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Fluency in Early Childhood: Contributions from the Research to Support Emerging and Struggling Readers

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Abstract

This article examines the research regarding fluency and its impact on struggling readers. Fluency is a key component of reading instructions for all learners. It encompasses the students' ability to read with automaticity, accuracy, and prosody for understanding. Research suggests that struggling readers have difficulty when fluency is weak, which impacts comprehension and cognitive resources. The examination of the literature yielded targeted interventions focused on fluency improves reading for students with reading difficulties.

Key Words: Struggling readers, Reading Problems, Fluency, Reading Interventions, Comprehension.

Introduction

Reading is one of the most important skills to be mastered in the age of technological advancement. The importance of learning to read early and well has been emphasized in recent national initiatives such as the No Child Left Behind Act of 2002 and, in particular, its Reading First component. Reading, unlike language, is a skill that has to be taught; it is not a concept that can be learned by replicating actions of another (Lyon, 1998). The cognitive processes required for reading consist of complex functions that must be initiated by visual, speech, and mental excitation units that are all interconnected (Adams, 1990). Reading requires training and development of higher order cognitive functions that rely on the input of information that must be processed for meaning (Reutzel & Cooter, 2013; Lyon, 1998; Snow, Burns, & Griffin, 1998).

The ability to read affords the student the opportunity to become an active participant in school and society; therefore, the ability to read may influence the very likelihood of an individual's successes or failures based generally on its acquisition.

In America today, there is a growing concern that children are not achieving fluency in reading (National Reading Panel, 2000). Numerous studies have demonstrated that an alarming number of students are not obtaining fluency as established for grade levels (Rasinski, 2012; Manzo & Sack, 1997; Orton Dyslexia Society, 1997). Reading fluency is recognized by researchers and teachers as a significant factor in developing skilled readers (Kuhn & Stahl, 2000). Lyon (1998) emphasized the academic and social value of helping students become good (fluent) readers where he stated, "If a youngster does not learn to read in our literacy-driven society, hope for a fulfilling, productive life diminishes" (p. 14).

The students who are demonstrating problems with fluency are not only students with learning disabilities (Mercer & Mercer, 2005). Traditionally, it was believed that students who exhibited reading problems came from socio-economically disadvantaged homes with few books and limited parent participation (Adams, 1990). Lack of literacy experiences in the home contribute to reading difficulties for many students; however, numerous children with vigorous learning experiences, average or above-average aptitude, and early immersion in literacy activities may also have difficulties developing fluency in reading (Adams, 1990; Lyon, 1998). Factors known to contribute to the development of reading fluency include strong early literacy skills (Chall, 1996; Flowers, Meyer, & Lovato, 2001; Snow et al., 1998; Turner, 2012), extended opportunities for reading practice (Kuhn & Stahl, 2000; Samuels, 2000), and targeted instruction designed to enhance reading fluency (Chard, Vaughn, & Tyler, 2002; Mercer, Campbell, Miller, Mercer, & Lane, 2000; Samuels, 1997; Wolf, Bowers, & Biddle, 2000).

Theoretical and Empirical Basis for Reading Fluency Instruction

The ability to read is a critical function in all areas of society. Learning to read is a very important goal set forth by parents and administrators for all students who attend school. The importance of learning to read early and well has been emphasized in recent national initiatives such as Race to the Top of 2009, No Child Left Behind Act of 2002 and, in particular, its Reading First component. Reading conveys ideas using a grapho-phonic system and is one of the primary modes of communication in schools. The reading process helps the student recognize and capture the meaning of words (Cunningham, 2013).

Researchers, in an attempt to help readers grasp the reading process, have observed through inquiry that reading reaches its advanced form when fluency is achieved. Fluency, according to Samuels (2000), is skilled reading in which the reader reads with speed, accuracy, expression, and comprehension. Fluent readers are characterized by high-speed word recognition wherein the reader's cognitive resources are freed so that attention can be focused on the meaning of the text (Turner, 2012; Snow et al., 1998). When reading reaches the advanced skill level of

automaticity, an effortless process, the reader is able to focus on the text without the intrusion of decoding (Chall, 1996; LaBerge & Samuels, 1974; Samuels, 2000). The National Reading Panel (2000) noted that children who do not develop strong word reading skills will continue to read slowly and with great effort.

