

# THE RIGHT TO READ AND THE RESPONSIBILITY TO TEACH

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The psychological, social, and economic consequences of reading failure are legion. Our National Institute of Child Health and Human Development (NICHD) research has consistently shown that if children do not learn to understand and use language, to read and write, to calculate and reason mathematically, to solve problems, and to communicate their ideas and perspectives, their opportunities for a fulfilling and rewarding life are seriously compromised. In our NICHD-supported longitudinal studies, we have learned that school failure has devastating consequences with respect to self-esteem, social development, and opportunities for advanced education and meaningful employment. Nowhere are these consequences more apparent than when children fail to learn to read.

Why? Simply stated, the development of reading skills serves as THE major foundational academic ability for all school-based learning. Without the ability to read, the opportunities for academic and occupational success are limited indeed. Moreover, because of its importance, difficulty in learning to read crushes the excitement and love for learning that most children have when they enter school.

As we follow thousands of children with reading difficulties throughout their school careers and into young adulthood, these young people tell us how embarrassing and devastating it was to read with difficulty in front of peers and teachers, and to demonstrate this weakness on a daily basis. It is now clear from our NICHD research that this type of failure affects children negatively earlier than we thought. By the end of first grade, children having difficulty learning to read begin to feel less positive about themselves than when they started school. As we follow children through elementary and middle school years, self-esteem and the motivation to learn to read decline even further. By high school, the potential of these students to enter college has decreased substantially. Students who have stayed in school long enough to reach high school tell us they hate to read because it is such hard work, their reading is so slow and laborious, and it makes them feel dumb. As a high school junior in one of our studies remarked, "I would rather have a root canal than read."

In the majority of cases, the students are deprived of the ability to learn about literature, science, mathematics, history, and social studies because they cannot read grade-level textbooks. Consider that by middle school, children who read well read at least 10,000,000 words during the school year. On the other hand, children with reading difficulties read less than 100,000 words during the same period. Poor readers lag far behind in vocabulary development and in the acquisition of strategies for understanding what they read, and they frequently avoid reading and other assignments that require reading.

It is important to note that this state of educational affairs describes an extraordinary and unacceptable number of children. According to the National Center for Educational Statistics (1998), 38 percent of fourth graders nationally

cannot read at a basic level--that is, they cannot read and understand a short paragraph of the type one would find in a simple children's book.

Unfortunately, reading failure is disproportionately prevalent among children living in poverty. Indeed, in many low-income urban school districts the percentage of students in the fourth grade who cannot read at basic level approaches 70 percent. It is important to understand, however, that while failure to learn to read adequately is much more likely among poor children, non-white children, and non-native speakers of English, recent data suggest that reading failure cuts across all ethnic and socioeconomic strata. In fact, a striking 32 percent of the fourth grade children across the nation who were reading below the basic levels were from homes where the parents had graduated from college.

The educational and public health consequences of this level of reading failure are dire. Of the ten to 15 percent of children who will eventually drop out of school, over 75% will report difficulties learning to read. Likewise, only two percent of students receiving special or compensatory education for difficulties learning to read will complete a four-year college program. Surveys of adolescents and young adults with criminal records indicate that at least 50 percent have reading difficulties, and in some states the size of prisons a decade in the future is predicted by fourth grade reading failure rates. Approximately half of children and adolescents with a history of substance abuse have reading problems. It goes without saying that failure to learn to read places children's futures and lives at risk for highly deleterious outcomes. It is for this reason that the NICHD considers reading failure to reflect a national public health problem.

### **How Does Reading Develop?**

Some children learn to read and write with ease. Even before they enter school, they have developed an understanding that the letters on a page can be sounded out to make words. Some preschool children can even read words correctly that they have never seen before and comprehend what they have read. Some children, without any great effort or pressure on the part of their parents, pick up books, pencils, and paper, and they are on their way, almost as though by magic.

However, the magic of this effortless journey into the world of reading is available to only a relatively small percentage of our nation's children. The research literature suggests that about 50 percent learn to read relatively easily once exposed to formal instruction, and that youngsters in this group learn to read in any classroom, with any instructional emphasis.

