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MOTOR ACTIVITY OF CHILDREN WITH DISABILITIES IN CONDITIONS OF MIXED EDUCATION AS SCIENTIFIC AND PEDAGOGICAL PROBLEM

Y. A. Kurivskyi, G. A. Iedynak

Kamyanets-Podilskyi Ivan Ogiienko National University, Ukraine

Abstract

The key challenges of the educational process in the conditions of war are limited ways of organizing motor activity, reduced motivation to use various forms of such activity and deterioration of the psycho-emotional state of participants in the educational process. *Goal of research* is to identify pedagogical problems in ensuring the appropriate level of motor activity of children with disabilities in the context of mixed education. *Research methods used*: theoretical analysis, systematization, comparison of different views on the investigated problem, generalization of data from scientific and methodological and special literature. *The results*. It was found that motor activity is considered as a means of achieving the highest possible positive result in the specified indicators of the state of functioning of body systems. The leading place in this process is given to expanding the potential of PE in the process of getting an education. The main pedagogical problems that require a systematic and comprehensive solution in the process of inclusive physical education of children with disabilities, which is implemented in a mixed format, are highlighted: ensuring the implementation of the fundamentals of inclusive pedagogy; flexibility in planning and modification of activities aimed at ensuring the optimal level of motor activity of children with disabilities; a comprehensive approach to problem-solving; permanent monitoring and

implementation of new domestic and foreign practices for the implementation of high-quality remote physical education, development of motivation in children with disabilities for systematic physical activity; ensuring independent motor activity of children with disabilities in conditions of mixed education; a differentiated approach in the implementation of motor activity; implementation of a multisensory strategy. *Conclusions.* The possibilities of mixed learning in the implementation of physical education for children with disabilities as a means of realizing the appropriate level of their motor activity have been clarified. The identified problematic aspects lead to the need to develop a new model of the inclusive physical education process for a system-wide solution. This approach is based on interdisciplinary integration processes of using distance technologies and innovative technologies of mixed learning to solve the issues.

Keywords: children with special educational needs; motor activity; inclusion; physical education.

Курівський Я., Єдинак Г. Рухова активність дітей з особливими освітніми потребами в умовах змішаного навчання як науково-педагогічна проблема.

Анотація. Ключовими викликами освітнього процесу в умовах війни є обмеженість способів організації рухової активності дітей з особливими освітніми проблемами, поряд із зниження мотивації до використання різних форм такої активності та їхнього погіршення психоемоційного стану. *Мета статті* – виявлення педагогічних проблем у забезпечення належного рівня рухової активності дітей з особливими освітніми проблемами у контексті змішаного навчання. *Методи дослідження:* теоретичний аналіз, систематизація, порівняння різних поглядів на досліджувану проблему, узагальнення даних науково-методичної та спеціальної літератури. *Результати.* З'ясовано, що рухова активність розглядається як засіб досягнення якомога більш високого позитивного результату у визначених показниках стану функціонування систем організму. Провідне місце у цьому процесі відводиться розширенню потенціалу фізичного виховання в процесі здобуття освіти дітей з особливими освітніми проблемами. Виокремлено основні педагогічні проблеми, які вимагають системного комплексного вирішення в процесі інклюзивного фізичного виховання з дітей з особливими освітніми проблемам, яке реалізується у змішаному форматі: забезпечення реалізації засадничих основ інклюзивної педагогіки; гнучкість у плануванні та модифікації діяльності, яка скерована на забезпечення оптимального рівня рухової активності дітей з дітей з особливими освітніми проблемам; комплексний

