

Basic cognitive strategies and the reading process in pupils with specific learning disabilities

(overview essay)

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Abstract: *The chapter presents information on learning strategies in pupils at primary and secondary schools. It specifies some of the approaches to reading acquisition in pupils with dyslexia. This issue is perceived from the cognitive and metacognitive strategies acquisition perspective. We also focus on the definition of basic skills such as process of reading comprehension, phonological information processing, and a flair for language acquisition. The chapter contains analysis of some foreign approaches and programs in the acquisition of basic strategies during learning process as well as specific examples of good practice.*

Key words: *specific learning disabilities (difficulties), pupils with dyslexia, the process of reading, comprehension, phonology, a flair for language, education, metacognition, strategies*

1 Theoretical Basis

Specific learning disabilities (also specific learning difficulties, learning disabilities) affect a significant number of children and adults. It is a heterogeneous group of individuals. Specific learning disabilities distinct from global intellectual deficiency and children have significantly worse results in learning and writing as their classmates of the same age and level of education (Häfele, H., Häfele, H. 2009).

Experts indicate that learning disabilities affect 4–8 % of children population, whereas international comparison present incidence of specific learning disabilities (SLD) around 6 %, while the percentage of the population decreases with increasing age. Manifestations of the disorder can affect quality of life of an individual, extent depends on his/her personality, but also the environment in which he/she lives (Hal-

lowell, E. M., Ratey J. J. 2007; ICD-10: F81.3, cf. Hollenweger, J. In Lichtsteiner Müller, M. 2011, p. 41 et seq.).

1.1 Factors affecting approaches to teaching pupils with dyslexia

At the beginning, I was looking forward to going to school, but later, when I moved to another city, I felt unaccepted by other children. It was quite difficult for me and I felt threatened at times. I was diagnosed with dyslexia in the second grade of primary school. I was taken into consideration in the lessons during the first grade. It was my father who noticed that I did not read accurately – he noticed that when he accidentally turned two pages in the reader, I continued reading what I thought might be on the page. I was reading in the context, but I did not realize that two pages were accidentally turned at once. I often hesitated to engage in discussion not to embarrass myself. School is difficult for me, it is challenging to take notes and follow a lecture, I often have to read the materials several times. I intensively prepare for the lectures and read too much, but I do not feel good if I am not prepared well. I think my experience and maturity help me in classes, and I feel that I can present a good point of view at some issues.

Pupils with dyslexia can be very vulnerable when they have to accept change, such as the start of compulsory education. If the school is informed of possible difficulties and keeps trying to offer support, this change may not negatively affect personality. Several factors must be considered in determining the most appropriate approach for pupils with dyslexia, which include:

- Context – includes the following: type of school, class size, teacher (employees) training programs, pupil's age and a current development phase
- Assessment – provides information on the seriousness of pupil's difficulties. This profile type is important to obtain initial information in order to develop a suitable intervention procedure
- Curriculum – What requirements and expectations concerning the pupil do we have? To what extent is the curriculum accessible and differentiated?
- The pupil – What is his/her motivation? What do we know about his/her learning style? How can we use this information to create a program?

Educational strategies must be individualized for each pupil. Early intervention allows pupil to achieve optimal level of development in educational, personal, social and professional areas.