Unfortunately, the other half of our nation's children find learning to read to be a much more formidable challenge. It is one of the most difficult tasks that they will have to master throughout their life.

### **Sounds Are Connected to Print**

Learning to read the English language is not as easy as conventional wisdom would suggest. Every type of writing system, whether it be a morphosyllabic system as used by the Chinese (where a written symbol represents a whole word) or an alphabetic system (such as English, French, and Spanish) presents challenges to the beginning reader. In an English alphabetic system, individual letters are abstract and meaningless, and must be linked to sounds called phonemes, blended together and pronounced as words, at which point meaning is finally realized. To learn to read English, children must learn the connections between the approximately 44 sounds of spoken English (the phonemes), and the 26 letters of the alphabet.

NICHD research has taught us that in order for a beginning reader to learn how to connect or translate printed symbols (letters and letter patterns) into sound, the would-be reader must understand that our speech can be segmented, or broken into small sounds (phoneme awareness), and that the segmented units of speech can be represented by printed forms (phonics). This understanding is absolutely necessary for the development of accurate and rapid word reading skills. Children are not born with this insight, nor does it develop naturally without instruction.

Why are phoneme awareness and the development of the alphabetic principle so critical for the beginning reader? Because if children cannot perceive the sounds in spoken words - for example, if they cannot hear the *a* sound in *fat* and *cat* and perceive that the difference lies in the first sound - they will have difficulty decoding or "sounding out" words in a rapid and accurate fashion. Unlike writing, the speech we use to communicate orally does not consist of separate sounds in words. For example, while a written word like *cat* has three letter-sound units, the ear hears only one sound, not three, when the word *cat* is spoken aloud. This merging and overlapping of sounds into a sound bundle makes oral communication much more efficient. For many children, this skill is only learned with difficulty and thus must be taught directly, explicitly, and by a well-prepared and informed teacher. It has also become clear that the development of these critical early reading-related skills, such as phoneme awareness and phonics, are fostered when children are read to at home during the preschool years, when they learn their letter and number names, and when they are introduced at very early ages to concepts of print and literacy activities.

Does this mean that children who have difficulty understanding that spoken words are composed of discrete individual sounds that can be linked to letters suffer from brain dysfunction or damage? Not at all. It simply means that the neural systems that perceive the phonemes in our language are less efficient in these children than in other children. Differences in neural efficiency can also be hypothesized to underlie the individual differences that we see every day when we observe people attempting to learn skills such as singing, playing an instrument, or painting a portrait. In some children, phonological differences likely have a genetic basis, although it is important to note that genetic influences in reading can be modified significantly by environmental factors. In other children, the differences seem to be attributable to a lack of exposure to language patterns and literacy-based materials

during the critical preschool years. In most cases however, the majority of children can be taught by properly trained teachers with appropriate and timely instruction. The development of phoneme awareness, the development of an understanding of the alphabetic principle, and the translation of these skills to the application of phonics in reading and spelling words are non-negotiable beginning reading skills that all children must master in order to understand what they read and to learn from their reading. The development of phoneme awareness and phonics, while necessary, are not sufficient for learning to read the English language so that meaning can be derived from print. In addition to learning how to "sound out" new and/or unfamiliar words, the beginning reader must eventually become proficient in reading, at a fast pace, larger units of print such as syllable patterns, meaningful roots, suffixes, and whole words.

### **The Development of Reading Fluency**

While the ability to read words accurately is a necessary skill in learning to read, the speed at which this is done becomes a critical factor in ensuring that children understand what they read. As one child recently remarked, "If you don't ride a bike fast enough, you fall off." Likewise, if the reader does not recognize words quickly enough, the meaning will be lost. If reading is slow and labored, the reader simply cannot remember what he or she has read, much less relate the ideas they have read about to their own background knowledge.

The amount of practice required for fluency and automaticity in reading to occur varies greatly. The average child needs between four and 14 exposures to automatize the recognition of a new word. It is therefore vital that children read a large amount of text at their independent reading level (with 95 percent accuracy), and that the text provide specific practice in the skills being learned.

