

Rules for the classification of younger children with Nonverbal Learning Disabilities and Basic Phonological Processing Disabilities

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Abstract

Rules for the classification of Nonverbal Learning Disabilities (NLD) and Basic Phonological Processing Disabilities (BPPD) that had been generated and tested on older children (ages 9–15) were applied to younger children (ages 7–8). The goal was to evaluate the applicability of these classification rules for a younger population with NLD and BPPD, and to make revisions if necessary. These rules were used to differentiate these two subtypes of learning disabilities using levels and patterns of performance on motor/psychomotor, tactile/perceptual, visual–spatial, auditory–perceptual, problem solving, and language measures. An experienced child-clinical neuropsychologist classified each child. Only those children who received a classification of NLD or BPPD by the neuropsychologist and those who met criteria for definite or probable NLD and BPPD as defined by the rules were used in this study. Revisions were made to these rules for younger children. Revised rules allow for their use as a source of information to assist a clinician in deciding whether a comprehensive neuropsychological evaluation would be valuable. They may also be useful for research purposes.

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There have been many studies designed to delineate the patterns of neuropsychological assets and deficits in older children (9–15 years of age) with learning disabilities (LD). Often, these studies have used a Verbal IQ–Performance IQ split (e.g., Rourke, Dietrich, & Young,

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1973; Rourke & Telegdy, 1971; Rourke, Young, & Flewelling, 1971) or patterns of academic achievement (e.g., Rourke & Strang, 1978) as a basis to separate children into groups. The goal of these studies was to identify and classify various LD subtypes. As the body of research in this area has increased, two reliable subtypes of LD have emerged.

One of these LD subtypes exhibits relative deficits in some language skills and in reading and spelling, and relative proficiencies in motor/psychomotor, tactile/perceptual, visual–spatial, and problem-solving skills. This LD subtype is now referred to as Basic Phonological Processing Disabilities (BPPD). Some dimensions of BPPD are seen as causative and sequential (i.e., primary → secondary → tertiary → verbal) whereas some of the dimensions are thought to be dependent (i.e., academic and psychosocial; Rourke, 1995). A model of the contents and dynamics of BPPD are shown in Figure 1.

Another subtype of children with LD demonstrates deficits in the following areas: motor/psychomotor, tactile/perceptual, visual–spatial, problem solving, and mechanical arithmetic. In addition, children with this LD subtype have relative strengths in some linguistic abilities and in single-word reading and spelling. This group of children exhibits the syndrome of Nonverbal Learning Disabilities (NLD) (Rourke, 1989, 1995). Some dimensions of NLD are seen as causative and sequential (i.e., primary → secondary → tertiary → verbal), whereas some of the dimensions are thought to be dependent (i.e., academic and psychosocial; Rourke, 1995). The content and dynamics of NLD are outlined in Figure 2.

For an explanation of the neuropsychological assets and deficits and their developmental dynamics, the interested reader is referred to Rourke, van der Vlugt, and Rourke (2002).

One of the investigations that contributed to the validity of the classification of younger children (ages 7–8 years) into the NLD and BPPD subtypes was that of Ozols and Rourke (1988). In this study, children with LD were divided into three groups based on their Reading, Spelling, and Arithmetic scores on the Wide Range Achievement Test (WRAT). Children in Group 1 had equal deficiencies in Reading, Spelling, and Arithmetic. Group 2 consisted of children who exhibited lower Reading and Spelling scores than Arithmetic scores, although all areas were impaired. Group 3 was made up of children who had higher Reading and Spelling scores than Arithmetic scores, as compared to age-appropriate norms. In this study, several significant differences between the groups were in evidence. Specifically, Group 3 performed better than groups 1 and 2 on some measures of auditory perceptual and language skills, and groups 1 and 2 performed better than Group 3 on some measures of visual–spatial skills.

Recently (Pelletier, Ahmad, & Rourke, 2001), classification rules for NLD and BPPD have been generated for older (9- to 15-year-old) children. These rules were meant to provide an objective method for the classification of the two LD subtypes. However, these rules have not yet been tested on younger children (ages 7–8 years). In this connection, Rourke et al. (1973) did not find the same clear cut differences on measures of verbal, auditory–perceptual, visual–perceptual, problem solving, motor and psychomotor performance in younger children with LD who were chosen for study on the basis of differences in VIQ and PIQ that were found in older children. Thus, it is important that the rules generated for older children who exhibit NLD or BPPD be replicated and/or revised for use with younger children.

The purpose of the present study was to apply and revise the Pelletier et al. (2001) classification rules by differentiating younger children with NLD and BPPD using their patterns of scores on problem solving, psychomotor/motor, visual–spatial, tactile/perceptual,

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