

Scientificallly-based Reading Research

Mindplay's My Reading Coach™

The five key components of reading
instruction
as reported by the
National Reading Panel

How Mindplay's My Reading Coach™
addresses the findings of the
National Reading Panel

My Reading Coach™ meets scientific research standards

In addition to utilizing demonstrated “best practices” in the field, My Reading Coach’ is supported by scientific research, consistent with the findings of the National Reading Panel (NRP). In April 2000, this panel released its research-based findings in two reports* and a video entitled, “Teaching Children to Read.”

These reports explain the methodology and scientific research used by the NRP in its effort to assess the best ways to teach children to read. The NRP research was conducted by five subgroups which focused on 1) Alphabets, 2) Fluency, 3) Comprehension, 4) Teacher Education and Reading Instruction, and 5) Computer Technology and Reading Instruction.

The NRP concluded that there are five key components to an effective reading instruction program. These components include:

1. Phonemic Awareness
2. Phonics
3. Fluency
4. Vocabulary
5. Comprehension

The *No Child Left Behind Act* of 2001 provides *Reading First* grants for state and local school districts in which students are systematically and explicitly taught these five key components of early reading as specified by the NRP.

My Reading Coach is consistent with scientifically-based reading research. It offers consistency of instruction and modeling, along with the best scientific practices to provide the accountability required in Reading First classrooms. It addresses each of the five key components found important by the NRP. It provides a clear instructional design in the following ways:

1. Explicit, direct, individualized instruction and remediation,
2. Integrated instructional sequences,
3. Practice activities that are mastery based to ensure short and long term memory retention and application,
4. Pre-testing as well as review testing and placement to ensure each student receives appropriately targeted instruction,
5. Professional development on effective reading instruction using an experienced co-teacher,
6. Supplemental teacher and student support materials.

My Reading Coach software offers schools a unique, cost-effective way to provide one-on-one reading instruction and remediation through technology. It empowers by allowing each child the opportunity to interact with an experienced reading teacher and speech pathologist. The application of this technology allows all children equal access and equality of instruction. The embedded coach teaches phonemic awareness, phonics, fluency and vocabulary. The coach also teaches and models effective reading comprehension strategies. The simple, easy to use management system monitors and tracks student progress and provides teachers and administrators with both class performance and improvement statistics, as well as detailed information on each individual student.

* Teaching Children To Read: An Evidence-Based Assessment of the Scientific Research Literature on Reading and Its Implications for Reading Instruction” and “Reports of the Subgroups”

Phonemic Awareness: One of the key elements identified by the National Reading Panel's Scientifically-based Research Findings

- Phonemic awareness is the ability to hear, identify and manipulate individual sounds (phonemes) in spoken words.

NRP Conclusion: "Phonemic Awareness Instruction helped all types of children improve their reading including normally-developing readers, children at risk for future reading problems, disabled readers, preschoolers, kindergartners, 1st graders, children in 2nd through 6th grades (most of whom were disabled readers), children across various SES levels, and children learning to read in English as well as other languages." (p. 2-5)

Further NRP Findings	My Reading Coach Meets NRP Research
"Teaching with letters is important because this helps children apply their PA skills to reading and writing. Teaching children to blend phonemes with letters helps them to decode." (p.2-6)	My Reading Coach provides explicit instruction in letter formation and blending phonemes with letters to help students decode.
"Teaching children phonemic segmentation with letters helps them spell." (p.2-6)	My Reading Coach teaches and provides immediate remedies in phonemic segmentation with letters to help students spell.
"Teachers should recognize that acquiring phonemic awareness is a means rather than an end. PA is not acquired for its own sake but rather for its value in helping learners understand and use the alphabetic system to read and write." (p.2-6)	My Reading Coach helps students apply learned phonemic awareness skills to reading, beginning with lesson 7.
"In these analyses, programs lasting less than 20 hours were more effective than longer programs. Single sessions lasted 25 minutes on average." (p.2-6)	The phonemic awareness instruction is limited to the needs of the student. That portion of the program is usually complete within 13 hours. The average session time on PA is 20 minutes.