It is also important to note that spelling instruction fosters the development of reading fluency. Through spelling instruction, youngsters receive many examples of how letters represent the sounds of speech and are reminded that written words are made up of larger units of print (syllables). This insight lets the developing reader know that word recognition can be accomplished by reading words in larger "chunks" rather than letter-by-letter.

### **Constructing Meaning from Print**

The ultimate goal of reading instruction, enabling children to understand what they read, appears to be based on several factors. Children who comprehend well seem to be able to activate their relevant background knowledge when reading - that is, they can relate what is on the page to what they already know. Good comprehenders also have good vocabularies, since it is extremely difficult to understand something you cannot define. Good comprehenders have a knack for summarizing, predicting, and clarifying what they have read, and they frequently use questions to guide their understanding. Good comprehenders are also good at using sentence structure within the text to enhance their comprehension.

Once children can read the words accurately and fluently, they can begin to construct meaning at two levels. At the first level, literal understanding is achieved. Next, they begin to guide themselves through text by asking questions like, "Why am I reading this and how does this information relate to my reasons for doing so?", "What is the author's point of view?", "Do I understand what the author is saying and why?", "Is the text internally consistent?" It is this second level of comprehension that leads readers to reflective, purposeful understanding of what they have read.

The development of reading comprehension skills, like the development of phoneme awareness, phonics, and reading fluency, needs to be fostered by highly trained teachers. Research shows that teachers must arrange for opportunities for students to discuss what they have read and explore any difficulties they had when reading. Children's reflections on what they have read can be directly fostered through instruction in comprehension strategies. These sorts of discussions and activities should be conducted throughout a range of literacy genres, both fiction and nonfiction, and should be a regular component of the language arts curriculum throughout the children's school years.

### **Other Factors That Influence Learning to Read**

Learning to read is a relatively lengthy process that begins very early in development. Children who receive stimulating literacy experiences well before they enter formal schooling appear to have an edge when it comes to vocabulary development, understanding the goals of reading, and developing an awareness of print and literacy concepts. Children who are read to frequently at very young ages become exposed in interesting and exciting ways to the sounds of our language, to the concept of rhyming, to other word and language play activities that serve to provide the foundation for the development of phoneme awareness, and the ability to recognize and discriminate letters. They will have less to learn upon school entry and will be better oriented to the alphabetic principle of how letters and sounds connect.

Ultimately, children's ability to understand what they are reading is inextricably linked to their background knowledge. Very young children who are provided opportunities to learn, think, and talk about new areas of knowledge will gain much from the reading process.

With understanding comes the clear desire to read more and to read frequently, thus ensuring that reading practice and the development of new vocabulary takes place. Through these early interactions and the explicit instruction provided by parents, caregivers, and teachers, skilled readers learn to apply phonemic and phonics skills rapidly and accurately to the text they are reading, practice reading sufficiently to develop fluency, automaticity, and the ability to read with expression, and apply comprehension strategies to what they are reading to facilitate understanding. But it all starts early, with those initial language and literacy interactions that expose the child to the structure of our language and how print

works. Unfortunately, few children who later have difficulties learning to read, and particularly children from poverty, come to kindergarten and the first grade with these advantages. We know for example, that the average middle class child is exposed to approximately 500,000 words by kindergarten; an economically disadvantaged child is exposed to half as many, at best.

### **What Are Some Difficulties In Learning To Read?**

Difficulties learning to read result from a combination of factors. In general, children who are most at-risk for reading failure are those who enter school with limited exposure to language and, thus, less prior knowledge of concepts related to phonemic sensitivity, letter knowledge, print awareness, the purposes of reading, and general verbal skills, including vocabulary. Children raised in poverty, youngsters with limited proficiency in English, children with speech and hearing impairments, and children from homes where the parent's reading levels are low are clearly at increased risk of reading failure. Likewise, youngsters with sub-average intellectual capabilities have difficulties learning to read. However, it is very important to note that a substantial number of children from highly literate households and who have been read to by their parents since very early in life also have difficulties learning to read.