підхід до вирішення проблеми; перманентний моніторинг та впровадження нових вітчизняних та закордонних практик реалізації якісного дистанційного інклюзивного фізичного виховання, розвиток мотивації у дітей з дітьми з особливими освітніми проблемами до систематичної рухової активності; забезпечення самостійної рухової активності в умовах змішаного навчання; диференційований підхід у реалізації рухової активності; упровадження мультисенсорної стратегії. *Висновки.* З'ясовано можливості змішаного навчання у реалізації інклюзивного фізичного виховання дітей з дітьми з особливими освітніми проблемами, як інструменту забезпечення належного рівня їхньої рухової активності. З'ясовано, що виокремлені проблемні аспекти, зумовлюють потребу розроблення нової моделі процесу інклюзивного фізичного виховання. Такий підхід, заснований на міждисциплінарних інтеграційних процесах застосування інноваційних технологій змішаного навчання задля вирішення поставлених питань.

Ключові слова: діти з особливими освітніми потребами, рухова активність, інклюзія, фізичне виховання.

Introduction

The educational process of secondary education institutions has recently undergone significant transformations and radical changes. The forms of organization of the educational process are being reorganized following the new realities of functioning that have arisen in the education system as a result of Russia's armed aggression against Ukraine.

To solve urgent problems, ensure the successful functioning of the system and continuity and equal access to education for all, taking into account the security situation in a specific territory, the combination of classroom and out-of-classroom education with the use of information and communication technologies has now become the rule rather than the exception [3].

On November 29, 2021, the Council of the EU adopted the Council Recommendation on blended learning approaches for high-quality and inclusive primary and secondary education [2]. Ukraine was no exception: the Ministry of Education and Science of Ukraine during a full-scale war proposes to change the models of the educational process of inclusive secondary education during the school year depending on the security situation.

According to [8], the majority of students in Ukraine use distance or mixed formats of education today. In the conditions of active search for effective solutions to such a situation, it seems appropriate to study the possibilities and methods of mixed learning, as a possibility of orderly implementation of the educational program for children with disabilities.

Analysis of recent research and publications. Enabling children with disabilities to receive quality education on their characteristics, needs and capabilities is one of the key priorities of modern Ukrainian social and educational policy [28]. According to information [9] in 2022/23 as a result of Russia's full-scale war against Ukraine, given the constant threat to the safety of participants in the educational process, about 51% of secondary education institutions worked in a mixed manner, combining face-to-face and distance learning.

According to literary sources [2; 4], the introduction of a mixed mode of education is aimed at creating optimal conditions for the organization of the educational process for children with disabilities. At the same time, according to scientists [14, 18], the transition from purely classroom education to mixed education is accompanied by many problems.

It has been studied [14, 19] that over the last year, the physical condition of students has significantly worsened, as a result of the long quarantine period, which was followed by martial law. At the same time, according to [3, 4, 28], the key challenges of the educational process in the conditions of war are limited ways of organizing motor activity (MA), reduced motivation to use various forms of such activity and deterioration of the psycho-emotional state of participants in the educational process. The challenges are also deepened by the fact that one of the most important features of the research object is that children with disabilities in Ukraine are considered to be the carriers of educational exclusion in the overwhelming majority [13, 17].

According to the data [1, 22], the self-realization of each child with a disability, and the formation of a future specialist requires ensuring the proper state of their health. In particular, as indicated [11, 21, 27], one of the directions of implementation of these processes is physical education (PE) in the education system, the basis of which is a specially organized MA. Here we note the almost complete lack of research and recommendations for ensuring the appropriate level of MA for children with disabilities in conditions of mixed education.

Based on a large number of studies, many of which are fundamental sciences about PE, it becomes clear that the problem of MA of children with disabilities is considered in the aspect of their health care. Therefore, in the context of research into the aspects of mixed education, we consider it necessary to consider the possibilities and problems of this form of education in ensuring the appropriate level of MA for children with disabilities.

Materials and methods

Goal of research is to identify pedagogical problems in ensuring the appropriate level of MA for children with disabilities in the context of mixed education.

This research is theoretical qualitative research. The used research methods of the theoretical levels are theoretical analysis, systematization, comparison of different views on the investigated problem, generalization of data from scientific and methodological, and special literature.

