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MESSAGE OF THE EDITORIAL BOARD CHAIRMAN

Welcome to the Armenian Journal of Special Education (AJSE). This journal is a peer reviewed journal in English for the enhancement of research in different areas of special, inclusive education and rehabilitation. The aim of the AJSE is to give a highly readable and valuable addition to the special education literature which will contribute to the decisive reference tool for years to come. Key to our aim is a vow to enlightening international authors, readers, and reviewers to become highly qualified and skilled writers, criticizers, and users of special and inclusive education research on international level, as well as advanced researching practices.

We are delighted to publish AJSE in English to reflect different issues of international and national special, inclusive education and rehabilitation fields that are relevant for up-to-date dispute. We are more than pleased to receive contributions for our next issue from special educators, rehabilitation field specialists, researchers, scholars and practitioners to ensure the reliability and the success of the Journal.

We highly appreciate any comments, feedback and suggestions that would help us to advance the objectives of the Journal. Always keeping in mind that education without innovative research and expansion is pointless for the community, we are keeping the track to interwove universally and contribute to global knowledge as much as it is possible.

Sincerely,

RUBEN MIRZAKHANYAN

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INCLUSIVE EDUCATION FROM A VERY BEGINNING: YEREVAN SCHOOL N20

PRINCIPAL'S NARRATIVE

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ABSTRACT

There are more than one billion “disabled persons” worldwide, 10% of whom are children mostly living in developing countries. Within the United Nations (UN) the term “disability” is defined as “any restriction or lack (resulting from an impairment) of ability to perform an activity in the way or within the range considered normal for a human being”.

The UN and the United Nations Children’s Fund (UNICEF) endeavour for all children to have equitable access to education as a basic human right. Education is critical for children to develop their human capital and enhance their upcoming economic and social prospects. The “Salamanca Statement” adopted at the “World Conference on Special Educational Needs: Access and Quality” called upon all governments and urged them to: adopt as a matter of law or policy the principles of inclusive education, enrolling all children in regular schools, unless there are compelling reasons for doing otherwise.

In developing countries understanding of inclusive education is closely related to the special education needs of students and their participation in regular school classes. From this perspective, this paper aims to tell a story of one school in Yerevan, the capital of Armenia from the very beginning till nowadays.

Key words: inclusive education, education discrimination, special educational needs, people with disabilities, narrative.

INTRODUCTION

The Convention on the Rights of the Child (1990) combined with the Convention on the Rights of Persons with Disabilities (2006) forms the heart of the international framework protecting children from education discrimination. Still, from the earliest times of human development, the attitudes of

people in society towards people with disabilities have changed. Thus, in the course of human development, the formation and definition of the rights of persons with disabilities have come a long way: from rejection to disappointment and then to the provision of numerous medical and social services (Harutyunyan & Ghazaryan, 2017).

Inclusive education systems were expected to remove barriers limiting the participation and achievement of all learners; respect diverse needs, abilities, and characteristics; and eliminate all forms of discrimination in the learning environment (UNESCO, 2018). Children started to learn together and the practice of mere integration or partial participation in class fell into disuse. Ainscow, Booth, and Dyson (2006) defined inclusion as an approach to education representing specific values. According to the authors, inclusive education is concerned with all children and with overcoming barriers to all forms of marginalization, segregation, and underachievement. The authors claim that many popular studies still take a much narrower view of inclusion regarding children who have disabilities, or who are otherwise categorized as “having special educational needs” (Harutyunyan & Sadlo, 2019; Sharma, 2015; Ainscow, Booth & Dyson, 2006).

In Armenia, as in many countries of the world, there are a lot of data gaps regarding persons with disabilities, hindering the possibility to make informed policy choices in fulfilling their rights. Only the first steps toward including these persons into society, such as changing education policy and accepting inclusive education for children with special needs are done by different NGOs and governmental structures (Harutyunyan, Hovyan, Saratikyan, Azatyan, Muradyan & Tanajyan, 2019). Inclusion is currently one of the most dispute and controversial topics involving current education practice. Success with the inclusion of children with special educational needs often depends on the perspectives of the teachers implementing the inclusion and multidisciplinary teams working with these children and their families. The process of inclusion can easily fail if the required supports and teacher commitment aren't presented (Harutyunyan, Hovyan, Saratikyan, Azatyan, Muradyan & Tanajyan, 2019).

Many sources are reflecting on the issues and achievement in the field of inclusive education worldwide, but still, this evidence is mostly from United States of America or western European countries and does not necessarily apply to other countries, such as Armenia, due to cultural differences and inclusive school policies in these countries (Harutyunyan & Harutyunyan, 2014).

While talking about Inclusive Education, the question becomes even more important because inclusion emphasizes the existence of persons with different abilities and diverse developmental problems in society. It is not a secret, that all these issues sometimes can be very lenient, which is related to the quality of the presentation of the idea of inclusion, the availability of physical and human resources for inclusive education, and other issues connected with the awareness and readiness of the society (Harutyunyan, Hovyan, Saratikyan, Azatyan, Muradyan & Tanajyan, 2019).

Inclusive education is more than the process of solving students' problems that fall outside the school system. Inclusive education itself gives equal opportunities to all learners, regardless of their disability, needs, age, sex, ethnicity, knowledge, or status (Moen & Gudmundsdottir, 2003).

Based on all mentioned above, the current paper has an aim to describe the situation in Armenia, the path of inclusive education development from one school narrative example.

METHODOLOGY

Narrative research is the study of how human beings experience the world, and narrative researchers collect these stories and write narratives of experience (Gudmundsdottir, 2001). Narrative inquiry is a relatively new branch within the qualitative or interpretive research tradition. When reading about narratives and narrative research, one is left with the impression that the focus of attention becomes diffuse, spreading in many directions. Very often, the concept of narrative is used in connection with how to represent a qualitative research study (Moen, 2006).

The narrative approach is a frame of reference, a way of reflecting during the entire inquiry process, a research method, and a style for representing the research study. Hereafter, the narrative approach is both the phenomenon and the method (Connelly & Clandinin, 1990), a hypothesis that some might find rather confusing and overpowering.

Still, within the frame of this paper, to understand the true situation, human beings, their actions, thoughts, and reflections, the environment, or the social, cultural, and institutional context in which the particular individual operates (Moen, 2006) were investigated and described.

In this paper, the perspective knowledge-for-practice is described. The focus here is on formal knowledge and theory, and the assumption appears to be that expert learners can be good teachers with more theoretical knowledge and experience (Cochran-Smith & Lytle, 1999).

A NARRATIVE

For several years since 2007 till now John Kirakosyan Yerevan School No. 20 has been implementing inclusive education. During the first years of inclusive education, our school adopted the emotional approach explaining the values of inclusion to the school staff, parents, and students. And the following rules were implemented, met, and respected:

- Everyone has the right to express his opinion freely.
- Everyone has the right to belong to a society and to be a part of it.

- Everyone has the right to get an education and to have a lifetime of learning.
- Everyone has the right to a company.
- Everyone gives his fruits to life because inclusion is not something mechanical but a general educational development process that includes access to education for all and meets all the needs of children.

A few years later we realized that we won't succeed only based on emotions and it led us to create a work plan. We called it "From Emotions to Strong Professionalism" which was based on our mission to provide quality education by living together and creating a tolerant and equitable school life for all children. In other words, there should be an atmosphere in the school that would promote the slogan "Children must learn together".

It was necessary to take into account certain principles that were mandatory for the implementation of the given plan.

- Inclusive education should be supported not only by school staff, but also by parents, by the community, and all those whose intervention could be helpful in one way or another.
- Inclusive education eliminates discrimination, so all children, including children with special educational needs, should be encouraged to become full members of society, and all children should participate in all school events.
- The community and the public should be informed about the involvement by holding meetings and parent forums.
- The school must have a well-trained support team.
- Teachers need to be introduced to new teaching methods, especially student-centered ones, for the education of ALL children.
- The school building should be adapted to the needs of children with physical disabilities: ramps, handles.
- Wide introduction of Information and Communication technologies in the education process should be ensured.

And we managed to implement our plan, for which we are grateful to the Ministry of Education and Science of Republic of Armenia, Yerevan Municipality, UNICEF Children's Fund, "Bridge of Hope" and "Mission East" NGO-s, Pedagogical-Psychological Assessment Center for supporting and being next to our school. Because of this cooperation and strong mutual support:

- a strong multidisciplinary team was created: psychologists, special pedagogues, speech therapists, social workers, educators, art therapist;

- an art therapy center was established which also became a centre for joint cooperation of children after classes;
- we managed to create opportunities for children to move freely and safely in the school building, even bringing down the classrooms to the first floor and buying a bus for transporting our students with special needs;
- trainings were organized for teachers not only on subjects or methodological topics but also on “Student social adjustment in school and in society”:
- parents were involved in the school routine;
- the school-parent-community relationship was strengthened.

