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THE INFLUENCE OF MOTOR AND COMMUNICATION SKILLS ON TRANFER ACTIVITY TECHNIQUES OF STUDENTS WITH AUTISM AND AUTISTIC SPECTRUM DISORDER

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According to the statistics, the number of children with autistic disorder is increasing every year around the world, while the majority of diagnosed children with autism have pronounced motor impairment as the most characteristic feature of a motor disorder associated with autistic spectrum disorder. Postmodern approaches to the system of training and education of students with autistic disorder emphasize the importance of developing motor sphere and motor skills in the performance of activities by students with autism and autistic spectrum disorder, their personal active participation or functioning in society, self-regulation, increasing learning abilities and skills, which encourages the ability to achieve the goals of harmonious development mainly during the period of schooling and inclusive or special education.

Keywords: *autism, autistic spectrum disorder, motor skills, communication skills, performance, activity, functional praxis.*

INFLUENȚA ABILITĂȚILOR MOTRICE ȘI DE COMUNICARE ASUPRA TRANSFERULUI TEHNICILOR DE ACTIVITATE ALE ELEVILOR CU AUTISM ȘI TULBURARI DIN SPECTRU AUTIST

Potrivit statisticilor, numărul copiilor cu tulburare de autism crește în fiecare an în întreaga lume, în timp ce majoritatea copiilor diagnosticați cu autism au deficiența motrică pronunțată ca fiind cea mai caracteristică trăsătură a unei tulburări motorii asociate cu tulburarea spectrului autist.

Abordările postmoderne ale sistemului de formare și educație a elevilor cu tulburare autistică subliniază importanța dezvoltării sferei motorii și a abilităților motrice în desfășurarea activităților de către elevii cu autism și tulburare de spectru autist, participarea sau funcționarea personală activă a acestora în societate, autoreglementarea, creșterea abilităților și aptitudinilor de învățare, ceea ce încurajează capacitatea de a atinge obiectivele de dezvoltare armonioasă în principal în perioada școlarizării și educației incluzive sau speciale.

Cuvintele-cheie*: autism, tulburări din spectru autist, abilități motrice, abilități de comunicare, performanța, activitatea, funcționarea.*

Introduction

Autism according to the international classification of diseases of the 11th revision, released in 2022, is considered as a neurobiological disorder of a psychological (mental) nature, where intellectual deficiency is not mandatory, that is, the IQ level of a student with autism is not considered. This is explained by the fact that intellectual deficiency in students with autism is associated primarily with a lack of need for communication, due to disorders, namely the emotional and intellectual psychological spheres of development [1].

If in previous two decades the meaningful core of setting and diagnosing autistic disorder in a child was non-contact and verbal lack of communication and communication skills, today modern scientists consider that the core of diagnosing such developmental disorder is *motor instability* and *functioning*, where by the *"Functioning"* in this context is considered as *"the level of disability in relation to the level of adaptation and functioning"* [2].

It is also known as a fact that motor impairment and motor disorders have been considered as the main problem in the performance of activities by students with autistic disorder, since the common thing that unites them is the *asynchrony* of psychophysical development, expressed in the form of a lack of purposefulness of a motor act, as well as a motive to perform various types of activities that are important on daily basis for children with autism. Motor and coordination problems are not as only one problem of general child's development, which also plays a key role in the mental development of a child with autism.

Modern scientists O.S. Nikolskaya, E.R. Bayenskaya, M.M. Liebling believe that mental development in autism occurs in special conditions and course of the disorder, when the regulation of vital and mental tone is disturbed, and the thresholds of affective sensitivity are lowered. The impossibility of an adequate response to the environment leads to the fact that for the child the most significant are the tasks of protection and self-regulation, not the goal of active adaptation to the world. This leads to a distortion not only in the development of mental functions, but also to coordination and motor disorders in varying degrees of severity, which leads to a limitation in the development of the motor system, as well as speech development and communication, respectively [3, p.27].