"Which methods of teaching PA have the greatest impact on learning to read?"	My Reading Coach Uses these NRP Suggested Techniques
Although all of the approaches exert a significant effect on reading, instruction that focuses on 1 or 2 skills produces greater transfer than a multi-skilled approach." (p.2-4)	
"1. Phoneme isolation, which requires recognizing individual sounds in words, for example, 'Tell me the first sound in paste.' (/p/)" (p.2-2; 2-10)	My Reading Coach provides explicit instruction to students in phonemic isolation in the Word Building Activity. Students must correctly identify each individual sound in a word. Students identify the sound and its associated grapheme.
"2. Phoneme identify, which requires recognizing the common sound in different words. For example, 'Tell me the sound that is the same in <u>bike</u> , <u>boy</u> and <u>bell</u> .'" (/b/) (p.2-2; 2-10)	
"3. Phoneme categorization, which requires recognizing the word with the odd sound in a sequence of three or four words, for example, 'Which word does not belong? bus, bun, rug'" (p.2-2; 2-10)	
"4. Phoneme blending, which requires listening to a sequence of separately spoken sounds and combining them to form a recognizable word. For example, 'What word is /s/ /k/ /u/ /l/?' (school)" (p.2-2; 2-10)	In the Word Building Activity, My Reading Coach says a word, then dissects it into each phoneme sound /s/ /k/ /u/ /l/. Students are challenged to correctly identify each individual sound in a word and the associated grapheme.
"5. Phoneme segmentation, which requires breaking a word into its sounds by tapping out or counting the sounds or by pronouncing and positioning a marker for each sound. For example, 'How many phonemes are there in ship?' (three: /sh/, /i/, /p/)" (p.2-2; 2-10)	As a remediation technique, My Reading Coach automatically pronounces the word, sound by sound, in the phonemic awareness activities. Students are given specific remedies to help them hear each sound.
"6. Phoneme deletion, which requires recognizing what word remains when a specified phoneme is removed. For example, 'What is smile without the /s/?' (mile)" (p.2-2; 2-10)	

Phonics: One of the key elements identified by the National Reading Panel's Scientifically-based Research Findings

- Phonics teaches children the relationships between the letters (graphemes) of written language and the individual sounds (phonemes) of the spoken language.

NRP Conclusion: "The meta-analysis indicated that systematic phonics instruction enhances children's success in learning to read and that systematic phonics instruction is significantly more effective than instruction that teaches little or no phonics." (p. 9)

"Systematic phonics instruction is significantly more effective than non-phonics instruction in helping to prevent reading difficulties among at-risk students and in helping to remediate reading difficulties in disabled readers." (p. 2-94)