The support group was able to contact the facilitators in a short period, organize individual lessons after classes, develop a system of counseling for teachers in correcting individual tasks, problems, completing Individual Learning Plans.

The educational goals and goals that we set for ourselves at the beginning of the year increased during the year because the results shown by the children were more than we had expected. This is due to several factors but the primary role mainly is social cooperation.

Inclusion is a process of taking into account the diversity of the needs of all learners, taking into account the participation of all children, and reducing exclusion from the education system.

Inclusive education means the necessary individual support for people with disabilities to ensure their effective education and to maximize their educational and social development.

Yerevan school No.20 after John Kirakosyan where 90 students from 750 are with educational special needs, the idea of helping people is in the first place. Here children socialize with their peers, acquire skills to communicate with each other, express themselves, often participate in extracurricular activities, become self-confident.

They are happy, they smile and come to school with love and many of them are full members of society.

LESSON TO LEARN

The advice to my beginner colleagues in the frame of universal inclusion policy is:

“It is crucial that school staff adopts the three most important concepts in their work that should be placed above education. These are the three real indicators of quality education: participation, cooperation, equality. When there is an environment of full participation and cooperation for all learners and everyone has equal opportunities to develop, then we can say that education is of high

quality. Teachers need to work more actively and systematically to achieve the goals of inclusive education.” Khosrovyan, A., Yerevan, 2021.

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CLASSIFICATION BASED ON DYSFUNCTION AS A BASIS FOR PROVIDING SPEECH THERAPY SERVICES

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ABSTRACT

At present, the legal acts in force in the Republic of Armenia, the approaches enshrined in them, which refer to children with various developmental disabilities, the provision of equal social living conditions for the disabled, are not a necessary basis for effectively and objectively solving the many problems arising from the above reasons.

Existing criteria are not decisive in terms of the impact of educational, social, and environmental factors and do not summarize all components of function and disability. Whereas an individual's participation in public life is conditioned not so much by his or her health condition as by all the surrounding circumstances that positively or negatively affect the person's activities.

Taking into consideration all this the main aim of this paper to describe the existing classification and criteria in regards to its influence on speech therapy service provision.

Key words: speech therapy, International Classification of Functioning, Disability and Health, dysfunction, health condition, speech disorder, speech therapy service.

LITERATURE REVIEW

The attitude towards stereotypes of children with various developmental disabilities in Armenia is a serious problem from the point of view of organizing their full participation in public life. The results of a study conducted by the United Nations Children's Fund (UNICEF) in cooperation with the Ministry of Labor and Social Affairs of the Republic of Armenia have revealed that children with physical and mental disabilities face serious obstacles in Armenia in regards to using different services, inclusion in mainstream schools, having sufficient habilitation and rehabilitation intervention, and participating in community life (Harutyunyan & Hovyan, 2013).

Moreover, in addition to having qualified, trained professional staff, the priority in Armenia is to ensure access to the physical environment available in institutions of inclusive education, in particular, in schools, universities, and various institutions for those with special educational needs who may have different problems and difficulties in daily activities and while adapting the environmental conditions (Harutyunyan & Hovyan, 2018).

The legislative changes made in the framework of educational reforms in 2017 in terms of current speech therapy assessment (based on the law on social protection of the disabled in the Republic of Armenia, article 5.1) plan to improve the work of specialists of pedagogical-psychological support centres, multidisciplinary teams of schools, increase the efficiency of inclusive education within the framework of educational reforms, as well as select more effective ways of organizing teamwork with children with special educational needs and their families.

Naturally, such decisions are the cause of certain problems in the process of educational needs assessment and have their impact on the application of pedagogical-psychological assessment criteria at the school level and the organization of education for children with speech disorders.

Already in 2018, in connection with the introduction of the program provisions of universal inclusive education, certain problems arose in the process of carrying out special rehabilitation works, which were addressed by special educators and psychologists, speech and other rehabilitation field specialists.

It should be noted that Armenia adopted the International Classification of Functioning, Disability and Health developed by the World Health Organization (WHO ICF, 2008; WHO, 2001) in 2014 as a national standard. This model, as a universal model emphasizes an individual's strengths, preserved abilities, promoting his/her more active participation in community and social life, including productivity and leisure. International Classification of Functioning, Disability, and Health developed by the World Health Organization (WHO ICF) enables a unified, coordinated, comprehensive approach to individual needs assessment policies to provide a variety of services (Harutyunyan, 2017). WHO ICF acts as the basis to evaluate or assess both a person's disability and the level of disability in the current population. As a model, it provides a description of human functions in situations related to their limitations as well as the basis for the coordination of this information. It divides the information into two parts:

- 1) structure of the body and function, activity and participation;
- 2) environmental factors (WHO, 2001).

As a result of a comprehensive assessment of the person, in accordance with his/her individual abilities and needs, it will be possible to provide appropriate and targeted services to ensure the

participation of children with speech disorders in the educational process and social inclusion, which will be a guarantee of their full inclusion in society (Harutyunyan & Hovyan, 2017).

AIM OF THE RESEARCH

Based on the primary goal of the speech therapy intervention organized in general education, the following issues for the research have been set:

1. to study the peculiarities of organizing speech therapy intervention in inclusive schools;
2. to study the peculiarities of organizing speech therapy assessment in inclusive schools;
3. to investigate the classification of function-based classifiers, the provision of speech therapy services organized accordingly, as well as the impact of the above services on the organization of education processes for children with speech disorders;
4. to analyze the effectiveness of support services in mainstream education as part of educational reform (cooperation between regional pedagogical - psychological support centres - multidisciplinary team - parent);
5. to analyze the practical significance of the WHO ICF and its effectiveness in the organization of the speech therapy intervention process.

ANALYSIS OF THE SITUATION

Current reforms in Armenia provide an opportunity to review the disability assessment system for children with speech disorders. This will allow the latter to ensure equal social life and educational conditions, opportunities, apply a new model of a comprehensive assessment of individual needs and capacity, based on the ideology and principles of the WHO ICF. The new approach makes it possible to more objectively, comprehensively assess a person's abilities, define disability, taking into account not only the health problem, diagnosis, ability, but also the environmental factors that affect the activity in one way or another (Harutyunyan, 2017; WHO, 2008; WHO, 2001). The main purpose of the model is to provide rehabilitation services that meet the needs of a person based on comprehensive assessments.

The issues of protection of the rights of children with developmental disabilities in the Republic of Armenia, including the social inclusion of such persons, promotion of equality, and equal opportunities, have always been under the state's attention. Despite this fact, many of the provisions of the law are no longer in line with the nature of the existing legal relationship. Although the law and the articles regulating the employment of the disabled have undergone many changes, however, certain issues related to disability have not been resolved. Moreover, there are contradictions and gaps in the

Republic of Armenia (RA) legislation regulating the field of disability, which significantly reduce the effectiveness of law enforcement. It should be emphasized that the fact that there are no guarantees for their implementation, especially material guarantees, hurts the effectiveness of the implementation of the RA legislation in this field. Objectively, there is a need to develop and adopt new laws and legislative norms. Steps are currently being taken to bring the legislation of the Republic of Armenia in this area in line with the international conventions. For that purpose, the draft law of the Republic of Armenia “On Protection of the Rights of Persons with Disabilities and Social Inclusion in the Republic of Armenia” was developed.

Educational need assessment and special educational conditions at different stages of a child’s development is a process of collecting and coordinating a variety of information about the child, which is carried out in the child’s usual environment to ensure proper planning of the child’s curriculum, necessary professional services, as well as speech therapy assessment (Avagyan, et. al., 2017; BHMKG, 2011).

Within the framework of a current research paper, the peculiarities of speech therapy assessment are presented, in the process of determining the type of speech disorder and speech therapy intervention so far. Within the structure of WHO ICF, the general qualifier showing the severity of the problem in all areas consists of five levels with a numerical value of 0-4 ((0) – no problem, a person can complete the task without any difficulty; (1) - mild, a person can perform this operation independently, but with difficulty; (2) - moderate, a person can perform this action in case of certain support, in the presence of a suitable object or with the partial support of another person; (3) - severe, when the complexity/problem is serious, and a person can do it only with the help of another person; (4) - complete, when a person cannot perform an action at all or does not participate at all in the action, even in the case of assistance (Harutyunyan, et. al., 2018; WHO ICF, 2008). The analysis includes an assessment of voice and speech functions, voice pronunciation, sound pronunciation, bradylalia and takhilalia, stuttering, rhythm and slowness, speech fluency, speed, and melody functions according to WHO ICF. Within the framework of the definition of the problem, the peculiarities of speech therapy assessment according to the type of speech disorder were studied and determined (based on the existing standards).

