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# Teachers' Awareness of the Development of Perceptual Motor Functions in Pupils with Mild Intellectual Disabilities at a Primary School in the Czech Republic

**Abstract**

The main aim of the study was to determine teachers' awareness of the development of visual and auditory perception in pupils with mild intellectual disabilities at a mainstream school in the Czech Republic. Based on this main aim, additional goals were set: to determine to what extent teachers are aware of the importance of developing visual and auditory perception in pupils with mild intellectual disabilities, by what means teachers develop visual and auditory perception in pupils with mild intellectual disabilities, and how teachers use pupils' homework to develop visual and auditory perception. To achieve the aims of the study, the qualitative method was used with the technique of a semi-structured interview. The results show that teachers are aware of the importance of developing perceptual motor functions

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in pupils with mild intellectual disabilities, but the level of training in working with pupils with mild intellectual disabilities in mainstream primary schools is low. Teachers should receive more expert advice on the development of perceptual motor functions, especially from the staff of school counseling services.

*Keywords:* mild intellectual disability, pupils, development, perceptual motor functions, teachers, primary school

## Introduction

Pupils with mild intellectual disabilities cannot be effectively educated without respecting and observing framework conditions and supportive measures and implementing effective teaching strategies. Within inclusive education of such pupils it is expedient to use common teaching methods, forms, and means, but they must be adapted to the pupils' personalities and educational needs. Pupils with mild intellectual disabilities participate in all school activities as full-fledged members of the team (Loosová, 2020). Pupils with mild intellectual disabilities may experience poorly developed visual and auditory perception. The difficulties lie in the lack of ability to analyze, synthesize, differentiate, and determine the figure and the background. Another specific difficulty may be a lack of awareness of the constancy of perceived phenomena, although some of their characteristics may vary slightly. If there is a weakness in the perception of the pupil, the teacher can help the pupil individually with adequate information processing in all situations that require visual and auditory perception. It is necessary to emphasize important information when speaking and to repeat it several times; visual information should be presented at a sufficient resolution and in a way that highlights the essential passages (Algozzine & Ysseldyke, 2006; Switzky, 2004).

## Theoretical basis

Individuals with intellectual disabilities form a heterogeneous group that differs from intact populations in several areas. Neuropsychological development is delayed in these individuals at different points in their lives and is determined by the degree of intellectual disability. Damage or delay of neuropsychological development brings with it several changes, in both the field of cognitive processes and the emotional and voluntary spheres; it also affects adaptability and behavior. The development of motor skills is also limited (Ainsworth & Baker, 2004). We may also encounter the term "learning difficulties," which can be described as a term that does not emphasize the primary problem – a diagnosis of an individual – but focuses on the consequence: the learning difficulties and the acquisition of a new one (Zelke, 2004). One of the most common problems of pupils with mild intellectual disabilities is coping with the demands of school, especially theoretical work at school (Matson, 2007). We also often observe specific problems in the field of reading and writing, so it is necessary to focus education primarily on the development of their skills (i.e., activities and actions that these pupils manage) and on compensating for deficiencies (Reddy et al., 2004). The education of pupils with mild intellectual disabilities is influenced by many factors; it is especially necessary to consider their specific personality, bearing in mind that the education of these pupils requires both theoretical knowledge and practical experience. Currently, schools develop school curricula on the basis of framework educational programs, allowing them to adjust the content of education and to use methods and forms of education that are appropriate for pupils with mild intellectual disabilities (Henley et al., 2002).

Individuals with mild intellectual disabilities exhibit certain peculiarities in different areas. The field of perception is characterized by a delayed, limited ability to perceive, which affects the entire further course of their psychological development. These pupils have a very narrow range of perception that makes it difficult for them to navigate a new place or unusual situation. Due to the slowed development of perception, the ability to

properly capture the context and relationships between objects is greatly reduced. One of the basic features of perception in pupils with mild intellectual disabilities is the inactivity of this process (Reiss, 2000). The development of auditory perception plays a very important role in the psychological development of an individual and it is closely related to the proper development of speech. The delay in the development of auditory perception is caused by the slow formation of differentiated conditional connections in the area of the auditory analyzer, which in turn leads to a delayed development of speech, which further results in a slowing of psychological development. The development of auditory perception also affects the perception of time and space (Tallal, 1980).

