

Bulletin of Taras Shevchenko National University of Kyiv.
Series "Psychology". № 2(16), pp. 10-13 (2022)
UDC 373.31[37.042.2:372.4+316.614.032]
DOI: [https://doi.org/10.17721/BSP.2022.2\(16\).2](https://doi.org/10.17721/BSP.2022.2(16).2)

ISSN 1728-3817
© Taras Shevchenko National University of Kyiv,
Publishing and Polygraphic Center "Kyiv University", 2022

Li Dandan, PhD Student
ORCID: 0000-0002-6816-6096
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine

Ding Shaojie, PhD (Psychology), Associate Prof.
ORCID: 0000-0001-5246-8797
Karazin Kharkiv National University, Kharkiv, Ukraine

DYSLEXIC DISORDERS IN STUDENTS OF A YOUNG SCHOOL: PECULIARITIES OF EDUCATION AND SOCIALIZATION

Dyslexia is a diagnosis that is increasingly becoming a reality for students and teachers of junior high school. In the biggest part, this diagnosis becomes a surprise to both the teacher, parents, and the student because of is established in the first-second grade due to the discovery of difficulties that arise during the mastering of writing and reading. Primary school is a new step of growing up. This exciting period is often characterized by natural stress due to the lack of direct support from parents, increasing independent responsibility, competition for the teacher's attention, and the coexistence of a large number of individuals in the team. And the difficulties arising from mastering perceiving written symbols can significantly complicate the process of socialization of the child. It creates additional barriers for the student during the formation of basic educational skills. This substantially increases anxiety and lowers the child's self-esteem, building internal barriers and fears. The article presents the analysis of dyslexic disorder, presents its classification, and describes the probable causes of its occurrence. The authors present and characterize dyslexia's impact on learning and socialization processes at the example of young school students. Overcoming the difficulties of mastering graphic symbols is a long and unstable process. But the authors emphasize that dyslexia is a feature, not a sentence. Children with dyslexic disorders need understanding, help from adults, and developed modern approaches to the presentation of information, increasing the level of concentration and further mastering cognitive skills. This ensures harmonious development and learning of the student and removes barriers in communication with peers, ensuring successful socialization of the child.

Keywords: primary school, dyslexic disorders, education, cognitive skills, socialization.

Introduction. Education today is becoming the main opportunity for self-realization in the modern world, which is dynamically changing and transforming. Primary school is not only the acquisition of basic academic skills, but also the beginning of independent social communication. Each new stage is a stressful situation that the child overcomes, in his own way, in accordance with his psychotype, level of independence and sociability. But this process can be, often unexpectedly, complicated by difficulties in mastering reading and writing, which is the basis for further academic success.

The purpose of our study was to study the problems faced by primary school students suffering from dyslexic disorders in the process of learning and socialization.

Literature Review. Dyslexia is defined by the scientific community as a specific disorder affecting a person's ability to master the reading skill, which significantly affects a person's ability to learn [1, 6]. The term "dyslexia" has entered our everyday life quite recently. In 1887, it was introduced by the German physician (ophthalmologist) Rudolf Berlin, who studied the causes of difficulties in reading in children with normal vision. His theory was further developed by Pringle Morgan in his work "Congenital word blindness", which is considered the first printed work devoted to the problem of dyslexia [2]. In it, he describes a patient who was found to be unable to perceive and interpret written signs (the alphabet), although the patient showed the ability to reproduce music, that is, his problem was precisely the perception of printed characters [8].

Modern reality is characterized by dynamic changes, challenges, and the need to constantly learn and develop. And the skill of reading at the same time it remains important, one might say, key to achieving academic success and full-fledged social activity [2]. Gough & Tunmer [5] define reading as a product of decoding what is written and understanding what is read (1).

Reading = decoding × (listening) comprehension (1)

Today, the following international classifications of dyslexia are most commonly used: DSM-5, developed by the American Psychiatric Association, and ICD-11. Both systems have quite similar and clear criteria for assessing pathology, which leads to the development of difficulties in the learning process, academic performance and, importantly, especially for primary school students, socialization [6].