As it is known, the precise position of the speech therapy intervention and work in the educational institutions of the Republic of Armenia is the prerequisite for organization and overcoming the verbal problems of the children with speech disorders and their full inclusion in the educational process (Hovyan, 2015; Paylozyan & Tadevosyan, 2007; Kalyagin, 2004). Speech therapy work carried out in these institutions pursues one important goal - the development of the ability and skills to reproduce the sounds of speech correctly.

Studies conducted in mainstream schools show that many speech therapists find it expedient to apply the psychological-pedagogical classification of speech disorders in their work, according to which there have developed perspective plans. According to that classification, the following points are separated:

- Sound underdevelopment (SU),
- Phonological underdevelopment (Phu),
- General speech underdevelopment (CSU).

Before the adoption of the WHO ICF, speech disorders were described in the 10th International Classification of Diseases (ICD 10). Those were codes as follows: F 80-89, F 98.5, F 98.6, R 47.1, etc. (Paylozyan & Tadevosyan, 2007).

The perspective plans for the correction of speech disorders in elementary school students are detailed in the sequence, content, shapes, and accessories of the speech therapy intervention with children with speech disorders. Plans can be applied to both individual and group exercises and intervention forms. The length of work on each topic depends on the child's knowledge and abilities, the next topic is passed only if the previous one is fully mastered. Experience analyses show that the correction of SU takes one academic year on average (Paylozyan & Tadevosyan, 2007; Chirkina, 2005). The speech therapist working in schools, to organize the speech therapy work in the educational institutions, first of all, use the perspective plans for the organization of that work. At the same time the development of the abilities of learners with speech disorders as a result of targeted speech therapy, according to which they should be able to perceive and distinguish sounds according to acoustic features, master the sound regulated for the given language, as well as exercise auditory control over their own pronunciation and assess the pronunciation of their own speech (Hovyan, Vardanyan, Amirbekyan & Grigoryan, 2008; Paylozyan & Tadevosyan, 2007; Hovyan & Karapetyan, 2001).

The issue becomes more complicated when it comes to the organization of speech therapy intervention in the regions of the RA, to the existence of appropriate programs for the development of children's speech, the provision of sufficient professional level of speech therapists, and Armenian language teachers. As the speech development of children with speech disorders is often complicated by a variety of external organ problems, many authors recommend the use of expressive exercises in speech therapy, which mainly help to strengthen the position of the external organs, their participation in each expression of sound, as well as the implementation of conscious actions aimed at sound analysis in the development of this or that property of sounds (Babina, 2014; Saratikyan, 2011; Hovyan, Vardanyan, Amirbekyan & Zohrabyan, 2007).

The analyses of existing data allowed us to find out how speech therapy assessment is done, what criteria are used to assess, and how to determine the type of speech disorder and the degree of

impairment. During the research, information was also collected on the assessment of the special educational needs of the child, in regards to the peculiarities of speech therapy assessment.

It should be noted also that the work of a school speech therapist is significantly different from the work of speech therapists in a pre-school educational institution or polyclinic. The school speech therapist deals not only with oral but also with written word correction, that is, he/she works on the specific mistakes of writing and reading. Thus, the work of a mainstream school speech therapist is very extensive. Speech disorders of preschool junior students can be a barrier to mastering the school material. At school, the child has to overcome many difficulties based on different factors, for example, talk and answer the questions in front of the whole class, ask questions, read aloud. Under these conditions, speech disorders are immediately revealed. Too often, children with speech disorders are painfully aware of their problem, becoming impulsive, self-contained, shy, and somehow irritable. The main task of the school speech therapist is to identify and overcome written and speech disorders in time. The collaborative work of speech therapists and the class teacher plays an important role in the prevention of written and speech disorders. In fact, children should be involved in preventive care before they go to school in first grade, but not all children go to preschool. And at the same time, parents do not have the relevant knowledge regarding these issues, so the school speech therapist corrects written language disorders (dysgraphia) too. Corrective speech therapy work at the school can lead to positive correction of dysgraphia of junior high school. The speech therapy room in mainstream education institutions is established to provide assistance to students with oral-written (primary) developmental disabilities. With the accurate organization of speech therapy work, the speech therapist helps children to overcome existing speech disorders, to master the school program equally with other students.

The main problems of speech therapist working in a mainstream school are:

- timely diagnosis of students' speech development disorders;
- correction of oral-written disorders aimed at overcoming difficulties in mastering the school program;
- prevention of speech disorders;
- awareness of parents and teachers about speech therapy knowledge.

Directions of speech therapy work:

- proper sound formulation;
- development of sound perception;
- development of phonetic analysis and combination skills;
- strengthening the pronunciation skills of words with different phonetic structures;
- word vocabulary;
- joint speech improvement;

- correction and prevention of writing a speech and reading disorders;
- development of fine motor skills.

Registration at the mainstream school speech therapist's office is based on students' speech examinations, which are held on September 1-15 and later on May 15-30. The work loading of a speech therapist in school is 20 academic hours per week. The speech therapist fills in a speech card for each child registered at the speech therapy office. After the elimination of written-oral speech disorders, the learner is discharged from the speech therapy service. Intervention sessions with children are conducted both individually and in groups. The main activities are group lessons, as a rule, they are held in extracurricular hours. The frequency of training is determined by the severity of the speech disorder. The duration of group exercises is 40 minutes; the duration of individual lessons is no more than 20 minutes usually.

The content of the speech therapy intervention session includes the following directions:

1. Development of general speech skills (breathing exercises, exercises aimed at the development of voice strength, tempo, rhythm, expressive side of speech);
2. Development of general mobility - the balance of movements (combining speech with movements);
3. Development of fine motor skills (massage, self-massage, finger training, mosaic work, plaster, glue, etc.);
4. Development of higher mental functions (attention, memory, thinking);
5. The compulsory set of general pronunciation exercises;
6. Work with the word syllable structure;
7. Development of sound analysis and combination skills;
8. Vocabulary development;
9. Coherent speech development;
10. Development of speech grammatical structure;
11. Dysgraphia and Dyslexia prevention and treatment tasks and exercises;
12. Graphomotor skills development with junior school students.

It is recommended to include no more than 5 types of work in one session while working with children of elementary school, and 6-7 activities with secondary school students. The peculiarity and strong point of the work is the maximum involvement of all analyzers. Frequent repetition of speech therapy exercises is typical while intervention.

CONCLUSION

Summing up the analysis of the provision of speech therapy services, it is important to state that the current criteria do not take into account the role of social and environmental factors in the assessment of speech disorders, while the individual's participation in public life is due not so much to his speech disorder as to all circumstances surrounding him. have a positive or negative impact on his educational activities.

The lack of experimentally developed means, methods, and pedagogical conditions for the implementation of speech therapy work in this context significantly complicates the solution of the above-mentioned important problem. Therefore, the research analysis of the speech therapy intervention attitude in mainstream schools allows to identify the existing problems related to the classification based on the dysfunction, to develop ways of optimizing speech therapy, and, accordingly, speech therapy intervention and the structure of the latest.

In terms of theoretical-practical applicability, we believe that pedagogical assessments and observations to increase the efficiency of speech therapy intervention work with children with special educational needs in mainstream schools provide an opportunity to coordinate the direction of the speech therapy work process. This is also important for the determination of the increased amount of funding for the organization of children's education in mainstream schools.

According to these criteria the WHO ICF-based assessment conducted in regional pedagogical - psychological support centres having the purpose to determine the increased amount of funding for organizing the education of children with special educational needs. Still, this assessment might be used for the identification of special conditions of the child's education and can be applied by clarifying the defined characteristics of the speech disorders, more precisely, as it was mentioned before.

Thus, the classification based on functional disorders needs to be amended from a professional point of view, as it can be a basis for increasing the efficiency of speech therapy work with children with special educational needs in mainstream schools. And the systematic speech therapy evaluation, the speech therapy work organized according to that evaluation contributes to the increase of the efficiency of the educational process of the children with speech disorders.

Summarizing, analyzing the conducted, the following conclusion and findings are described as key elements:

1. In case of introduction of multidisciplinary services in the system of inclusive education, in particular, speech therapy and organization of the service, it is possible to register positive changes in terms of the effectiveness of the students' organization of educational activities to ensure their participation in school activities as independently as possible.