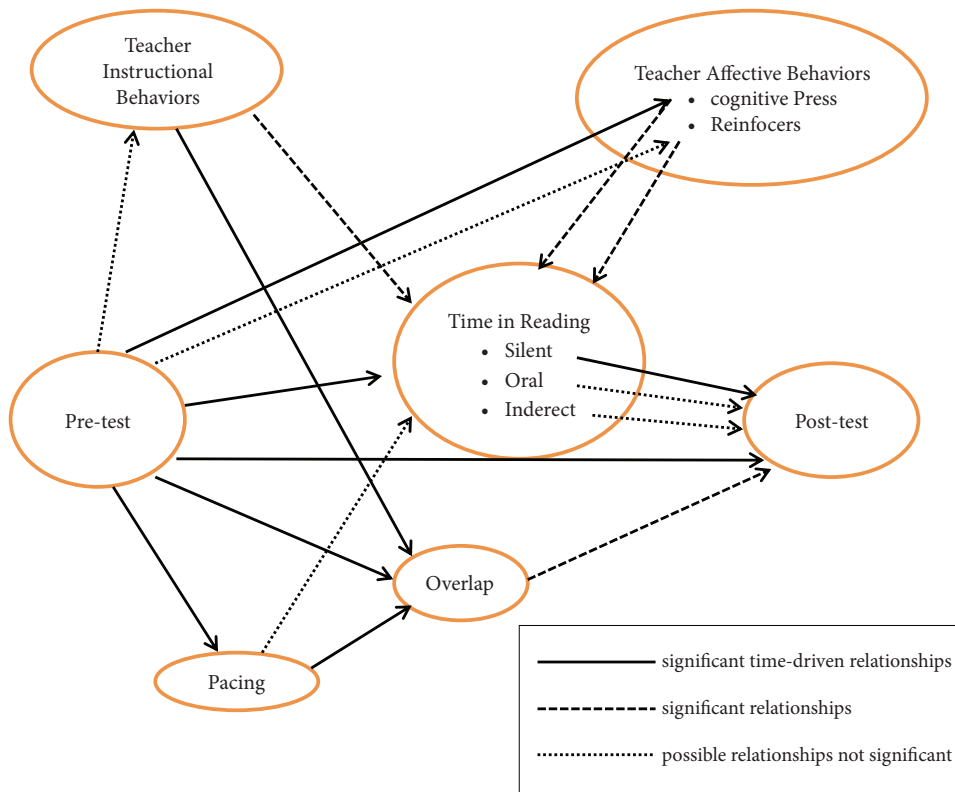


Fig. 1: A model for explaining reading achievement. (Leinzhardta, Zigmonda, a Cooley 1981, p. 352). Copyright 1981 American Educatinal Research Association.

The figure represents the structure of model based on research on classroom activities that affect pupils' attitudes toward learning. These are activities that simultaneously significantly affect development of reading skills. English researchers focused on research on classroom activities in special classes for pupils with SLD; they investigated relative effectiveness of different activities on improving reading performance of pupils. They assumed that learning is based on activities that pupils perform in the classroom, on the curriculum, but also on the teacher's behaviour that directly affects pupils' activities and only indirectly pupils' learning. They neither defined instructions for reading, nor reading methods. However, reading activities were divided into three groups. Those that are directly associated with reading (for example those that bring the pupil to writing), those that indirectly support some aspects of reading, but it is not reading itself (e.g. listening to teacher or storytelling), those that affect the acquisition of reading, but belong into a category where focus is not directly on

reading itself (for example working on math skills, drawing, cutting and gluing). In this way they have created a study that offers accurate descriptive information about the instructions for reading in special classes.

Further they investigated whether it is possible to adopt specific causal relationships between the specific process and outcome variables (Fig. 1). They assumed that the way teachers structure learning environment could make a difference in the way pupils work in the educational environment (the class) and affect their level of proficiency in reading, which they reach at the end of the academic year. Fig. 1 shows the causal model of assumptions about the way the classroom variables interact. Solid black lines indicate a significant relationship, in which they assumed causal link, dotted lines indicate relationship which was expected to be significant but it was not. The main goal of Fig. 1 is to show that the final test depends on the pupil's behaviour and content of instruction. It was assumed that pupils' behaviour will be influenced by the teacher's behaviour. The research was conducted for two years in 11 special classes for pupils with specific learning disabilities with more than 100 pupils and their teachers. Data confirmed expectations and specified what happens in the classroom and how each pupil has experienced and responded to the learning environment. Pupils in special classes spent an average of only 26 minutes from the 362 minute school day by reading aloud or silently, and on average showed little progress in the process of reading skills acquisition. However, time spent on each task by pupils with dyslexia in the direct or indirect form was highly predictive for their reading skills development (Swanson, H. L., Harris K. R., Graham, S. 2003).