Practical teachers most often distinguish 3 types of dyslexia in young children in accordance with the forms of its manifestation:

1. Visual – predominant violation of visual perception and visual memory;
2. Auditory – violation of auditory (auditory) perception and auditory memory (often associated with cognitive disorders);
3. Integration is the most difficult type to diagnose. In children in isolation (calmness), the functions of perception and reproduction of information may correspond to the norm by age, but when various stimuli (stimuli) come from outside, these abilities are disrupted [1].

It should be noted that the form of dyslexic disorder depends on the form of violation of the interaction of neurological circuits in the human brain (and in particular the child). This in one way or another provokes difficulties in the perception and reproduction of written information [11]. At the same time, difficulties with reading can have not only a negative impact on personal development, but also affect the progression of society as a whole [2, 5] therefore, diagnosis, therapy, and most importantly, acceptance of the problem and assistance to schoolchildren in overcoming it is an important condition for the harmonious development of society.

Methodology. In the course of the analysis, we processed literature sources from the main scientometric databases (Scopus, Web of Science, Web of Knowledge, PubMed, Google Scholar Index, CrossRef, Index

© Dandan Li, Shaojie Ding, 2022

Copernicus) to determine the main difficulties encountered by primary school students suffering from dyslexia in the process of learning and socialization.

We excluded from the analysis advertising messages, abstracts, informational letters without attribution and sources on which the conclusions were based.

Results and Discussions

Problem designation. Most authors agree that dyslexia is a condition associated with difficulties in deciphering and perceiving what is written [2, 6, 12]. It is characteristic of 5–17 % of the population, regardless of culture or language affiliation [13].

Dyslexia is not defined as a specific medical syndrome. This means that those suffering from this disorder do not have a specific profile of abilities [4]. This thesis is also confirmed by the first printed work on dyslexia: the patient was able to reproduce music, although he had never done it before. At the same time, he completely did not perceive letter entries [8]. Such features of individuals with dyslexic syndrome complicate the determination of the diagnosis and its threshold points [2, 15].

In 2009, member of the British Parliament Graham Stringer identified the problem of dyslexia as extremely acute for children who carry it into their adult life, affecting the success and stressfulness of the population; as a problem requiring early recognition, diagnosis and correction [4].

The diagnosis of dyslexia is most often established for a child in the first 2 years of primary school (the beginning of education), which is most often associated with difficulties in mastering writing and reading. The problem on the letter may be related to consonant letters (auditory immunity) and letters that have a similar or mirror spelling. As an option, it is possible to persistently mirror the spelling of certain letters by a child (phonological confusion). It should be noted that the problems of writing, closely related to the reading skill, can manifest themselves not just by a violation of the writing mechanism, but with a large number of spelling errors, permutation, omission or "not hearing" the doubling of letters in a word (dysgraphia) [2, 6, 13].

The problem with reading for the native language (familiar to the child) is a violation of the fluency of reading, whereas for foreign languages it is, first of all, a violation (distortion) of pronunciation, replacement of sounds (phonemic errors). Some children may have a problem of short-term memory, as well as disorders of the narration of the read (heard) text, perception and reproduction of counting tables (dyscalculia) [6].

Causes and mechanisms of dyslexia in primary school students. Dyslexia disrupts the relationship between the behavioral, cognitive and biological areas of the brain. At the same time, phonological, visual and auditory functions may suffer [13]. At the same time, Nicolson and Fawcett note the importance of motor centers (in particular the cerebellum) in the development of dyslexia. They note that 80% of children with dyslexia have impaired assessment of time, space, coordination of movements and muscle tone, as well as balance [9]. Pernet et al. confirms the importance of the cerebellum in the development of dyslexia and calls the function of the cerebellum a marker of the development of dyslexia: "the cerebellum is the best biomarker of developmental dyslexia" [10]. It is not uncommon to have a combined

diagnosis of hyperactivity as a primary neurological diagnosis and dyslexia later [6].

