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INNOVATIVE PEDAGOGICAL TECHNOLOGIES IN DEVELOPING FINE MOTOR SKILLS OF PRIMARY SCHOOL STUDENTS WITH INTELLECTUAL DISABILITIES, SPEECH DISORDERS, AND SPECIAL NEEDS

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Abstract: This scientific article is devoted to the use of innovative pedagogical technologies in the development of fine hand motor skills of elementary school students in the conditions of inclusive education. The study highlights the active involvement of all students, including children with disabilities, in the educational process through the use of modern technologies, game approaches and didactic tools that help develop motor skills. Also, the fact that the development of fine motor skills has a positive effect on the level of mastery and social-psychological adaptation of students is substantiated by clear evidence. Practical methods and methodical recommendations are also described in the work.

Key words: Inclusive education, primary class, fine motor skills, innovative pedagogical technologies, strengthening hand muscles, game approach to education, special pedagogy, motor development.

Introduction: The development of fine motor skills of primary inclusive schoolchildren is important. This process plays a major role in the overall development of students, including the formation of their intellectual, physical and psychological aspects. Fine motor skills include the skills of performing subtle and precise movements of the fingers. In inclusive education, the individual needs of each student are taken into account in the development of these skills using innovative pedagogical technologies. This article shows the impact of fine motor skills development on the level of mastery and socio-psychological adaptation of students. Through the use of innovative pedagogical technologies, all students, including children with disabilities, are actively involved in the educational process. These changes have a positive effect on strengthening the hand muscles of students, their overall physical and psychological development. Goals and objectives: To study the pedagogical aspects of developing fine motor skills in inclusive education. To analyze the impact of using innovative technologies and game approaches on student development. Decrees of the President of the Republic of Uzbekistan No. PF-5270 dated December 1, 2017 “On measures to radically improve the system of state support for persons with disabilities”, No. PF5712 dated April 29, 2019 “On the Concept for the Development of the Public Education System until 2030”, No. PF-6108 dated November 6, 2020 “On measures to develop the spheres of education and science in the new period of development of Uzbekistan”, No. PF-60 dated January 28, 2022 “On the Development Strategy of New Uzbekistan for 2022-2026”, No. PQ-4860 dated October 13, 2020 “Measures to further improve the system of education and upbringing for children with special educational needs "On", Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated October 12, 2021 No. 638 "On approval of regulatory legal documents on education of children with special educational needs" and other documents define the tasks of personnel issues, modernization of educational content, methodological and didactic support of the process.[1] Identifying how to support the motor development of students with disabilities through special pedagogical approaches. ‘‘The resolutions and decrees of the President of the Republic of Uzbekistan Shavkat Mirziyoyev in the field of education are aimed at supporting this process. For example,

[1] https://devedu.uz/wp-content/uploads/2024/05/4-Inklyuziv-talim-nazariya-va-metodika.pdf

Decree No. PF-134 “On Approval of the Concept for the Development of School Education in 2022–2026”, adopted on May 11, 2022, pays special attention to improving the quality of education, ensuring the overall development of students, and developing inclusive education.[2]’’ "In addition, Resolution No. PQ-54 "On measures to further deepen reforms in the field of education", adopted on February 2, 2024, considered the issues of modernization of the education system, the introduction of innovative pedagogical technologies, and taking into account the individual needs of students..[3]’’. Based on these resolutions and decrees, the possibilities of using innovative pedagogical technologies in the development of fine motor skills of primary school students are expanding. This has a positive impact on the overall development of students, including the improvement of motor skills.

„Inclusive Education is a collaborative education, recognized by the entire community as the most humane and effective education. Inclusive education is an educational process in which all children, regardless of their physical, mental, intellectual and other problems, receive education together with their peers in a common way, in their own homes and territories, in schools where all conditions are created that meet their needs.[4]’’

Fine motor skills are the ability of children to perform small and precise movements with the palms and fingers of their hands and feet. The field of fine motor skills has a specific meaning and includes a large number and variety of movements. For example: from simple movements (for example, holding a toy, various details) to complex movements (such as writing and drawing). Fine motor skills begin to develop from the moment a child is born.[5]

Methodology: The methods and approaches used in the application of innovative pedagogical technologies in the development of fine motor skills of primary school students (inclusive education) are presented. This article clearly describes the methods used for scientific research, the processes of data collection and analysis, and the following methods are recommended:

• Experimental method,

• Monitoring and analysis methods,

• Didactic games,

• Qualitative research.

