





Socio-pedagogical aspects of inclusive education of children in schools

Aspectos sociopedagógicos da educação inclusiva de crianças nas escolas

Aspectos sociopedagógicos de la educación inclusiva de los niños en las escuelas

Larysa Kozibroda¹ , Iryna Turchyk² , Natalia Mukan¹ ,
Iryna Sadova² , Svitlana Stepanyuk³ 

¹ Lviv Polytechnic National University, Lviv, Ukraine.

² Drohobych Ivan Franko State Pedagogical University, Drohobych, Ukraine.

³ Kherson State University, Kherson, Ukraine.

Corresponding author:

Larysa Kozibroda

Email: komisarenko.an@gmail.com

How to cite: Kozibroda, L., Turchyk, I., Mukan, N., Sadova, I., & Stepanyuk, S. (2022). Socio-pedagogical aspects of inclusive education of children in schools. *Revista Tempos e Espaços em Educação*, 15(34), e17175.

<http://dx.doi.org/10.20952/revtee.v15i34.17175>

ABSTRACT

The article aims at comparison the impact of traditional and inclusive educational processes on the quality of life of children with ASD. All countries observe a tendency to increase the number of children with special educational needs. A special category is children with autism spectrum disorders (ASD). Such children are characterized by a pronounced lack of social interaction and ability to communicate. Therefore, it is important to investigate whether the processes of adaptation of such children in the conditions of inclusion and traditional education in special institutions will be equally effective. Such research remains relevant due to the lack of clear recommendations on how to organize the learning process and content saturation of individual training programs, as well as physical education tools that are effective in treatment and correction to improve the quality of life of program participants. As a result, all the features of the pedagogical process and socio-pedagogical support of children with special needs in schools were studied.

Keywords: Autism. Emotional functioning. Pedagogy. Social functioning. Special educational needs.

RESUMO

O artigo visa comparar o impacto dos processos educativos tradicionais e inclusivos na qualidade de vida de crianças com TEA. Todos os países observam uma tendência de aumento do número de crianças com necessidades educativas especiais. Uma categoria especial são as crianças com

transtornos do espectro do autismo (TEA). Essas crianças são caracterizadas por uma pronunciada falta de interação social e capacidade de comunicação. Portanto, é importante investigar se os processos de adaptação dessas crianças nas condições de inclusão e educação tradicional em instituições especiais serão igualmente eficazes. Tal pesquisa permanece relevante devido à falta de recomendações claras sobre como organizar o processo de aprendizagem e saturação de conteúdo dos programas de treinamento individual, bem como ferramentas de educação física que sejam eficazes no tratamento e correção para melhorar a qualidade de vida dos participantes do programa. Como resultado, foram estudadas todas as características do processo pedagógico e do apoio sociopedagógico de crianças com necessidades especiais nas escolas.

Palavras-chave: Autismo. Funcionamento emocional. Funcionamento social. Necessidades educacionais especiais. Pedagogia.

RESUMEN

El artículo tiene como objetivo comparar el impacto de los procesos educativos tradicionales e inclusivos en la calidad de vida de los niños con TEA. Todos los países observan una tendencia a aumentar el número de niños con necesidades educativas especiales. Una categoría especial son los niños con trastornos del espectro autista (TEA). Tales niños se caracterizan por una pronunciada falta de interacción social y capacidad de comunicación. Por lo tanto, es importante investigar si los procesos de adaptación de tales niños en las condiciones de inclusión y educación tradicional en instituciones especiales serán igualmente efectivos. Tal investigación sigue siendo relevante debido a la falta de recomendaciones claras sobre cómo organizar el proceso de aprendizaje y la saturación de contenido de los programas de entrenamiento individuales, así como herramientas de educación física que sean efectivas en el tratamiento y corrección para mejorar la calidad de vida de los participantes del programa. Como resultado, se estudiaron todas las características del proceso pedagógico y el apoyo sociopedagógico de los niños con necesidades especiales en las escuelas.

Palabras clave: Autismo. Funcionamiento emocional. Funcionamiento social. Necessidades educativas especiales. Pedagogía.

INTRODUCTION

The main idea of inclusive education is the full inclusion of children with special educational needs in school life through the creation of an optimal school environment for all students - with normative development and with special educational needs. This involves providing children with special educational needs with special assistance and support in the classroom or, if necessary, learning outside the classroom (Ament et al, 2015).