Thus, in nonverbal dyslexia, the visual-attentive mechanism is used to diagnose a violation of the functioning of the temporoparietal interconnected zones. It is important that the function of speech is not impaired (the frontotemporal circuits of the left hemisphere function adequately). This mechanism of interaction provokes sluggish, uncertain, slow reading, rearrangement of letters and is associated with high cognitive fatigue. This form of dyslexia can be regarded by a number of teachers as inattention (lack of attention) of parents (guardians) to the child's education. It should be noted that a number of teachers are poorly familiar with the problem of dyslexia, since it was often not included in their training course. At the same time, experts define this form of cognitive impairment as "surface pattern dyslexia". It is important that such a violation creates difficulties not only in the perception of information by the student, but also in the conduct of training by the teacher [2, 6, 11, 15].

Speech disorders (in particular phonological ones) are (although not absolute) indicators for examining a child for dyslexia, since they can have an impact on the process of reading and writing. Although it is worth noting that even serious disorders and delayed oral speech do not directly indicate the development of dyslexic disorder, since the brain centers responsible for the development of speech are different from those that suffer from dyslexia [6].

Indirect outcomes of dyslexic disorders. Dyslexia, as a violation of the ability to read, is associated with impaired phoneme perception and attention focusing, which is a feature of children with dyslexic disorders [15]. At the same time, the task of the teacher is to train and educate students at all stages of education [1]. Positive for children with dyslexia is child-centrism (orientation to the needs of the student), despite the different level of preparation for school, readiness for the perception of new knowledge, different pace of work, speed of memorization, observation, ability to concentrate attention [14]. In at the same time, the demand for general results from children, comparing them with classmates or peers increases the anxiety of schoolchildren, in severe cases provoking the development of depressive states. A study conducted by Moroccan experts shows that schoolchildren with dyslexic disorders have a higher level of anxiety compared to those of the same age without such disorders. At the same time, the level of anxiety correlates with the level of self-esteem, which, in turn, is relevant both for dyslexics and for children without impaired perception of written text [7].

The main aspiration of a person is self-expression and self-realization. Psychologically, this is facilitated by the exclusion of strict requirements, the selection of forms and methods of training, the creation of a trusting atmosphere of acceptance, cooperation, mutual respect. This promotes self-affirmation, builds students' confidence in their own capabilities, teaches them to find ways to achieve their goals [14]. Also, the developed systems for working with children suffering from dyslexic disorders show an improvement in reading skills when performing programs aimed at restoring the volume of visual attention. Also, exercises aimed at phonemic discrimination and reading pseudonyms [15], solving logical and phonemic puzzles, using graphic organizers for self-organization have a positive effect on both the reading process and the writing process [3]. Such techniques not only improve the

academic performance of students, but also, having a positive effect, raise the student's self-esteem, instilling faith in their own capabilities, which undoubtedly has a positive effect on the subsequent stages of socialization (communication with peers) and self-realization [3, 7, 15].

It should be noted that dyslexia directly depends on the mental health of the child, therefore, low traumatization and moderate pressure on the child during training reduces the manifestations of dyslexic disorder [7]. Also, the severity, development and correction of dyslexia symptoms depends on the initial complexity of the pathology, the child's resources, both general intellectual, and the ability to cope with stress and emotions. In addition, the start time of parents (various specialists) with dyslexia is excessively important. But even the normal reproduction of the tasks assigned to the student does not mean the normal course of neurological processes, but only a high intellectual level of a person suffering from dyslexic disorder [3, 4, 6].

Conclusions. Dyslexia is a complex neuromotivated pathology of perception and reproduction of graphic text. It is diagnosed, most often, in primary school students due to the development of problems with reading and writing, which significantly affects the educational process, as well as negatively affects self-esteem, leads to an increase in anxiety, which can develop into a depressive state.

Dyslexia is a feature of a child, but not a sentence. An individual approach, acceptance and appropriate assistance, combined with additional development of visual focusing abilities, training of phonetic skills and assistance in organizing training, are able to overcome the difficulties encountered in the learning process and ensure high academic results.