2. It is already obvious that each speech therapy professional intervention has its own role and importance for ensuring the normal path of the child's educational process. Accordingly, speech therapy assessment provides an opportunity to effectively organize the work of speech development and correction, which allows reducing the barriers that arise as a result of physical, mental limitations, unfavorable environmental conditions of students with special educational needs, which have affected the child's normal participation in education.
3. In mainstream schools, it is necessary to evaluate and use all possible means of support and ways to maximize the independent, free participation of students with special educational needs in both the educational process and community life.
4. The analysis revealed that by combining WHO ICF model, which is the basis for speech therapy assessment, with the classification of speech disorders established in modern speech therapy, it is possible to record positive changes as a result of cooperative and supportive work.
5. Within the frame of speech therapy assessment and speech therapy work organized accordingly, through establishing cooperation with the members of the multidisciplinary team, it is possible to assess the educational needs of each student with special educational needs from his/her professional point of view (speech therapy in this case), at the same time giving high value to child's health and social needs, which directly influence education process.

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ABOUT SIGN LANGUAGE TRANSLATOR APPLICATION

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ABSTRACT

The Sign language translator is a trilingual mobile app for translating speech into international sign language. The developed mobile application is designed for the people who have hearing problems and use sign language. It converts imported audio information into texts and simultaneously translates it into the international sign language.

The application works for Armenian, Russian and English languages. It has an admin module that allows you to add new words, edit or remove them. It has simple three-language operating interfaces. The application works on both Windows and Android operating systems. It does not require additional resources or investments. It can be useful for inclusive societies and education.

Key words: International sign language, sign language translator, sign language dictionary, online learning, multi-layered training, multi-criterion training.

INTRODUCTION

People with hearing problems are everywhere. Societies treat them well and want to ensure full involvement in the socio-economic and cultural spheres. However, it is not an easy process. In a situation where online learning has spread to many countries around the world due to the coronavirus, the problem has become more and more complicated for this segment of the society. We offer our solution to the problem.

On October 2, 2010, Armenia adopted the UN Convention about the “Rights of People with Disabilities”, according to it the state parties recognize educational right of people with disabilities.

We did a statistical survey for the period 2011-2020. As a result, it turned out that many hearing-impaired citizens are deprived of their right to education (the results of the statistics are given in Appendix A).

We tried to understand the causes and:

- we made our own test questionnaire to find out that the Armenian society is not ready for the integration process (Test questionnaire and results are presented in Appendix B).
- we investigated the disabled people problems and found out that they are not often ready for the integration process.
- we researched the Armenian market and detected that there are not enough technical means (Situation in the international market is shown in Appendix C).

THE PURPOSE OF THE WORK

Create a mobile app that will help people with hearing problems integrate into society, especially in the field of education.

We tried to understand how this problem is solved in the international market:

- We studied the international experience.
- We analysed the existing solutions.
- We found our competitors.
- We discovered their strengths and weaknesses.

Here are the results of analysis:

- We almost don't have competitors in the Armenian market.
- The demographic distribution in Armenia forces to have a trilingual system (Armenian, Russian and English).
- There are many foreign language apps on the international market (mostly in English).
- Our competitors are serious organizations.

THE TASKS

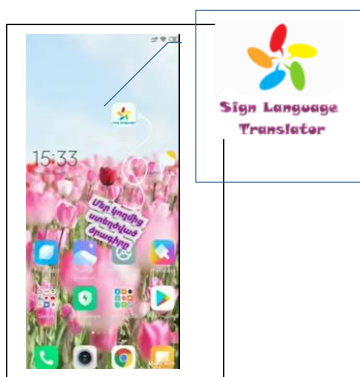
To achieve our goal, we set out the following tasks

- To create a sign language translator with the Armenian interface. It must support Russian and English languages.
- To expand the application for Windows and Android operating systems /for PC and mobile/.

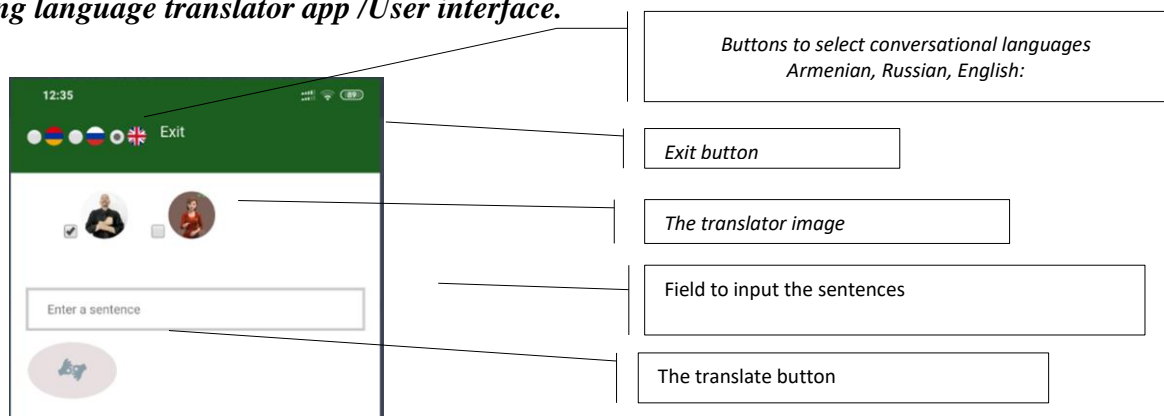
THE APPLICATION DESCRIPTION

The Sign language translator is a trilingual mobile application (app) for translating speech into international sign language (Adam, 2012; Woll & Ladd, 2003). It can be installed on the mobile smartphones and its logo will be on the screen (Picture 1). After running the app, the user can see the general interface (Picture 2).

Picture 1.
Sign language translator app's logo.



Picture 2.
Sing language translator app /User interface.



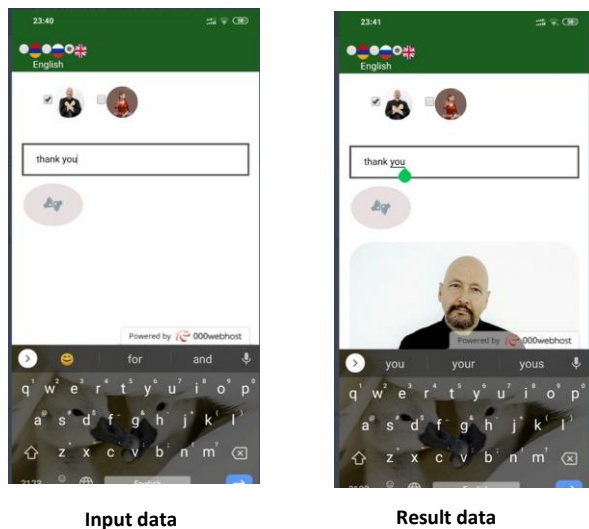
In this interface, first of all the user chooses a language by the country flags (Armenian is a default, but the user can select Russian or English languages as well). Secondly, the user must choose the translator image (male or female). The user must check a flag in front of the image. Only after that

the user can input sentences or a word in the input field. When the user clicks on the translate button, the application translates the text into the sign language.

Besides typing, the user can speak, the app will type all the text into the sentence input field, and translate it to the sign language, too. Picture 3 shows inputting the sentence in the input field and the result for both cases (typing or speaking).

Picture 3.

Sign language translator app's user interface (Input and Result data).



This application has an admin module. It is designed for inputting new data, as well as editing or removing them. The admin module consists of one super and several admins. The super admin supports all admins and gives them passwords for a login in the system. Every admin can see the data which was input by himself/herself and can edit or remove them. Super admin can see all admins and their data, and can change it all. He can remove even other admins.

The admin interface is the same as user's interface. Admin's general interface has an "Admin" button for login. Picture 4 shows admin's general interface and login interface. The admin interface, after logging in, takes the user to another interface for adding, editing or removing data. For data adding admin must click "+Adding" button. So, another interface opens on the mobile screen (Picture 5). The admin can input all data in Armenian, Russian, English and also short videos presenting input word. For saving all the data, admin must click on the "Save" button. If admin want to cancel the work, he/she must click on the "Cancel" button.