Further NRP Findings	My Reading Coach Meets NRP Research
"Systematic phonics instruction typically involves explicitly teaching students a prespecified set of letter-sound relations and having students read text that provides practice using these relations to decode words." (p. 2-92)	My Reading Coach directly teaches a complete set of letter-sound relations and has students read text that provides practice using these relations to decode words.
"This supports the conclusion that systematic phonics instruction is effective when delivered through tutoring, through small groups and through teaching classes of students." The effect size was most effective in a tutoring situation. (d = .57 (individual) vs. d=.43 (small group) vs. d=.39 (class) (p. 2-93)	My Reading Coach teaches and remediates each student individually. It also provides teachers with lessons to help struggling students.
"Systematic phonics instruction produced much growth in spelling among the younger students, that is, kindergartners and 1 st graders but not among older students." (p. 2-94) One factor cited by the NRP, "as children move up in grades, remembering how to spell words requires knowledge of higher level regularities not covered in phonics programs." (p. 2-95)	My Reading Coach teaches phonics and remediates spelling in the Writing Activity to ensure improved spelling performance. In addition to the 44 phonemes and phonemic blending taught in My Reading Coach, students are taught spelling patterns including word structure needed by older students to spell longer words.
"Programs that focus too much on teaching of letter-sound relations and not enough on putting them to use are unlikely to be very effective." (p. 2-96)	My Reading Coach helps students apply learned phonics skills to reading, beginning with lesson 7.
"Some of the phonics programs showing large effect sizes are scripted in such a way that teacher judgment is largely eliminated. Although scripts may standardize instruction, they may reduce teacher interest in the teaching process or their motivation to teach phonics." (p. 2-96)	My Reading Coach directly teaches and remediates each student. It provides equity of phonics instruction to all students, frees teachers from performing this monotonous task and enables teachers to help students put these skills to use in text reading.
"A key feature that distinguishes systematic phonics instruction from nonsystematic phonics instruction is in the identification of a full array of letter-sound correspondences to be taught. The array includes not only the major correspondences between consonant letters and sounds but also short and long vowel letters and sounds, and vowel and consonant digraphs (e.g., oi, ea, ou, sh, ch, th). Also, it may include blends of letter-sounds that recur as subunits in many words, such as initial blends (e.g., st, sm, bl, pr), and final stems (e.g., -ack, -end, -ill, -op). Learning vowel and digraph spelling patterns is harder for children; therefore, special attention is devoted to learning these relations. It is not sufficient to teach the alphabetic system." (p. 2-99)	My Reading Coach is not restricted to the alphabetic system. It also addresses: short vowels, long vowel sounds, vowel signals that make a vowel say its long name, blends, consonant / vowel digraphs, sight words, high-frequency words, spelling rules, prefixes, suffixes and decoding multisyllable words.
"Systematic phonics programs teach phonics explicitly by delineating a planned, sequential set of phonic elements and teaching these elements explicitly and systematically; some systematic phonics program also use controlled vocabulary (decodable text) to provide practice with these elements." (p. 2-102)	A 25-year veteran speech pathologist developed My Reading Coach. The program presents an orderly progression of sounds based on ease of production and ease of fusing or blending sounds together. In the early lessons, the student is presented with controlled vocabulary. Thereafter, story passages are presented to motivate the reader.
"Finally it is important to emphasize that systematic phonics instruction should be integrated with other reading instruction to create a balanced reading program." (p. 2-97)	My Reading Coach integrates text story passages beginning at lesson 30 to transfer phonics skills to text comprehension.

Fluency: One of the key elements identified by the National Reading Panel's Scientifically-based Research Findings

- Fluency is reading text with speed, accuracy, and proper expression.

NRP Conclusion: "Fluency depends upon well developed word recognition skills, but such skills do not inevitably lead to fluency" (p.3-1)

Further NRP Findings	My Reading Coach Meets NRP Research
"The analysis of guided oral reading procedures led to the conclusion that such procedures had a consistent and positive impact on word recognition, fluency and comprehension." (p.3-3)	My Reading Coach comes with 15 teacher-guided oral reading lessons. A single student or a small group of students can complete these 15 lessons with a teacher, paraprofessional or a family member.
"Children who do not develop reading fluency, no matter how bright they are, will continue to read slowly and with great effort." (p. 3-3)	Fluency must be taught. My Reading Coach teaches a student to Read Like You Talk™. This fluency technique is easy to learn and apply.
"The demonstrated effectiveness of guided oral reading compared to the lack of demonstrated effectiveness of strategies encouraging independent silent reading suggests the importance of explicit compared to more implicit instructional approaches for improving reading fluency." (p. 3-4)	My Reading Coach explicitly teaches fluency techniques and then provides students with practice activities. It supplies the teacher with oral reading passages and suggestions on how to use these passages to improve fluency and reading comprehension.
"In its early conception, it was recognized that fluency requires high-speed word recognition that frees a reader's cognitive resources so that the meaning of a text can be the focus of attention. However, it is now clear that fluency may also include the ability to group words appropriately into meaningful grammatical units for interpretation. Fluency requires the rapid use of punctuation and the determination of where to place emphasis or where to pause to make sense of a text." (p. 3-6)	Since My Reading Coach is a mastery-based teaching and practice system, all students become proficient at decoding words. This decreases the cognitive load spend on word recognition. The program comes with 24 basic grammar lessons that teach students how to use parts of speech for proper pausing. Students are given direct instruction to read with inflection and emphasis.
"The reader must recognize the printed words (decoding) and construct meaning from the recognized words (comprehension). Both decoding and comprehension require cognitive resources. At any given moment, the amount of cognitive resources available for these two tasks is restricted by the limits of memory." (p. 3-8)	My Reading Coach teaches students proper pausing, allowing students to "chunk" phrases into meaningful groups or pictures. This process frees up limited memory and decreases cognitive load.
On automaticity (fluent processing of information that requires little effort or attention) – "These processes may be developed only through extensive practice under consistent conditions, which are typical of many skill acquisition situations." (p. 3-7)	My Reading Coach provides consistent instruction and consistent practice in a mastery-based environment. This consistency ensures students gain fluent processing of information that requires little effort or attention.
"One of the key reasons for the abiding interest in the word recognition process is the consistent finding that development of efficient word recognition skills is associated with improved comprehension." (p. 3-8) "Although accuracy in word recognition is, indeed, an important reading milestone, accuracy is not enough to ensure fluency – and without fluency, comprehension might be impeded." (p. 3-8)	My Reading Coach initially focuses on encoding and decoding and progresses to word recognition. As early as lesson 7, the program begins adding words and parts of speech to improve inflection, emphasis and overall fluency and thereby comprehension.
"However, more skilled readers come to fixate on function words (words such as of, the, to, etc.) less often than on content words." (p. 3-9)	These function words are some of the parts of speech taught in My Reading Coach to improve fluency. (prepositions: of, to, etc. articles: a, an, the)
"Competent reading requires skills that extend beyond the single-word level to contextual reading, and this skill can best be acquired by practicing reading in which the words are in a meaningful context." (p. 3-11)	My Reading Coach progresses beyond single words in lesson 9. Students progress from words to sentences and by lesson 30 are reading stories with fluency and comprehension. Students are instructed to understand a story's meaning using the context clues presented within the story.