From the point of view of the theory and practice of inclusion, the problem of teaching in an inclusive classroom should be solved by introducing a curriculum for children with special educational needs, by carefully and systematically defining educational goals. In the early eighties of the last century, the introduction of an inclusive model of education, taking into account the peculiarities of the educational needs and behavior of students with special educational needs, prompted teachers to turn to the differentiation of the curriculum. Within the framework of differentiation, modification is considered - this is the introduction of changes in the content and conceptual complexity of the subject, as well as adaptation - changes that do not imply significant deviations from the content and conceptual complexity of the subject (Uzair-ul-Hassan, Hussain, Parveen, De Souza, 2015).

Scientists and teachers come to the conclusion that the curriculum, including the standardized one, must meet the educational needs of all students with normative development and special educational needs. According to foreign sources, in the educational process in no country there is an impeccable curriculum that takes into account the capabilities and needs of all children studying in the same class, and which the teacher could use without changes. Therefore,

teachers, on the basis of an officially approved curriculum, develop learning tasks that are accessible to students of the entire class.

Educators who use formal curriculum in this way are said to be using universal instructional design. In inclusion, the idea of universal learning design is quite productive, since such an approach to organizing learning allows you to meet the educational needs of each student. However, as practice shows, the use of universal design depends on how detailed and regulated the learning tasks are and how much they can be interpreted for teaching students with special educational needs.

In pedagogy, the concept of universal design is based on the concept of accessibility of the curriculum without its prior adaptation or modification. In the global educational space, the discussion of this concept for the organization of learning lasted more than 25 years, and finally the main principles of the universal design of learning were defined (Zwane, Malale, 2018).

All countries around the world observe a general trend towards an increase in the number of children with special educational needs (SEN). In recent years, more and more children with SEN have been entering the educational space of general secondary education institutions. The doors of ordinary schools are opened for such children due to inclusion. The direction to create decent learning conditions for children with SEN is a step towards the implementation of European principles and living standards (Movahedi, Bahrami, Marandi, Abedi, 2013).

A separate category is children with autism spectrum disorders (ASD). They are characterized by a pronounced lack of social interaction, the ability to communicate and learn about the environment, loss of interest in reality. Disorders in social communication, sensory and behavioral areas lead to a relatively lower level of motor activity of such children than in children with typical development. Reduced physical activity for a child with autism provokes the development of a wide range of diseases. Experts note in children with ASD disorders of physical development, disharmonious development of physical qualities. Therefore, many teachers have difficulty teaching children with autism in an inclusive classroom. And some teachers believe that it is impossible to teach students with autism with students without disabilities, especially in physical education classes.

The results of research show that exercise programs lead to the improvement of a number of behavioral reactions, improve the social and emotional functioning of the child, improve the processes of cognition and attention. The positive influence of physical activity on the components of the quality of life of children with ASD is proved: social, emotional, school and physical functions (Tyler, MacDonald, Menear, 2014). Scientists are focusing on studying the impact of various tools on the indicators of psychophysical development of these children. However, the effectiveness of various forms of education for children with ASD remains unclear. Today in Ukraine the process of implementing inclusion has just begun. There are educational institutions with traditional education (children with SEN study exclusively in special educational institutions or at home) and inclusive education (children with SEN study in educational institutions and receive the necessary additional support in the educational process). It has not been established which form is more effective for the socialization of children with ASD (who have significant congenital anomalies, mostly in the social sphere). However, this issue is of great relevance at this stage of improving the education system in the country (Must et al, 2014)

Additional research on the effectiveness of inclusive education in physical, emotional and social health, cognitive skills and school functioning of students with ASD will provide clear recommendations on how to organize the learning process and content saturation of individual curricula, as well as physical education that are effective in treatment and adjustments to improve the quality of life of program participants.

When describing the pedagogical conditions for the integration of inclusive practice, focusing on the concept of "children with special needs", it is necessary to determine: the content

of the special educational needs of different categories of children at different stages of development, the creation of individual educational routes, etc. To ensure the full-fledged education of such children in mass preschool educational institutions, they need appropriate psychological and pedagogical support, since the quality of the educational process largely depends on how much the potential opportunities for learning and development of each child, his individual characteristics are taken into account and realized. In defining inclusion, it is important to note the following points: encouraging difference; benefits for learners, not just those who are excluded; absence from school of children who may feel excluded; providing equal access to education or creating special conditions for certain categories of children without their exclusion. It does not mean: reform of special education only, but reform of both formal and non-formal education; responding only to differences, but also improving the quality of education for students; special schools, but additional support for students in the general education system is possible; meeting the needs of only children with disabilities; meeting the needs of one child at the expense of another (Zhen-Huan et al, 2016).

Inclusive education includes: recognition of the equal value for society of all students and teachers; increasing the degree of participation of students in the educational process and extracurricular activities and at the same time reducing the level of isolation of some students; changes in school policies, practices and school culture to meet the diverse needs of students at the school; overcoming barriers to quality education and socialization of all students, not just students with disabilities and students with special educational needs; analysis and study of attempts to overcome barriers and improve the accessibility of educational institutions for certain categories of students (Kim, Todd, Fujii, Lim, Vrongistinos, Jung, 2016).