When re-educating auditory perception, we focus on practicing different areas. These areas overlap differently during re-education. We practice listening, auditory memory, auditory differentiation, and auditory analysis and synthesis. During this practice, we must make sure that the exercises are focused on both right-hemisphere and left-hemisphere functions (Mody et al., 1997). For pupils with mild intellectual disabilities in primary school, we focus on training to determine the intensity of sound and the color and height of the sound stimulus, as well as to differentiate human voices, the direction of the source, and the distance of the sound stimulus. It is necessary to develop phonematic hearing in particular, which is essential for practicing voice differentiation. The best method for re-education is the rhythm method – spoken speech is supported by clapping or typing specific syllables. We can also use different rhymes and songs (Dessemontet & Bless, 2013).

Some deviations also occur in the development of visual perception. Pupils with mild intellectual disabilities have difficulty distinguishing the figure from the background. Visual perceptions are very imprecise. The overall inactivity of visual perception is obvious, and pupils also have a problem with the perception of space and time (Shinkfield et al., 1997). Properly developed visual perception is central to practicing reading and writing. The most common difficulty of pupils with mild intellectual disabilities is distinguishing details in which letters differ (e.g. in the Czech language "sz" when reading, "rz" when writing). Pupils with mild

intellectual disabilities even at preschool age have problems differentiating shapes which differ vertically or horizontally along an axis (Burack et al., 1998). In pupils with mild intellectual disabilities, visual impairment is considered a sensorimotor impairment in the field of mere cognition. In most cases, however, these pupils experience more complex impairment of visual–motor abilities, which are measured by various drawing tests, e.g., a drawing of a human figure. (Beirne-Smith et al., 2005). Sencibaugh (2007) mentions slowness and a narrowed range of visual perception in pupils with mild intellectual disabilities. Pupils with impaired nervous systems have a slower rate of visual perception, which is mainly due to the reduced extent of perceived material. For example, a pupil with mild intellectual disability can observe far fewer stimuli when observing the landscape than their intact classmate. Imperfectly developed visual perception is the basis for a specific learning difficulty, dyslexia, but it is also related to dysorthographia and dyscalculia. This is due to a distorted perception of shapes, letters, and numbers, especially for shapes that are very similar or differ only in minor details. The right–left and space orientation also plays a role here. The pupil has difficulty estimating distances and is therefore less able to determine direction (Baroff & Olley, 1999; Zigler & Bennett-Gates, 1999).

In the re-education of visual perception, we should proceed from the perception of specific objects to representations of them, followed by the perception of shapes and symbols of abstract and more complex schemes. In the development process, we focus on practicing individual areas of visual perception: color and shape differentiation, visual differentiation (visualization), visual analysis and synthesis, visual memory, figure–background differentiation, reverse figure differentiation, eye movement exercises, and perception (Jucovičová & Žáčková, 2014). When practicing visual perception in pupils with mild intellectual disabilities, we focus on identifying perceived phenomena oriented in space, developing visual memory, estimating dimensions, and recognizing light sources. Furthermore, the pupil recognizes colors, differentiates basic shapes, and learns to become oriented in space according to visual stimuli (Kraus et al., 1996).

## Research questions

The main research question was to determine teachers' awareness of the development of visual and auditory perception in pupils with mild intellectual disabilities in a mainstream school. Based on the partial aims, three partial research questions were identified:

- To what extent are teachers familiar with the importance of developing visual and auditory perception in pupils with mild intellectual disabilities?
- By what means do teachers develop visual and auditory perception in pupils with mild intellectual disabilities?
- How do teachers use pupils' homework to develop visual and auditory perception?

## Research methodology

Qualitative research was used for the research, which can be characterized as a process of researching problems and phenomena in an authentic environment in order to obtain a comprehensive picture of them based on a relationship between the research participant and the researcher and on deep data (Flick, 2018). The main technique of the research was semi-structured interviews. Interviewing is the most often used method of data collection in qualitative research. The aim of a semi-structured interview is to obtain comprehensive and detailed information about the phenomenon under study (Charmaz, 2014). During the interviews, questions were expanded with additional information and follow-up questions to better and more accurately express and clarify the answers of the interviewee. If a question seemed unclear, it was reworded so that it could better be understood and answered. Each participant agreed to audio recording of the entire interview and was informed about the anonymization of her data and the destruction of the recording.

