

Writing problems in developmental dyslexia: Under-recognized and under-treated[☆]

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Received 29 July 2006; received in revised form 15 November 2006; accepted 27 November 2006

Abstract

The International Dyslexia Association defines dyslexia as unexpected problems of neurobiological origin in accuracy and rate of oral reading of single real words, single pseudowords, or text or of written spelling. However, prior research has focused more on the reading than the spelling problems of students with dyslexia. A test battery was administered to 122 children who met the inclusion criteria for dyslexia and qualified their families for participation in a family genetics study that has been ongoing for over a decade. Their parents completed the same test battery. Although a past structural equation modeling study of typically developing children identified a significant path from handwriting to composition quality, the current structural equation modeling study identified a significant path from spelling to composition for children and their parents with dyslexia. Graphomotor planning did not contribute uniquely to their composition, showing that writing is not just a motor skill. Students with dyslexia do have a problem in automatic letter writing and naming, which was related to impaired inhibition and verbal fluency and may explain their spelling problems. Results are discussed in reference to the importance of providing explicit instruction in the

[☆] Grant P50 33812-06 to -08 from the National Institute of Child Health and Human Development (NICHD) supported this research. Results were presented at the International Neuropsychological Society Meeting in Dublin, Ireland, July 9, 2005. This article was accepted under Dr. Pianta's editorship.

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phonological, orthographic, and morphological processes of spelling and in composition to students with dyslexia and not only offering accommodation for their writing problems.

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Keywords: Dyslexia; Writing disability; Motor skills; Automatic handwriting; Spelling; Written composition

Defining developmental dyslexia

Dyslexia is a word of Greek origin. It begins with a prefix that means impaired. Its base word means word. Individuals with developmental dyslexia exhibit impairment in word-level processes in written language, that is, in oral reading and written spelling. However, their verbal comprehension or listening comprehension is spared. Once they learn to read words they can usually understand reading material. (See Berninger, 2001a). More than three decades of research in English speaking countries has identified three marker measures that are not oral reading or written spelling per se but tend to be impaired in dyslexics and explain their problems with learning written words: phonological coding, orthographic coding, and rapid automatic naming (RAN) (Berninger, Abbott, Thomson, & Raskind, 2001).

The current definition of dyslexia recommended by the International Dyslexia Association is unexpectedly low accuracy and/or rate of oral reading or spelling of neurobiological origin (Lyon, Shaywitz, & Shaywitz, 2003). Nevertheless, many diagnosticians and interventionists continue to focus only on the reading and not on the spelling problems of dyslexics. Dyslexia is typically thought to be a reading disorder. The purpose of the research reported here is to increase awareness among school psychologists that students with dyslexia may also have significant problems in writing skills that require assessment and instructional intervention.

Research findings are accumulating that document the writing problems in individuals with dyslexia. For adults with a history of dyslexia, spelling problems persisted through the life span (Bruck, 1993; Lefly & Pennington, 1991), especially in males (Lefly & Pennington, 1991). Connelly, Campbell, Maclean, and Barnes (2006) found that college students with dyslexia made more spelling errors than a spelling-matched control. Both children and adults with dyslexia showed almost as many indicators of writing problems as of reading problems when both writing and reading were assessed (Berninger et al., 2001). Follow-up of participants in treatment studies for dyslexia showed that affected students often overcame their reading problems but then faced significant problems in spelling and written composition, but had difficulty finding services for their writing problems once they learned to read (Berninger, 2006).

Not all reading and spelling problems are dyslexia

Children may struggle with learning to read and spell for many reasons and the reading and spelling problems are not always unexpected. For example, children with deafness or blindness, primary language disorder or selective language impairment, speech impairment, mental retardation, autism, pervasive developmental disorder other than autism spectrum disorder, specific developmental neurogenetic disorders (e.g.,

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