Implementation of reforms and changes aimed at the benefit of all students; the belief that differences between students are a resource that contributes to the pedagogical process, and not obstacles that need to be overcome; recognition of the rights of children to receive education in general educational institutions located at the place of residence; improving the situation in schools in general for both students and teachers. Recognizing the role of schools not only in improving the academic performance of students, but also in the development of local communities; developing partnerships between schools and local communities; recognition that inclusion in education is one of the aspects of inclusion in society. Inclusive education is based on an ideology that excludes any discrimination against children, ensures equal treatment of all people, but creates special conditions for children with special needs. Inclusive education is a system of educational services based on the principle of ensuring the fundamental right of children to education and the right to study at the place of residence, which provides for the education of a child with special educational needs, in particular a child with special needs, in a school environment.

So, the purpose of the study is to compare the impact of two forms of socialization of children with ASD (traditional and inclusive educational processes) on individual components of their quality of life.

METHODOLOGY

The article aims at comparison the impact of traditional and inclusive educational processes on the quality of life of children with ASD. For this, a number of methods were applied, which form the research methodology. The study was carried out using the following theoretical methods: systems analysis and synthesis, induction and deduction, comparison, classification, generalization and systematization, idealization and abstraction; and the second group - and survey methods. Participants in the study were students with ASD aged 12 years, studying in inclusive educational institutions (n = 15), and children of the training and rehabilitation center with a diagnosis of ASD (n = 18). The comparison group consisted of students of 5th grades of schools (n = 90). Pupils with typical development answered the questionnaires on their own (PedsQL-4, PedsQL-3 (acute

version)), and their parents or guardians were involved in filling out the questionnaires of children with ASD. Statistical analysis. Significance of discrepancies between the indicators was determined by the Mann-Whitney U-test for unrelated samples.

RESULTS AND DISCUSSION

Inclusive education provides access to education for children with special needs in mainstream schools through the use of teaching methods that take into account the individual characteristics of children. Inclusive education is based on an ideology that excludes any discrimination against children; ensures equal treatment of all people, but creates special conditions for children with special needs. The knowledge and skills acquired outside the society could not help children with special educational needs fully adapt to society, prepare to overcome the inevitable difficulties of life, and, consequently, be fully realized as equal and full-fledged members of society. In inclusive classes, children with special needs are included in the education process. They comprehend the basics of an independent life, learn new forms of behavior, communication, interaction, learn to be active, take initiative, consciously make choices, reach agreement in solving problems, and make independent decisions. Inclusive education is a flexible, individualized education system with features of psychophysical development in the conditions of a mass general education school. The main motto of such education is that all children are valuable and active members of society. Such training is useful both for children with psychophysical characteristics, and for children with a typical level of development and society as a whole (Geretsegger, Elefant, Mössler, Gold, 2014).

Inclusive education presupposes a complex, systemic, personality-oriented and individualized learning style, overcoming behavioral deviations and developmental deficits. However, the socialization of students requires the study and knowledge of not only the structure of the existing developmental disorder, but the level of social adaptation of each child. In the process of inclusive education, the prospects for future development, the relevance of mastering a certain form of social behavior, individual preferences and intentions of children with special educational needs are taken into account. Inclusive education is based on an ideology that denies any discrimination against children, ensures equal treatment of all people, but creates special conditions for children with special needs. Integration – efforts aimed at introducing children with special educational needs into regular educational space.

An intermediate stage in the development of an inclusive education system can be considered the integration process, which also has several types: Social integration. Children with special needs can participate with other children in extracurricular activities such as meals, games, excursions, etc., both in preschool and general education, but they do not study together (Green et al, 2009).

functional integration. Both children with special needs and peers study in the same class. There are two types of such integration: partial integration and absolute integration. With partial integration, children with special needs study in a separate special class or department of the school and attend only certain general education events, while with absolute integration, such children spend all their time in general education classes. Specifically, the last type of integration can be considered as a real educational integration.

Reverse integration. We can talk about this type of integration when healthy children attend a special school. Spontaneous or uncontrolled integration. Occurs when children with special needs attend general education classes without receiving additional special support. There are reasons to believe that in many countries many such children make up the majority of those who are left to study for a repeat year.

In modern scientific and methodological sources, strategies for introducing inclusive practices are defined (Bahrami, Movahedi, Marandi, Sorensen, 2016):

1. Taking into account existing practices and experience. In most preschool educational institutions, teaching staff know more than they are used in practical activities. The main direction of development should be the improvement of the professional competencies of teachers on inclusion.

