



Recognizing And Addressing Specific Learning Disabilities In Pupils With Visual Impairments

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ABSTRACT

The paper focuses on the issue of depicting and diagnosing specific learning disabilities (SLD) in pupils with severe visual impairment. This issue has been resonating in special education practice in the Czech Republic for a long time. The current practice in the Czech Republic is such that it is very difficult to diagnose and distinguish when it is SLD and when it is an issue related to severe visual impairment, and thus very often only a suspected diagnosis is made. This paper aims to present the research results in this area in our country (this research is co-financed by IGA_PdF_2024_019 The phenomenon of specific learning disabilities in pupils with visual impairment). The paper also includes research on the topic in the context of global research and will be followed by a mapping of the current situation at the level of Czech special education. Data for the research itself was collected through questionnaires and interviews with experts on the subject.

Index Terms— pupils, visual impairments, specific learning disabilities, Czech special education.

I. INTRODUCTION

Persons with severe visual impairment are a minority and their numbers are gradually increasing. More than one-third of the world's population currently has a visual impairment, but only when the visual impairment cannot be corrected with glasses, medication, or the correct procedures can we speak of a disability. A disability can then be characterized as a defect that, even after the correction mentioned above, causes problems for the individual in everyday life in obtaining and processing information by visual means. In our paper, we want to focus on one area of the "normal" life of children and adolescents: schooling. Just as the number of people with severe visual impairment/disability is increasing, the number of pupils in the country who have been diagnosed with a learning disability is increasing. However, the diagnosis of visual impairment and associated learning disability in the Czech Republic, as shown by testimonies from practice, is very often given to pupils suspiciously, based on the same symptoms [1].

The World Health Organisation states that there are 285 million people with visual impairment worldwide (39 million of whom are blind), while the European Union adds that there are approximately 30 million people with severe visual impairment on the European continent. In the Czech Republic, it then dissects data from 2013, where the Czech Statistical Office found that there are approximately 65,000 people with severe visual impairment in the Czech Republic (6% of the approximately 1.1 million people with disabilities in the Czech Republic) [2].

As the statistics are relatively accurate in terms of the number of people with severe visual impairment, finding those that define or classify how pupils with visual impairment combined with specific learning disabilities are faring is more difficult. And there are no such official statistics in the country at all. „Existing studies show that between 14% and 65% of students with visual impairments also have learning disabilities. Similar symptoms of both conditions and earlier identification of visual impairment often mask the presence of a learning disability... “[3].

On this basis, specific research is being conducted at the Faculty of Education of Palacký University Olomouc, which focuses on this topic.

II. LITERARY RESEARCH

We began our research by searching for sources, both domestic and foreign. We can state that 841 records were retrieved using keywords on April 24, 2024, of which 127 duplicates were automatically removed. The exported records in .ris format were imported into the Rayyan citation manager. Subsequently, a further 155 duplicates were manually removed and 551 studies were then further excluded from the remaining 559 studies that did not meet the established inclusion criteria. Details of the searches were as follows:

A. Search strategy /executed only with Ebsco multiviewer – copied from the system below:

- AB (pupil* or student* or student*) A AB (low vision or visual impairment or visually impaired or blind or blind) A AB learning disability;
- (date 24/4/24);
- Search results – 841 articles, 714 without duplicates (automatically deleted).

Search details:

- Interfaces – EBSCO Discovery Service;
- Search Screen – Advanced Search;
- Databases – Discovery Service at Palacký University in Olomouc.

Inclusion/exclusion criteria - assessment of records at AB and title level for the search: Education of pupils with visual impairments and learning disabilities (screening in Rayyan citation manager).

B. Inclusion Criteria:

- Pre-school, primary and secondary schools;
- Also include university and higher education;
- Age range 4-26 years (pupils/students);
- All genders;
- All forms of education system;
- Language – English;
- Topic – related to education (e.g. support, diagnosis, etc.) – exclude teacher training, national or international statistics of people with special education needs, diagnosis of SLD or visual impairment only, QoL of people with disabilities, etc.
- Type of publication - not restricted except for posters and brochures or similar materials etc. – not research-based.

Result: retrieved 24.4.2024, 714 articles (n= 127) were found after automatic removal of duplicates, of which an additional 155 duplicates were identified manually by checking at abstract and title level – removed, 559 studies were further evaluated.

Of the 559 publications screened at title/abstract level:

Reasons for exclusion: n= 547 (in some cases 2 reasons (n= 10)).

