



## Research-Based Reading

**TOUCHPHONICS®**  
**Robin Steed, Ed.D.**

*by Kenneth Barker, Ed.D.*

### Introduction

*Touchphonics*® is a manipulative, multisensory instructional system designed to develop students' phonics knowledge as they discover patterns in the structure of words. *Touchphonics* provides instruction for the core reading skills: phonemic awareness; sound-to-symbol correspondences; sound substitution, segmentation, and blending. While phonics is the system of sound and symbol relationships, word structure knowledge includes the organization of the elements of phonics into patterns. *Touchphonics* lessons include systematic, sound-by-sound decoding along with instruction in structural patterns to help students understand how sounds and spellings vary depending on the letter combination patterns within words.

### The Challenges of Reading and Writing English

English is an alphabetic language. Alphabet letters are abstract symbols that have no intrinsic meaning. Phonemes are meaningless in isolation but they become concrete when blended into spoken words. However, to form written words, there are only twenty-six letters in the English alphabet for the forty-four English phonemes that need to be represented in print. So in learning to read and spell, graphemes become the written representations of phonemes. Graphemes are letters and letter combinations. For example the graphemes *t* and *h* each represent a sound, and when they are combined in the grapheme (or digraph) *th*, they represent a third, different sound. The alphabet is an economical system of writing, but it does not yield a "transparent orthography" (Hanna et al., 1966), where there is a direct one-to-one correlation between sounds and symbols, phonemes and letters.

Additionally, English is a challenging language to read and write because of its large and eclectic vocabulary. The lexicon of English is larger than its closest rival, German, by more than two-thirds. Moreover, English is a polyglot language, derived from languages such as Anglo-Saxon, Norman, Latin, and Greek, each contributing languages having their own word structure and orthographic conventions.

*Touchphonics* is a research-based, multisensory (visual, auditory, kinesthetic, tactile—VAKT) system for teaching phonics and structural analysis. Its central, unique feature is Touch-Units® comprising over 200 three-dimensional, textured-plastic, color-coded letter units representing all the English graphemes. The units are categorized, for example, as single consonants (yellow), *l*, *s*, and *r* blends (blue), *r*-controlled vowels (red or white with yellow), suffixes (purple), and borrowed sounds (brown). In all, there are 20 Touch-Units categories. The Teacher's Guide and Resource Book provides a warm-up review of consonant letters and offers patterned word lists for additional activities, games, and drills. It includes routine-enhancing extension activities and provides diagnostic tools. The Student Workbook gives independent practice and in Blackline Masters are 59 illustrated, decodable readers, one for each *Touchphonics* lesson.



*Touchphonics* is fully multisensory, incorporating visual, auditory, kinesthetic, and tactile elements in its instruction.

Learning to read English is more or less challenging for all students. Reid Lyon asserted that for many students “reading is one of the most difficult tasks that they will have to master throughout their schooling” (1998). He discussed three statistical groups:

- the top 30% are above average in reading ability
- the middle 40% are classed as average in reading ability
- the lower 30% are sometimes referred to as being at risk for reading failure

*Touchphonics* is a reading program that has been shown to benefit all three groups, uniquely supporting students who are at various stages of reading acquisition, but it is with the lower 30%, struggling readers and readers with language-based learning disabilities, that it is most effective.

Learning disabilities refers to neurobiological disorders that affect how the brain works (Lerner, 2003). For example, a nonimpaired reader utilizes neural pathways that allow instant word recognition, but a reader with dyslexia may compensate with areas of the brain that deal with word analysis, requiring the reader to analyze and decode each word every time it appears.

Recent studies have shown that effective reading intervention programs can allow students with language-based learning disabilities not only to reach a higher reading level but to develop the same neural reading systems as nonimpaired readers. Sally Shaywitz (2003) has conducted experiments showing that effective instructional practices can help readers with language-based learning disabilities to develop rapid,

automatic reading systems and utilize the same regions of the brain as nonimpaired readers. Shaywitz describes her findings: “[MRI brain images from dyslexic readers before and after intervention] provide powerful evidence that early interventions with an effective reading program leads to the development of primary, automatic [neural] reading systems and allows a child to catch up to his classmates...After more than a century of frustration, it has now been shown that the brain can be rewired and that struggling children can become skilled readers” (p. 87).

Effective instructional practices capture students’ attention so that they can practice and absorb the concepts. Shaywitz reinforces the idea that “You want [the student’s] active involvement. When you have it, he is paying attention, and learning is going on” (p. 85). Many students respond well to instruction that utilizes varied avenues of sensory input, involving them through multiple neural channels, allowing for more active learning.