1.2 Reading skills development in pupils with dyslexia

The ability to read and write is one of the most demanding performances that human brain has to process. Well-established education systems for pupils with dyslexia favor phonological skills in their intervention programmes for teaching reading and writing skills; they are considered the essence of effective teaching. The next step is then the regular application of intervention programmes that are designed to ensure pupil's progress and to consolidate learning. The issue of metacognitive strategies is still being examined in the Czech education system. Recently, there has been a tendency to grip education methodologically and to improve the process of teaching reading with comprehension. The number of papers addressing early intervention for pupils with dyslexia is increasing. These efforts are to a significant extent influenced by the results of international measurements PIRLS and PISA (2011). Specialized publications present a number of views on what constitutes an essential skill for accurate and fluent reading. The basic factors include:

- verbal readiness (such as recognition of letters, spelling, syllabification, phonemic awareness, analogous strategies and linking grapheme and phoneme),
- words recognition (such as a word class recognition and visual memory usage).

The experts present five processes that are important for the development of reading skills. These processes include **phonology, syntax, working memory, semantics and spelling**. Studies focused on the process of reading agree that the deficit in reading comprehension is used as a benchmark for problems in reading; they are not addressed towards the cognitive deficiencies that highlight the difficulties in reading associated phonology.

Phonological processing of speech is considered to be one of the most common causes of dyslexic difficulties in American literature (cf. Bartoňová, M. 2012, Pokorná, V. 2010). Phonological processes affect different skills, but in the context of the development of reading skills it is most significant association of sound with a letter (for example, understanding the rules of the transition between grapheme). This skill is the basis for decoding written texts and although other ways can be used to find out the meaning of the written texts, phonological way is clearly the most important and crucial of them in early development of reading skills.

M. Mikulajová (2009) as well as many other experts emphasizes the speech sound of the child's speech – phonological awareness is perceived as an important factor for further language development. For example, it helps the child to orientate in language grammar that is necessary for the understanding of written and spoken language; and it is a prerequisite for mastering the mechanism of reading and writing. Phonological awareness is superior to concepts that include awareness and use of language, but is also crucial for understanding the script. Capabilities such as analysis, synthesis or phoneme-grapheme linking are necessary for reading and are very low in many pupils with dyslexia. Good level of phonological skills is a prerequisite for the recognition of single words. It requires a complex phonetic skills, automatization, and also a certain level of visual skills (Mather, N., Wendling, B. J. 2011; Klicpera, Ch., Schabman, A., Gasteiger-Klicpera, B. 2010). In order to improve the pupil's skills to identify individual words correctly and also spelling skills, it is essential to focus the interventions on the development of phonological skills and phoneme-grapheme linking.

Working memory refers to storage of information in short-term memory during processing of incoming information and finding connections in long-term memory. In reading, working memory means decoding and recognizing words or phrases during the memorizing of what is being read. Working memory can also be crucial for reading single words, especially at the beginning of the skills acquisition of reading words, because the transition rules between graphemes and phonemes for each segment of speech must be kept in mind while remaining segments of words are processed. Longer words, in terms of number of syllables have greater demands on

working memory. Moreover, the complexity of the specific rules have the effect on the difficulty recognizing the word, since the number of alternatives and combination of a grapheme and phoneme with the pronunciation can affect the ease or difficulty in reading the specific words. If there are more ways to say the word, reading slows down and will not be accurate until the child has mastered a single item.

Semantic processing involves **understanding the meaning of words**. In theory, the word meaning is encoded into a semantic network is also accessed from there. Semantic processing is important for obtaining meaning of the word in the context of reading. One of the problematic areas in the context of reading is comprehension. It is necessary to use and specify procedures to mitigate the inability of comprehension also in this area. First, it is necessary to focus on building vocabulary and motivate students to use words outside the classroom. In addition, pupils should learn to link sentences into more coherent utterances. The main difficulty in understanding and comprehension of the text for pupils with dyslexia is the inability to abstract meaning of the text. It is a complex process that requires understanding of language. The inability to decode words is the subsequent difficulty for pupils with dyslexia. The skill to decode or properly recognize single words is connected with the reading comprehension skill (Fletcher, J. M., Reid Lyon, G., Fuchs, L. S. 2006). Syntax awareness, also called **a flair for language**, refers to the ability to understand the language syntax. This ability also appears to be crucial for the continuity and efficiency of reading and requires anticipation. Syntactic factors can affect difficulty to read single words, such as function words, prepositions and auxiliary verbs that are difficult to include in the semantic network. We can observe the way reading process is acquired with the beginners. Also we can observe how they process information about the words that are trained through reading, how they combine these words in sentences. This leads us to a thought that the ability to handle the syntax may be an important aspect of learning words.