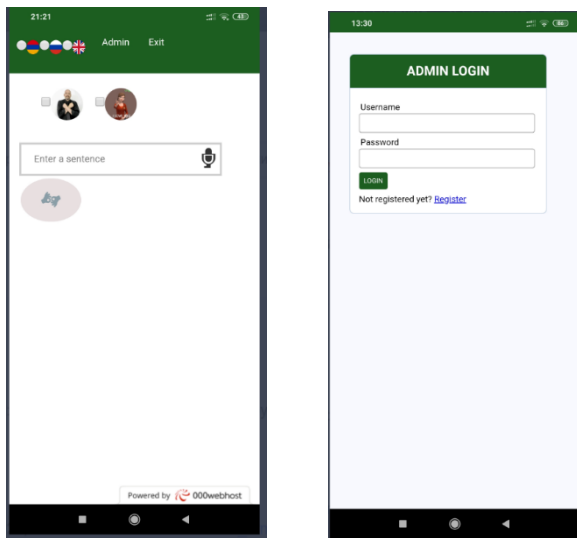
To see all the data, the admin should click on "General list" button. To edit a data, the admin should click on "Edit" button. The editing interface is similar to adding interface. In the editing interface the admin can change old data and save them.

To delete a data admin should click on "Delete" button. The app confirms query and deleting the record.

The admin can be any operator. But super admin must be a master of the field, who is responsible for the correct data.

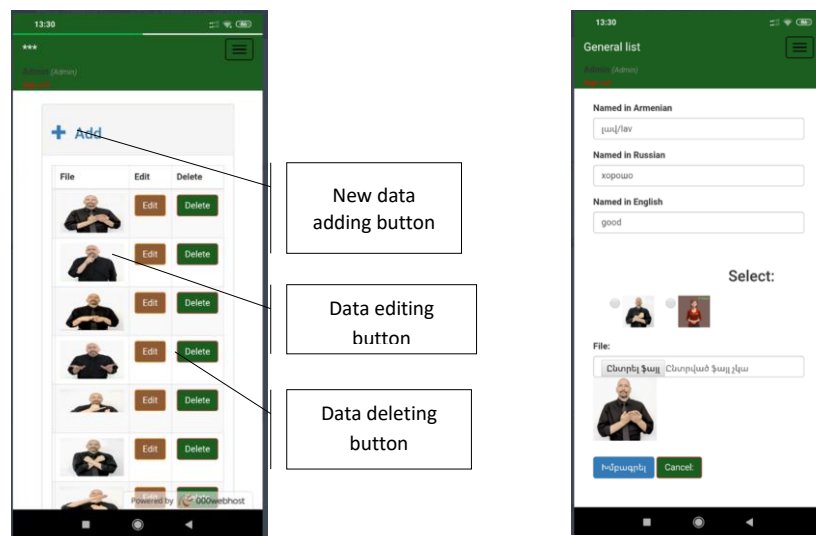
Picture 4.

Sign language translator Admin general interface and Admin login interface.



Picture 5.

Sign language translator Admin general interface and Admin login interface /data adding or editing interface/.



Sing language translate Admin interface

Sing language translate Admin interface /data adding or editing interface/

The application is designed on the HTML, CSS, JS PHP MySQL technologies (Alekseev, 2019; Gosudarev, 2019; Prokhorenok & Dronov, 2015).

To interface design, we used HTML and CSS. To add a text to speech function on our application we used Javascript, we used the Web Speech API, which can be used to synthesis speech which is converting text to speech, and we can also use it to recognize speech to convert speech to text. We used the following interfaces/property: **SpeechSynthesis**, **SpeechSynthesisUtterance** and **window.speechSynthesis**.

JavaScript **SpeechSynthesis** Interface is the main controller interface for the speech synthesis service which controls the synthesis or creation of speech using the text provided.

The **SpeechSynthesisUtterance** Interface is the interface in which we actually create the speech or utterance using the text provided, setting a language type, volume, pitch of the voice, rate of speech, etc.

The JavaScript **window.speechSynthesis** property of the Javascript window object is used to get the reference of the speech synthesis controller interface, on which we call the speaking method.

To data base we used MySQL server and for connection to Web browser we used PHP (see Appendix D).

TESTING

After the design work was completed, we tested it and conducted a survey again. We wanted to find out if there were any flaws in the project. Besides, we wanted to get new offers. We made tests consisting of 10 questions and got statistics again. It is presented in Appendix E.

SUMMARY

Hence, we have developed application that works on the Windows and Android operation systems. It has 2 modules: users and admin. In the developed application both modules have 3 language interfaces and can work with Armenian, Russian and English words data bases. All interfaces are very easy and comfortable to use. The app can translate a word, a sentence or speech into the sing language.

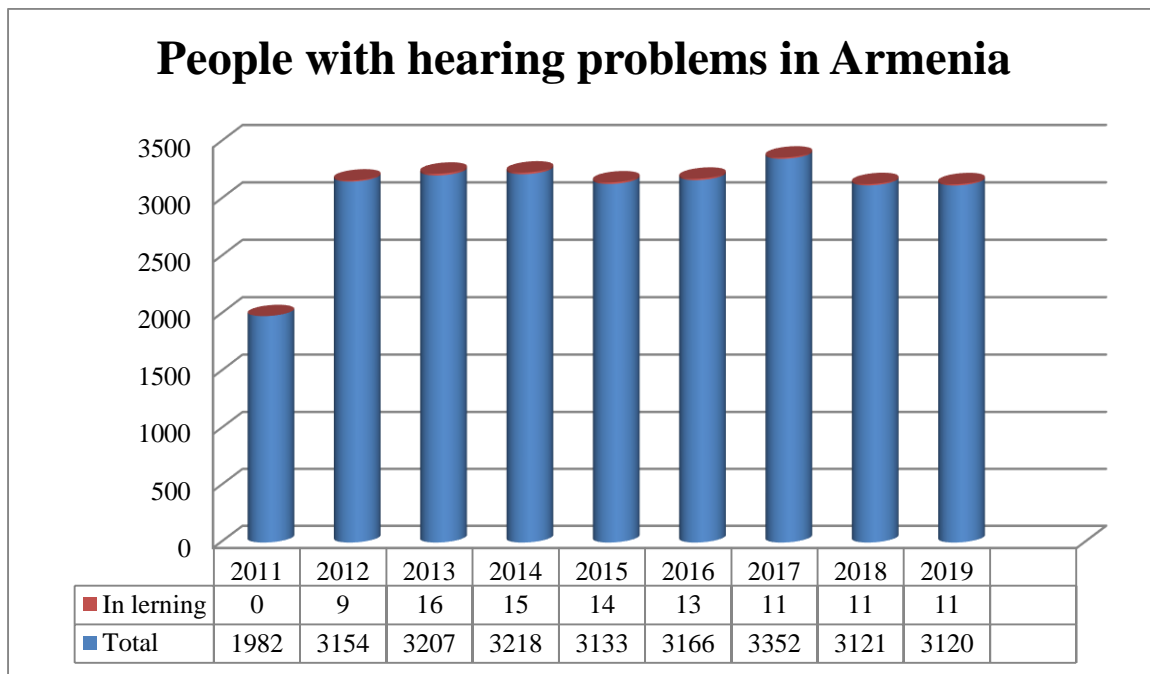
The app is open for adding new words, editing or removing words. So the app can be used to create a new language dictionary (German, Spanish, Chinese, Japanese, etc.).

The developed application increases the accessibility of a device for individuals with disabilities and can be useful for deaf and dumb people and all those who have hearing problems. It can be useful in education to train students or while performing daily activities. The application can be useful and play an important role in the process of building an inclusive society and increasing participation of deaf and dumb in social life.

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Test questions

Query 1

Is it right to abolish special schools?

- Yes -3%
- No - 78%
- I don't know -17%
- Other answer -3%

Query 2

Do You want to be a deaf and dumb child in the classroom with your child?

- Yes -8%
- No - 73%
- I don't know -3%
- Other answer -16%

Query 3

Is it convenient to see a special pedagogue in the classroom?

- Yes -5%
- No - 75%
- I don't know -13%
- Other answer -7%

Query 4

It will be very difficult for your child?

- Yes -50%
- No - 47%
- I don't know -1%
- Other answer -2%

Query 5

It will be very difficult for that child?

- Yes -35%
- No - 55%
- I don't know -5%
- Other answer -5%

Query 6

Will have that child a problem communicating?

- Yes -95%
- No - 0%
- I don't know -3%
- Other answer -2%

Query7

You support multi-layered teaching?

- Yes -60%
- No - 25%
- I don't know -10%
- Other answer -5%

Query 8

Will you want your child to attend a special school?

- Yes -95%
- No - 0%
- I don't know -3%
- Other answer -7%

Query 9

If your child has problems, you will prefer to keep them at home?

- Yes -5%
- No - 89%
- I don't know -1%
- Other answer -5%

Query 10

Are you knowing what is a multi-layered teaching?

- Yes -75%
- No - 25%
- I don't know -0%
- Other answer -0%

Query 11

Are you listen about sing language automatic translators?

- Yes -80%
- No - 15%
- I don't know -0%
- Other answer -5%

Query 12

Can computer/mobile translators help such people in the education?