Children who have difficulties learning to read approach the reading of words and text in a laborious manner, demonstrating difficulties linking sounds (phonemes) to letters and letter patterns. Their reading is hesitant and characterized by frequent starts and stops and mispronunciations. Comprehension of the material being read is usually extremely poor. Usually, it is not because he or she is not smart enough. In fact, many children who have difficulty learning to read are bright and motivated to learn to read--at least initially. And here we come full circle--many of these early difficulties in developing phonemic awareness are due to a lack of literacy and oral language interactions with adults during infancy and early childhood. Thus, because the environments most bereft of these interactions are those characterized by poverty, the cycle continues.

### **Deficits in Phoneme Awareness and Developing the Alphabetic Principle**

Difficulty linking letters with sounds is the source of reading problems for many children. Their reading is hesitant and characterized by frequent starts and stops and multiple mispronunciations. If asked about the meaning of what has been read, they frequently have little to say because they take far too long to read the words, taxing their memory and leaving little energy for remembering and understanding what they have read.

Unfortunately, there is no way to bypass this decoding and word recognition stage of reading. A deficiency in these skills cannot to any meaningful extent be offset by using context to figure out the pronunciation of unknown words. While one learns to read for the fundamental purpose of deriving meaning from print, the key to comprehension starts with the immediate and accurate reading of words. There are

some children who can read words accurately and quickly yet do have difficulties comprehending, but they constitute a very small portion of those with reading problems.

If the ability to gain meaning from print is dependent upon fast, accurate, and automatic decoding and word recognition, what factors hinder the acquisition of these basic reading skills? The main culprit appears to be a deficit in phoneme awareness - the understanding that what is heard by the ear is actually composed of smaller segments of sound called phonemes. Whether genetic or neurobiological in origin, or whether attributable to a lack of exposure to language patterns and usage during infancy and the preschool years, children who lack phoneme awareness have difficulties linking speech sounds to letters - their decoding skills are labored and weak, resulting in extremely slow reading. This labored access to print renders comprehension nearly impossible.

Teachers who have in-depth knowledge about reading development and difficulties have a clear understanding of the skills that are critical for learning to read and reading to learn, and have a depth and breadth of knowledge that will allow them to tailor reading programs for those children who do not respond to reading methods selected by state, local, or school authorities are the answer. In short, teacher preparation is the key to teaching our nation's children to read, to learn from reading, and to enjoy reading.

### **Deficits in Acquiring Reading Comprehension Strategies**

For many children, difficulties in understanding what they have read occur because it takes far too long to read words, leaving little energy for remembering and comprehending what was read. Unfortunately, the slow and inaccurate reading of words cannot be improved in any appreciable way by using the context of what is read to help pronounce the words correctly. Consequently, while the fundamental purpose of reading is to derive meaning from print, the key to comprehension starts with the rapid and accurate reading of words. Other deficits in reading comprehension are related to: (1) inadequate understanding of the words used in the text; (2) inadequate background knowledge about the context of the text; (3) a lack of familiarity with the semantic and syntactic structures that help predict the relationships between words; (4) a lack of knowledge about different writing conventions (humor, explanation, dialogue, etc.); (5) a deficit in the verbal reasoning ability which would enable the reader to "read between the lines"; and (6) a lack of the ability to remember verbal information. If children are not provided early and consistent experiences that are explicitly designed to foster these skills, reading failure will occur no matter how well developed word recognition skills are.

### **Deficits in Developing and Maintaining the Motivation to Learn to Read**

A major factor that limits the amount of improvement that a child may make in reading is related to the motivation to continue the learning process. Very little is

known with respect to the exact timing and course of motivational problems in the learning to read process, but it is clear that difficulties learning to read are very demoralizing to children. In the primary grades, reading activities constitute the major portion of academic activities undertaken in classrooms, and children who struggle with reading are quickly noticed by peers and teachers. Although most children enter formal schooling with positive attitudes and expectations for success, those who encounter difficulties learning to read frequently attempt to avoid engaging in reading behavior as early as the middle of the first grade year. It is known that successful reading development is predicated on practice with reading, and obviously the less a child practices, the less developed the various reading skills will become. To counter these highly predictable declines in the motivation to learn to read, prevention and early intervention programs are critical.