1.3 Choosing strategies in teaching pupils with dyslexia

Just as each pupil is unique, also teachers are aware of their need to know a wide repertoire of teaching strategies from which to choose and edit and modify the most appropriate ones. Teacher's knowledge of pupils' learning styles can help pupils to use strategies that are based on their strengths and allow them to handle the learning process at the same time. The teacher can observe the way pupils learn and interview them about what suits them best.

It is important for the teacher at primary and secondary schools to choose appropriate intervention and strategies. These strategies should aim to enhance the development of neural functions, help to the retrieval of academic skills and partial

functions. If the intervention is correctly explained, it is better accepted by the pupil with dyslexia. The way to help pupils with plenty of educational content is to organize information, put them into units and into context. For example: a pupil can remember various areas of knowledge by headings such as change, relationship, society. This sort of mental concept can be successful, and the pupil can recall a lot of information. Drafts also help pupils gather more information, organize and understand them.

1.4 Cognitive strategies for pupils with SLD

Cognitive strategies belong to the strategies that pupils use deliberately to influence their learning and cognition. Metacognitive strategies are understood to be *“human ability to plan, monitor, evaluate procedures, which he/she uses himself/herself during learning and recognition. It is a conscious activity, which leads the person to knowledge about the way of progressing when discovering the world”* (Průcha, J., Walterová, E., Mareš, J. 2001, p. 122). Cognitive strategies research objectives in individuals with specific learning disabilities (SLD) are to construct and validate strategies that help with learning and introduce them to pupils. Experts highlight the importance of informing pupils and familiarize them with strategies that can be learned. They point out to the link between used strategies and support for learning (Swanson, H. L., Harris, K. R., Graham. S. 2003). The ability to manage planning, monitoring and evaluation of used strategies are a part of managing the strategies. Pupils should acquire these elements because they are important for the subsequent learning. The evaluation of particular strategies is needed especially because we can observe whether it is used by the pupil in education, and especially if he/she can link the learnt strategy with regular learning.

Studies focused on the use of strategies in teaching pupils with SLD in basic education are still developing. Researchers usually focus on the effectiveness of some common elements or strategies such as strengthening and setting the goals, instruction such as: coping with anxiety, self-regulation and self-assessment of learning, accurate or clear instruction in mathematics, the use of mnemonics. Strategies using mnemonics for mastering language skills are considered very effective (Swanson, H. L., Harris, K. R., Graham. S. 2003).

Pupils with dyslexia have difficulty in cognitive and metacognitive learning strategies acquisition; some need concreteness and structure to build up a sufficient repertoire of strategies in order to get most in the acquisition of learning. Learning of the pupil using one of several cognitive and metacognitive strategies cannot in any case change a pupil into a strategic pupil, who consistently and willingly makes efforts to learn. It also documented in some research studies. The minimum condition for making a pupil with SLD experienced and using the strategies is to gradually incorporate

them into the whole curriculum. Success depends mainly on the mass, school-wide use of learning strategies under the great support of teachers (Swanson, H. L., Harris, K. R., Graham, S. 2003; Bartoňová, M., In Bartoňová, M., Vítková, M. 2007).

V. Pokorná (2012, p 111) sees a strategy as a mental activity that can be validated; if we don't find it useful, we can think about other strategies. The strategies help us to handle a particular task faster, safely and with less risk of error. Individuals with specific learning disabilities use different ways for processing information than intact pupils. They often repeat the same strategy that they have adopted earlier; they are not very flexible.