- Publication type n= 34;
- Participants - not pupils with visual impairment (PWVI) + SLD n=143 (either neither or too general, including PWVI or SLD - e.g. people with disabilities, exceptional people, listing different disabilities etc. or is only PWVI n= 26 or only SLD n= 3);
- Topic – manual, booklet, national statistics, diagnostic tools, use of teaching methods, aids, quality of life, etc. - but not focused on people with disabilities or SPU or their education or support n= 230;
- Language of abstract n= 48 (numbers for languages include deleted duplicates, so total does not add up: Swedish n= 1, Arabic n= 4, Spanish n= 20, Portuguese n= 30, Russian n= 1, French n= 1, Italian n= 1, Turkish n= 1, Hungarian n= 2);
- Duplication n= 102 (authors swapped, upper/lower case letters in the title, etc., but the result is the same)
- No studies were excluded due to age.

C. Included

A total of n=12 were included (these studies will continue to be examined and subjected to literature review). From the above-mentioned number of literary sources, after reading the full text, we came to the number of nine sources that deal with the given topic on a local or very limited level. We subsequently expanded this search of sources with our research into the education of visually impaired pupils in the Czech Republic.

III. RESEARCH CONDUCTED WITHIN PRIMARY SCHOOLS IN THE CZECH REPUBLIC

The research was conceived as a response to requirements from practice when the professional public has a significantly lower awareness of the issue of the combination of visual impairment and specific learning disabilities compared to other topics. As already written above, the symptomatology and impact on the education of pupils in both of these specificities are theoretically similar in certain directions, they may even overlap, and on the contrary, we can observe differences in other directions. To verify theoretical knowledge, it is also necessary to obtain knowledge from practice and the real functioning of pupils and teaching staff. For this reason, we considered it necessary to contact experts who encounter this issue and find out their attitudes and experience gained from long-term work with pupils with visual impairment. The research was intended as a probe into the Czech education system and to find out more detailed information about the presence of

pupils with a combination of visual impairment and specific learning disorders in primary schools. At the same time, the collected data should shed light on specific methods of work, diagnosis, or intervention. The output of the research subsequently became a more specific mapping of the diagnostic situation and the impact on education and their comparison with the theoretical findings in the first part of the thesis. The aim was to find out whether the manifestations of visual impairment and specific learning disorders in primary school pupils are sufficiently differentiated and a diagnosis is established with a combination of these disorders.

A combination of two research methods was chosen to collect the necessary data. The first of them was a questionnaire, subsequently supplemented with an interview. The interview took place with the respondents who filled out the questionnaire and served to deepen the information obtained and to examine the topic in more detail. The research was conducted with a focus on the age category of primary school pupils. This research was primarily focused as a probe into the system of diagnosis and care for elementary school students with a combination of visual impairment and a specific learning disability. That is why we found it appropriate to interest only experts in expressing themselves on the topic there is a high probability that they have encountered the above-mentioned specificity in pupils. The target group was identified as pedagogues, special pedagogues and psychologists working in a special pedagogic center or primary school or class established in accordance with §16 paragraph 9 of the Education Act focused on the education of visually impaired pupils. To ensure the relevance of the answers, a control question was included in the questionnaire, which helped to filter out unwanted answers [1].

We assume that if the visual impairment manifests itself in education, the pupil is taken into care in a special pedagogic center. In schools established according to §16, they undoubtedly also have long-term experience with pupils with different types of disabilities, including their possible combinations.

IV. RESULTS

A relatively small sample of respondents, which consisted of interviews and subsequent interviews and questionnaires from all school counseling centers and elementary schools that provide services to people with severe visual impairment in the Czech Republic, could have seemed limiting at the beginning of the research, but as it turned out, the research team succeeded get necessary and relevant information. The already very specifically defined target group was in itself limiting, but necessary for the purposes of the research. The goal was to get the opinions of experts who have experience with the given issue. If we also take into account other factors on the part of the respondents that influenced their ability, or inability, to fill out the questionnaire, we get to an even more limited number. Even so, more than two dozen responses were returned (21 out of 25 facilities), and less than half of the respondents were willing to participate in the expanding, follow-up research conducted by interviewing female researchers. For the purposes of this work and as a mere initial survey of the situation of students with visual impairments and a specific learning disability, this is completely sufficient. It also shows that this is a topic that is current among counselors and teachers, and they want to have a discussion and spread awareness about it.