References

1. Prosina, O. V., & Budagyan, A. S. (2022). Current aspects of professional activity of a teacher: dyslexia as a reality of a modern school. *Innovatsiyna pedagogika*, 44 (2), 92-97. <https://doi.org/10.32843/2663-6085/2022/44/2.19> [In Ukrainian].
2. Andresen, A., & Monsrud, M. B. (2021). Assessment of Dyslexia—Why, When, and with What?. *Scandinavian Journal of Educational Research*, 1-13. <https://doi.org/10.1080/00313831.2021.1958373>
3. Anulao L. A., & Cruz, S. E. D. (2022). A Case Study of Learners with Dyslexia in an Elementary School in the Philippines. *International Journal of Recent Advances in Multidisciplinary Topics*, 3(2), 106-116. URL: <https://www.ijramt.com>
4. Elliott, J. G., & Grigorenko, E. L. (2014). *The dyslexia debate* (No. 14). NY: Cambridge University Press (USA). 259 p.
5. Gough, P. B., & Tunmer, W. E. (1986). Decoding, reading, and reading disability. *Remedial and Special Education*, 7(1), 6-10. <https://doi.org/10.1177/074193258600700104>
6. Habib, M. (2021). The neurological basis of developmental dyslexia and related disorders: A reappraisal of the temporal hypothesis, twenty years on. *Brain sciences*, 11(6), 708 <https://doi.org/10.3390/brainsci11060708>
7. Ihbou, S., Anarghou, H., Boulhana, A., Najimi, M., & Chigr, F. (2021). Mental health among students with neurodevelopment disorders: case of dyslexic children and adolescents. *Dementia & Neuropsychologia*, 15, 533-540. <https://doi.org/10.1590/1980-57642021dn15-040014>
8. Morgan, W. P. (1896). Congenital word blindness. *British Medical Journal*, 2(1896), 1612. PMCID: PMC2510867
9. Nicolson, R. I., & Fawcett, A. J. (1999). Developmental dyslexia: the role of the cerebellum 1. *Dyslexia*, 5(3), 155-177. [https://doi.org/10.1002/\(SICI\)1099-0909\(199909\)5:3<155::AID-DYS143>3.0.CO;2-4](https://doi.org/10.1002/(SICI)1099-0909(199909)5:3<155::AID-DYS143>3.0.CO;2-4)
10. Pernet, C. R., Poline, J. B., Demonet, J. F., & Rousselet, G. A. (2009). Brain classification reveals the right cerebellum as the best biomarker of dyslexia. *Brain sciences*, 10(1), 1-19. <https://doi.org/10.1186/1471-2202-10-67>
11. Peyrin, C., Lallier, M., Démonet, J. F., Pernet, C., Baciu, M., Le Bas, J. F., & Valdois, S. (2012). Neural dissociation of phonological and visual attention span disorders in developmental dyslexia: FMRI evidence from two case reports. *Brain Lang*, 120, 381-394 <https://doi.org/10.1016/j.bandl.2011.12.015>
12. Snowling, M. J., & Hulme, C. (2012). Annual Research Review: The nature and classification of reading disorders—a commentary on proposals for DSM-5. *Journal of child psychology and psychiatry*, 53(5), 593-607. <https://doi.org/10.1111/j.1469-7610.2011.02495.x>
13. Usman, O. L., Muniyandi, R. C., Omar, K., & Mohamad, M. (2021). Advance machine learning methods for Dyslexia biomarker detection: a review of implementation details and challenges. *IEEE Access*, 9, 36879-36897. <https://doi.org/10.1109/ACCESS.2021.3062709>
14. Yashchuk, O. M., Yashchuk, S. M., Kobernyk, H. I., Kotlovyy, S. A., & Biletska, I. O. (2020). Examining the Formation of Integrative Readiness of Pre-Service Teachers to Work in Inclusive Classrooms in Ukraine. *International Journal of Higher Education*, 9(5), 208-222. <https://doi.org/10.5430/ijhe.v9n5p208>
15. Zoubrinetzky, R., Collet, G., Nguyen-Morel, M. A., Valdois, S., & Serniclaes, W. (2019). Remediation of Allophonic Perception and Visual Attention Span in Developmental Dyslexia: A Joint Assay. *Front Psychol*, 10, 1502. <https://doi.org/10.3389/fpsyg.2019.01502>