Professor Andrew Whitehouse of the Telethon Kids Institute, Australia, and his colleagues in the course of diagnostic evaluation of children with autism from the age of 6 years, that a third of autistic children have movement or motor disorders that are rarely noticed [4]. All students with autistic spectrum disorder, with a significant heterogeneity of this group in terms of composition, require psycho-correctional education (integration of traditional and non-

traditional learning styles), the task of which is, first of all, the development of meaningful interaction with the outside world [5, p.29].

Metodology

The concept of the psychopedagogical experiment was conditioned by the theoretical postulates that were put forward by the great scientists of cultural historical psychology: L.S. Vygotsky, A.R. Luriya and A.N. Leontiev, where are considered:

1) The thesis about general and particular patterns of psychophysical and speech development.
2) The concept of activities and their implementation, which especially emphasizes the role and importance of communication and activities as such in the development of a child, including a child with autism.
3) Testing at the initial stage of the study and at the end according to the methods: (1) Functional Independence Measurement Scale. (2) Barthel Scale (activity index of daily activities). (3) Observation - action analysis (adapted by Keilhofhner and Forsyth, 2009). (4) Motor test (Bruininks-Oseretsky Test of Motor Proficiency 2)

Results

In our practical research that was conducted in Auxiliary School nr.6 in Chisinau, working with students with autistic disorder (21 respondents), we encountered and acknowledged the difficulties in performing all types of activities. Automatisation of certain components of action in students with autistic disorder displaces the object of conscious regulation as autostimulation. The stereotyping of the performance of actions puts forward in the circle of consciousness not their common goals, but only changes the conditions for their implementation, in other words there is a distortion of control and evaluation of the results of these actions.

The respondents who took part in the study (survey) in 2022 are presented as follows:

1*) age:* a) 7 years old - 16 students (76.2%); b) 8 years - 5 students (23.8%); 2) *gender:* a) boys - 14 students (66.7%); b) girls – 7 students (33.3%); 3) *diagnosis:* a) autism 11 - students (52.4%); b) *ASD* - 10 students (47.6%);

As seen in Figure 1 and according to the survey of students, we admit that:

1) 51.1% (12 students) of students have a *very low level of communication skills* 2) 23.8% (5 students) of students have a *low level of development of communication skills.* 3) 19% (4 students) of students have *an average level of development of communication skills.*

The research results showed that the *motor skill* of students with ASD (all 10 students with ASD) is developed better compared to students with autism, as the appearance of the *"above average"* mark clearly demonstrates and confirm

this scientific observation. We observe and declare that the level: 1) *"above average"* in 10 students (47.6%). 2) *"average level"* for 6 students (28.6%). 3) *"low level"* in 2 students (9.5%). 4) *"very low level"* for 3 students (14.3%).

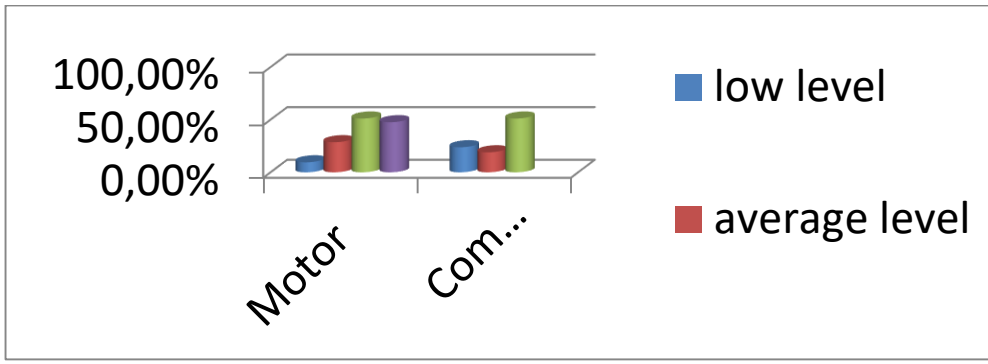


Figure 1. The level of formed motor and communication skills before the psycho-correctional impact

In the course of the scientific research and in the process of communication, as well as interaction with people (teaching staff), a student with autism and ASD undergoes adaptation and socialization that was named as functioning, which largely depends on the volitional and creative components of behavior, where students enter the sociocultural environment, their assimilation of the values of society, which would allow them to function successfully as a member of society [7-9].