- Yes - 92%
- No - 6%
- I don't know -2%
- Other answer -0%

Result diagram

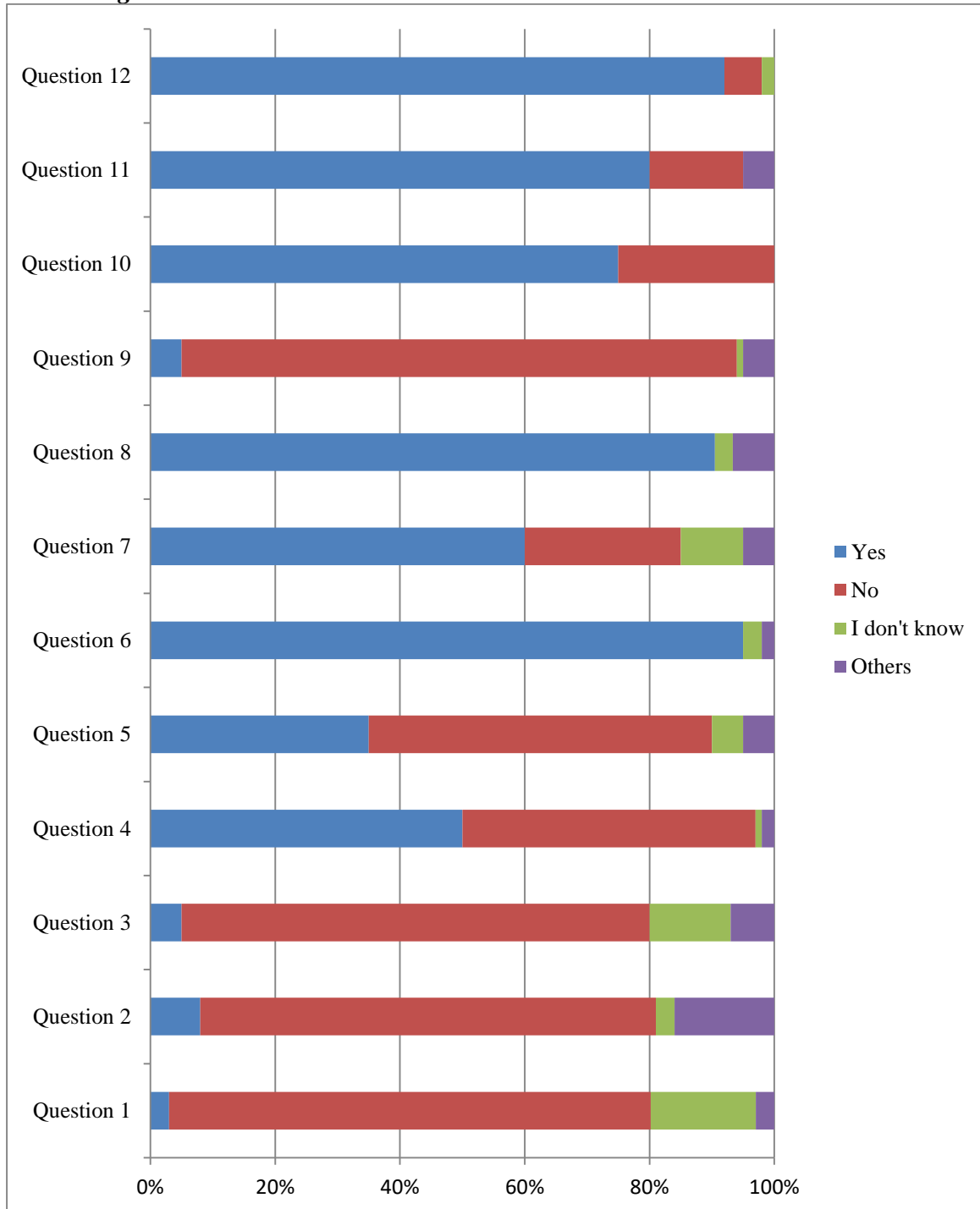


Table 1.
Market players and their opportunities

1	2	3	4	5	6	7	8	9
LeTim Games https://play.google.com/store/apps/details?id=ru.avroraventures.com.russiansinglanguage	Язык жестов — азбука	No	Android	Training	Training	No	Russian	Thatching the alphabet Games Social communication
Mind Rockets Inc https://play.google.com/store/apps/details?id=com.mindrocketsinc.mimix	Mimix3D Sign Language	Yes	Android	Yes	No	No	English	Teach language
Daniel Mitchel https://play.google.com/store/apps/details?id=com.signasl.signasl	Sign ASL	No	Android	No Only text	No	No	English	Social Communication by dictionary
jpgironb https://play.google.com/store/apps/details?id=com.jpgironb.assistiveguru	Deaf Mute Helper	Text convert to voice	Android	No	No	No	40 language	Social Communication
Software Studios https://play.google.com/store/apps/details?id=com.asltranslator	ASL Translator	Yes	Android	No Text convert to sign	No	Ω	English	Social Communication
MEDL Mobile Enterprises LLC https://apps.apple.com/us/app/marlee-signs/id566054855?ign-mpt=uo%3D8	Marlee Signs	No	iOS	No Text convert to sign	No Teaching program.	No	English	Social Communication

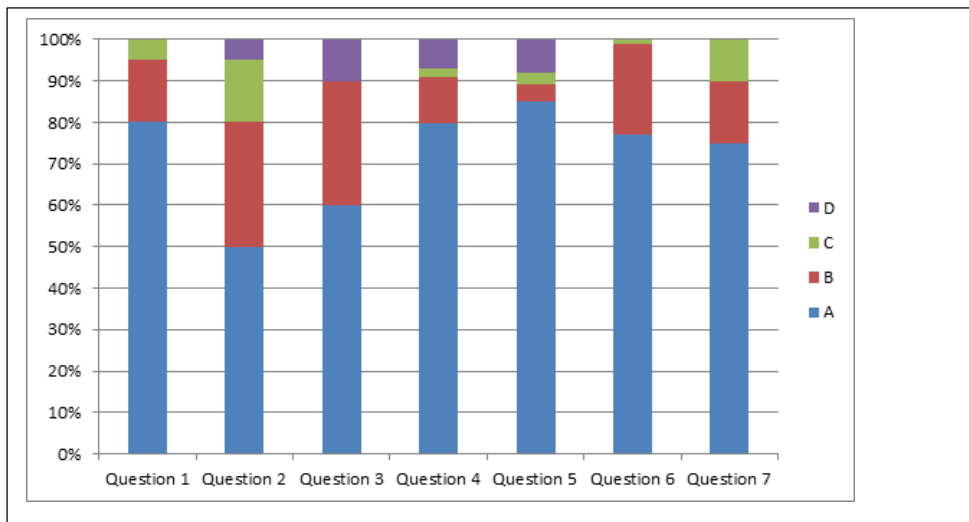
Appendix D

```
C:\Users\Bro Argisht Bro Areg\Desktop\zvuk.html - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
zvuk.html
35 <p><button type="button" onclick="runSpeechRecognition()">Speech to Text</button> &nbsp; <span id="a
36 <div id="output" class="hide"></div>
37 <script>
38     function runSpeechRecognition() {
39         var output = document.getElementById("output");
40         var action = document.getElementById("action");
41         var SpeechRecognition = SpeechRecognition || webkitSpeechRecognition;
42         var recognition = new SpeechRecognition();
43         recognition.onstart = function() {
44             action.innerHTML = "<small>listening, please speak...</small>";
45         };
46
47         recognition.onspeechend = function() {
48             action.innerHTML = "<small>stopped listening, hope you are done...</small>";
49             recognition.stop();
50         }
51
52         recognition.onresult = function(event) {
53             var transcript = event.results[0][0].transcript;
54             var confidence = event.results[0][0].confidence;
55             output.innerHTML = "<b>Text:</b> " + transcript + "<br/> <b>Confidence:</b> " + confiden
56             output.classList.remove("hide");
57         };
58
59         // start recognition
60         recognition.start();
61     }
62 </script>
63 </p>
Hyper Text Markup Language file      length: 2118  lines: 64      Ln: 64  Col: 8  Sel: 0|0      Windows (CR LF)  UTF-8  INS
```