Results

Carrying out scientific research in the specified direction, first of all, requires the study of the features of mixed learning, which is a relatively new direction in the domestic system of secondary education of children with disabilities.

Therefore, by analyzing and summarizing literature data [13, 22, 30], it was found that "blended learning" in secondary education is a holistic approach used to describe cases when the school uses more than one approach to the learning process. At the same time, this term implies a characteristic of a relatively new form of education, which is based on the use of the latest information and communication technologies (ICT) [4, 6].

It was found [2] that blended learning involves combining learning at school with distance education in different proportions. The concept itself appeared in the 1990s as an alternative to distance learning, but it began to be studied and implemented only in the 2000s. It is believed [6, 33] that blended learning is a powerful toolkit that allows solving problems that make it necessary to find forms of learning organization that would meet the needs and interests of students.

According to these scientific sources [2, 18], the main advantage of mixed education for children with disabilities, in contrast to the eye system, is in the presentation of information. Blended learning is positioned [28] as an opportunity to master educational material at one's own pace and, at the same time, to cooperate with participants in the inclusive educational process. At the same time, for children with disabilities studying at a distance, blended learning provides opportunities for face-to-face communication and the development of certain skills. Given that ICT technologies are now becoming a full-fledged part of the educational process, blended learning is designed to combine distance and face-to-face learning in optimal forms [26]. However, along with that, it is also about combining different approaches, ways of presenting material, and types of work, depending on where the process takes place in the classroom or remotely.

The need to ensure the proper level of MA for children with disabilities during the school period is because MA is considered as a means of achieving the highest possible

positive result in certain indicators of the state of functioning of body systems [10, 16]. The leading place in this process is given to the expansion of the potential of physical culture in ensuring an effective educational process and an effective physical education (PE) in the process of obtaining an education [23]. It is believed [31] that the development of a MA for children with disabilities should be one of the priority tasks of PE in secondary school [20].

PE for children with disabilities means adapting this process in such a way that it is fully appropriate to their needs, which synthesizes: the development of physical qualities, basic motor skills, skills in certain sports, dances, individual and group games, etc. Accordingly, among the components of the MA of children with disabilities, the formation of skills in basic movements is singled out; the development of functional capabilities; and movement qualities, the formation of skills for implementing knowledge related to physical exercises in practice [19].

One cannot help but underestimate the fact that the organization of PE for children with disabilities in a mixed format requires the use of additional resources, given that this category of children includes a fairly wide list of children (with disabilities, gifted, physically impaired, etc.). We consider the identified problem through the prism of educational inclusion, which ensures equal access and quality of educational services, and equal opportunities for learning and development in a mixed format.

According to data [20, 33], educational inclusion is positioned as a tool for implementing learning in a mixed format, which takes into account individual opportunities for practical learning, ensuring a full-fledged educational process, meaningful social connections and health care, which is ensured by the appropriate level of MA. In particular, scientists of the Mykola Yarmachenko Institute of Special Pedagogy and Psychology of the National Academy of Pedagogical Sciences of Ukraine on issues of children with disabilities believe [9] that children under the age of 18 should engage in moderate or intense exercise (the list includes running, fast walking or cycling, etc.) for 60 minutes a day for at least 5 days a week. It is the institutions of secondary education that must ensure the implementation of this recommendation, creating equal opportunities for inclusive PE and MA to help every child with a disability learn to lead a healthy and active lifestyle.

Therefore, the inclusive educational process, in addition to acquiring the appropriate level of knowledge, involves providing a full-fledged MA, which is an equally important component of this process. MA is considered [16] as a complex characteristic of an individual that requires development (improvement) and assumes that he has the motivation to perform muscular activity, the implementation of which takes place in various forms and is aimed at

solving the tasks of MA as the main factor in ensuring healthy growth and development of children body. It contributes to the improvement of the child's motility, the development of coordination, balance, the formation of correct posture and mobility. At the same time, the proper level of MA is a correlate of the psychological state of children with disabilities, shaping their mood, developing self-confidence, and even promoting healthy sleep. That is, it is a factor on which their physical, psychological and mental health condition depends [7].

