



Aleksandra B. Grbović

Ksenija M. Stanimirov¹ 

University of Belgrade, Faculty of Special Education
and Rehabilitation, Belgrade, Serbia

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Teaching approach for children with visual dysfunctions – practical instructions for acquiring academic skills²

Extended summary

Inclusive education refers to meeting the educational needs of every student, but in practice the implementation of teaching is difficult because certain impairments in students remain unrecognized. A special problem arises when working with students who do not have obvious difficulties, such as children with cerebral visual impairment. This condition is characterized by various difficulties in visual functioning that arise because of a lesion of the visual centers in the central nervous system. In that case, cognitive processing of incoming visual information is compromised, which is why these children have difficulties in acquiring academic skills, as well as in displaying adaptive behavior. This disorder is currently the leading cause of visual impairment in children in developed countries. However, although it is quite widespread, it often goes undiagnosed, and the specific behaviors that can be observed in these children are most often described as atypical and are often attributed to other conditions or developmental problems rather than visual difficulties.

The aim of this paper is to provide, through literature review, general recommendations for the appropriate teaching approach in working with students with cerebral visual impairment, then some suggestions for adapting teaching strategies and teaching materials, as well as recommendations for adapting the space. The implementation of the given recommendations enables the improvement of the school achievement of the aforementioned students and facilitates the acquisition of academic skills.

¹ ksenijastanimirov@fasper.bg.ac.rs

 <https://orcid.org/0000-0003-2061-4045>

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Functional problems of children with cerebral visual impairment are based on a short and unstable visual attention span and difficulty in maintaining fixation. The way they observe the visual scene is fragmented, which makes it difficult to spot, find, and recognize familiar faces or objects. The above results in difficult understanding of visually presented information, which is particularly evident if a child does not have enough time to observe or if the information is not obvious enough. With starting school, the academic demands placed on the child complicate the problems he/she has.

Since the acquisition of literacy (basic literacy and the functional one) requires visual engagement, it is clear that distinguishing graphic symbols and judging the correctness of their copying (whether in mathematics or the mother tongue) represents a significant challenge for students with visual perception difficulties of any kind. As for the difficulties of the students with cerebral visual impairment, pronounced difficulties in differentiating, recognizing, and noticing the spatial organization of symbols (letters and numbers) can be singled out. The difficulties are particularly pronounced if the contrast is not appropriate and the background (specifically, a page of a book) is saturated with visual content. Difficulties in perceiving symbols presented in a sequence were also noticed, that is, they perceive isolated symbols more easily. Visuo-perceptual and fixation difficulties interfere with the analysis of letter elements, which further jeopardizes synthesizing the observed into meaningful word(s). In addition, limitations in the use of the lower half of the visual field which are often present require a specific compensatory position of the head during the perception of the written material.

For better functioning in the educational environment, strategies should be applied that facilitate the visual functioning of the children with cerebral visual impairment. In this regard, adequate workspace in the educational environment is singled out in terms of importance. For these students, maintaining a constant and unchanging arrangement of objects in space while reducing the amount of sensory information, i.e., reducing visual and sound distractors from the environment as much as possible, is of key importance. In practice, this means removing the unnecessary school equipment and furniture, covering shelves with teaching aids, positioning students in a quiet environment. Ensuring a sufficient amount of time to process visual data and formulate a response can also be essential for visual functioning. In the case of children with vision field loss, care should be taken about the appropriate way of presenting teaching aids. For students with more severe forms of cerebral visual impairment, it is necessary to encourage active learning by using teaching aids in the preferred color(s). The use of technology and electronic media can be of great benefit in the work, primarily because they allow easy adjustment of the brightness, color, size and contrast of the materials used in the lesson. In addition, they enable the creation of reading materials, simple in content and free from unnecessary visual content.

Because of all the above, it is necessary to raise the awareness of teachers about the existence of these students as well as about the behaviors that indicate vision problems, in the basis of which lie neurological conditions. Acquainting teachers with the characteristics of students with cerebral visual impairment will ensure a timely detection of this type of visual impairment, and then the implementation of appropriate interventions to more effectively implement the teaching process.

Keywords: cerebral visual impairment, reading, mathematics, teaching approach, adaptations

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