The data from the interview was followed by a transcription, which is an essential, yet time-consuming part of qualitative research. This research used literal transcription, which involves the conversion of spoken speech from the interview to written form (Silverman, 2013). After transcription, the data were analyzed. Open coding was chosen for the research, which is the first step in the process of grounded theory. Due to its simplicity it is very popular in the methodology of qualitative research (Miles et al., 2014). With open coding, the text is broken up into fragments, which are then assigned a code as a category property. Most of the properties could be read from the data, while others had to be derived. It was possible to reveal certain topics in open data. The data analysis itself is followed by interpretation, which can be supplemented by notes from field notes or direct quotations of parts of the interviews (Corbin & Strauss, 2015).

## Characteristics of the research sample

The research had the character of purposeful (deliberate) selection, more precisely, the selection of critical cases (Patton, 2015). A significant criterion was the participants' personal experience in the education of pupils with mild intellectual disabilities. The sample consisted of five women who were interested in participating in the research. All of the subjects are teachers of the first level of a mainstream primary school in the Ústí nad Labem region, and all have experience teaching integrated classes including pupils with mild intellectual disability. Due to the small research sample, the findings of the study cannot be generalized. The interviews were always held in person. For reasons of anonymity, the participants are marked with a letter and a number (I1, I2, I3, I4, and I5).

The average age of the women was 55 years. These findings correspond to the information concerning the aging population of teachers and reflect the predominant female nature of the school environment, which has negatively affected several generations of Czech pupils. The average pedagogical experience of the teachers was 30 years. The length

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of teaching practice is one of the essential indicators that influence the educational process of pupils with mild intellectual disabilities. The teachers in our research have enough pedagogical experience and can therefore accept pupils with mild intellectual disabilities into their classes. Teachers with extensive teaching experience can respond to the changes taking place in the area of inclusive education in our schools.

## Analysis and interpretation of the results

The following section includes analysis and interpretation of the data. First, the categories that were identified during coding are presented and the partial research questions are addressed. Then the interpretation of the given categories is elaborated on and supplemented by actual quotations from the subjects.

### *Category 1: Attitudes of teachers to the development of perceptions*

#### Evaluating the importance of developing visual and auditory perception

All five participants considered the development of visual and auditory perception to be crucial to the further development of a child, not only in pupils with mild intellectual disabilities. They try to include exercises to develop these perceptions as often as possible because they are aware of the influence of the development of partial functions on the pupil's development in other school skills.

I1: "I rate this as a very important teaching activity. I now have a pupil in the class who they rated as mentally retarded. In the first grade he could hardly speak, but later turned out to be quite intelligent. I focused on developing visual and auditory perception, and now he speaks much better. In my opinion, the child's family should also be involved. Because parents often think that as a teacher, I must teach their child everything myself. So, the child doesn't go to any experts and the parents don't work

properly with him. So, I take on more than one function at the same time and it's very challenging."

**Sharing good practices among the teaching staff**

In view of ensuring the permeability of approaches to individual pupils with mild intellectual disabilities in mainstream primary schools, cooperation among teachers at school is considered fundamental. The participants agreed that sharing best practices among members of the teaching staff is one of the best sources of methods for developing visual and auditory perception. All of them, however, stated that this topic is usually not discussed in group meetings, but instead mainly in smaller groups among themselves.

I3: "Probably yes, we certainly do not all discuss it together in meetings, but the teachers advise each other. Mostly, teachers with the same qualifications share procedures that are effective, etc."

**Completing courses or seminars**

It is essential that each teacher is continuously educated, learning new information and expanding his or her knowledge. The teacher should always be aware to the progress and shifts of society in order to meet pupils' expectations. The interviews showed that only three out of the five women had completed an official course focused on teaching pupils with mild intellectual disabilities in mainstream primary schools, which also mentioned the topic of developing visual and auditory perception.

I5: "I took such a course once. A lady from a special education center came to the school and told us about the types of disabilities we can encounter at school and how to deal with them. In any case, I think every child is different and, in some cases, would really need special care that I am not able to provide."

I1 and I2 did not attend any such courses because none had been organized by the school administration. Therefore, they seek out different training courses themselves, but none of them has focused on teaching pupils with mild intellectual disabilities in mainstream primary schools.

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Moreover, these training courses often must be financed by the teachers themselves. All of the interviewees stated that they do not feel ready to work with pupils with mild intellectual disabilities in mainstream primary schools, even after many years of practice.