However, it must be stated that a full-fledged MA is often the first thing that children with disabilities are deprived of, as a result of the distance form of the educational process. As an academic field of study, inclusive PE, supporting an attitude of acceptance of differences, should provide access to an active lifestyle and physical education in various adapted forms. At the same time, we consider the individual characteristics of children with disabilities not as a problem, but as opportunities. It should be noted that each institution of secondary education tries to create, develop and improve its model of implementation of PE (for children with disabilities).

It was found out by the analytical analysis [21, 31] that inclusive PE is a dynamic system, among the subsystems of which are children with disabilities, the content of PE, the means and possibilities of realizing a full-fledged motor opportunity using various forms and innovative technologies, etc. On the other hand, it must be stated that long-term distance learning, having a certain list of advantages, in particular the opportunity for children with disabilities to study at their own pace, has several disadvantages precisely in providing a full-fledged MA. In particular, this is due to the lack of interaction with the teacher and classmates, orientation in tasks, the difficulty of implementing control, etc.

It is worth noting that the implementation of the content of the educational subject "Physical Culture" in a mixed format, in contrast to the content of the vast majority of other disciplines, requires a specially organized MA. At the same time, such a specially organized MA is aimed at eliminating existing negative trends in the physical development and health of children with disabilities.

Here it is necessary to address the main advantages of organizing mixed education for children with disabilities. Based on the analysis of the literature [2, 13, 30], the following are highlighted: provision of feedback in the learning process, individualization of learning, differentiated approach, the possibility of consolidating the learned material, easy access to educational materials, etc. Instead, in the list of shortcomings, the most important are those of a technical and technological nature, in particular, poor Internet connection, etc.

On the basis of a systematic theoretical analysis of the identified problems of ensuring the appropriate level of MA, we will single out the main pedagogical problems that require a systematic and comprehensive solution in the process of inclusive PE of children with disabilities, which is implemented in a mixed format. Among these:

1. Ensuring the implementation of the fundamentals of inclusive pedagogy, which is inherently student-centered and focused on equity, creating an inclusive learning environment in which students feel like equal participants in inclusive PE. This involves the formation of a learning environment in a mixed format so that it is meaningful, appropriate and accessible for every child with a disability.

The educational environment of inclusive PE, despite its implementation in a mixed format, should ensure that every child with a disability is a full participant in the process and feels equal. A healthy and supportive environment helps children with disabilities develop communication skills, skills to recognize and manage emotions, set and achieve goals, make decisions, and initiate and maintain positive relationships.

2. Compliance with the basic provisions of inclusive pedagogy, which requires a balanced approach to the issue of choosing the content of inclusive PE. The latter should be adapted both to the specific conditions of mixed education and to how the MA of children with disabilities is implemented. In particular, MA, special equipment, the content of inclusive PE, regardless of the form of implementation, and evaluation methods must be adapted to the needs and capabilities of all children with disabilities. Therefore, we embody the main narratives of inclusion, which requires that all children, regardless of abilities or disabilities, have the right to respect and assessment, communication and full participation in all MA implementation activities.

3. Taking into account the fact that blended learning is considered from the perspective of the synthesis of independent and joint learning [4] to achieve the goal and defined results of inclusive PE, we believe that special attention should be paid to flexibility in planning and modifying activities aimed at ensuring the optimal level of MA of children with disability

In this aspect, it is worth taking into account that the tasks of inclusive PE of children with disabilities in conditions of mixed education are primarily due to the creation of conditions for full implementation and their physical development during the process, organized based on modern general scientific and special pedagogical technologies of the theory, methodology and practice of physical culture.