In our survey and research, we determined that the main criteria for communicative socialization are: 1) understanding of speech (oral, addressed to the student during psycho-correctional classes). 2) communication (a way of expressing the subjects during the study). In most cases, this is non-verbal communication.

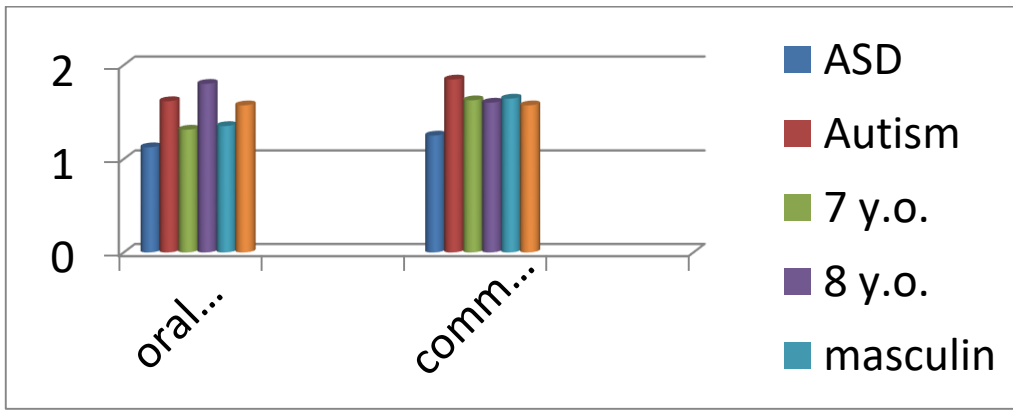


Figure 2. Average indicators of social interaction depending on gender,

age and diagnosis

The test results revealed the following results: 1) 38.1% (8 students) - a *verbal way of communication.* 2) 61.9% (13 students) - a *non-verbal way of communication*. 3) 71.4% (15 students) *understand the addressed speech*. 4) 14.3% (3 students) *do not understand the addressed speech.* 5) 14.3% (3 students) *partially understand the addressed speech.*

Acquiring a motor action (motor operations) is associated not only with the formation of a skill, but also with the development of those qualitative features that allow students to perform motor exercises of a corrective nature and direction with the necessary strength, speed, endurance, dexterity [10, p.47]. Having revealed a new level of formation of the studied skills among students with autism and ASD, we can acknowledge the following: 1) there was a transition from a *very low level* of skill development to a *low level*; 2) from a *low level* to an *average level*; 3) from the *middle level* to the *upper level*; 4) a new level appears – *high*.

Table 1. Comparison of the levels of development of motor and communication skills of the subjects after psycho-correctional influence

Level of development	Communication Skills	Motor skills
Low	21,4% (3 Students)	7,1% (1 Students)
Middle	42,9% (6 Students)	14,3% (2 Students)
Above average	24,4% (3 Students)	42,9% (6 Students
High	14,3% (2 Students)	35,7% (5 Students)

As it can be seen from table 1 motor skill after psycho-correctional influence allows students with autism and ASD to pass to a new level of development, the stage of performing activities, for example, "self-service". Here we observe and admit that the transfer of a motor skill to a purposeful motor act of performing an activity (self-service) has a different character in the subjects of both groups.

In the experimental study, the prospect of developing skills for performing activities by students with autism and ASD, as well as a *positive transfer* of methods for performing activities, was considered. That is a specific motor action with the aim of transferring it to the performance of activities where there is a motive and a need, which describes the traditional way of performing an activity by a human being (psychological aspect).

