. They have been teaching and perhaps collecting data, but none of it has been organized and published in a systematic way. As teachers of the deaf, we often trust the intuition of our peers, and their opinions are important. However as researchers, we feel that without empirical evidence it seems a stretch to recommend the inclusion of Visual Phonics in reading programs for deaf children, as is suggested by Luetke-Stahlman and Nielsen (2003), without data-based research.

**Incorporating Visual Phonics Into Explicit Reading Instruction: On the Other Hand**

Teachers believe that Visual Phonics works, but professional intuition is a far cry from empirical evidence. Drawing from research on phonemic awareness with both hearing and deaf children, teachers who seek reading improvement in their students must dedicate instruction to (a) print awareness and encoding; (b) alphabet knowledge with sound-letter correspondence; (c) spelling, punctuation, abbreviations, and acronyms; (d) comprehension; (e) oral and silent reading fluency; (f) written composition; and (g) English semantics and syntax (Hammill, 2004; Musselman, 2000). Explicit instruction in Visual Phonics could provide support for print awareness, encoding, alphabet knowledge, sound-letter correspondence, spelling, punctuation, abbreviations, acronyms, comprehension, fluency, written composition, and English semantics and syntax. Unfortunately, at this time the profession cannot provide the data to support the contention that Visual Phonics can provide any or all of the supports suggested by reading professionals.

**Deaf Children Left Behind**

The No Child Left Behind Act of 2001 requires that all children become proficient readers through the use of scientifically based reading programs. Many programs are phonics based, and until now many deaf children have been unable to access the phonetic system of English. Despite the documented deterrents of retention (Jimmerson, 2001), many deaf children repeat a grade because they cannot pass state high-stakes testing. Neither grade retention nor grade promotion is an answer for children who lack specific skills. Instead, Jimmerson suggests that teachers and administrators formally plan explicit instruction using research-based strategies.

**Visual Phonics: The Time Is Now**

Visual Phonics is not a research-based strategy—yet. It does, however, appear to hold promise as a method of providing systematic visual access to the English phonological system. Historically, deaf children have not had much systematic access to instruction in English phonology. With the incorporation of Visual Phonics, access to phonemic awareness and alphabet knowledge appears quite possible. Phonological awareness and alphabetic knowledge have been solidly linked to reading proficiency in studies with hearing students (National Institute of Child Health and Development, 2000), and several studies suggest its importance for deaf children (e.g., Dyer et al., 2003; Musselman, 2000; Nielsen & Luetke-Stahlman, 2002). We submit that there are few researchers who doubt the benefits of including instruction in phonemic awareness and phonics in instruction for both deaf and hearing students. To date, the profession has not been able to figure out how to successfully do it.

Is Visual Phonics a program that can provide access to the phonological system of English and help deaf students become better readers and writers? It is impossible to say. Although many deaf children are explicitly taught Visual Phonics in their schools, until the studies are done and the data are in, some deaf children will have access to a strategy that is sweeping the country without any real research base while other deaf children will not have the exposure to any chance at developing one of the two requisite skills to become skilled readers.

Which is worse—a grassroots movement with no research base but that is touted by many to be of great benefit to deaf students, or the status quo? If the No Child Left Behind Act requires teachers to use scientifically research-based teaching strategies for children, then the teachers, speech pathologists, and researchers must provide the data to qualify or disqualify Visual Phonics as a viable teaching strategy. This is a case in which research should follow practice. Soon.

**References**


Luetke-Stahlman, B., & Nielsen, D. C. (2003). The contribution of phonological awareness
and receptive and expressive English to the reading ability of deaf students with varying degrees of exposure to accurate English. 

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In memory of Nancy Iallene Taylor, a perpetual inspiration.