### **Deficits in Effectively Preparing Teachers**

As evidence mounts that reading difficulties originate in large part from difficulties in developing phoneme awareness, phonics, spelling skills, reading fluency, and reading comprehension strategies, the need for informed instruction for the millions of children with insufficient reading skills is an increasingly urgent problem.

Unfortunately several recent studies and surveys of teacher knowledge about reading development and difficulties indicate that many teachers are underprepared to teach reading. Most teachers receive little formal instruction in reading development and disorders during either undergraduate and/or graduate studies, with the average teacher completing only two reading courses. Surveys of teachers taking these courses consistently show that very few have ever observed professors demonstrating instructional reading methods with children. They also report that their course work is largely unrelated to actual teaching practices, that the theories they learn are rarely linked to the actual instruction of children, and that the supervision of student teaching and practicum experiences is frequently lacking in consistency and depth.

At present, motivated teachers are often left on their own to obtain specific skills in teaching reading by seeking out workshops or specialized instructional manuals. Many teachers report that they are tied to "packaged" reading programs, regardless of the quality of the programs or their usefulness for all children, because they do not understand the reading process well enough to augment the programs or to select different instructional strategies for different children. As we survey teachers' perceptions of their preparation, we find consistently that they are "method-driven" rather than conceptually prepared to teach the range of skills required to learn to read.

Clearly, teachers of youngsters who display reading difficulties should be thoroughly trained to assess and identify problem readers at early ages and be well versed in understanding the conditions that must be present for these children to become efficient readers. Unfortunately, many teachers and administrators have been caught between conflicting schools of thought about how to teach reading and how to help students who are not progressing. They are limited by a "one size fits all" philosophy



that emphasizes either a "whole language" or "phonics" orientation to instruction. This parochial type of preparation places many children at continued risk for reading failure since it is well established that no reading program should be without all the major components of reading instruction (phoneme awareness, phonics, spelling, fluency, and reading comprehension). The real question is, "Which children need what, when, for how long, with what type of instruction, and in what type of setting?"

It is hard to find disagreement in the educational community that the direction and fabric of teacher education programs in language arts and reading must change. However, bringing about such change will be difficult. How teaching competencies and certification requirements are developed and implemented will have to become more thoughtful and systematic. It is alarming that many of the requirements are not based upon the best research related to reading development and disorders. Fundamental changes must occur in the type and depth of knowledge that teachers have if we are to ensure literacy for all.

### **Can Children With Reading Problems Overcome Their Difficulties?**

Yes, the majority of children who enter kindergarten and elementary school at-risk for reading failure can learn to read at average or above levels if they are identified and provided with systematic, explicit, and intensive instruction in phonemic awareness, phonics, reading fluency, vocabulary, and reading comprehension strategies. Substantial research supported by NICHD and OERI shows clearly that without systematic, focused, and intensive interventions, however, the majority of children rarely catch up. Unless these children receive the appropriate instruction, over 70 percent of the children entering first grade who are at risk for reading failure will continue to have reading problems into adulthood. On the other hand, the early identification of children at-risk for reading failure coupled with the provision of comprehensive early reading interventions can reduce the percentage of children reading below the basic level in the fourth grade (e.g., 38 percent) to six percent or less. Are Certain Early Intervention Approaches More Effective Than Others?

Yes. On the basis of a thorough evidence-based review of the reading research literature that met rigorous scientific standards, the National Reading Panel (NRP), convened by the NICHD and the Department of Education, found that intervention programs that provided systematic and explicit instruction in phonemic awareness, phonics, guided repeated reading to improve reading fluency, and direct instruction in vocabulary and reading comprehension strategies were significantly more effective than approaches that were less explicit and less focused on the reading skills to be taught (e.g., approaches that emphasize incidental learning of basic reading skills). The NRP found that children as young as four years of age benefited from instruction in phonemic awareness and the alphabetic principle when the instruction was presented in an interesting and entertaining, albeit systematic manner. Likewise, the National Center for Educational Statistics recently reported data from its Early Childhood Longitudinal Study involving 22,000 children showing