*Touchphonics* is fully multisensory, incorporating visual, auditory, kinesthetic, and tactile elements in its instruction. The tactile Touch-Units® are kinesthetically manipulated during the lessons. Those qualities, along with the visual aspects—the Touch-Units’ shape and color coding—and the kinesthetic experience of writing the words made with the Touch-Units, effectively capture students’ attention and provide additional memory cues for rapid learning. Auditory elements, such as listening to and saying letter names, words, and sentences, complete *Touchphonics*’ full range of multisensory stimuli.



## Touchphonics: A Concrete, Constructivist Approach

Robin Steed developed *Touchphonics* when she was a special education teacher. She had one student in particular whose reading difficulties prompted this effort. Years later, as a college senior about to earn his B.A., he said that if someone had asked him, when he was young, how written words are put together, “my honest, best answer would’ve been that if you take a bunch of letters and throw them up into the air, when they come down some of them will make words.” He had lacked essential orthographic understandings, especially concerning the structure of words.

Steed found that teaching phonics skills using manipulatives to build written words facilitates students’ developing their own understanding of word structure (1984). This finding affirms Piaget’s assertion that knowledge is gained when the learners take in information and then manipulate it to make it uniquely their own (1952). Students are asked to physically touch each letter-unit as they verbally blend their sounds together to arrive at the pronunciation of a word. Students then build and sound out related words, working with them on a concrete level.

Related words have similar orthographic patterns. “Word families,” such as *hat*, *mat*, *cat*, and *bat*, or *plain*, *main*, *stain*, and *train*, are one kind of orthographic pattern. Using onsets and rimes is a form of substitution and word families present a great aid in spelling and decoding similar words. *Touchphonics* instruction makes these similarities known to students and teaches word families, but it also demonstrates that any graphophonemic unit within a word can be substituted with a similar unit to form another word. The

word thus formed may be nonsensical—it may not be a word used in the English language—but it will conform to the same structural pattern as the original word. The following string of words and non-words exemplifies this: *hat*, *has*, *his*, *hus*, *mus*, *mut*. Each of these uses the CVC pattern of consonant-vowel-consonant. This promotes a deepening understanding of orthographic concepts among students. Those students seen to struggle are often those who fail to grasp one or more such orthographic concepts (Adams, 2001, Pressley, 1998). Students are taught to manipulate and substitute letter-units within orthographic patterns in a progressive sequence. After developing competence in building and spelling words in the first pattern, they are introduced to the next, though review is naturally emphasized. The sequence is hierarchical; easy patterns are introduced before more difficult and subtle patterns.

### Touchphonics Components

**Touch-Units**<sup>®</sup> comprise over 200 textured-plastic letter units that are color-coded by categories such as single consonants (yellow), *l*, *s*, and *r* blends (blue), *r*-controlled vowels (red or white with yellow), suffixes (purple), and borrowed sounds (brown). Color-coding is a powerful conveyer of information that often works much the same as learned mnemonics to make complicated things appear less complex and to aid in memorization (Jensen, 1995).

The opportunity for students to manipulate these shaped, textured plastic letter-units, substituting the /st/ in *stop* with /fl/ to make *flop*—or substituting short *i* for short *o* to make *flip*, affords kinesthetic input, which addresses many word structure issues and encourages students to test and reaffirm assumptions that developmentally contribute to orthographic knowledge.

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### **Teacher’s Guide and Resource Book**

instruction includes prereading exercises, a warm-up review of consonant letters, and 59 lessons, each of which includes phonemic awareness, linking sounds to letters, blending sounds, making words, and reading decodable text. Other valuable features are a wealth of patterned word lists useful for creating additional activities, games, and drills, as well as routine-enhancing special extension activities, and special diagnostic tools.

The **Student Workbook** provides independent practice for the 59 lessons, and includes a decoding practice page and a making words record page for every skill and a story response page for every decodable reader.

**Decodable Readers** are a set of 59 illustrated texts, one for each *Touchphonics* lesson. The Readers include continuing characters and humorous situations that invite students to apply skills and enjoy reading. They are available as a set of Blackline Masters, which includes all 59 texts, or as two volumes of individually bound Readers, desirable for classroom libraries.

The **Magtiles Kit**<sup>®</sup> contains color-coded magnetic tiles (one to match each of the 200+ Touch-Units) that provide a large format for teacher-modeling and whole group instruction. Three customized pocket charts are included for storage and display.

**Whiteboards** are sturdy, dry-erase boards on which students can build, manipulate, and transcribe words. Two sizes of the boards are available to accommodate differing instructional settings and needs.