Because the inclusive PE of children with disabilities is a complex pedagogical innovation, that involves the formation of a high level of somatic health in the learning process, is based on the organization of health measures for the full implementation of MA, oriented to each child with disabilities, his learning style, abilities and individual capabilities.

4. A comprehensive approach to solving the problem of providing MA in mixed education. It must be stated that to this day, the study of the regulation and support of MA of children with disabilities in conditions of mixed learning by physiological mechanisms, morphological and functional systems, the relationship with the psychological state and mental capacity remains outside the attention of researchers. It has been studied [7, 19] that the results of PE improve when teachers pay attention to the differences of children with disabilities, which are caused by the listed factors. At the same time, by involving them in physical culture classes, they take measured measures, encouraging children with disabilities to perform the same tasks in the implementation of MA as their peers who do not have disabilities. However, unequivocally, when implementing blended learning, this is extremely difficult to implement and requires additional research.

6. Permanent monitoring and implementation of new domestic and foreign practices for the implementation of inclusive PE in a mixed format and ensuring this form of solving the urgent tasks of implementing MA for children with disabilities, which is a rather difficult task. The content of inclusive MA practices takes into account the characteristics of children with disabilities and is presented in such a way as to overcome barriers to access that may arise in the process of distance education. We agree with the opinions [3, 12] that the use of all possible means of the remote format of inclusive PE for children with disabilities should be aimed at the formation and development of a sustainable need and habit of systematic MA.

7. Development of motivation in children with disabilities for systematic MA. A condition for any purposeful activity is a readiness to satisfy a certain need. In this case, we are talking about the need for MA, as a factor in maintaining health and well-being throughout life and preventing the progression of existing diseases.

In this sense, it is important to note that the proper level of MA is a factor in improving the condition of the cardiorespiratory system, strengthening the musculoskeletal system, controlling body weight, normalizing the psycho-emotional state: it helps reduce anxiety and depression, avoid the risk of developing diseases of an oncological nature, type 2 diabetes, etc. [10].

It is also worth considering the factor of influence of MA on mental capacity: physically active children with disabilities, as a rule, have higher achievements in educational

activities. This is evidenced by empirical studies [15, 22] of cognitive indicators, in particular memory, mental performance, etc., which undergo changes under the influence of MA.

8. Ensuring independent MA of children with disabilities in conditions of mixed education. This involves supporting children with disabilities who express a desire to participate in any form of MA before, during and after the educational process. Despite the differences in the academic and social sphere, as well as the level of physical and cognitive development of abilities, children with disabilities should feel supported in the manifestation of any activity [31].

9. Differentiated approach in the implementation of MA. Undoubtedly, effective inclusive PE for children with disabilities requires time, energy, attention and patience, however, the result is worth it [1]. According to ideas [18], the differentiation of inclusive PE of children with disabilities is a complex conceptual model that ensures the individualization of this process.

In this way, we are trying to implement a person-oriented approach in the inclusive pedagogical process of PE, when the center is a specific child with a disability, all the variety of psychophysical features [15]. There is no doubt that a differentiated approach in the implementation of MA for children with disabilities is a challenge, the practical implementation of which is a rather complex problem that requires a balanced approach. We propose not only to differentiate the MA of children with disabilities but also the results of this process. Let's also take into account that such an approach is of crucial importance in the formation of motivation to carry out systematic independent MA.

10. Application of a multisensory strategy. Such a strategy is a powerful means of addressing the many needs of children with disabilities. This strategy is considered a tool for solving the issue of combat mental trauma, which was also called "wartime neurosis" [9].

Quite often, pathological physiological reactions are observed after a traumatic event, which is generally a normal way of responding to war. This, taking into account the presence of special needs and the resulting individual typological features of the nervous system of children with disabilities, can have negative consequences. Such as a decrease in the level of functioning of individual systems, stress on regulatory mechanisms, and loss of functional resources, which can result in a deterioration of health.