Accuracy

Accuracy refers to the ability to name words correctly. Beginning readers read words initially through mastery of the alphabetic principle and working knowledge of blending and segmenting (Adams, 1990; Gaskins & Ehri, 1997; Rasinski, Padak, Linek, & Sturtevant,1994; Snelling, van der Leij, Blok, and de Jong, 2010). The ability to use these skills in a continuous manner that is free from errors constitutes accuracy at its base level (Ergul, 2012). In addition, accuracy supports the development of letter-sound skills to enhance a reader's capacity to recognize familiar and unfamiliar words by directing his/her attention to component letters as he/she map sounds (Ehri, 1998; LaBerge & Samuels, 1974). This process is formerly recognized as decoding.

Accuracy is a prerequisite skill for automatic word recognition (Samuels, 2000). Mastery of the prerequisite skill enables the reader to become increasingly familiar with letters and words (Kuhn & Stahl, 2000). As this skill develops, less and less attention needs to be directed toward processing text at the orthographic level (Adams, 1990; Kuhn Stahl, 2000; Samuels, 2000). In theory, with automatic decoding, cognitive resources are freed up to allow the reader to concentrate on comprehension (LaBerge & Samuels, 1974). Automaticity is reached when decoding takes place at the proper rate for reading (Manis, Doi, & Bhaktawahr, 2000).

Automaticity with Word Reading

Automaticity with word reading is important to the skilled reader in the advancement of oral reading fluency. Fluency, used in this context, means the speed and accuracy in which multiple letters of the alphabet can be produced orally (Speece, Mills, Ritchey, & Hillman, 2003). Therefore, fluency has a significant effect on the advanced stages of reading automaticity at the word level (Adams, 1990). Failure to achieve automaticity with word reading breaks down the reading process for the delivery of oral reading fluency (Levy et al., 1997; Taub

& Szente, 2012).

Automaticity with word reading can be attained by developing advanced skills in phonological awareness and phonetic decoding (Torgesen, Wagner, & Rashotte, 1997a; Vadasy, Jenkins, & Pool, 2000). Phonological awareness is defined as one's knowledge of and access to the sound structure of oral language (Foorman, Francis, Novy, & Liberman, 1991; Torgesen, Wagner, Rashotte, Burgess, & Hecht, 1997b). Students need to master phonological processing, through

which sound processing of oral language is utilized in decoding written materials (Adams, 1990; Taub & Szente, 2012; Torgesen et al., 1997b). The development of phonological awareness is enhanced by the understanding of written material (orthographics) for alphabetic reading that is connected to phonological processing (Adams, 1990). Reading that is produced at the phonological and word level may be devoid of context but aids fluency by gaining speed and effortless word identification (Ehri, 1991; Lyon & Moats, 1997).

Reading Rate

Reading rate is defined as the speed at which oral or silent reading takes place (Richards, 2000). The reading rate plays a significant role in reading fluency (Morris et al., 2013). Slow, labored, and unenthusiastic reading is found to have a negative effect on oral reading fluency and comprehension (Rasinski, 2000). In the classroom, teachers who misunderstood reading rate and equated it with fluency were found to lack a good grasp of fluency instruction to compliment oral reading fluency (Richards, 2000).

Mastropieri, Leinart, and Scruggs (1999) observed reading rate in its relationship to dysfluency by noting several deficiencies that could be attributed to slow speed. For example, reduced reading rate results in less text being read in the same amount of time as other students. Furthermore, slow reading rates require too much cognitive effort, and not enough memory of text is available to be used with other segments of the text for comprehension.

Prosody

Prosody is a general linguistic term used in much of the research to describe the rhythmic and tonal features of speech (Dowhower, 1991; Kuhn & Stahl, 2000). The definition for prosody in relationship to oral reading fluency includes constructs such as expression, inflection, rhythm, and use of phrase boundaries while reading. The term “reading with expression” is used synonymously with prosody in much of the research to describe its working features and characteristics (Cowie, Cowie-Douglas, & Wichman, 2002; Dowhower, 1991; Paige, Rasinski, & Magpuri-Lavell, 2012; Schreiber, 1991). Prosody emerges once reading accuracy and automaticity has been developed.