Vocabulary: One of the key elements identified by the National Reading Panel's Scientifically-based Research Findings

- Vocabulary development entails the development of stored information about the meanings and pronunciation of words needed for communication. (Snow, 1991)

NRP Conclusion: "Both vocabulary and comprehension involve the meaning of the text, albeit at different levels. Vocabulary is generally tied closely to individual words while comprehension is more often thought of in much larger units." (p. 4-15)

Further NRP Findings	My Reading Coach Meets NRP Research
<p>"It is generally believed that receptive vocabulary is much larger than productive vocabulary since we often recognize words that we rarely use."(p. 4-16)</p> <p>"Vocabulary is also subcategorized as oral vs. reading vocabulary, where oral refers to words that are recognized in speaking or listening while reading vocabulary refers to words that are used or recognized in print." (p. 4-16)</p>	<p>My Reading Coach uses the student's receptive vocabulary as it instructs ESL and LEP learners who are able to understand language before they are able to produce it. The program helps all learners improve encoding / decoding as well as vocabulary skills to use and vocalize language.</p>
<p>"It is clear that vocabulary should be taught both directly and indirectly. Vocabulary instruction should be incorporated into reading instruction. There is a need of direct instruction of vocabulary items that are required for specific text to be read as part of the lesson." (p. 4-24)</p> <p>"It also seems clear from the Panel's data set that having students encounter vocabulary words often and in various ways can have a significant effect." (p. 4-25)</p>	<p>My Reading Coach uses a combination of methods for students to learn vocabulary including: explicit instruction, indirect acquisition through sentence and story reading, and decoding instruction.</p> <p>My Reading Coach instructs in roots / affix analysis to help students with word meaning.</p> <p>My Reading Coach's supplementary oral reading passages also use the pre-instruction technique of introducing vocabulary words prior to reading material.</p>
<p>"Effective instructional methods emphasized multimedia aspects of learning, richness of context in which words are to be learned, active student participation, and the number of exposures to words that learners will receive." (p. 4-27)</p> <p>"...computer technology could bring to bear many different media. This is one way of adding a number of different modalities to the teaching of vocabulary and, consequently, helping ensure more effective vocabulary learning." (p. 4-26)</p>	<p>My Reading Coach uses multimedia methods. As early as lesson 7 students match words and sentences with their graphic representation, thus building vocabulary skills at a high-interest level.</p> <p>Stories are presented along with inferential and literal questions to ensure students gather meaning from material within story context.</p>
<p>"Recent research studies in the area suggest that indirect learning can definitely occur, and that vocabulary can be acquired through incidental exposure." (p. 4-21)</p>	<p>My Reading Coach comes with almost 200 reading passages that expose students to story reading. This exposure helps students build vocabulary in the context of the passages read.</p>
<p>"One trend that was strongly reflected in the database was that high frequency and multiple, repeated exposures to vocabulary material are important for learning gains." (p. 4-22)</p> <p>"It also seems clear from the Panel's data that having students encounter vocabulary words often and in various ways can have a significant effect." (p. 4-25)</p> <p>"Students should not only repeat vocabulary items in learning; they should be given items that will be likely to appear in many other contexts." (p. 4-25)</p>	<p>My Reading Coach begins presenting vocabulary in textual context as early as lesson 9. Passage text repeats words as reinforcement and continues to expand vocabulary gradually. Many words are reused in the reading passages presented in lesson 30 and throughout the remainder of the program in different contexts.</p>
<p>"A few studies that addressed active engagement in learning all reported results consistent with conventional wisdom about learning: Active learning is best." (p. 4-26)</p>	<p>Students continuously interact with the emulated coach in the program to learn and expand their vocabulary skills.</p>