Using the experimental method, the process of developing fine motor skills of primary school students was studied through specific experiments. In the study, a number of practical exercises and games were organized to assess the motor skills of students. When using this method, the following exercises and tests were used to determine the motor skills of students, especially the use of their fingers and the coordination of their movements:

1. Finger pressing and holding exercises

[2] O'zbekiston Respublikasi Prezidenti Shavkat Mirziyoyevning 2022-yil 11-maydagi PF-134-son Farmoni "2022–2026-yillarda maktab ta'limini rivojlantirish konsepsiyasini tasdiqlash to'g'risida"
[3] O'zbekiston Respublikasi Prezidentining 2024-yil 2-fevraldagi PQ-54-son qarori "Ta'lim sohasidagi islohotlarni yanada chuqurlashtirish chora-tadbirlari to'g'risida"
[4] file:///C:/Users/NEXT%20NOUT/Downloads/Sh.N.Ibadullayeva++.pdf
[5] https://cyberleninka.ru/article/n/maktabgacha-yoshdagi-bolalarda-mayda-motorikani-rivojlantirishga-doir-o-yinlar

Information: These exercises are aimed at developing the strength of students' fingers and fine movements. During the exercise, students are presented with small Methodology: Methods and approaches used in the use of innovative pedagogical technologies in the development of fine motor skills of primary school students (inclusive education). This section clearly describes the methods used for scientific research, the processes of data collection and analysis, and the following methods are recommended: Experimental method, Monitoring and analysis methods, Didactic games, Qualitative Research.

Using the experimental method, the process of developing fine motor skills of primary school students was studied through specific experiments. The study organized a series of practical exercises and games to assess students' motor skills. In applying this method, the following exercises and tests were used to determine students' motor skills, especially the use of their fingers and the coordination of their movements:

1. Finger Pressing and Holding Exercises

Information: These exercises are aimed at developing students' finger strength and fine motor skills. During the exercise, students were asked to hold or squeeze small objects (such as small round plastic balls or plasticine) with their fingers.

Methodology: Students were given a plasticine or soft ball and asked to squeeze it with their fingers for a while. During the exercise, encouraging students to perform the movements gradually is especially important for children with disabilities.[6]

objects (e.g., small round plastic balls or plasticine) were required to be held or squeezed with the fingers.

Methodology: Students were given a plasticine or soft ball and were asked to squeeze it with their fingers for a while. It is especially important for children with disabilities to encourage students to perform the movements gradually during the exercise.[7]

Finger Pencil Holding and Drawing Exercises

Information: These exercises are designed to develop students' writing and drawing skills. Students were given the task of drawing or writing various shapes (straight lines, circles, squares, etc.).Methodology: Students were given a simple pencil and paper for drawing. During the exercise, they drew certain shapes or wrote letters to develop correct pencil holding and fine finger movements. This exercise was effective in strengthening motor skills.[8]

[6] Tursunova, M. (2021). "O'quvchilarda motorik ko'nikmalarni rivojlantirishda qo'llaniladigan mashqlar." Journal of Inclusive Education, 3(2).
[7] Tursunova, M. (2021). "O'quvchilarda motorik ko'nikmalarni rivojlantirishda qo'llaniladigan mashqlar." Journal of Inclusive Education, 3(2).
[8] Abdullayeva, F. (2020). "Yozuv va chizish mashqlari orqali mayda motorikani rivojlantirish." Journal of Primary Education, 4(1).

Soft games and exercises with didactic tools

Information: Soft games and exercises based on playing with didactic tools, such as Lego blocks, jigsaw puzzles or small balls, were used to develop the coordination and motor skills of students' fingers.