The **Storage System** helps to minimize organization time by allowing teachers quick access to Touch-Units, which can be stored in its durable plastic drawers. The drawers are labeled so teachers can pull what’s needed and keep their instructional workspace uncluttered.

### **Research Base**

The National Reading Panel’s report (2000) states:

- “Overall, the findings showed that teaching children to manipulate phonemes in words was highly effective under a variety of teaching conditions with a variety of learners across a range of grade and age levels and that teaching phonemic awareness to children significantly improves their reading more than instruction that lacks any attention to PA” (p. 7).
- “Across all grade levels, systematic phonics instruction improved the ability of good readers to spell” (p. 10).
- “The findings were replicated repeatedly across multiple experiments and thus provide converging evidence for causal claims” (p. 7).

The *Touchphonics* program meets the phonemic awareness and phonics research standards of the National Reading Panel, as well as three others: those outlined by the NRP for fluency, vocabulary, and comprehension, all of which are included in *Touchphonics* instruction. *Touchphonics* is designed to be a balanced literacy program, leading students towards automaticity in reading and increased reading comprehension.



## Phonemic Awareness

Phonemic awareness is the understanding that spoken words are made up of individual sounds (phonemes). Students with good phonemic awareness can identify and work with phonemes. The research done by the NRP found that phonemic awareness activities build the most useful foundation for reading.

In *Touchphonics*, each lesson starts with phonemic awareness. The first introduction to a new phonogram is aural, with students listening for a target phonogram and learning to hear the phonogram in the context of a word before they learn how it relates to letters. When they have learned the relationship of the sound to the letters, they can engage in building words activities, which contain phonemic awareness reinforcement through oral segmentation and blending of the phonogram in words. For students who need additional phonemic awareness instruction, there are extra Phonemic Awareness Activities in the back of the Teacher's Guide and Resource Book.

## Phonics

Phonics is the relationship between the sounds of spoken language and the letters of the written language. Good phonics teaching consists of direct and systematic instruction that teaches letter-sound relationships in a clearly defined sequence. Such instruction uses methods that facilitate learning and give substantial opportunities to practice applying newly obtained concepts through reading and writing.

In the *Touchphonics* Teacher's Guide and Resource Book, the lesson plans include

instruction in the relationships between letters and sounds and word structure knowledge. Students build words with Touch-Units and write the words they have just built. In this way, students transfer the concrete, multisensory understanding they have gained from the Touch-Units to the more abstract representation of letters in print. By reading the decodable stories, they apply their phonics and word structure abilities to arrive at comprehension.

## Fluency

Fluency is the ability to read accurately and smoothly. A fluent reader is able to read at a good pace, grouping words to read with expression and comprehension. Students with poor fluency read slowly, relying too heavily on decoding each word instead of recognizing words and grouping them together to make sense. Students with a lack of fluency concentrate on individual words instead of chunking words into phrases or sentences. These students have difficulty with comprehension.

In *Touchphonics*, fluency practice is incorporated into each lesson plan. As students read words made with Touch-Units or words written on the board, they are asked to first sound out each letter, and then blend the sounds until they can read the word automatically. In the Workbook, students practice reading and writing words and sentences containing recently learned concepts, improving their automaticity and fluency through ample practice. The Decodable Readers provide excellent opportunities to practice fluency. Students are encouraged to go back over a story several times, improving their fluency with each round of reading.

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## Vocabulary

Vocabulary refers to the words that a student knows. Students know different words to different degrees in their listening/speaking, reading, and writing vocabularies. An adequate vocabulary is essential to comprehension, since the text makes sense only if the words are understood. Vocabulary is also important for fluency, since unknown words can slow down or interrupt the flow of reading.

The words that students build with Touch-Units are an excellent medium for teaching vocabulary. The word lists in the Teacher's Guide and Resource Book provide words to use as practice for each concept; these word lists contain a range of vocabulary, from common, well-known words to words that are much less likely to be in a student's listening/speaking vocabulary and thus are perfect candidates for vocabulary instruction. For example, the word lists associated with the silent *e* lesson contain words ranging from *bike* and *game* to less common words such as *mope* and *drake*.

## Comprehension

Comprehension is the ability to gain meaning from reading a text. Poor readers whose decoding skills are labored show poor comprehension. Once readers develop a certain degree of automaticity with word recognition, they can devote much more attention to the meaning of the word and to its significance in relation to the surrounding text. *Touchphonics* speeds students toward automaticity of decoding, and at the same time provides practice with comprehension. As students read the stories in the Decodable Readers, they practice making sense of the words in

context. As they complete the Workbook pages, they are required to write or complete sentences about the stories, answer questions, and draw pictures to illustrate their comprehension of the story.