Список використаних джерел

1. Просіна О. В., Будагян А. С. Актуальні аспекти професійної діяльності педагога: дислексія як реалія сучасної школи. *Інноваційна педагогіка*. 2022. Т. 2. № 44. С. 92-97. DOI: <https://doi.org/10.32843/2663-6085/2022/44/2.19>
2. Andresen A., Monsrud M. B. Assessment of Dyslexia – Why, When, and with What?. *Scandinavian Journal of Educational Research*. 2021. P. 1-13. DOI: <https://doi.org/10.1080/00313831.2021.1958373>
3. Anulao L. A., Cruz S. E. D. A Case Study of Learners with Dyslexia in an Elementary School in the Philippines. *International Journal of Recent Advances in Multidisciplinary Topics*. 2022. Vol. 3, no. 2. P. 106–116. URL: <https://www.ijramt.com>
4. Elliott J. G., Grigorenko E. L. The dyslexia debate: No. 14. N. Y.: Cambridge University Press (USA). 2014. 259 p.
5. Gough P. B., Tunmer W. E. Decoding, reading, and reading disability. *Remedial and Special Education*. 1986. Vol. 7, no. 1. P. 6–10. DOI: <https://doi.org/10.1177/074193258600700104>
6. Habib M. The neurological basis of developmental dyslexia and related disorders: A reappraisal of the temporal hypothesis, twenty years on. *Brain sciences*. 2021. Vol. 11, no. 6. P. 708. DOI: <https://doi.org/10.3390/brainsci11060708>
7. Ihbou S., Anarghou H., Boulhana A., Najimi M., Chigr F. Mental health among students with neurodevelopment disorders: case of dyslexic children and adolescents. *Dementia & Neuropsychologia*. 2021. Vol. 15. P. 533–540. DOI: <https://doi.org/10.1590/1980-57642021dn15-040014>
8. Morgan W. P. Congenital word blindness. *British Medical Journal*. 1896. Vol. 2, no. 1874. P. 1612. PMCID: PMC2510867
9. Nicolson R. I., Fawcett A. J. Developmental dyslexia: the role of the cerebellum 1. *Dyslexia*. 1999. Vol. 5, no. 3. P. 155–177. DOI: [https://doi.org/10.1002/\(SICI\)1099-0909\(199909\)5:3<155::AID-DYS143>3.0.CO;2-4](https://doi.org/10.1002/(SICI)1099-0909(199909)5:3<155::AID-DYS143>3.0.CO;2-4)
10. Pernet C. R., Poline J. B., Demonet J. F., Rousselet G. A. Brain classification reveals the right cerebellum as the best biomarker of dyslexia. *BMC neuroscience*. 2009. Vol. 10, no. 1. P. 1–19. DOI: <https://doi.org/10.1186/1471-2202-10-67>
11. Peyrin C., Lallier M., Démonet J. F., Pernet C., Baciu M., Le Bas J. F., Valdois S. Neural dissociation of phonological and visual attention span disorders in developmental dyslexia: FMRI evidence from two case reports. *Brain Lang*. 2012. Vol. 120. P. 381–394 DOI: <https://doi.org/10.1016/j.bandl.2011.12.015>
12. Snowling M. J., Hulme C. Annual Research Review: The nature and classification of reading disorders—a commentary on proposals for DSM-5. *Journal of child psychology and psychiatry*. 2012. Vol. 53, no. 5. P. 593–607. DOI: <https://doi.org/10.1111/j.1469-7610.2011.02495.x>
13. Usman O. L., Muniyandi R. C., Omar K., Mohamad M. Advance machine learning methods for Dyslexia biomarker detection: a review of implementation details and challenges. *IEEE Access*. 2021. Vol. 9. P. 36879–36897. DOI: <https://doi.org/10.1109/ACCESS.2021.3062709>
14. Yashchuk O. M., Yashchuk S. M., Kobernyk H. I., Kotlovyy S. A., Biletska I. O. Examining the Formation of Integrative Readiness of Pre-Service Teachers to Work in Inclusive Classrooms in Ukraine. *International Journal of Higher Education*. 2020. Vol. 9, no. 5. P. 208–222. DOI: <https://doi.org/10.5430/ijhe.v9n5p208>
15. Zoubrinetzky R., Collet G., Nguyen-Morel M. A., Valdois S., Serniclaes W. Remediation of Allophonic Perception and Visual Attention Span in Developmental Dyslexia: A Joint Assay. *Front Psychol*. 2019. Vol. 10. P. 1502. DOI: <https://doi.org/10.3389/fpsyg.2019.01502>