Methodology: Students were given the task of assembling puzzles or building shapes with Lego blocks. In this exercise students use their fingers and hands to precisely coordinate, assemble and place objects.[9]

Questionnaire method

Information: In order to collect opinions on the motor development of students, questions were asked to determine their individual development process. This questionnaire examined the physical activity of students, exercises and games that affect their motor skills, and the level of socio-psychological adaptation of students.

Example of a questionnaire structure:

1. How much time do you spend doing physical exercises per day?

o Less than 10 minutes

o 10-30 minutes

o More than 30 minutes

2. How do you feel after physical activity?

o Very good

o Average

o Tired

3. Do you like doing physical exercises?

o Yes, I like it very much

o Sometimes I like it

o No, I don't like it

4. Have you had difficulty working with small objects (for example, beads or Lego)?

[9] Ganieva, D. (2021). "Didaktik vositalar orqali motorikani rivojlantirish." Special Education Review, 5(3).

o Yes

o Sometimes

o No

5. Do your hands get tired when writing or drawing?

o Yes, they get tired quickly

o Sometimes they get tired

o No, they never get tired

6. Do you actively participate in group games?

o Yes, always

o Sometimes

o No

7. Do you find it difficult to master a new game or experience?

o Very difficult

o Average

o Easy

8. Do you like working with plasticine or clay to develop hand coordination?

o Yes, I like it

o Sometimes I like it

o No, I don't like it

9. Do you experience pain or discomfort in your hands during exercises?

o Yes, often

o Sometimes

o No

10. What physical activity do you think helps you?

• Games (e.g. Lego or puzzles)

• Physical experience (e.g. squeezing balloons)

• Creative activity (e.g. drawing or making)

Result After conducting this survey, we checked how many students responded in percentages.

1. How much time do you exercise per day? 10-30 minutes 50% of students answered.

2. How do you feel after physical activity? Very good: 30% answered.

3. Do you like doing physical exercise? Sometimes: 40% answered.

4. Do you have difficulty working with small objects (e.g. beads or Lego)? Sometimes: 50% answered.

5. Do your hands get tired when writing or drawing? Yes, it gets tired quickly: 10% answered.

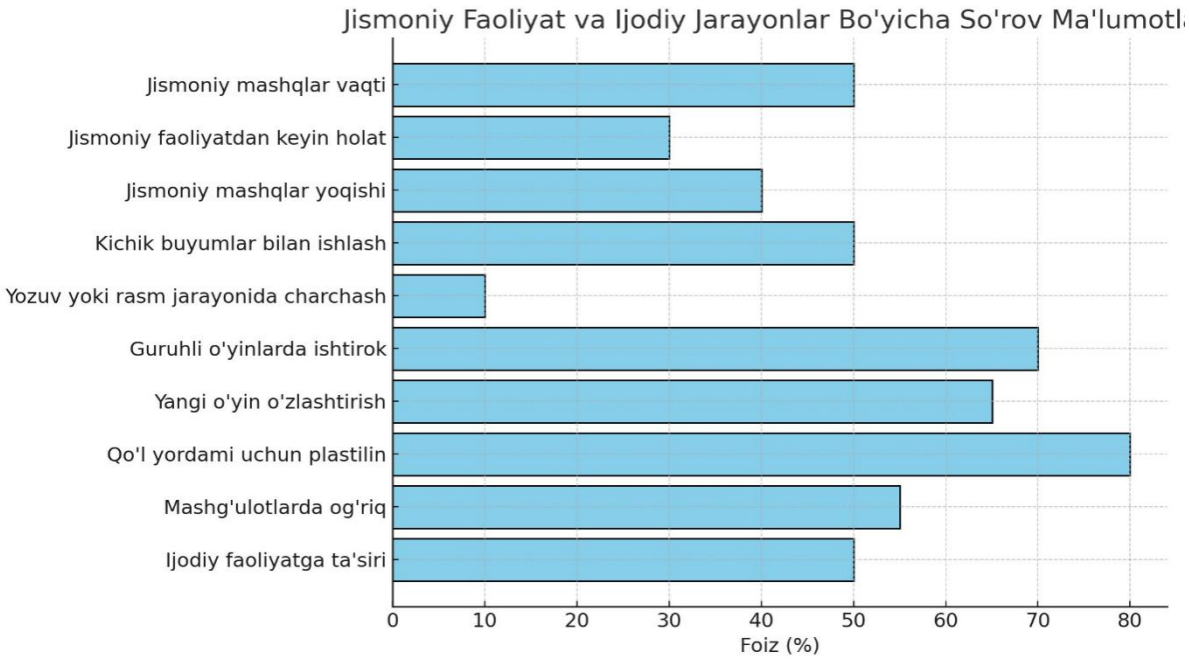
6. Do you actively participate in group games? Yes 70% answered.