In addition to addressing the NRP criteria, *Touchphonics* has research evidence that demonstrates its effectiveness. Robin Steed's dissertation study (1984) tested the instructional system that has become *Touchphonics*. She trained three special educators in her system, and they used it for 1 month with 9 of their students with severe reading difficulties. Pre- and post-tests showed significant gains in word recognition and word attack. The mean gain for the students on the Slosson Oral Reading Test was 6 months for 1 month of instruction, while the mean gain on the Woodcock Reading Word Attack Subtest was 6.4 months.

Johnson (1982) conducted a study, which tested the spelling improvement of 54 college students randomly selected from among those enrolled at the Brigham Young University English Language Center. The study examined the relative effectiveness of three spelling methods.

A tape-recorded spelling pre-test was administered to each subject, followed by thirty minutes of study time, followed by a tape recorded post-test. The pre-test and post-test had different words. Therefore, what was actually tested was not the subjects' ability to improve on spelling a specific word list, but rather their ability to improve in spelling words orthographically similar to those found in the list. Each test had 51 spelling words; 17 of which contained the *ea* vowel combination, 17 the *ou* combination, and 17, *ow*. Every ten seconds a new word was pronounced and



then used in a sentence. Following the pre-test, subjects were given thirty minutes with one of three treatments:

- thirty minutes of *Touchphonics* instruction, in which students were taught to build and manipulate the graphemes of test words and other similar words—but not words found in the post-test
- thirty minutes of “traditional” spelling instruction, where the pre-test was corrected and subjects rewrote misspelled words at least five times each, prior to the post-test
- thirty minutes of “no method,” where subjects knew a post-test would follow, but they were allowed to do any kind of preparation—or no preparation.

In reporting the results of the study, Johnson noted, “The Steed system [*Touchphonics*] appeared far superior to the traditional and no method approaches ( $p$ -value < 0.0005).” Interestingly, the “no method” group of subjects, who prepared themselves any way they chose for the post-test, slightly outperformed the “traditional method” group.

## Conclusion

*Touchphonics* combines phonemic awareness and phonics instruction with the teaching of word structure. It is a highly effective multisensory, manipulative program that teaches students to build words using Touch-Units, which are color-coded according to their orthographic function. *Touchphonics* instruction is pattern-driven, encouraging students to formulate, test, and affirm their own decoding and encoding “rules”. While those students who are at or above grade level benefit from *Touchphonics* instruction, dramatic gains are found with students who might otherwise be “left behind.”

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For more information about this and other research-based materials from School Specialty Intervention, visit [intervention.schoolspecialty.com](http://intervention.schoolspecialty.com) or call 800.225.5750.

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## References



- Adams, M. J. (2001). Alphabetic anxiety and explicit, systematic phonics instruction: A cognitive science perspective. In S. B. Neuman & D. K. Dickinson (Eds.) *Handbook of early literacy research*. New York: Guilford Press.
- Hanna, P. R., Hanna J., Hodges, R., & Erwin, R., Jr. (1966). *Phoneme grapheme correspondences as cues to spelling improvement*. Washington, D.C., U.S. Government Printing Office.
- Jensen, E. (1995). *Brain-based learning and teaching*. Del Mar, CA: Turning Point
- Johnson, S. E. (1992). The effect of method, language proficiency, and orthographic background on spelling acquisition. A master's thesis presented at Brigham Young University.
- Lerner, Janet (2003). *Learning disabilities: theories, diagnosis, and teaching strategies*. Boston: Houghton Mifflin Company, 2003, pp. 2-3.
- Lyon, G. R. (1998). Statement of Dr. G. Reid Lyon, chief, Child Development and Behavior Branch, National Institute of Child Health and Human Development, National Institutes of Health before the U.S. Senate Committee on Labor and Human Resources, 04/28/98.
- National Reading Panel, (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications: Reports of the subgroups*. Washington, D.C.: National Institute of Child Health and Human Development.
- Piaget, J. (1952). *The language and thought of the child*. London: Routledge & Kegan Paul.
- Pressley, M. (1998). *Reading instruction that works: The case for balanced teaching*. New York: Guilford Press.
- Shaywitz, Sally (2003). *Overcoming dyslexia: a new and complete science-based program for reading problems at any level*. New York: Alfred A. Knopf, p. 86. Shaywitz, p. 85.
- Steed, M. R. (1984). *A system for teaching word recognition skills to children with severe reading disorders*. Dissertation presented to the Department of Elementary Education at Brigham Young University (available online at [intervention.schoolspecialty.com/Touchphonics](http://intervention.schoolspecialty.com/Touchphonics)), p. 28.