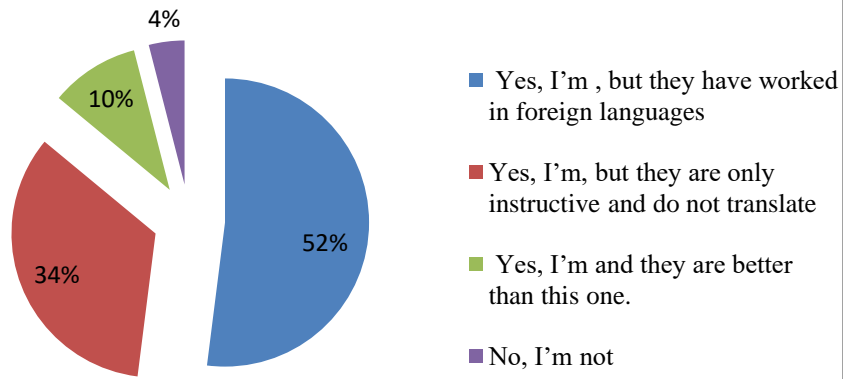
Appendix E

Test questions

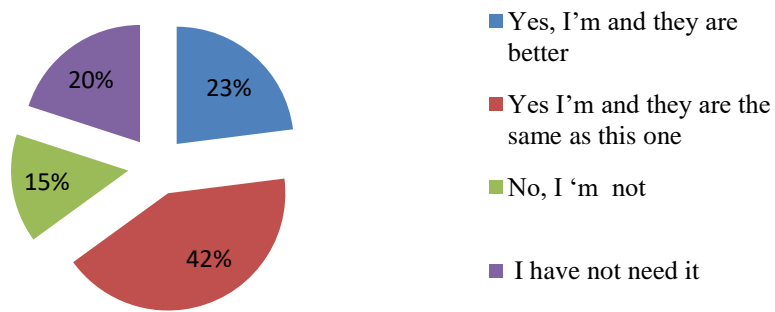
1. **How easy is the software to use?**
 - A. Very easy
 - B. Easy
 - C. Hard
 - D. Very hard
2. **How is the look of exterior design?**
 - A. Very beautiful
 - B. Beautiful
 - C. Not pretty
 - D. Very bad
3. **Was the app useful for you?
Did you learn anything?**
 - A. Very useful
 - B. Useful
 - C. Not quit useful
 - D. Not useful
4. **Would you advise your friends to use this app?**
 - A. Yes absolutely
 - B. Yes, if they ask me
 - C. No, never
 - D. I don't know
5. **The application also has the Web version.
Do you think this is good?**
 - A. It is very good.
 - B. Good
 - C. I don't know.
 - D. Not necessary
6. **Can this app help to build an inclusive school?**
 - A. Very much
 - B. It can help
 - C. I don't know
 - D. Will not help
7. **Can this application help in the process of building an inclusive society?**
 - A. Very much
 - B. It can help
 - C. I don't know
 - D. Will not help



8. Are you familiar with similar applications?



9. Are you familiar with similar Armenian applications?



**PROVEN AND RELIABLE METHODS OF EARLY SPEECH THERAPY
INTERVENTION FOR CHILDREN WITH AUTISM SPECTRUM DISORDER**

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ABSTRACT

The purpose of our research is to identify the effective tools for early Speech therapy intervention in working with children with Autism Spectrum Disorder (ASD) in order to provide their speech forming and development by using confinable methods. Besides, the purpose includes the thesis about high effectivity of systematic complex approach in case of work with ASD.

Current research is based on theoretical materials from professional literature and on 14 years of own personal speech therapy professional experience.

It is concluded that methods used in the speech therapy work with ASD children are effective in application, but as a result of the individual approach of the child's speech and communication, their combination at the appropriate stage of development provides a higher result.

We emphasize the development of established methods and means of early speech intervention in the work with ASD, the development of a systemic approach and the introduction of conditions that will facilitate their early speech therapy intervention.

Keywords: Autism Spectrum Disorder, communication, gesture, sensory integration, Denver model, the Affolter's approach, ABA, AAC, DTT, PRT, CBT, "Floor time".

LITERATURE REVIEW

Studies of the professional literature show that there are currently many methods, tools, programs aimed at developing the mental processes, communication, emotional sphere of a child with autism. Based on the results of our professional activities, we can state that almost every existing and widely used method provides the best efficiency due to the combination of individual approaches and means. For example, the leading role in working with children with ASD have approaches, which are meant to correct behavior, and then come the methods of influencing general perception, emotional spheres, and after it- the approaches of communication and speech development.

Today there are two psychological-pedagogical methodological groups - basic and auxiliary.

Basic methods allow the child to master household, communication, working, educational, and professional skills, while auxiliary tools create conditions for the implementation of basic methods (sensory integration, game therapy, art therapy, hypo therapy, sand therapy, Dolphin therapy, swimming, etc).

Nowadays Zwaigenbaum's and colleagues research in the special edition of "Pediatrics" periodical proves the reliability of the thesis, that it is possible to diagnose ASD at the age below two. This fact more than ever shows the necessity of correction programs for the children with ASD. At the same time, professional intervention for children younger than 2 and 3 years should include developmental methods, so such intervention should occur as soon as possible and base on the study of the child's individual capabilities and difficulties (Zwaigenbaum et al., 2005).

The intervention of the ASD problem should be aimed at consolidating all interests, involved in the problem: family, relatives, kindergarten, social and medical resources, etc. Early diagnosis of ASD is the key to early intervention, which according to a number of studies has a significant impact on the "long-term" positive results for the children with ASD (Morozov, 2002).

Early signs of autism often appear at 18 months or earlier (Woods & Wetherby, 2003).

Appropriate intervention should begin with a detailed study of the child's strengths and needs. A clear diagnosis is based on systematic observations, survey of the child's communication, social interaction, behavioral and development level.

AUTHORS NOTES

According to the World Health Organization's (WHO) report (April 2017), every 160th child in the world has ASD. According to our ten-year (2007-2017) research in Armenia, there was a fivefold increase in the number of children diagnosed with ASD (Kharatyan & Hovyan, 2019).

This sharp increase makes the interpretation of effective approaches to speech therapy intervention in children with ASD even more important.

During our long-term speech therapy practice (14 years, average number of children per year - 50), children diagnosed at the age of 0-3 years and included in the development intervention process, registered higher degree of development in the same period and with the same methodological approach, than children older than 3-6 years old with the same diagnosis.

However, according to our research, in Armenia parents first apply for examination and diagnostics for their children at the age of 3 to 6. In 57 % cases those are boys and in 25% cases are girls. While talking about early diagnosis at the age of 0-3-year boys make up 15%, girls-3%.

MODELS OF SCIENTIFICALLY SUBSTANTIATED EARLY SPEECH THERAPY INTERVENTION

Communication.

Social skills training. Social communication activities are called to encourage socially acceptable behavior of the children with ASD and to use social groups and other platforms to teach them peer-to-peer interaction skills, as social communication deficits are a major problem for people with ASD. Research on corrective methods through social communication is still ongoing today (Kimhi, 2014). According to our observations, this method is effective in methodical combined work.

Joint attention, symbolic play, engagement management. This method involves a combination of developmental and behavioral characteristics. It is based on the basis of social communication (joint attention, play) and includes natural strategies of increasing the speed and complexity of social communication. This approach assumes the joint work of teachers and parents, which is focused on child's different everyday activities in different areas of life (Pierce, et al., 2011).

Game therapy. This method is actively used in the work with children with ASD, as their main independent play activity is the manipulation of toys or non-toy objects (belts, toy parts), which becomes stereotypical and has a self-stimulating nature. In the development process, the game goes through various stages, from simple manipulations to complex symbolic games (Tyulina, 2013). Children with ASD are mainly in the manipulative stage of the game, there may be noticed some elements of functional play, and the symbolic stage of play is particularly affected. Role play is the highest stage of game development, the development of which is associated with the possibility of further socialization of the child, and for most children with autism it is almost inaccessible at the moment when the developmental interventions begin (Greenspan & Weeder, 2013).

Either the play therapy is ancillary or basic, it is one of the most promising ways to work with children with ASD. In practice, it is more affordable, as it can be used by both professionals and relatives of a child with ASD. The child's family can use play therapy every day, making it the main basis of communication. From our point of view, the attractiveness of play therapy lies in its psychological comfort for the child and the whole family (Woods & Wetherby, 2003; Ayres & Dubuque 1974).

Augmentative and Alternative Communication (AAC) can help to complete and compensate for the lack of expressive communication, as many children with ASD have functional speech impairment. This method involves the use of more difficult techniques, from sign language to image systems, such as the AAC image sharing system (Bondy & Frost, 2001), which is a communication strategy for people with speech impairments and allows to communicate with peers at an early age. It does not teach oral speech at once, but helps to speak with the help of pictures, which further promotes the formation of word-speech and the development of social communication initiatives. Experimental studies have shown the effective use of this method,

especially when it is used within the framework of the ABA direction. This thesis shows and proves the essence of systematic approach.