2. Development of professional mobility of the teaching staff of an educational institution in terms of the prospects and advantages of an innovative inclusive model of education. This is determined by the ability to see opportunities for learning in differences.

3. The need for a careful study of barriers to ensure the participation of all children in the educational process.

4. Using resources to ensure inclusion through active collaboration between educators, support staff, parents and children themselves.

5. Creation of conditions for the formation of positive motivation of the teaching staff in accepting the idea of inclusion, professional development, self-development.

Therefore, inclusive practice is the creation of a culture of an educational institution that encourages an indifferent attitude towards everyone, the development of modern methods and forms of work that help reduce obstacles to attracting students to a full life.

Participants. The participants of the study were students from RAS, studying in inclusive school of Lviv ($n = 15$), who formed the first main group (1OG, age 12.51 ± 2.91 years, min = 11, max = 13) and children of Lviv training and rehabilitation center "Trust" with a diagnosis of autism spectrum disorders ($n = 18$), which amounted to 2 main groups (2OG, age 11.63 ± 1.59 years, min = 11, max = 13). The comparison group (GP) consisted of students of 5th grades of schools in Lviv ($n = 90$, age 11.50 ± 0.18 , min = 11, max = 12).

Organization. Students with typical development independently answered the questionnaire (PedsQL-4, cognitive qualities - for PedsQL-3 (acute version)). Children from RAS were involved in filling out the questionnaires of their parents or guardians.

Statistical analysis. Most indicators did not have a normal distribution. Therefore, the significance of discrepancies between the indicators of children was determined by the Mann-Whitney U-test for unrelated samples.

Results. It is expected that the levels of almost all indicators of quality of life of children with ASD are significantly ($p < 0.05$) lower than in children with typical development. Thus, most GP children do not have any problems in various aspects of activity and communication. Compared with children with typical development, children with ASD who study in traditional conditions, although they have lower rates, but differ slightly in terms of physical and emotional functioning; however, they have significant differences from children with typical development in terms of social, school and cognitive components of quality of life (table 1).

Table 1. Indicators of quality of life of study participants.

| Indicators | Physical | Emotional | Social functioning | School | Cognitive |
|--|------------------------|------------------------|------------------------|------------------------|------------------------|
| 1. Children with ASD in conditions inclusive education in school ($n=15$) | 59.11 ± 18.09 M | 49.31 ± 11.91 L | 27.14 ± 15.32 L | 23.66 ± 14.05 L | 34.45 ± 16.21 L |
| 2. Children with ASD in the context of traditional special education educational institutions ($n=18$) | 66.09 ± 11.80 M | 56.64 ± 13.52 M | 49.70 ± 11.40 L | 44.72 ± 11.45 L | 40.82 ± 12.66 L |
| Children with typical development in traditional school ($n=90$) | 88.15 ± 9.49 H | 75.46 ± 10.61 H | 88.64 ± 12.35 H | 78.64 ± 15.27 H | 88.86 ± 10.31 H |
| 1 - 2 | - | - | <0.05 | <0.05 | - |
| 2 - | - | - | <0.05 | <0.05 | <0.05 |
| 1 - | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 |

H – high level, M – medium level, L – low level.

At the same time, the indicators of children with ASD who study at school are significantly lower than those who attend a special educational institution ($p < 0.05$) in the social and school spheres. Among the complaints of children of both COs, difficulties in establishing good relations with other (typically developed) children (47%) and maintaining friendly contacts with them (37%) are equally common. The lower score on the scale of social functioning in children 1OG is due to the inability to do what their typically developed classmates (68% vs. 47%) failure to keep up with the pace of play of other children with typical development (68% vs. 42%), as well as bullying experience (42%). In the context of traditional education, almost all criteria for negative school functioning in children with ASD are less common (except for keeping up with schooling).

Cognitive performance was observed to be equally low in both samples of children with ASD. A significant proportion of children with pervasive (end-to-end) developmental disorders cannot think quickly (68%); 63% have trouble keeping attention on the task, 42% have a hard time remembering what they are told, 47% have a hard time remembering what they just heard, 47% have a hard time remembering what they just thought. Particularly low quality of life indicators on the scale of cognitive functioning of 1OG respondents are due to the presence of a large number of people who often have problems concentrating on lessons (67%) and speed of learning (67%).