I2: "I have not taken any of these courses. In my opinion, not many are offered so there is nothing to choose from. Once upon a time, I received training on mild intellectual disability. But it was only about how to recognize a pupil with this kind of disability."

**Cooperating with school counseling services**

The successful course of inclusive education of pupils with mild intellectual disabilities is supported by cooperation with experts from school counseling services. They help in their education, consultancy and counseling support for pedagogical staff and parents. They offer methodological support to schools, preparing documentation for pupil inclusion and controlling its course. I1 and I2 mainly talked about poor communication with the school counseling services in the Ústí nad Labem region. These two participants addressed school counseling services directly, filled out a questionnaire, and waited for the facility to comment. They also stated that they did not receive enough professional assistance from the school counseling facility.

I1: "Communication with the educational and psychological counseling center is not always good. The recommendations that the consulting staff write to us usually only repeat the activities we already do with the pupils and what we wrote in the counseling document. I expect professional help from them, but in my opinion it is insufficient. The reports and recommendations we receive from them are often written too professionally. I have become accustomed to it after years and I have been looking for key words but parents, for example, cannot understand it at all."

I3 also serves as a guidance counselor at a primary school, so she cooperates with the school counseling services very often. It is addressed to them mainly based on suggestions from colleagues from the teaching staff. Like I1 and I2, she argues that communication with the school counseling services is not good, mainly because of the long waiting times.

I3: "When it comes to communicating with a special education center, it is certainly better than communicating with an educational and psychological counseling center, which is extremely lengthy, and it often takes up to three quarters of a year to examine a pupil. These waiting times are perceived as one of the biggest problems of the whole system."

I4 and I5 deal with school counseling services only minimally, because their suggestions are directed to the guidance counselor, who mediates this cooperation.

**Acquisition of materials**

The sources of data for the development of visual and auditory perception were indicated by almost all interviewees. The most common sources of data are the Internet, professional journals or books, and advice from colleagues.

I4: "Practical experience, either my own or my colleagues', was the best. I also draw from the Internet, professional journals, and books. Specifically, in mathematics, I use the tables that I create for the pupils with mild intellectual disability."

***Category 2: Means of developing perceptions***

**Methods of visual perception development**

The participants mainly use classical methods of visual perception development. During the interview, I1 stated that she focused primarily on the development of visual differentiation and memory, preferring to use methods that use material aids. I2 focuses primarily on the development of visual analysis and synthesis, differentiation and memory.

I2: "Especially matches and differences; I also used wooden cubes, which had a different part of the picture on each side. The child was then tasked with assembling them in order to form a single picture."

Likewise, I3 focuses on visual memory, analysis, and synthesis. Train teachers the visual memory of pupils with mild intellectual disabilities by displaying various numbers, pictures, objects, and letters which the pupils

should subsequently describe. They also often use Kim's games: teachers present a group of different subjects to the pupils, which they then cover, and the pupils are asked to name which subjects they have seen.

**Methods of auditory perception development**

In the interviews, I1 and I2 stated that they focused primarily on the development of auditory differentiation of sounds. As an exercise, they mainly use the length of syllables, the position of a certain sound in the word, clapping syllables, and determine the soft and hard consonants. Both also train auditory memory with pupils using different stories to be remembered. I3 and I5 focus mainly on hearing memory training; for other categories they did not mention any methods. For pupils with mild intellectual disabilities, the teachers use simple exercises focused on non-speech sounds when they tap the board with a marker and the pupils determine how many taps they have heard. Then they move on to speech stimuli and include the game "packing suitcases," which adds more and more words to a sentence. She also develops auditory memory by means of rhymes, where the rhythm supports the memorization of short poems.

I4: "In mathematics I hardly use any methods for training auditory perception. Most of the time, we focus on these difficulties in so-called interventions, when we have time directly for a pupil, or a teacher assistant works with the pupil."

**Use of special aids**

In the educational process of pupils with mild intellectual disabilities, a combination of textual aids, which are among the basic teaching aids, and other types of teaching aids (displaying and representing objects and facts, audio-visual equipment, etc.) is appropriate. In the case of sufficient color expressiveness, systematic content, and separation of essential and non-essential phenomena, the use of textual aids at primary schools is important. All interviewees use special aids in the classroom that help to develop visual and auditory perception. They include images, cubes, puzzles, dominoes, worksheets, a buzzer, balls, and an interactive whiteboard.