Why Is Fluency Important?

Fluency was selected by the National Reading Panel (2000) as a major factor for the development of skilled reading and as a focus of remedial practices. The acquisition of fluency can help readers read text with speed,

accuracy, and proper expression, rather than just the mechanical processing of text without meaning (Erekson, 2010; Fuchs, Fuchs, Hosp, & Jenkins, 2001).

Relationship With Comprehension

In the context of explaining the relationship between oral reading fluency and comprehension, Adams (1990) focused on speed and word recognition. First, Adams noted that phonemic awareness and word perception significantly accelerates the acquisition of reading skills. The reader must be able to read a word and combinations of words in such a manner that it becomes effortless and provokes interpretation of the text. This action must be done not by attending to individual words but the relations between them. The reader must perceive print in rapid sequence (speed) to arouse many words at once. When word identification does not require strategies for recognition, automaticity in oral reading fluency may take place with comprehension. Schatschneider, Torgesen, Buck, and Powell-Smith (2004) found reading fluency to be the most important predictor of reading comprehension performance of third-grade students.

Samuels (2000) observed that, in order for a reader to understand text, a logical representation of what is being read must exist. The logical representation needed for comprehension exists at the orthographic level, in which the word must be identified with understanding (Samuels, 2000). When automatic decoding skills are present, other resources are freed to help comprehension by the way of fluency (Graves, Juel, Graves, & Dewitz, 2011; Levy et al., 1997; Snow et al., 1998). Researchers agree that an increase in fluency leads to an increase in comprehension (Kuhn & Stahl, 2000).

Chall (1996) stated that fluency is important for students with dyslexia because they have labored reading with many pauses, which results in slow and disconnected oral reading. This dysfluent reading at the decoding and word level makes comprehension almost impossible.

Cognitive Resources/Working Memory

LaBerge and Samuels (1974) proposed that learning to read involved enhancing word identification speed (e.g., letter-to-sound level), processing these words into chunks for identification (Zutel & Rasinski, 1991), and connecting the words while reading text. Efficient use of these cognitive processes results in freeing the reader from the text to use memory or other resources for understanding. Perfetti (1992) demonstrated how slow cognitive processing, such as naming speed, could contribute to oral reading failure by limiting the orthographic representation in long-term memory and stalling cognitive resources(Morris et al., 2013). When the cognitive resources are free and fast moving, they can by directed toward the higher order skills of comprehension (Graves et al. 2011; LaBerge & Samuels, 1974; Samuels, 2000; Snow et al., 1998)

Interventions to Improve Reading Fluency

The National Reading Panel (2000) conducted a meta-analysis of studies concerning reading fluency and interventions to develop fluency. The strategies that were found to have merit and the potential to increase reading fluency are listed below.

Repeated Reading Studies

The research in the decade of the 1970s produced the seminal works of Laberge and Samuels (1974) and Dahl (1979) that fostered the reexamination of interventions to improve reading fluency. The researchers at the time conducted studies to increase the reading rate for struggling readers as an intervention for improved reading skills. LaBerge and Samuels specifically endorsed the hypothesis that text processing or reading would be improved by forcing the reader to read words by chunking instead of word-by-word reading. This process would later be part of the "automaticity theory" (O'Shea & O'Shea, 1988; Samuels, 1979). A simple strategy such as multiple readings of connected text was found to produce positive results in regard to helping struggling readers develop higher reading rates and automaticity (LaBerge & Samuels, 1974). Repeated reading in its traditional form is still deemed effective at this present time (Strickland, Boon, & Spencer, 2013).

Repeated readings with assistance. The effectiveness of repeated reading with instructional help also has been researched. An examination of three major studies provides discrete views on assisted and non-assisted repeated reading practices and their effectiveness for improving reading fluency.

Young, Bowers, and MacKinnon (1996) devised a study to compare the results of students in assisted and non- assisted repeated reading practices, the researchers observed that those students who received practice using the assisted repeated reading method showed improved word accuracy in reading. Mercer, Campbell, Miller, Mercer, and Lane (2000) performed a study in which a fluency intervention was developed and used to supplement reading instruction of middle school students with learning disabilities (LD). The study supports the practice of providing fluency training. The researchers found using repeated reading to build reading fluency to be an effective reading intervention strategy for improving the reading skills of students with reading disabilities.