There was a tendency (not statistically confirmed) to a slightly lower level of indicators of emotional functioning of children with ASD in the conditions of ZSSO than in a special educational institution. Almost the same number of children with 1OG and 2OG only occasionally get angry (46.67% and 52.63%, respectively), almost never miss (43.33% and 36.84%) and never worry about what should happen (36, 67%, 26.32%). Most of the children we examined with ASD (70%) almost never have problems falling asleep. At the same time, one in five (21%) children who attend educational institutions often or almost always experience fear, and one in six complain of frequent feelings of anger (16%), which differs in frequency from 2OG children. In order to correct these negative manifestations of the mental state of children with ASD, we recommend introducing into physical education lessons in an inclusive educational process tools that help strengthen self-control and self-correction of aggressive and anxious behavior of children with ASD.

In terms of physical indicators, children with ASD from inclusive and special educational institutions had an average level of functioning and did not differ from each other. The majority of CO respondents (more than 70%) have never or almost never had problems with daily activities; every second child with ASD never complained of pain (47%) or low energy (47%).

Traditional education (in special educational institutions) with its many years of experience in organizing education, the system of methodological approaches to individualization of tasks developed in it have greater prospects in the socialization of children with ASD than secondary school. This is evidenced by significantly ($p < 0.05$) higher indicators of social and school components of the quality of life of children 2OG compared to 1OG. To a greater extent, this applies to the social component of quality of life, as the results of social functioning of students in special educational institutions (49.72 ± 11.45) were close to the average level. While the typical difficulties for RAS in establishing good relationships with other children (47%) and maintaining friendly contacts with them (37%) are inherent in children of 1OG and 2OG in equal measure, significant shortcomings in the process of inclusive education are bullying of children with OOP because of their inability to do things that other children can do and their inability to keep up with the pace of their peers with typical development. Therefore, to increase the self-esteem of children with ASD and the quality of the social component of their lives, we can advise during joint games to choose for children with ASD "calmer" roles (eg leader), as well as develop their talents, which will improve social function.

Significant lag in the indicators of social and school functioning of children with ASD from inclusive school can be explained by an inaccurate diagnosis. Because it is known that the more severe the disease and the lower the level of intelligence, the worse the quality of life.

We believe that the pattern we have established applies only to children with autism. While for other nosologies of children, social and school indicators of quality of life would be higher in children 1OG, ie the processes of their socialization in inclusive educational institution would be more productive.

The reason for the discrepancies between social and school quality of life indicators may still be hidden in the family. Because we cannot entrust the solution of the problem of rehabilitation of children with ASD only to educational institutions. Parents need to be involved to strengthen their participation in the control of hyperactivity, correction and control of stereotyped behavior, improving self-care, improving the practical communication skills of children with autism. This is the opinion of other experts.

In terms of cognitive indicators, both methods of teaching children with ASD are equally ineffective - as evidenced by the low level of cognitive performance of children 1OG and 2OG. In inclusive classes, children with ASD often suffer from an inability to think quickly and focus (67% each). One of the effective means of improving mental processes is recognized as a means of physical education. Physical education has a great positive effect on the psycho-emotional state of special children, helps them increase self-esteem, attention and ability to concentrate, affects the volitional sphere, gives the opportunity to find new friends and actively spend time outdoors. Improving cognitive performance are dancing, exergaming, cycling. Therefore, it is recommend to use these tools in the process of physical education of students with ASD.

In accordance with physical and emotional indicators, both methods of socialization are equally effective (as evidenced by the lack of significant differences in the indicators of children 1OG and 2OG). Indicators of physical and emotional functioning of children with ASD in 1OG and 2OG correspond to the average development, ie physical and emotional development is successful. However, at the same time, the physical and emotional performance of children with RAS 1OG does not differ from that of children with typical development, which has good prospects. But between 2OG and healthy children, the differences in these indicators already have significant differences ($p < 0,05$). Increased anxiety and fear distinguish children with CHD from children from special educational institutions. To correct these qualities, it is necessary to introduce into martial arts lessons with children with ASD in an inclusive school means of martial arts, water exercises, hippotherapy, which enhance self-control and self-correction of aggressive and anxious behavior.

Most of the children we examined with ASD (70%) almost never have problems falling asleep. This is not consistent with the results of other experts who consider these problems inherent in children with ASD. However, at the same time, corresponds to other data [30].

The low levels of social, school and cognitive components of the quality of life of children with ASD, especially cognitive ones (less than 41 points) are of concern. Therefore, children with autism need more spiritual support.

The levels of almost all indicators of quality of life of children with ASD were significantly ($p < 0.05$) lower than in children with typical development. Physically and emotionally, typically developed classmates and children with ASD in special schools did not differ, while the latter, in turn, were significantly ($p < 0.05$) ahead of students in inclusive schools. In the social and school spheres, the indicators of children with ASD who attended inclusive secondary schools were significantly worse than those who attend a special educational institution ($p < 0.05$). Students with ASD had problems with cognitive functioning regardless of the type of educational process, but in inclusive classes, they lagged behind special school students due to their inability to think quickly and focus. Due to frequent attacks of fear and anger, the level of emotional functioning of children with ASD who studied in secondary schools was slightly lower than those who attended a special educational institution.