**Involvement of pupils in the production of aids**

At this point, the teacher assistant plays an important role. All participants stated that their pupils lead to the production of their own aids, primarily with the help of the teacher assistant.

I3: "Most of the time it happens that I sit with them, tell them what the aid should look like, and they will make it either with my help or the teacher assistant's. It's still better if the pupil creates it himself so that he can use it."

**Use of games**

I1, I2, and I5 often use games to develop visual and auditory perception. For example, pupils should recognize voices of their classmates or look for hidden things after class.

I1: "We try to do almost everything in the form of a game. I try to include as many senses as possible in the development, so for example I connect the development of auditory perception with movement games, etc."

By contrast, I3 and I4 do not use games to develop visual and auditory perception.

I3: "I do not use games as such in developing auditory and visual perception, or at least not in a targeted way. I believe that some games may develop these perceptions, but now I am not aware of any."

***Category 3: Home preparation***

**Familiarization of parents with the issue**

As teachers, I1 and I2 deal very often with parents on this topic. They say that they must be uncompromising in such interviews, to deal with them directly and not to allow discussion.

I2: "Parents often do not like hearing that they have to do something extra with their child. I'll tell them straight. I have more experience with non-cooperating parents who have transferred all responsibility for developing their children's perception to me or to a teacher assistant. At home, therefore, they don't try very much. In fact, they only pick up the child from school and that's the end of their work."

I4 and I5 rarely discuss this topic with parents.

I4: "These issues are usually dealt with by a guidance counselor, but sometimes I meet my parents personally and tell them what else they should focus on. I explain to them that much of the responsibility lies with them, and how important homework is for development."

As a guidance counselor, I3 has to inform parents about the report and recommendations from the school counseling service, to explain to them what to develop with the pupils and how to do it.

**Development of visual perception in home preparation**

All participants stated that they did not knowingly include any exercises for developing visual perception in their homework. They assign these exercises only to parents.

I2: "I don't include any visual perception exercises in homework. I use homework primarily to repeat the curriculum we are currently discussing. Parents are given exercises that are to be practiced with the child in the long term."

Teachers limit the homework for a maximum of two hours to avoid overloading a pupil with mild intellectual disability, with the associated risk of potential psychosomatic complaints and a significant negative impact on the pupil's behavior.

**Development of auditory perception in home work**

As with visual perception exercises, none of the participants included auditory perception development exercises in the homework. Again, they assign such exercises to their parents. As another reason why they do not include these exercises as homework, they state that they are not able to check whether the pupil has completed the task.

I4: "I don't include such exercises. First, I couldn't check in any way that the pupil had accomplished the task, and then the exercises with parents with the pupil with mild intellectual disabilities were commissioned by the guidance counselor."

**Modification of homework**

In pupils with mild intellectual disabilities, repetition and practice of homework assignments have a reasonable role to play, especially because of changes in memory functions. This helps them to consolidate and memorize at least a minimum amount of important information. For teachers, this form is challenging because it must modify the scope of tasks with regard to the use of specific methods of work and aids. Almost none of the interviewees assign homework for the development of visual or auditory perception to pupils with mild intellectual disabilities.

I1: "I shorten the tasks for these children as much as possible or adapt them to their abilities."

Only I4 stated that she seeks to adapt homework primarily to the pupils with mild intellectual disabilities and to target them to develop visual perception.

**Use of feedback**

The educational process of pupils with mild intellectual disabilities requires not only direct and regular verification of the effectiveness of teaching, but also immediate and systematic feedback. All participants use feedback from homework almost identically. If the pupil does not manage to work out the given homework assignment due to his/her abilities, the teachers will ask him/her to do a similar assignment again, or ask the teacher assistant to practice the problem with the pupil until he/she has mastered it.

I2: "If I see that a child is still not successful in a certain activity, I do the same task until the child is fully adopted."

## Conclusions of the research

The main research aim and three partial aims were fulfilled by answering the main research question, for which three partial research questions were set. The interviews which were conducted and analysed provided answers to these research questions and fulfilled the set aims.