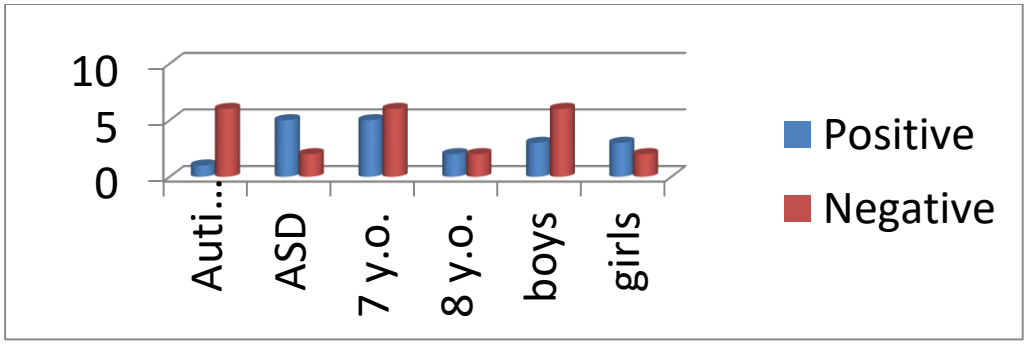


Figure 3. Comparison of gender, age and diagnosis values for the transfer of motor skills to the performance of activities by the students

From Figure 3 we admit that the *negative transfer of skills* is obvious. *Positive transfer* of motor skills to the performance of activities was observed in 6 students (42.9%), and *negative transfer* in 8 subjects (57.1%). We see that *negative transference* in most of its cases in boys diagnosed with autism. We assume that the *positive transfer* of motor skills to performance skills is primarily associated with the transition from one level of skill development to the highest, as well as the fact that a verbal and visual explanation of the motor material studied by the student could serve as an impetus to motor activity. The results obtained indicate that the development of motor activity and the formation of motor skills are higher than the formation and development of communication skills.

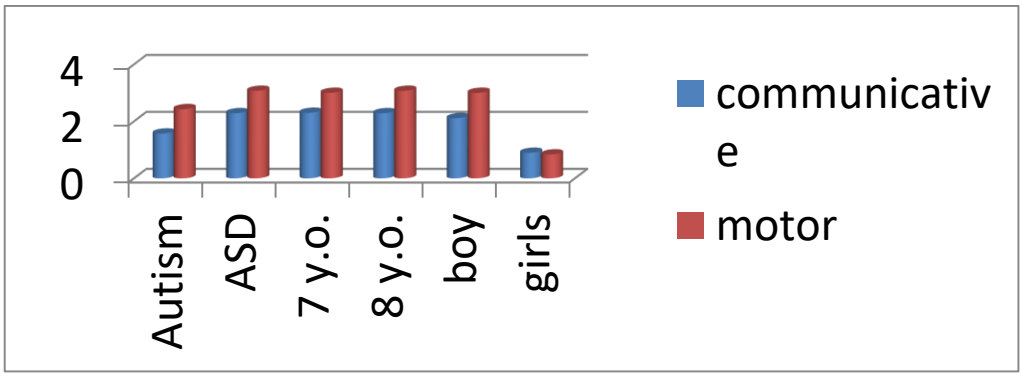


Figure 4. Comparative analysis of communication and motor skills depending on gender, age and diagnosis after corrective action

Our experimental research allows us to state the following points with confidence: 1) the development of motor skills is higher than communicative ones. 2) the transfer of motor skill techniques to the skill of performing activities in most cases is negative. 3) It has been proven that the relationship between the level of motor skill and performance skill ($t= 1.147$ at $p < 0.272$). 4) a gender

difference was proved: a) in performance skills (t = -1.249 at p < 0.234). b) motor skill transfer (t = -1.000 at p <0.336). 5) differences in communication and motor skills depending on gender, age, and diagnosis were proved, where the predominance of motor skills in relation to communicative ones according to the T-criterion was proved: a) gender and communication skills (t = - .335 at p = 0.729). b) gender and motor skills (t = -.522 at p = 0.611).

Conclusions:

1) The severity and severity of developmental disorders in students with autism and ASD play a key role in the formation of a motor skill or motor ability, and also has an impact on the psycho-emotional development of a student with autism and ASD, their adaptation, integration into society;
2) there is a connection between the level of development of motor activity and the skill of performing activities, namely, self-service activities in students with autism and ASD;
3) the skills of communication and motor act contribute to the improvement of the performance of activities by students with ASD and autism.

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