that, after controlling for family income, youngsters who attended more academically oriented preschool programs had significantly higher scores in reading, math, and general knowledge when tested in the fall of their kindergarten year than children attending less academically oriented preschools. In addition, five NICHD longitudinal early intervention studies examining the effectiveness of different early intervention approaches provided in kindergarten and first and second grades for those children most at-risk for reading difficulties strongly suggested, if implemented appropriately, such programs could reduce the number of children who fail to learn to read well below the 38 percent rate currently observed nationally. It is also important to note that the majority of children composing this unacceptably large group of poor readers ARE NOT provided special education services, as is discussed next.

### **Will Proper Reading Instruction Reduce the Need for Special Education?**

Yes. But it is important to understand at the outset that the number of children with reading difficulties served in special education reflects only a fraction of the number of school age children who fail to learn to read. Recall from the previous discussion that 38% of fourth grade students read below the basic level. Keeping in mind that the majority of these children will continue to have reading difficulties throughout their school career if they do not receive systematic and focused early intervention, we can estimate that at least 20 million school age children suffer from reading failure. Among these 20 million children, only approximately 2.3 million school-age children are served in special education under the category of learning disabilities (LD). The remaining 17.7 million poor readers not meeting the eligibility requirements for the LD category are either provided some form of compensatory education or overlooked all together.

We have taken care in our NICHD early intervention and prevention studies to identify ALL children who are at-risk for reading failure within a given sample and to identify the instructional approaches that are the most effective for the majority of these students, irrespective of whether they are eligible for special education as an LD student or eligible for compensatory education services. These studies have indicated that with the proper early instruction, the national prevalence of reading failure can be reduced significantly. Thus, by putting in place well designed evidence-based early identification, prevention, and early intervention programs in our public schools, our data strongly show that the 20 million children today suffering from reading failure could be reduced by approximately two-thirds. While still a totally unacceptable rate of reading failure, such a reduction would allow us to provide services to the children who are in genuine need of special education services with substantially greater focus and intensity.

### **So What Have We Learned?**

In studying approximately 10,000 children over the last 15 years, NICHD research has documented the importance of phonemic awareness in the development of automatic word reading. We have learned that:

1. The assessment of risk status and educational progress in young children is frequently ignored on the premise that early educational progress is driven largely by maturational factors which dissipate with time, such that differences observed early in development will disappear with age. We know, however, that children do not outgrow reading problems. This attitude toward assessment and early systematic and focused intervention and prevention efforts produces devastating consequences for many young children, particularly children from poverty.
2. Phonemic awareness skills assessed in kindergarten and first grade serve as potent predictors of difficulties learning to read. We have learned how to measure phonemic awareness skills as early as the beginning of kindergarten, and over the past decade we have refined these tasks so that we can predict with approximately 92 percent accuracy who will have difficulties learning to read. Administration of these screening instruments does not require a great deal of time or cost a great deal of money, but it does a good job of informing teachers and schools about those children who are most at risk for subsequent literacy problems.
3. Screening is not diagnostic. That is, it does not provide the teacher with a detailed indication of the child's specific reading problems and needs, but it can certainly save resources that would have to be provided later by identifying those children at greatest need for immediate intervention.
4. Diagnosis is a more detailed process than screening. Identifying instructional needs, which is the purpose of diagnosis, helps the teacher plan instruction.
5. Neither screening for early identification nor diagnostic assessment provides detailed information about how well a program is working or whether a teacher is providing proper instruction.
6. Teachers need better tools for making educational decisions in light of students' performance on these "progress monitoring" assessments.
7. For 85 to 90 percent of poor readers, prevention and early intervention programs that combine instruction in phoneme awareness, phonics, spelling, reading fluency, and reading comprehension strategies provided by well-trained teachers can increase reading skills to average reading levels. However, we have also learned that if we delay early intervention until nine years of age, the time that most children with reading difficulties first receive services, approximately 75 percent of these children will continue to have difficulty learning to read throughout high school and their adult years. The wasted time and expense of waiting is enormous compared to what is required to teach them when they are five or six years old.
8. No single method, approach, or philosophy for teaching reading is equally effective for all children. However, children who receive direct and systematic instruction in phoneme awareness, the alphabetic principal and phonics

- improve in their word-reading skills at a significantly faster rate than children instructed via implicit approaches employing authentic literature.
9. The key to ensuring that all children reach their potential in learning to read rests with formal training and experiences that teachers receive in assessing individual differences and in delivery of direct and informed instruction.

