Chapter 4

Psychoeducational Strategies in School Context to Support Students With Specific Learning Disorders in a Sample of Children Aged 6 to 16

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ABSTRACT

This chapter provides a literature review on the evidence-based practices for students with learning disabilities (LD). Selective studies include different effective teaching instructions, either for improving vocabulary knowledge or reading comprehension, and developing math problem-solving skills. Research-based practices could fill the gap between research and practice in special education within school context and could help LD students to achieve the same results as their peers. Reviewed studies were grouped in three main categories, namely (1) hetero-regulated language and reading instructions, (2) hetero-regulated math instructions, and (3) auto-regulated instructions/metacognitive strategies, about both language both reading skills. Twenty-six empirical contributions along the last two decades have been entered. With regard to reading, positive results were found on fluency vocabulary-based activities, explicit reading instruction, and contextual learning. With regard to math problems, cognitive and manual instructions were useful. Finally, the development of metacognitive strategies was found effective for any kind of LD. Limitations and psychoeducational implications of the findings will be illustrated, as well as some considerations for future research.

INTRODUCTION

Learning disabilities (LD) refer to a heterogeneous group of life-long neurological disorders determined by genetic and/or neurobiological factors that alter the functioning of the brain by conditioning one or more cognitive processes related to learning. These processing problems can negatively interfere with learning basic skills such as reading, writing and/ or math. The etiology of LD remains substantially unknown, although the evidence suggests a genetic origin combined with environmental risk factors that alter normal brain development (e.g., prematurity, low birth weight, prenatal exposure to nicotine), (Caselli & Vicari, 2016).

LD are mainly characterized by lower working memory (WM) and processing speed (speed of completion a task with reasonable accuracy). Working memory skills are used for all learning activities. A person with low working memory skills is forced to work more than peers to keep information in mind. Instead of being able to store and process information, he/she is forced to work hard only to be able to keep the information itself. Many students with poor working memory skills lose new information before it can be processed, making learning difficult. When an individual in addition to having limited WM capabilities also has a slow processing speed, it becomes even more difficult to keep new information before it is lost. In fact, they struggle with fact recall, summarization, identifying main concepts, sequencing, and inference-style question (National Joint Committee for LD, 2008).

Recently, research attempts to develop effective treatment methods by evaluating not only the efficacy towards the specific deficit ability, but also the brain changes following the treatment and the individual factors predictive of a therapeutic success. The targeted interventions can be identified between a) interventions aimed at preventing learning difficulties in children at risk of developing LD, b) oriented compensative interventions that aim to improve speed and accuracy in reading, writing and calculation in children with a recognized disorder (Alexander & Slinger-Constant, 2004).

Overall, treatments related to learning disabilities can be distinguished between cognitive treatments and educational practices. Cognitive treatments tackle the cognitive deficit underlying the specific learning disorder. Educational practices are techniques used by teachers to help students' study. The main objective is to make students become more effective, learning to use appropriate strategies in carrying out specific tasks or achieving specific tasks.

Accordingly, negative consequences prevent them from learning new information so that these students may experience a significant disadvantage in secondary school (Wankek & Roberts, 2012). Children with language difficulties are not only at risk of poor academic outcomes; they also often experience social-emotional and behavioral difficulties which may persist into adulthood (Clegg, et al., 2015; Snowling, et. al., 2006; Winstanley, Webb, & Conti-Ramsden, 2018). The gap between research and practice can be bridged by the use of evidence-based practices.

This chapter summarizes published research on the most effective instructional practices on the basis of scientific research both on knowledge of math, vocabulary acquisition, and reading comprehension involving school-aged (6-16) students with learning disabilities. The first goal of this chapter is to provide the reader with a literature review of the newest empirical evidences available in the last decades (i.e., 2000-2020) concerning psychoeducational instruction strategies implemented by an external source (i.e., teachers or mobile devices) in school contexts for LD children or self implemented through meta-cognitive techniques. Hence, it will be emphasized that interventions delivered in school settings can improve children's oral language skills and math skills. This evidence has important implications for educational policy and suggests that programs based on verbal instructions for young children can be

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