The first partial goal was to find out to what extent teachers are aware of the importance of developing visual and auditory perception in pupils with mild intellectual disabilities, which we achieved through the research question, "To what extent are teachers familiar with the importance of developing visual and auditory perception in pupils with mild intellectual disabilities?" All informants stated in their responses that they perceive the development of visual and auditory perception as being very important in further development, not only in a pupil with mild intellectual disability. Unfortunately, due to the lack of seminars and courses on this issue, they did not feel fully prepared to provide such pupils with the support they need in this area. A great help in their search for the right methods for developing visual and auditory perception was their colleagues on the teaching staff, who share best practices with each other. The participants perceived a major problem in cooperation with school counseling services, which provide them with an insufficient volume of materials that focus on the development of visual and auditory perception. In any case, despite these difficulties, they reported trying to develop the perception of these pupils on multiple levels and looked for materials themselves from various sources, such as professional journals, books, or the Internet. Pipeková et al. (2014) focused on evaluating the cooperation of teachers with an educational and psychological counseling center or a special education center in support of pupils with mild intellectual disabilities. Most interviewees considered cooperation with school counseling services to be very beneficial. However, some of them considered school counseling services to be unnecessary institutions communicating very little with schools, or even not at all.

The second aim was to find out by what means teachers develop visual and auditory perception of pupils with mild intellectual disabilities. The next research question led to its fulfilment: "By what means do teachers develop visual and auditory perception in pupils with mild intellectual disabilities?" The interviewees used various means to develop visual and auditory perception. These include training visual and auditory memory using various stories, pictures, and special aids, such as a buzzer. Furthermore, they focus on visual distinction, which develops using special

tools, such as pictures, cubes, memory games, and puzzles. Anwer et al. (2015) focused on the degree of visual perception ability of pupils with mild intellectual disabilities at the first stage of primary school. The results of the study showed that visual perception plays an important role in pupil's school performance. They also perceive the development of auditory speech differentiation to be an important area, focusing primarily on determining the length of sounds, distinguishing between soft and hard consonants using balls, etc. Viktorin (2018) focused on pupils with mild intellectual disabilities and the development of their perceptual motor functions, deficiencies in which are reflected in the pupils' graphic expressions. In the conclusions of the study it is mentioned that in the field of visual perception the teachers practice mainly distinguishing the figure from the background and distinguishing inverse patterns; in the field of auditory perception, it is an exercise of auditory analysis and synthesis, distinguishing between soft and hard syllables and auditory differentiation of syllable length. The participants also stated that they try to lead pupils to produce their own aids, thus helping to develop fine motor skills. Three participants also reported using games as a tool for developing visual and auditory perception.

The last partial aim was to find out how teachers use homework to develop visual and auditory perception. The research question asked was, "How do teachers use pupils' homework for the development of visual and auditory perception?" It is clear from the results that homework is not very popular as a tool for developing visual and auditory perception. The interviewees agreed that they would assign exercises for the development of visual and auditory perception mainly to parents and expect them to cooperate fully in their implementation. According to them, the pupil should develop visual and auditory perception mainly on their own and in the long term with the help of a parent. The inclusion of exercises for the development of visual and auditory perception in homework therefore seems pointless to them. They also stated that it is impossible to check whether a pupil has performed such an exercise.

The research study on "Pupils with mild intellectual disabilities in an inclusive school environment" analysed the role of parents as an important

factor for inclusive education. Parents observe the educational needs, abilities, and development of their children from a different perspective than teachers. However, parents were often exposed to a great deal of stress in a situation of home education. Empathy, listening, an understanding attitude, mutual information on assessment, acceptance of boundaries, a realistic view of what is being done, and justified criticism are competencies that are invaluable in the cooperation between parents and teachers (Bartoňová, 2013). Regarding the feedback from homework, the participants stated that they mainly use negative feedback, when a pupil fails to complete task due to his/her abilities. If this happens, he/she will assign the homework again or assign it directly to the parent or teacher assistant for repeated exercise. Positive feedback, that is, if the pupil is able to do the task, for the participants meant that the pupil has already fully mastered the given skill.