2 The consequences of specific learning disabilities in adulthood – qualitative research

The aim of V. Kacelova's research project (2011) supervised by M. Bartoňová was to determine the effects of specific learning disabilities in individuals in adulthood and focus on the perception of the consequences of specific learning disabilities throughout basic education to adulthood. One of the research questions was the following question: *How much influence do the consequences of specific learning disabilities have in the life of an adult with dyslexia?* A number of categories were identified. Considering the content of our report, we addressed the category whose aim was to find a link between the counselling approach and a method of compensation of specific learning disabilities (learning styles) within education, especially in elementary school. All three informants reported that the consequences of specific learning disabilities were compensated in some way; but the answers were different concerning the perception of compensation. They agreed on using compensatory mechanisms most often in the Czech language lessons. *"I felt stupid that I didn't have to do what the others had to and I did not like it. I felt that it was unfair to the others, I felt different."* Compensation for T. consisted of writing short dictations, which according to him consisted of the reduction of two or three sentences, but he failed anyway. He never had dictations evaluated only in words or by numbering mistakes. Compensation also related to homework. He did not use compensation in high school, but he was glad because he would not feel good about it. He believed that teaching should be equally challenging for everybody. In the case of K., the compensation was perceived as an auxiliary factor, she had more time to check her work. Sometimes, she was writing a filling exercise instead of a dictation. In elementary school, there was also the period when K. was evaluated verbally or by stating the number of mistakes in dictation, but she got a mark for the final certificate. According to her, it was probably the period after the assessment in the counselling centre, when the school received the results of the recommendations from this agency. She wrote homework and entries in the

workbooks in the same way as other classmates. *M.* has the feeling that “*when I was completing a filling exercise, I was evaluated better because of specific learning disabilities.*” He did not perceive the compensation negatively, because he was not the only pupil with specific learning disabilities in the group.

All the informants stated that they need a quiet environment when studying; they cannot listen to the radio or television. All of them also have to read the text aloud and learn it this way. *M.* and *K.* prefer to move while learning. Informants’ answers differed concerning time needed for preparation, therefore the length of concentration and consequently the need for breaks, which depended on the length of learning. The informants reported that they did not have to learn intensively for some subjects. It depended on the subject and the issue discussed. Home preparations were not regular for any of them. They all studied only for written exam announced in advance or when they were to be called to the blackboard. They wrote regularly only homework, and sometimes just a part of the exercise, they finished the rest of it at school. *M.* said that he “*would manage to study much of the curriculum at the same time, maybe he would remember it with difficulties, and he does not want to sacrifice the whole day to it*” *T.* studied alone, his parents studied with him only at the beginning of compulsory education. They dictated dictations and read a book with him. Although he has older sisters, they did not study together with him because he would not respect them. *M.* himself said: “*I cannot think about what I am studying, but what I get into the head, I just repeat it.*”

K. studied with her mother, who kept reading everything aloud to her, she listened to her and then responded to questions on a given topic. Her mother sometimes explained the issue. She also practiced dictations at home. Replies to this topic gave me the impression that *K.* studied only when her mother wanted that, because she answered the question concerning the style of studying in high school as follows: “*I did not care that much there because I was my own manager there.*” She also acknowledged that leaving the style of studying with her mother and swopping to the style of preparing alone for school was very difficult for her. She studied for previously announced written exams and also when she feared unannounced exams and when she was to be tested of the subject at the blackboard. She was studying for hours.

The informants prefer different styles of interpretation and representation for lecturing at school or for trainings. They prefer practical demonstration, which enables them to understand better topic and graphical representations of topic suits them currently best. They use the graphical representation also for better understanding the issue. It is better for them if there are more examples. They need to feel assured that they really understand the issue that is being discussed.

The informants consistently reported that paying attention is related to the topic. If a topic is interesting for them, it is easier to pay attention. They concentrate better on the information useful for them and remember them better. “*I used to study for*

a very long time but the concentration was shorter.” Consequently, the effect of studying was significantly reduced. M. widely uses Facebook and internet but it drives his attention away and he cannot concentrate on studying then. Sometimes, there are days when he can concentrate on studying and it is fast, but sometimes he fails to pay attention and he does not find studying interesting.

The informant with specific learning disabilities reported some difficulties which due to SLDs persisted into adulthood. However, the influence is not so essential to limited them in their job opportunities and satisfying life. All the respondents are relatively satisfied in the current employment or student position and do not think that specific learning disabilities would significantly limit them in the future. We are aware of the fact that the results cannot be generalized to the whole population due to the small number of the informants.