So, the adaptation of students with ASD such as social and school, physical and emotional in special schools is more successful. Being involved in an inclusive learning process to improve their

socialization children with ASD, special attention should be paid to avoiding bullying of these children and shifting their focus from failing to do things that others can do and failing to keep up with peers with typical development. To improve mental processes, as well as to overcome the increased anxiety and fear in children with ASD enrolled in inclusive classes, it is necessary to include in physical education classes effective tools that help correct unwanted mental states and behavior of children with ASD (Bandini, Gleason, Curtin, Lividini, Anderson, Cermak, 2013)

Achievement of success in studies and life both by children with special needs of psychophysical development and by their healthy peers depends on certain socio-pedagogical conditions. Let's reveal their content.

1. Introduction into the educational process of situations of reflection and success. In the educational process, the situation of reflection should dominate in time - the situation of curiosity, doubt, search. The teacher is the organizer of the situation of reflection. In this perspective, the work of the teacher can be carried out in two directions.

First direction. The teacher independently conducts reflections, gradually involving students in this work. Having asked a problem, the teacher reveals the ways to solve it and reflects together with the students: shows them the way of scientific thinking, building the logic of persuasion through the formulation of the thesis, the selection of arguments and the construction of a demonstration (certain conclusions - new knowledge); through the formulation of problematic questions, it draws the attention of students to the dialectical movement of thought towards the truth, making them accomplices in scientific research.

Second direction. The teacher gives students the opportunity to independently look for ways to solve the problem, but he does not take a passive position. He (if necessary) directs the students' opinion by asking heuristic questions: where?, when?, how?, where?, what?, why? the like; teaches them to ask such questions to themselves and to others. In the process of unfolding the situation of reflection, when solving a certain educational problem, teachers should give priority to the individuality, self-worth, originality of each student as an active carrier of subjective experience that accumulates while studying in a general educational institution. The teacher should thank for any opinion expressed by the child, simultaneously unfolding the situation of success. The situation of success contributes to the activation of cognitive activity, which is the basis for the cognitive activity of students in the classroom. Teachers should fix attention on any, without exception, achievement of the child.

Classmates can clap their hands, a teacher can shake hands with a student for an original (alternative, rational) solution to a particular problem. In such conditions, all, without exception, children will have a desire to be "heard", to express their own opinion on the topic being studied, they offered, without fear of making a mistake, their own options for a meaningful discussion.

2. Problem-search dialogue as a mechanism for deploying a situation of reflection in the educational process. Using a problem-search dialogue, the teacher teaches his pupils to consider each educational problem (learning new material, solving a learning problem) from different points of view, creating a palette of reflections. To this end, in the process of solving a certain educational problem, the teacher should teach children to answer heuristic questions: where?, why?, when?, how?, from where?, than?, who?, what?, put them before themselves and before others. Answering heuristic questions, performing certain work, students, based on observation, analysis, comparison of a number of individual facts, considerations, both independently and under the guidance of a teacher, while showing a guess, a creative approach (heuristic and research method of obtaining knowledge), come to the discovery and the formulation of a grammatical rule, an arithmetic property, open up a new (original, rational) way of solving a certain problem. The problem-search dialogue, which should be carried out in the subsystems: "teacher - class", "teacher - student", "student - student", "student - class" is an example of cooperation between children with special

needs of psychophysical development and healthy classmates (Kryshtanovych, Kryshtanovych, Stechkevych, Ivanytska, Huzii, 2020).

As a result, children with special needs feel their importance, try to keep up with their healthy peers, and as a result, their cognitive, motor, language, social and emotional development improves. At the same time, healthy classmates learn to naturally perceive and tolerate human differences; maintain friendly relations with children who are different from them, show them sensitivity, respect. To ensure the effectiveness of problem-search dialogues in inclusive classes, the teacher must study the state of attention, fatigue, pace of work of each child; take into account the state of hearing, vision, motor skills and general physical development of children with special needs; be well acquainted with the devices used by students with visual and hearing impairments, check the suitability of hearing aids, keep glasses clean, etc.