## Recommendations for special educational practice

A major problem is the recommended practices by school counseling services, which are often inadequate and do not correspond to individual pupils with mild intellectual disability. Above all, these are practices that have been used for a very long time and have been practiced by all pupils. The staff of school counseling services should focus more on the individual requirements of each pupil. It is also important to focus on the diagnosis of the pupil, which should be performed over a much longer time period. Updating procedures for developing visual and auditory perception is essential. One of the other problems is the insufficient training of teachers at mainstream primary schools in working with pupils with mild intellectual disabilities. These training programs should be attended by every teacher who works with or will work with pupils with mild intellectual disabilities. The possibilities for further education of teachers in working with pupils with mild intellectual disabilities should be much more diverse. Teachers should receive more expert advice from school counseling services, especially regarding the development of perceptual

motor functions, which is central to the further development of a pupil with mild intellectual disabilities. In this case, the school management should also take the initiative to provide its teachers with enough courses, training programs, or seminars to make teachers feel ready to work with pupils with mild intellectual disabilities. In fact, teachers often feel insecure about working with these pupils, and this is reflected in the pupils' performance. School counseling services should show teachers how to use the benefits of homework to develop perceptual motor functions and should recommend the most appropriate exercises and procedures. Cooperation with parents is also very important in this respect, which is often complex. If parents and pupils do not develop perceptual motor functions regularly, the pupil's development is delayed even more. The solution could be a more communication between parents and school counseling services or a school that aims to familiarize parents with the importance of developing perceptual motor functions.

## Conclusion

Muñoz-Ruata et al. (2010), while studying perceptual motor skills in people with intellectual disabilities, found significant deficits in perceptual motor skills, although the nature and extent of these skills in this population remained unclear. Molloy and Witt (1971) stated that the development of cognitive processes is an integral part of speech development and the subsequent stimulation of reading competence in pupils with mild intellectual disabilities. This has been confirmed by other experts on cognitive stimulation of pupils' reading skills; for example, Hlebová et al. (2015) came to the conclusion that partial cognitive functions (visual division, the respective differentiation of figure and background, the visual differentiation of shapes, visual memory, auditory division, auditory differentiation of speech, auditory memory, intermodal relationship, time series perception, tactile/kinesthetic perception, and spatial orientation) may be one of the prerequisites influencing the reading competence of pupils with mild intellectual disabilities, despite the

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deficiencies in pupils' cognitive functions due to their primary diagnosis (intellectual disability).

Based on an analysis of the data obtained from the research, it was found that primary school teachers are to some extent familiar with the importance of developing visual and auditory perception, but the further education of teachers towards the development of these perceptions in pupils with mild intellectual disabilities is insufficient. Teachers use proven methods and special aids to develop visual perception. Teachers also do not use homework to develop perceptual motor functions in pupils with mild intellectual disabilities.

## References

Ainsworth, P., & Baker, P. C. (2004). *Understanding mental retardation: A resource for parents, caregivers, and counselors.* Jackson, MS: University Press of Mississippi.

Algozzine, B., & Ysseldyke, J. E. (2006). *Teaching students with mental retardation.* Thousand Oaks, CA: Corwin Press.

Anwer, S., Akbar, M., Liaqat, S., Lal, V., Shair, K., Buksh, H. W., & Ali, H. A. (2015). Visual perceptual abilities in intellectually disabled children with and without attention deficit hyperactive disorder. *International Journal of Innovation and Scientific Research*, *16*(2), 303–312.

Baroff, G. S., & Olley, J. G. (1999). *Mental retardation: Nature, cause, and management*. Philadelphia, PA: Psychology Press.

Bartoňová, M. (2013). *Inkluzivní didaktika v základní škole se zřetelem na edukaci žáků s lehkým mentálním postižením* [Inclusive didactics in primary school with regard to the education of pupils with mild intellectual disabilities]. Brno: Masarykova univerzita.

Beirne-Smith, M. R., Patton, J. R., & Kim, S. H. (2005). *Mental retardation: An introduction to intellectual disabilities.* Upper Saddle River, NJ: Pearson Prentice Hall.

Burack, J. A., Hodapp, R. M., & Zigler, E. (1998). *Handbook of mental retardation and development.* Cambridge: Cambridge University Press.

Charmaz, K. (2014). *Constructing grounded Theory*. Los Angeles: SAGE Publications.

Corbin, J., & Strauss, A. (2015). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Los Angeles: SAGE Publications.

Dessemontet, R. S., & Bless, G. (2013). The impact of including children with intellectual disability in general education classrooms on the academic achievement of their low-, average-, and high-achieving peers. *Journal of Intellectual & Developmental Disability*, *38*(1), 23–30.

Flick, U. (2018). *An introduction to qualitative research.* Los Angeles: SAGE Publications.