2.1 Educational strategies and approaches planning

When **planning educational strategies and approaches**, the teacher uses knowledge of the pupil's developmental specifics together with the respect for his/her individuality. During instruction, teacher uses strategies and programmes that enable pupils to better develop their potential (cf. Krejčová, L. Mertin, V. 2012). When planning educational strategies, he/she reflects on what the pupils have to learn, on the way of the evaluation of the pupil's success, on the acquired pupil's knowledge, and on what he/she is able to manage. What to do to keep the pupil's attention and emotionally involve them, in what way the pupils will acquire new information and skills? How to get feedback on progress of teaching?

Example: Educational strategies planning

When planning, teachers can ask the following questions: What do I want students to learn or to be able to do as a result of this learning experience? How do I evaluate their success? What knowledge do the pupils already have and what they are able to manage? How do I attract and keep their attention? How can I attract the pupils emotionally? What strategy do I choose for acquiring new information and skills? In what way will the pupils acquire and practice curriculum to remember it? In what way will they receive feedback during learning and after learning?

Strategy for attracting attention: If the teachers want to attract their pupils' attention, they need to have a strategy to do so. The activity will focus on: Helping the pupils to focus and keep their attention, to eliminate distractions, to concentrate, to foster independent learning, and to use the “prime time” (i. e. at the time of the pupil's highest concentration). Directing the class activities at the beginning of teaching helps pupils to eliminate distractions, helps concentrate to prior knowledge and leads to paying attention.

2.2 Strategies for secondary school pupils

In the eighties, the Kansas institute focused on teaching and learning strategies for adolescents with learning disabilities. They were guided by the conceptual framework Learning to Learn. It focuses on teaching pupils and students to learn. The team developed and tested a variety of educational strategies that resulted in the Learning Strategies Curriculum. It contains three basic elements: Acquisition, retention and expression of written information (Schumaker 1992 In Swanson, H. L., Harris, K. R., Graham. S. 2003). These elements correspond with tasks which adolescents with learning disabilities in high schools are “struggling” with. The main problem we observe in the following points: The use of technologies – thinking aloud – the instructors model the cognitive strategies for adolescents with learning disabilities. The adolescents are instructed to repeat the individual steps of the strategy verbally until they master them in order to automatize it. The adolescent with SLD is practicing the strategy with control materials (age-appropriate reading). If the pupil masters the strategy, he/she can apply it to a content of the educational field (curriculum) of the relevant school year, and also to increase own learning management. Other important strategies investigated by the research team were cognitive strategies focused on reading comprehension, writing paragraphs and sentences, checking mistakes in written text or writing essays about one’s opinion (Swanson, H. L., Harris, K. R., Graham. S. 2003).

3 Conclusion

Learning strategies are pedagogically very important because it is possible to influence their use better than in case of the cognitive style. Metacognitive strategies include pupils’ skills to analyse their own presumptions for successful learning. The main study skills for pupils with dyslexia are organization, reading strategies, presentation skills. Teacher focuses on mastering the skills of organization and orderliness in learning habits of pupils. Adopting learning patterns cannot completely eliminate problems of pupils with dyslexia, but their frequent usage improves access to information and ideas as well as it enables them to express themselves clearly. However, if pupils with dyslexia are encouraged to acquire skills, they must be responsible for their development and use themselves.

Preparing lessons depends on teacher’s ability to recognize pupils’ specificities, their difficulties. He/she has to know how they manifest in the pupils’ studies. The pupils obtain much of the information by observation, work samples and different types of evaluation. Teamwork is also important, it allows getting and gathering more detailed information about pupils, it can help evaluate approaches and create effective teaching. Teachers should become the “*observers*” of their pupils.

Previous individual summaries clearly point out to active research on cognitive strategies for pupils with learning disabilities, primarily in the area of creating and laying the cornerstones in this field. In the future, we can expect further research on the issue extended also into math and social studies. In addition, we expect research in at least two other areas. Firstly, we emphasize the development towards the use of structure and planning in particular. Consequently, the approach moves from the cognitive sphere to the metacognitive sphere. The teacher leads pupils to introspection, to completion and a self-assessment of their own learning. To help the pupil develop appropriate strategies, teachers use more flexibility and can use their pedagogical and strategic knowledge and experience. This approach also provides pupil with optimum development opportunities in their own self-managed learning. The effectiveness of this approach depends on the pupil's own efforts to expand the repertoire of strategies. Pupils with learning disabilities tend to have problems in cognitive and metacognitive strategies in learning; some of them need more specific and structured strategies to build a sufficient repertoire of strategies so that they can get the most of them.