Надійшла до редколегії 14.09.22
Рекомендована до друку 21.11.22

Лі Дандан, асп.
ORCID: 0000-0002-6816-6096
Національний технічний університет "Харківський політехнічний інститут", Харків, Україна

Дін Шаоцзе, канд. психол. наук, доц.
ORCID: 0000-0001-5246-8797
Харківський національний університет імені В. Н. Каразіна, Харків, Україна

ДИСЛЕКТИЧНІ РОЗЛАДИ У ШКОЛЯРІВ ПОЧАТКОВОЇ ШКОЛИ: ОСОБЛИВОСТІ НАВЧАННЯ ТА СОЦІАЛІЗАЦІЇ

Дислексія дедалі частіше стає реальністю для учнів і педагогів молодшої школи. У переважній більшості випадків наявність дислексичного розладу стає несподіванкою як для вчителя, батьків, так і самого школяра, адже найчастіше це встановлюють у 1-2 класі внаслідок виявлення складнощів, що виникають у процесі опанування письмового мовлення. Хоча слід зауважити, що, залежно від типу розладу, його ознаки можуть бути виявлені на більш ранніх етапах онтогенезу. Початкова школа (початок шкільного життя) – це новий крок дорослішання, бентежний період, який часто характеризується закономірною стресовоюстю через відсутність безпосередньої підтримки батьків, підвищення самостійності, відповідальності, конкуренції за увагу вчителя, співіснування великої кількості індивідуальностей у колективі. У цій ситуації складнощі, що виникають з опануванням базових когнітивних навичок (читання, письмо і загалом – сприйняття письмових символів, як буквених, так і числових), може значно ускладнити процес соціалізації дитини, а також створити додаткові бар'єри перед учнем під час формування базових освітніх навичок. Це значно підвищує тривожність і знижує самооцінку дитини, вибудовує внутрішні бар'єри та страхи.

У статті проведено літературний пошук й аналіз наявних сучасних наукових досліджень у напрямі вивчення та подолання дислексичного розладу. Також подано аналіз дислексичного розладу, представлено його класифікацію, описано ймовірні причини виникнення й охарактеризовано його вплив на процеси навчання та соціалізації на прикладі учнів молодшої школи. Подолання складнощів опанування графічними символами є тривалим і нестабільним процесом, що інколи призводить до зневіри в досягненні успіху, але слід підкреслити, що, незважаючи на певні особливості й ускладнення, дислексія не є вироком. Діти з дислексичними розладами потребують розуміння, допомоги дорослих (як батьків, так і педагогів) і розроблених сучасних підходів до презентації інформації, підвищення рівня концентрації уваги та подальшого опанування когнітивних навичок. Це забезпечує гармонійний розвиток і навчання учня, що, з іншого боку, усуває бар'єри у спілкуванні з однолітками та забезпечує успішну соціалізацію дитини.

Ключові слова: початкова школа, дислексичний розлад, навчання, когнітивні навички, соціалізація.