3. The use of interactive teaching methods in the lesson will help the teacher to stimulate the development of the situation. Interactive we consider those methods, the use of which contributes to the simultaneous development of both hemispheres of the child's brain. The use of interactive teaching methods in any lesson will help the teacher to introduce elements of research, search, comparison of various facts, phenomena, positions, conclusions into the educational process, and helps the student to more clearly define his point of view. We advise the teacher to use the following methods at the level of assimilation of new knowledge: problem-search dialogue (promotes the development of predominantly the left hemisphere of the brain) in combination with the method of figurative vision (contributes to the development of predominantly the right hemisphere of the brain); at the level of formation of intellectual and creative skills - the following methods: "brainstorming", problem-search dialogue, inversion, empathy, incident, didactic game, synectics. The content of these methods is disclosed by us in the tutorial "How to teach a child the art of thinking."

4. The main goal of each lesson, in which the situation of reflection dominates in time, should be the development of conceptual thinking and speech of the student. Let's substantiate this thesis (Bodnar, Hamade, 2019).

- The content of each educational branch consists of a number of scientific concepts.
- The concept is the concentration of knowledge of the child, the most important means of orderly thinking.
- The formation of conceptual thinking is the formation of intelligence in action.
- With the help of concepts, students learn to make true judgments, from judgments - inferences, and therefore learn to interact constructively with others.
- In the process of constructive interaction in the subsystems "teacher-class", "teacher-student", "student-student", "student-class" the discipline of the mind of the individual is formed.

The development of students' conceptual thinking is the basis for the development of creative and divergent thinking. The correctness of the "discovery" made (a sign of creative thinking), the expediency (constructiveness, etc.) of each new idea (a sign of divergent thinking), the student must be able to prove with the help of conceptual thinking, using the following methods (Baranek, Parham, Bodfish, 2005):

- consideration of an object being studied from different angles and highlighting the greatest number of its inherent features, traits, qualities, etc. (based on operations of analysis and synthesis);
- comparison of selected features, qualities, properties in order to select the most significant, the main ones (based on comparison and abstraction operations);
- establishment of causal relationships and dependencies;
- formation of new provisions (based on the operation of generalization). The development of conceptual thinking is connected with the development of speech.

As a result: the intellect should become speech, and speech - intellectualized, namely: clear, concise, evidence-based. The educational environment in inclusive classrooms should be built on

the basis of a system of interrelated targets. Educational guidelines provide for the acquisition of knowledge in the process of learning through flexible systems suitable for use in various educational and life situations, by means of mental activity; skills to reproduce the logic of scientific knowledge in educational activities. So, the main didactic task is to help students independently acquire knowledge and apply it in various learning and life situations. Developing guidelines are aimed at developing conceptual, creative and divergent thinking, intellectual and creative skills. Educational guidelines are aimed at helping students in self-determination and self-development, fostering perseverance, organization, endurance, responsiveness, respect for the partner's opinions, emotional stability in contact; the ability to subordinate personal goals and desires to a joint cause. Social guidelines involve the formation of communicative skills, which are the ability of the speaker to constructively interact with the participants in the act of communication.

CONCLUSION

The levels of almost all indicators of quality of life of children with ASD were significantly ($p < 0.05$) lower than in children with typical development. Physically and emotionally, typically developed classmates and children with ASD in special schools did not differ, while the latter, in turn, were significantly ($p < 0.05$) ahead of students in inclusive schools. Due to frequent attacks of fear and anger, the level of emotional functioning of children with ASD who studied in high school was slightly lower than those who attended a special educational institution. Therefore, the physical and emotional adaptation of students with ASD in special schools is more successful.

In the social and school spheres, the indicators of children with ASD who studied in inclusive secondary schools were significantly worse than those who attend a special educational institution ($p < 0.05$). That is, according to these indicators, the processes of adaptation of children with ASD also occur more effectively in the context of traditional education. When involving children with ASD in an inclusive learning process to improve their socialization, special attention should be paid to avoiding bullying of these children and shifting their focus from inability to do things that others can and from inability to keep up with peers with typical development.

Students with ASD had problems with cognitive functioning regardless of the type of educational process; however, in inclusive classes, they lagged behind special school students due to their inability to think quickly and focus. To improve mental processes, as well as to overcome the increased anxiety and fear in children with ASD enrolled in inclusive classes, it is necessary to include in physical education classes effective tools that help correct unwanted mental states and behavior of children with ASD.

Authors' Contributions: Kozibroda, L.: conception and design, acquisition of data, analysis and interpretation of data, drafting the article, critical review of important intellectual content; Turchyk, I.: conception and design, acquisition of data, analysis and interpretation of data, drafting the article, critical review of important intellectual content; Mukan, N.: conception and design, acquisition of data, analysis and interpretation of data, drafting the article, critical review of important intellectual content; Sadova, I.: conception and design, acquisition of data, analysis and interpretation of data, drafting the article, critical review of important intellectual content; Stepanyuk, S.: conception and design, acquisition of data, analysis and interpretation of data, drafting the article, critical review of important intellectual content. All authors have read and approved the final version of the manuscript.