Second, the lingering issue of research on cognitive strategies focuses on helping pupils with learning disabilities become strategic learners. We are well aware of the fact that the pupil cannot possibly change into a strategic learner who is consistently and willingly making efforts to learn by acquiring one of several cognitive and metacognitive strategies. The educators agree that success depends primarily on a mass, school-wide use of learning strategies with great headmaster's support and teachers' teamwork. The adoption of learning strategies and approaches used in the reading process cannot completely eliminate the problems of students with dyslexia, but their frequent usage can improve access to information and ideas as well as enable pupils to clearly express their ideas.

4 Literature

- [1] BARTOŇOVÁ, M. *Specifické poruchy učení*. Texty k distančnímu vzdělávání. Brno: Paido. ISBN 978-80-7315-232-1.
- [2] BARTOŇOVÁ, M. Některé aspekty inkluzivního vzdělávání v podmínkách primárního školství. Aspects of Inclusive Education in Primary School Setting. In BARTOŇOVÁ, M., VÍTKOVÁ, M. et al. *Inkluzivní vzdělávání v podmínkách současné české školy. Inclusive Education in Current Czech School*. Brno: MU, 2010. 1. vydání. od s. 243–251, 9 s. ISBN 978-80-210-5383-0.
- [3] BARTOŇOVÁ, M. *Kapitoly ze specifických poruch učení I. Vymezení současné problematiky*. 2. vyd. Brno: Masarykova univerzita, 2010. ISBN 978-80-210-5299-4.
- [4] BARTOŇOVÁ, M., VÍTKOVÁ, M. *Strategie ve vzdělávání žáků se speciálními vzdělávacími potřebami a specifické poruchy učení*. Texty k distančnímu vzdělávání. 2. přepracované a rozšířené vydání. Brno: Paido 2007, s. 159. ISBN 978-80-7315-140-9.
- [5] FLETCHER, J. M., REID LYON G., FUCHS, L. S. *Learning Disabilities: From Identification to Intervention*. New York: Guilford Press, 2006. 336 p. ISBN 9781593856274.

- [6] HÄFELE, H., HÄFELE, H. *Bessere Schulerfolge für legasthene und lernschwache Schülerinnen durch Förderung der Sprachfertigkeit*. Norderstedt: Books on Demand, 2009. 328 s. ISBN 978-3-8370-9019-2.
- [7] KACELOVÁ, V. *Vymezení problematiky specifických poruch učení v dospělosti*. Diplomová práce. Brno: MU. 2012
- [8] KLICPERA, Ch., SCHABMAN, A., GASTEIGER-KLICPERA, B. *Legasthenie: Modelle, Diagnose, Therapie und Förderung*. 3., aktualisierte Aufl. München: Reinhardt, 2010, 326 s. ISBN 978-3-8252-2472-1.
- [9] KREJČOVÁ, L., MERTIN, V. *Metody a postupy poznávání žáka*. Praha: Wolters Kluwer, 2012. ISBN 978-80-7357-679-0.
- [10] LICHTSTEINER, MÜLLER, M. (Hrsg.) *Dyslexie, Dykalkulie. Chancengleichheit in Berufsbildung, Mittelschule und Hochschule*. Bern: HEP Verlag, 2011, 162 s. ISBN 978-3-03905-713-9.
- [11] MATHER, N. WENDLING, B. J. *Essentials of Dyslexia Assessment and Intervention*. Willey, 2011. 396 p. ISBN 9781118152645.
- [12] MIKULAJOVÁ, M. a kol. *Čítanie, písanie a dyslexia s testami a normami*. Bratislava: MABAG spol. s. r. o. 2012. ISBN 978-80-89113-94-1.
- [13] PRŮCHA, J., WALTEROVÁ, E., MAREŠ, J. *Pedagogický slovník*. Praha: Portál, 2001. ISBN 978-80-7367-647-6.
- [14] SWANSON, H. L., HARRIS, K. R., GRAHAM, S. *Handbook of learning disabilities*. New York: Guilford Press, c 2003, xvii, 587 p. ISBN 15-723-0851-6.

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