Henley, M., Ramsey, R. S., & Algozzine, R. F. (2002). *Characteristics and strategies for teaching students with mild disabilities.* Boston, MA: Allyn and Bacon.

Hlebová, B., Ďorďovičová, J., & Palková, V. (2015). *Kognitívna stimulácia čitateľskej kompetencie žiakov s ľahkým stupňom mentálneho postihnutia v školskej integrácii* [Cognitive stimulation of reading competence of pupils with mild

intellectual disability in integrated schools]. Prešov: Vydavateľstvo Prešovskej univerzity.

Jucovičová, D., & Žáčková, H. (2014). *Reedukace specifických poruch učení u dětí* [Re-education of specific learning disabilities in children]. Prague: Portál.

Kraus, N., McGee, T. J., Carrell, T. D., Zecker, S. G., Nicol, T. G., & Koch, D. B. (1996). Auditory neurophysiologic responses and discrimination deficits in children with learning problems. *Science*, *273*(5277), 971–973.

Loosová, L. (2020). *Analýza přístupu k rozvoji percepčně-motorických funkcí u žáků s lehkým mentálním postižením na základní škole* [Analysis of the approach to the development of perceptual-motor functions in pupils with mild intellectual disabilities at primary school; Unpublished bachelor's thesis]. Masarykova univerzita, Pedagogická fakulta, Katedra speciální a inkluzivní pedagogiky, Brno.

Matson, J. L. (2007). *Handbook of assessment in persons with intellectual disability*. London: Academic Press.

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook*. Los Angeles: SAGE Publications.

Mody, M., Studdert-Kennedy, M., & Brady, S. (1997). Speech perception deficits in poor readers: Auditory processing or phonological coding?. *Journal of Experimental Child Psycholology*, *64*(2), 199–231.

Molloy, J. S., & Witt, B. T. (1971). Development of communication skills in retarded children. In J. H. Rothstein (Ed.), *Mental retardation: Readings and resources* (p. 447–460). New York: Holt, Rinehart and Winston.

Muñoz-Ruata, J., Caro-Martínez, E., Martínez Pérez, L., & Borja, M. (2010). Visual perception and frontal lobe in intellectual disabilities: A study with evoked potentials and neuropsychology. *Journal of Intellectual Disability Research*, *54*(12), 1116–1129.

Patton, M. Q. (2015). *Qualitative research & evaluation methods: Integrating theory and pratice*. Thousand Oaks, CA: SAGE Publications.

Pipeková, J., & Vítková, M. (2014). *Od edukace k sociální inkluzi osob se zdravotním postižením se zaměřením na mentální postižení* [From education to social inclusion of people with health disabilities focusing on intellectual disabilities]. Brno: Masarykova univerzita.

Reddy, G. L., Malini, J. S., & Kusuma, A. (2004). *Mental retardation: Education and rehabilitation services.* New Delhi: Discovery.

Reiss, S. (2000). A mindful approach to mental retardation. *Journal of Social Issues*, *56*(1), 65–80.

Sencibaugh, J. M. (2007). Meta-analysis of reading comprehension interventions for students with learning disabilities: Strategies and implications. *Reading Improvement*, *44*(1), 6–22.

Shinkfield, A. J., Sparrow, W. A., & Day, R. H. (1997). Visual discrimination and motor reproduction of movement by individuals with mental retardation. *American Journal on Mental Retardation*, *102*(2), 172–181.

Silverman, D. (2013). *Doing qualitative research*. Los Angeles: SAGE Publications.

Switzky, H. N. (2004). *Personality and motivational systems in mental retardation*. California: Gulf Professional Publishing.

Tallal, P. (1980). Auditory temporal perception, phonics, and reading disabilities in children. *Brain and Language*, *9*(2), 182–198.

Viktorin, J. (2018). *Inkluzivní vzdělávání žáků s lehkým mentálním postižením na základních školách: výzkumný projekt* [Inclusive education of pupils with mild intellectual disabilities in primary schools: A research project]. Brno: Masarykova univerzita.

Zelke, S. (2004). Self-concept of students with learning disabilities and their normally achieving peers: A review. *European Journal of Special Needs Education*, *19*(2), 145–170.

Zigler, E., & Bennett-Gates, D. (1999). *Development in individuals with mental retardation*. Cambridge: Cambridge University Press.