7. Is it difficult for you to master a new game? Easy: 65% answered.

8. Do you like to work with plasticine or to improve hand strength? Yes 80% answered.

9. Do you experience pain or discomfort in your hands during training? No: 55% answered.

10. What physical activity do you think helps you? Creative activities (e.g. painting or crafting) 50% responded.



This diagram shows that children are highly interested in creative and social activities, especially manual work and group games. Although writing and drawing are not tiring for children, these activities may not be very interesting for children. The evaluation of the state after physical activity (30%) has a relatively low score. This indicates the need to encourage physical activity or create a comfortable environment for children.

High scores: Using plasticine for manual work (80%) showed the highest score. This means that children are very interested in working with tools such as plasticine in creative activities. Participation in group games (70%) and mastering new games (65%) also have high scores. This indicates the importance of social and play-based learning processes among children.

Average: The results for physical activity time (50%) and working with small objects (50%) were average. These activities may be enjoyable for children, but other factors may also be involved. Pain during activities (55%) was also moderately reported, indicating the difficulty of physical activity. Low: Fatigue during writing or drawing (10%) was the lowest. This suggests that children may enjoy the creative activity more or that it is not too strenuous for them. The state after physical activity (30%) and liking physical activity (40%) were low, indicating that physical activity can be difficult for children.

(Discussion) In my opinion, the implementation of innovative pedagogical technologies for the development of fine motor skills of primary school students will contribute not only to their physical development, but also to the development of skills such as conscious reading and writing. The development of motor skills in the early grades helps to increase students' thinking skills, improve concentration and memory. It should be noted that the use of new technologies in the educational process increases students' self-confidence and encourages them to try new activities. This is especially important in inclusive education, as it provides an individual approach to the needs of each student. However, in order to effectively use these technologies, teachers need to improve their skills and consolidate their knowledge of modern pedagogical methods. To effectively use innovative technologies, teachers should plan lessons tailored to the needs of students and provide individual assistance to students. At the same time, it is necessary to set certain time limits and procedures for their use so that technologies do not have a negative impact on students. Innovative technologies can develop the educational process, but it is important to use them correctly and in a timely manner.

The use of innovative pedagogical technologies in the development of fine motor skills helps to improve the level of mastery and socio-psychological adaptation of primary school students in inclusive education. Innovative technologies create the opportunity to implement an individual approach to students, organize education that meets their needs. This helps students feel free and confident, which is an important component of this process[10].

In the process of developing fine motor skills in primary school, educators, through the effective use of technology, support students' attention, develop finger muscles, and support creative thinking. The use of game approaches, such as educational games and didactic materials, accelerates the thinking and physical development of students. These technologies help students test their abilities and learn on their own, while making the learning process more interesting and effective. At the same time, it is necessary to take into account some of the difficulties that may arise when using innovative technologies. Teachers must have the skills to use technology correctly and effectively. Also, the high cost of technology or problems with the Internet and computer technologies can hinder the learning process of students. Therefore, additional resources and support from the state and educational institutions are needed to address these problems. The use of innovative pedagogical technologies greatly contributes to the development of fine motor skills in primary education. They improve the physical and mental development of students, make the learning process more effective, and help implement the basic principles of

[10] O‘rni, Sh. (2022). Innovatsion pedagogik texnologiyalar va ularning ta’lim tizimidagi roli. Pedagogika va Ta’lim.

inclusive education. At the same time, for the successful implementation of these technologies, it is important to improve the skills of teachers and improve the technological infrastructure [11].

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