Sensory experience is a powerful mechanism for implementing a complex of developmental, educational, and educational functions of PE. Given the fact that an important component of the introduction of a multisensory strategy, which is based on multisensory perception, into the educational process is the issue of effective organization of mixed

learning. This requires a careful selection of tasks aimed at activating MA, taking into account the psychological and age characteristics of students with disabilities.

Taking into account the peculiarities of the mixed format of education, the need to take into account the individual characteristics of each child with disabilities, influencing their motor and mental spheres in such a way as to prevent the formation of inadequate adaptation, is a rather difficult task. Instead, multisensory, which is implemented with the help of analogies and stimuli (musical accompaniment, game method, use of colors, etc.) is an innovative method, an ecological and scientifically based approach to the use of mechanisms of brain plasticity, the development of interests and motives, and a conscious attitude towards physical exercises and increasing MA level.

Discussion

Scientific exploration in a certain direction is justified by the need to adapt the educational process to today's challenges. The basis of such a change in the educational paradigm is the synthesis of traditional systems and innovative practices [18, 28]. At the moment in Ukraine, due to the ongoing hostilities, special attention is paid to the possibilities of blended learning for children with disabilities, individualized, accessible, based on needs and opportunities, which combines the best examples of experience in face-to-face and distance learning.

Our research is consistent with the data [3, 4] that the integration of different formats of PE, in our case online and offline, is the basis of the complexity of the problem of ensuring an adequate level of MA as a factor in the health preservation of children with disabilities. The difficulty lies in the fact that mixed education should be considered as a system of creating conditions for meeting the needs of MA, and therefore, ensuring the strengthening of health, physical and spiritual development of children with disabilities. It is undeniable [5, 16] that a certain elimination of deviations in the state of health due to an increase in the level of MA directly affects the quality of life of children with disabilities. Thanks to the improvement of their physical condition, and, therefore, somatic health, an improvement in well-being is observed, which to a certain extent eliminates their physical limitations, according to the data of scientific sources [7, 10, 28].

We agree with the opinion [11, 14, 16] that the development of MA of children with disabilities should be one of the priority tasks of inclusive PE. The appropriate level of MA is considered [19, 21] as a tool for preventing the negative impact on the health of children with disabilities of a complex of external factors, as a basis for ensuring physical development in

the pedagogical process of PE [32]. Which becomes especially relevant in the conditions of prolonged military operations on the territory of Ukraine.

We support scientific approaches [11, 15, 29] that the issue of ensuring the appropriate level of MA of children with disabilities in the learning process is considered from the aspect of their health care. In the context of blended learning, this involves the specific organization of inclusive PE. There are many obstacles to the effectiveness of inclusive PE for children with disabilities in ensuring the appropriate level of MA by means of mixed learning: physical, informational, institutional, and mental. It is important to be able to identify them and look for technologies to overcome them.

Conclusions

The conducted research provides an opportunity to find out the possibilities of blended learning in the implementation of PE for children with disabilities, as a means of realizing the appropriate level of their MA. The singled-out problematic aspects necessitate the development of a new model of inclusive PE for the systematic comprehensive solution of the identified problems in the aspect of health care. This approach is based on interdisciplinary integration processes of using distance technologies and innovative technologies of mixed learning to solve the issues.

So, there is every reason to conclude that ensuring the proper level of MA requires solving identified pedagogical problems in the process of inclusive PE of children with disabilities, which is implemented in a mixed format. This generally involves a radical revision of theoretical and methodological foundations, rethinking of traditional paradigms, elimination of organizational and methodological barriers, development and implementation of new concepts, modern approaches, innovative technologies, implementation of integrative and inclusive educational practices, etc.

Prospects for further investigations include finding out the level of MA of children with disabilities in the process of mixed education.

Conflict of interest. The authors state that there is no conflict of interest.

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