Text Comprehension: One of the key elements identified by the National Reading Panel's Scientifically-based Research Findings

- Reading Comprehension is defined as “intentional thinking during which meaning is constructed through interactions between text and reader. (Harris & Hodges, 1995)

NRP Conclusion: “Both vocabulary and comprehension involve the meaning of the text, albeit at different levels. Vocabulary is generally tied closely to individual words while comprehension is more often thought of in much larger units.” (p. 4-15)

NRP’s three predominant themes: ”(1) reading comprehension is a cognitive process that integrates complex skills and cannot be understood without examining the critical role of vocabulary learning and instruction and its development; (2) active interactive strategic processes are critically necessary to the development of reading comprehension; and (3) the preparation of teacher to best equip them to facilitate these complex processes is critical and intimately tied to the development of reading comprehension.” (p. 4-1)

Further NRP Findings	My Reading Coach Meets NRP Research
<p>“Of the 16 categories of instruction, 7 appear to have a firm scientific basis for concluding that they improve comprehension in normal readers. The seven individual strategies that appear to be effective and most promising for classroom instruction are (in alphabetical order) <i>comprehension monitoring</i>, cooperative learning, <i>graphic and semantic organizers</i> including story maps, story structure, <i>question answering</i>, question generation, and summarization.” (p. 4-42) (bold and italicized item missing filled in from p. 4-6)</p>	<p>My Reading Coach uses a combination of specific cognitive strategies such as: comprehension monitoring, graphic organizers, question answering, summarization and story structure.</p>
<p>“Multiple-strategy teaching in which the reader uses several of the procedures in interaction with the teacher over the text. Multiple-strategy teaching is effective when the procedures are used flexibly and appropriately by the reader or the teacher in naturalistic context.” (p. 4-6)</p>	<p>My Reading Coach uses multiple-strategy direct teaching and remediation to model effective reading comprehension strategies and to teach students to employ these skills as they read.</p>
<p>“These comprehension strategies yield increases in measures of near transfer such as recall, question answering and generation, and summarization of texts. These comprehension strategies, when used in combination, show general gains on standardized comprehension tests. Teachers can learn to teach students to use comprehension strategies in natural situations. Furthermore, when teachers teach with these strategies, their students learn them and improve their reading comprehension.” (p. 4-6)</p>	<p>My Reading Coach uses a comprehension monitoring strategy called Read Like You Talk™ to help students easily understand and remember what they read. This strategy uses grammar instruction to help students easily identify when to make and change mental pictures to grasp the meaning of what is read.</p> <p>Students, on average, improve 2 or more reading grade equivalent levels with 50 hours of instruction.</p>
<p>“With respect to the scientific basis of the instruction of text comprehension, the Panel concludes that comprehension instruction can effectively motivate and teach readers to learn and to use comprehension strategies that benefit the reader.” (p. 4-6)</p>	<p>All students receive equitable reading comprehension strategy instruction since the program’s reading coach teaches these techniques. The coach models proper application as he teaches these strategies; and he encourages students to become active participants in the learning process as they master vocabulary, grammar and reading comprehension.</p>
<p>“As indicated by the Panel’s review of text comprehension, reading comprehension can be improved by teaching students to use specific cognitive strategies or to reason strategically when they encounter barriers to comprehension when reading. The goal of such training is the achievement of competent and self-regulated reading.” (p. 4-7)</p>	<p>My Reading Coach uses a combination of specific cognitive strategies such as: comprehension monitoring, graphic organizers, question answering, summarization and story structure.</p>