The answers from the questionnaire managed to cover the researched topics and answer the questions asked in the initial phase of the research. At the same time, during the development of the theoretical part, the obtained information was linked with professional literature and compared. From a qualitative point of view, the objectives of the research were fulfilled, as individual topics were further discussed in the interviews. The interview allowed the research team to get to know more in-depth the individual areas of education of pupils with the examined combination of defects and to consult the emerging questions directly with the experts. The information obtained from the questionnaire and from the interviews are in accordance with each other, and by combining them we managed to obtain comprehensive and comprehensive information about the given issue. In the field of diagnostics, it has been established that specific learning disorders appear in all degrees of visual impairment. The group of pupils with visual impairment in the degree of blindness is no exception, even if it has its own specifics. However, learning disabilities are most common among students with binocular vision impairment. Diagnostics is carried out in cooperation between a special pedagogic center and a pedagogic-psychological consultancy, and their employees must be able to communicate well with each other, given that the combination of disabilities combines the expression needs of both consultancy facilities. According to findings, there is no uniform standardized test for determining specific learning disabilities in students with visual impairment. During diagnostics, it is necessary to modify the tests, use aids or create test batteries individually in each device. The impact on education is then similar to that of pupils with a specific learning disability, supplemented and multiplied by the specifics brought about by visual impairment. The intervention for pupils with visual impairments is supplemented by the observance of visual hygiene, training in working with a compensatory aid and also by the adaptation of text and picture materials. Separately, the effects of visual impairment and specific learning disabilities are similar and can be difficult to distinguish from each other in the learning process. However, when combining them, difficulties are added. In addition to the re-education of learning disabilities, it is also necessary to follow the principles for working with students with visual impairments. The outcome of our research was also the confirmation that specific learning disabilities can occur in all degrees of visual impairment, regardless of the quality of visual perception. Combinations with low vision and binocular vision disorders are typically the most common, but

more serious defects at the level of residual vision or blindness cannot be excluded.

We can consider the most significant results of our investigation to be the fact that, according to the research, dyslexia as well as dysgraphia and dysorthography are most common in pupils with severe visual impairment. At the same time, we can state that the greatest difficulties subsequently appear for pupils in two logical areas, namely in the area of diagnostics and the area of acquiring trivia. From the point of view of pedagogues, the subsequent intervention is always adapted to the individual needs of the pupils, but also to the approach of their families to education.

CONCLUSION

As confirmed by our research, as well as the sources obtained from the literature review, the occurrence of learning disabilities in pupils with residual vision could be an interesting and necessary area for further, more detailed investigation. For them, teaching in classic black print and acquiring Braille dot writing takes place at the same time. If dyslexia or dysgraphia were present, theoretically a specific error rate should appear in both cases. On the other hand, the acquisition of both methods can be more difficult for students, and the error rate can appear even without the presence of the mentioned learning disorders, as was defined in more detail in the theoretical chapters of the thesis. Blind students generally acquire reading and writing more slowly, and the level of acquisition can be affected by the quality of tactile perception. Even so, in some cases we encounter a combination with a specific learning disability.

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This relatively interesting and diverse researched topic is not new in scientific activity and its investigation has been appearing since the turn of the millennium, when, for example, the term Braille dyslexia was used in 1998 60 researches [4], but unfortunately there has not yet been a sufficiently deep exploration of the topic and the creation of a unified methodology and standardized diagnostic tools that would subsequently spread among experts working with pupils with such a combination of special educational needs.

It is worth mentioning, for example, an article [5], that tracks student results and describes the methods that researchers used to establish a dual diagnosis – low vision and learning disability. The article [4], already mentioned in the theoretical part, deals with pupils with more severe degrees of visual impairment combined with a learning disability, which describes the causes of reading difficulties when using Braille and their possible connection with dyslexia. An article from Romania [6] also deals with the detection and prevention of Braille reading disorders. In it, attention is paid mainly to the development of tactile abilities already in preschool age, tools to speed up the two-handed technique of reading Braille and solving the problem of phonetic deficit and the overall development of phonological awareness.

The article [7] deals with the influence of central visual impairment (CVI) on the acquisition of reading skills. Pupils with central visual impairment are another group in which reading difficulties are observed and this work did not deal with them in depth. However, counseling workers in the Czech Republic also notice significant difficulties in students with this disorder, as was stated in the interviews in this thesis. Although there are tendencies to research the issue abroad, it is still not well anchored in Czech literature. In the publication [8], a chapter is dedicated to students with a combination of visual impairment and specific learning disability, which concludes with the following statement: "We believe that specific learning disabilities can occur together with other limiting conditions. However, we leave this question open because the current state of scientific knowledge cannot answer it" [8, p.53]. The quoted section is a reaction to the statement by Matějček, who in the text refers to severe visual impairment as a deficiency and a limiting condition that excludes the diagnosis of dyslexia.

At the same time, as the results of the questionnaire showed, pupils with a combination of a learning disability and visual impairment in a more severe degree are not entirely an exception in Czech schools. Academic, bachelor's and diploma theses are created with a similar theme. Although the frequency of various scientific contributions is high, they are often individual independent researches that are not followed up by further scientific activity. Due to the great diversity of the topic, in the case of efforts leading to the unification of knowledge, we are talking about a difficult task.

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