Ethics Approval: Not applicable.

Acknowledgments: Not applicable.

REFERENCES

Ament, K., Mejia, A., Buhlman, R., Erklin, S., Caffo, B., & Mostofsky, S. (2015). Evidence for Specificity of Motor Impairments in Catching and Balance in Children with Autism. *J Autism Dev Disord*, 45(3), 742-751.
<https://doi.org/10.1007/s10803-014-2229-0>

- Bahrami, F., Movahedi, A., Marandi, S., & Sorensen, C. (2016). The Effect of Karate Techniques Training on Communication Deficit of Children with Autism Spectrum Disorders. *J Autism Dev Disord*, 46(3), 978-86. <https://doi.org/10.1007/s10803-015-2643-y>
- Bandini, L., Gleason, J., Curtin, C., Lividini, K., Anderson, S., Cermak, S. (2013). Comparison of physical activity between children with autism spectrum disorders and typically developing children. *Autism*, 17(1), 44-54. <https://doi.org/10.1177/1362361312437416>
- Baranek, G., Parham, L., & Bodfish, J. (2005). Sensory and motor features in autism: Assessment and intervention. In: Volkmar, F. (Eds.), *Handbook of Autism and Pervasive Developmental Disorders*, pp. 831-857.
- Bodnar, I., & Hamade, A. (2019). The effect of physical activity interventions on development of children with autism spectrum disorder. content-analysis of researches. *Pedagogics, psychology, medical-biological problems of physical training and sports*, 23(3), 18-25. doi.org/10.15561/18189172.2019.0302
- Geretsegger, M., Elefant, C., Mössler, K., & Gold, C. (2014). Music therapy for people with autism spectrum disorder. *Cochrane Database of Systematic Reviews*, 6, CD004381. <https://doi.org/10.1002/14651858.CD004381.pub3>
- Green, D., Charman, T., Pickles, A., Chandler, S., Loucas, T., Simonoff, E., & Baird, G. (2009) Impairment in movement skills of children with autistic spectrum disorders. *Dev Med Child Neurol.*,51(4), 311- 316. <https://doi.org/10.1111/j.1469-8749.2008.03242.x>
- Kim, Y., Todd, T., Fujii, T., Lim, J., Vrongistinos, K., & Jung, T. (2016) Effects of Taekwondo intervention on balance in children with autism spectrum disorder. *J Exerc Rehabil*, 12(4): 314-319. <https://doi.org/10.12965/jer.1632634.317>
- Kryshtanovych, M., Kryshtanovych, S., Stechkevych, O., Ivanytska, O., & Huzii, I. (2020). Prospects for the Development of Inclusive Education using Scientific and Mentoring Methods under the Conditions of Post-Pandemic Society. *Postmodern Openings*, 11(2), 73-88. <https://doi.org/10.18662/po/11.2/160>
- Movahedi, A., Bahrami, F., Marandi, M., & Abedi, A. (2013) Improvement in social dysfunction of children with autism spectrum disorder following long term Kata techniques training. *Research in Autism Spectrum Disorders*, 7, 1054-1061. <https://doi.org/10.1016/j.rasd.2013.04.012>
- Must, A., Phillips, S., Curtin, C., Anderson, S., Maslin, M., Lividini, K. (2014). Comparison of sedentary behaviors between children with autism spectrum disorders and typically developing children. *Autism*, 18(4), 376-84. <https://doi.org/10.1177/1362361313479039>
- Tyler, K., MacDonald, M., & Menear, K. (2014). Physical activity and physical fitness of school-aged children and youth with autism spectrum disorders. *Autism Res Treat*, 14, 1-6. <https://doi.org/10.1155/2014/312163>
- Uzair-ul-Hassan, M., Hussain, M., Parveen, I., De Souza, J. (2015). Exploring teachers' experiences and practices in inclusive classrooms of model schools. *Journal of Theory and Practice in Education*, 11(3), 894-915.
- Zhen-Huan, L., Qiao-Ling, X., Zhang-Yong, Y. & Xiao-Zhen, W. (2016). Quality of Life of Children with ASD. *Autism Open Access*, 2016; 6: 183. <https://doi.org/10.4172/2165-7890.1000183>
- Zwane, S., & Malale, M. (2018) Investigating barriers teachers face in the implementation of inclusive education in high schools in Gege branch, Swaziland. *African journal of disability*, 7, 391. <https://doi.org/10.4102/ajod.v7i0.391>

Received: 11 December | **Accepted:** 10 February 2022 | **Published:** 31 March 2022



This is an Open Access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.