### **How Can We Help Children Learn to Read?**

Learning to read is a lengthy and difficult process for many children, and success in learning to read is based in large part on developing language and literacy-related skills very early in life. To facilitate that, here are some steps we should take:

1. A massive effort needs to be undertaken to inform parents, and the educational and medical communities, of the need to involve children in reading from the first days of life; to engage children in playing with language through nursery rhymes, storybooks, and writing activities; and, as early as possible, to bring to children experiences that help them understand the purposes of reading, and the wonder and joy that can be derived from it. Parents must become intimately aware of the importance of vocabulary development and the use of verbal interactions with their youngsters to enhance grammar, syntax, and verbal reasoning.
2. Young preschool children should be encouraged to learn the letters of the alphabet, to discriminate letters from one another, to print letters, and to attempt to spell words that they hear. By introducing young children to print, their exposure to the purposes of reading and writing will increase and their knowledge of the conventions of print and their awareness of print concepts will increase.
3. Reading out loud to children is a proven activity for developing vocabulary growth and language expansion, and plays a causal role in developing both receptive and expressive language capabilities. Reading out loud can also be used to enhance children's background knowledge of new concepts that may appear in both oral and written language. However, we must have a clear understanding that reading aloud to children is a necessary, but not sufficient means to teaching reading skills.
4. Kindergarten programs should be designed so that all children will develop the prerequisite phonological, vocabulary, and early reading skills necessary for success in the first grade. Children should acquire the ability to recognize and print both upper and lowercase letters with reasonable ease and accuracy, develop familiarity with the basic purposes and mechanisms of reading and writing, and develop age-appropriate language comprehension skills.
5. Beginning reading programs should allot sufficient instructional time to the teaching of phonemic awareness skills, phonics skills, the development of spelling and orthographic skills, the development of reading fluency and automaticity, and the development of reading comprehension strategies. All of these components of reading are necessary, but not sufficient, in, and of,

- themselves. For children demonstrating difficulty in learning to read it is imperative that each of these components be taught in an integrated context and that ample practice in reading familiar material be afforded.
6. For the field of education to become a profession in the fullest sense of the term, it must develop and embrace a trustworthy, reliable base of knowledge from which states, schools and individual teachers can draw specific information when making instructional decisions. Other professions have well-established procedures for evaluating research on various approaches and for agreeing how these findings will be used to help guide professional practice.
  7. It is critically important that professional development activities and programs align specifically with ongoing major efforts to employ scientifically research-based practices to enhance student achievement. No matter how powerful our research findings might ultimately be, the impact of those research investments will be minimal if researchers, professors, teachers, and policy makers do not speak the same language about what constitutes trustworthy quality research and how that information can be implemented in the complex world of classrooms.
  8. Major efforts should be undertaken to ensure that colleges of education possess the expertise and commitment to foster expertise in teachers at both preservice and inservice levels. A major impediment to serving the needs of children demonstrating difficulties learning to read is current teacher preparation practices. Many teachers lack basic knowledge and understanding of reading development and the nature of reading difficulties. Strong competency-based training programs with formal board certification for teachers of reading should be developed. Further, we must consider developing comprehensive school-based training programs that are coherent, easily accessible, and meaningful to teachers.
  9. If one seeks to meet the goal of "leaving no child behind," then teachers must know at the earliest possible moment that a student is falling behind, and at the same time, must know how to intervene to prevent the student from falling further behind.

In summary, we know how to measure a child's progress toward reading with fluency and comprehension. We know how to assist teachers in acquiring the skills necessary to teach reading effectively. We know how to reach the most vulnerable children in our nation with the essential skills they need to learn to read. All that remains now is to apply what we have learned in America's classrooms.

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