TUSD – Year 2 of a 3-year School Comparison District CCSA Testing / AIMS State Testing

A study was conducted to determine the effectiveness of My Reading Coach on student achievement. In the 1999-2000 school year, Myers-Ganoung students did not use My Reading Coach, and the students able to meet district reading standards were only **11.5%**. During the course of the next two years, the students able to meet district standards improved based on the number of hours of My Reading Coach usage to 51%. This represented an improvement of 40.5% in two years.

Roberts Elementary's scores, a school in the same corridor and attracting students with similar socio-economic backgrounds, declined during the same period of time to 42%. Roberts Elementary used the same curriculum as Myers-Ganoung; however, their students did not use My Reading Coach.

2nd Grade (2000 – 2001)

In the 2000-2001 school year, all Myers-Ganoung Elementary's 2nd grade students used My Reading Coach for approximately 27 hours, and students meeting district standards increased to 37% (improvement: 25.5 percentile points).

Year 1	Population:	White/ Anglo	African / American	Hispanic	Native American	Asian American	Total
Myers-Ganoung	Students	21	6	43	1	3	74
(27 hours on My Reading Coach)	% of Students	28%	8%	58%	1%	4%	
	% met standard	33%	50%	37%	100%	0%	37%
Roberts	Students	22	14	47	3	3	89
	% of Students	25%	16%	53%	3%	3%	
	% met standard	64%	43%	23%	67%	67%	39%

2nd Grade (2001 – 2002)

In 2001-2002, all 2nd grade students used My Reading Coach for approximately 50 hours. With additional My Reading Coach usage, students meeting standards improved an additional 14%. Thus, 51% of Myers-Ganoung students were able to meet district standards.

Year 1	Population:	White/ Anglo	African / American	Hispanic	Native American	Asian American	Total
Myers-Ganoung	Students	13	15	47	4	3	82
(50 hours on My Reading Coach)	% of Students	16%	18%	57%	5%	4%	
	% met standard	54%	53%	49%	25%	100%	51%
Roberts	Students	5	5	57	2	0	69
	% of Students	7%	7%	83%	3%	0%	
	% met standard	40%	0%	44%	100%	0%	42%

3rd Grade (2001 – 2002)

The same students who used the My Reading Coach program at Myers-Ganoung in the 2nd grade, continued to use the program in the third grade during the 2001-2002 school year for approximately 15 additional hours. This study shows the growth in the percentage of students able to meet state standards.

Year 2	Population	White/ Anglo	African / American	Hispanic	Native American	Asian American	Total
Myers-Ganoung	Students	16	5	30	0	1	52
	% of Students	31%	10%	58%	0%	2%	
	% met standard	75%	60%	67%	0%	100%	69%
Roberts	Students	8	8	32	4	1	53
	% of Students	15%	15%	60%	8%	2%	
	% met standard	50%	25%	16%	50%	0%	25%

Impact of My Reading Coach on ESL Students

A two-year study was conducted at Myers-Ganoung Elementary School to measure the effectiveness of My Reading Coach on 2nd grade ESL students. In year one, 29 students were present for both pre and post testing. The 2nd grade students listed as ESL included 12 bi-lingual students (non-English speakers). In year two, there were 25 ESL students with 11 listed as bi-lingual students.

Students were given a nationally-known standardized reading comprehension test* to measure both pre and post test results.

Myers-Ganoung Population: ESL	Number of Students	Hours on My Reading Coach	Pretest Percentile	Post test Percentile
Year 1 (2000-2001)	29	27	15.4	25.6
Year 2 (2001-2002)	25	50	8.8	35.4

*DRP – Degrees of Reading Power - Reading Comprehension Test (p=. 75 pre=J0, post=K0)