The third study to examine repeated reading with instructional aid was conducted by Homan, Klesius, and Hite (1993). The findings from the study indicate that both repeated reading and assisted nonrepetitive reading methods improved comprehension among the participants in the study. The researchers noted that the findings support the value of allocating time for students to engage in connected reading. In conclusion, the study revealed that assisted nonrepetitive strategies facilitate the development of both accurate and automatic recognition of sight vocabulary. The three studies reviewed provide experimental evidence to support the intervention of repeated reading as a viable tool to improve and develop oral reading fluency.

Other repeated readings studies. Levy, Nicholls, and Kohen (1993) examined the processing benefits that accrue across repeated reading of a text for good and poor readers. The findings from the research supported the use of repeated reading for both groups with improvements in reading rate across readings. A simultaneous effect, improved detection of misspelled spelling words with improved comprehension, was also observed in the study. Stoddard, Valcante, Sindelar, O'Shea, and Algozzine (1993) investigated the effects of repeated readings in regard to reading rate and reading comprehension on fourth and fifth graders reading below grade level. Their findings demonstrated repeated readings increased reading rate and reading comprehension. The research also identified subskills that are important in enhancing comprehension, such as fast and accurate word recognition and fluent word reading.

The research supporting the use of repeated reading is well-founded on empirical studies. The use of repeated reading has been proven to have a positive effect on reading fluency for students who are poor readers, learning disabled, and mainstream students from the general population. The literature demonstrates the intervention of repeated reading as a skill that can benefit literacy for all (Strickland, Boon, & Spencer, 2013).

Other Strategies to Increase Reading Fluency

A variety of other methods have been employed to a lesser extent than repeated readings to increase reading fluency. These include word work, oral recitals, CBM- management for instruction, and fluency development lessons. Studies of these methods show that increasing reading fluency can go beyond using repeated reading as the primary intervention (Graves et al., 2011; National Reading Panel, 2000).

Why Focus on Word-Level Skills?

Research related to the development of reading fluency focuses on text-level interventions. That is, to help students read text more fluently, we have given them practice with reading text. For beginning readers who have not yet developed automaticity with word reading, it may be unrealistic to expect improvement with text- level reading. By beginning with word-level skills, teachers can help students acquire the tools they need for fluent reading (Smith, Cummings, Alonzo, Fien, & Baker, 2014).

Pullen (2000) studied the effects of alphabetic word work using manipulative letters on the reading skills of struggling first-grade students. The process included four-step lesson in which the teacher (a) introduced a book,

(b) coached the students through the book, (c) used manipulative letters to develop decoding and encoding skills, and (d) had the students reread the book. The findings for the study validate the use of manipulative letters to increase word recognition and indicate that rereading text increases sight word knowledge.

Pullen, Lane, Lloyd, Nowak, and Ryals (2003) performed a study to evaluate the use of manipulative letters to increase segmenting, blending, sounding out, and spelling skills to promote decoding of pseudowords (nonwords). The findings from the study revealed that decoding skills for each student improved with instruction using manipulative letters and teachers can use simple instructional methods to improve early reading skills.

Lane, Pullen, and Hudson (2003) examined the use of a literacy-tutoring model to determine which components would help struggling beginning readers. The components of the tutoring model included word work using manipulative letters, written word work, and a generalization component. The primary component of this study is word work using manipulative letters. Lane et al. determined that word work with manipulative letters was a critical step for developing decoding skills. By increasing students' automaticity with word reading, teachers can affect students' passage reading fluency.

Summary

The research literature demonstrates clearly that reading fluency is and should be a focus of reading instruction in the elementary grades. To become proficient readers, children must develop the ability to (a) read words accurately and automatically and (b) read text automatically and with prosody (Ergul, 2012; Taub & Szente, 2012). Most interventions designed to increase struggling readers' fluency have focused on increasing reading rate. The most popular method is repeated reading of connected text (Strickland, Boon, & Spencer, 2013). Some children, despite intervention, continue to struggle to develop reading fluency. Interventions designed to increase word-level reading skills through the use of manipulative letters have shown positive results (Smith et al, 2014).

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