Sign Language. In science the issue of gesture-using is still controversial, even for people with hearing impairments. It has been proven that children with autism can be taught sign language as an alternative means of communication; there is evidence that some children have started speaking sign language. Our research has shown that children who have overcome this stage of body language communication are more likely to start speaking and have more meaningful speech.

Visual support. Children with autism have difficulty understanding speech and do not orient themselves in the sequence of actions. So it is very effective to organize the teaching of the mentioned sequence through visual images.

Modeling. This method is especially effective when the work process is videotaped and it is possible to watch it after finishing the work. This method is also applicable to the child's relatives, so it is important, because the intervention carried out by parents is a key element in the stages of preparation for the learning and communication process of children with ASD.

Denver model. The method is based on active therapy performed by children and adults, which is carried out through games that develop communication skills. The method includes peer-to-peer interaction in the school environment and homework (Rogers & Dawson, 2009).

The early intervention model for nursing children is a continuation of the Denver model, which incorporates developmental approaches to behavioral learning strategies that can be implemented in a variety of settings (for example, by a specialist or parent in group or individual classes at home or in a hospital) (Rogers & Dawson, 2009).

Social stories. In this method a hero is chosen and every day a symbolic story is told to the child about the hero. Applying the method separately is not effective.

Adaptation with peers. Recent studies have shown that when children with autism are in the company of normally developing children, it has a positive effect on their personality development and communication processes. We especially use pedagogical programs, as autism is a permanent impediment to the development of the child, so multifaceted development is needed. Studies show that the methods and programs that keep the child in the daily routine are more effective (Rogers & Dawson, 2009).

Behavioral approach.

Applied Behavioral Analysis (ABA). The method is defined as the application of behavioral principles aimed at modifying specific behavior and evaluating the effectiveness of the intervention. It prevents problem behavior. The use of this method is based on a person's needs, interests and marital status. The ABA method is often used in early professional intervention programs (under 4 years) to develop a child's necessary and important life skills. Studies show that children with ASD show more positive results if the method is used before the age of 5. ABA has been the basis for a number of other methods, such as Discrete Trial Training (DTT), Pivotal Response Treatment (PRT) and Cognitive-Behavioral Therapy (CBT).

Cognitive-Behavioral Therapy (CBT). The method involves a combination of cognitive-behavioral learning principles aimed at promoting and encouraging desired behavior. The approach is based on the idea that a change in a person's mindset or cognitive patterns can lead to a change in a person's behavior. Various studies have described this method as a way for children with ASD to manage their own behavior and to exhibit appropriate behavior in different situations and environments.

Social thinking means supporting children with pre-school-age ASD, as well as adults with social learning problems (social communication disorders, and similar problems). It includes strategies for teaching pragmatic speech, social emotion, social perception, and skill development. CBT teaches people to understand the logic of the processes taking place (Leaf & Macken, 2016).

Improving the quality of life for a child with ASD requires the support and involvement of people around him/her, such as social, medical and educational institutions will help control the child with the disorder in his/her daily life.

The Greenspan Floor-time Approach, which is also known as "Floor time" considers working on the floor. Means of communication are formed gradually. The method includes a 5-6-hour lesson in two parts, during which the child is taught basic skills on the floor. This method is often combined with behavioral therapy (Greenspan & Weeder, 2013).

Sensory integration.

According to the study by American speech therapist and psychologist Jane Ayres, 70% of children with behavioral, developmental, speech, motor, or emotional disorders have disorders of various sensory systems. As we all know, no part of the human nervous system works separately. In the case of sensory dysfunction, the child is unable to concentrate, which is especially noticeable

during speech perception, when the brain is unable to analyze large amounts of audio material. Sensory integration is a process in which sensations from different sensory systems are perceived and developed (visual, auditory, taste, smell, touch, proprioceptive, vestibular), which activation is the basis of methodological exercises (Ayres & Dubuque 1974). This method, however, loses its effectiveness when used as a stand-alone method. It is also necessary to make it an integral part of the correction program.

The Affolter's approach. Based on sensory integration, authored by Swiss researcher Felicie Affolter (Affolter & Walter, 2020). The essence of the method is to give the child tactile information with support of an adult, which helps the child to perceive and integrate new information and then act. The approach mentions the leading role of the sensory information that comes through the tactile system, which according to Affolter, plays a central role in development, helping the child to think and then act. Due to the integration of the other senses in this process, the method allows the child with ASD to develop speech perception and communication skills at a certain stage, including ergo-therapy in speech therapy (Affolter & Walter, 2020).

Thus, if in the past in psychological-medical-pedagogical correctional work for each child with autism it was necessary to choose one of the existing methodological approaches as the main one, recently the authors and followers of different approaches do not consider their method as the only correct one. Nowadays is underlined the importance of the involvement of parents, in particular, in organizing activities so that they can be continuously implemented at home (Rogers & Dawson, 2010).

Early and complex intervention significantly affects the quality of ASD child's life, bringing long-lasting and positive changes. As an example we can consider the results of the speech therapy examination conducted in our Center, based on the data of 2007-2008. As an option we studied 16 children with ASD, who used the Center's speech therapy service. The children were divided into 4 groups in the study, four children in each group. The following professional methods were used:

1. First group - the Affolter's approach.
2. Second group - the ABA approach.
3. Third group - game therapy.
4. Fourth group - complex application of methods.

9 months of observation in all groups shows positive dynamics in the process of speech perception and reproduction, however, the highest efficiency was recorded in 4th group, when the choice and use of methods were periodically changed based on the child's current level of development. Besides, the children of the first 3 groups, where only one of the current approaches was applied, observed a decrease in positive dynamics from the 3rd trimester.

In particular, in the first trimester, the children of all the observed groups had positive dynamics of speech perception and pronunciation, however, in the second trimester, the speed of positive tendency in the first three groups significantly decreased, and in the third trimester stopped. At the same time, in the fourth group, using complex methods and high results were maintained until the end of the course.

As a result, on the initial stages, the method chosen according to the primary assessment, no matter how appropriate it is to the child's developmental characteristics, provides an effective start, however, in the absence of methodological combination, it does not provide high efficiency.

For example, the ABA method chosen for 2nd group was expedient because the children had behavioral difficulties. However, after the correction of behavior, due to the difficulties of sensory perception, the positive dynamics ceased. At the same time the use of ABA was discontinued when working with children in the 4th group, it was replaced by the Affolter's approach, after which it became possible to use play therapy, and later return to the use of the ABA.

A similar difficulty was observed in the work with the children of the 1st group, when based on the results of the primary assessment, the overcoming problems of the children's emotional sphere became more difficult and the Affolter's approach was preferred. Later there were some difficulties in the conditions of narrow methodical application. In the case of the 4th group children, with whom the work was initially started by the Affolter's approach, after overcoming some of the emotional problems, they were easily included in the game therapy.

Thus, it can be concluded that all the methods used in the speech therapy work with ASD children are effective in application, but as a result of the individual approach of the child's speech and communication, their combination at the appropriate stage of development provides a higher result.

We underline the importance of using complex program, as we will have the expected result only in the combination of methods. Of course, this combination must be systematic, necessarily

carried out with an individual approach to each child, taking into account the child's abilities, needs and specific features his/her study.

Examining, comparing and analyzing the many methods and programs aimed at developing the means of speech communication of children with ASD, we can state that not excluding the possibilities of using modern methods for speech development, it is necessary to emphasize the development of complex methods, their systemic approach and conditions which will facilitate early speech therapy in children with ASD.

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**WHO ICF AS AN ASSESSMENT TOOL FOR EVALUATION OF
SELFCARE ACTIVITIES OF THE CHILD WITH CEREBRAL PALSY**

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ABSTRACT

The study was conducted in two stages. At the first stage, quantitative methods were chosen as methodologies, since the object that is studied by this method is a quantitative unit, which in the future allows to draw conclusions, based on the results, using certain numerical models to develop or confirm new hypotheses, or/and refute existing ones. At the second stage, a qualitative study was conducted on the basis of the results of the first stage, accordingly developing recommendations on ergotherapy for each code issue.

According to the study results, in today's Armenia, it is possible to issue all the problems that children with Cerebral Palsy face in self-care and life by using certain assessing tools of occupational therapy. In this case, the study shows that the evaluation of the World Health Organization International Classification of Functioning and Disability, Children and Youth (2008) allows to observe and issue the existing problems of this sphere in a more accurate and comprehensive way. It also provides an objective basis for identifying the problems in the field of children's self-service and life, which, in its turn, allows the occupational therapist to conduct a detailed assessment to find out which self-service actions are available to the child, to what extent the child's actions and personal roles are compatible with the current state of the disease, and to what extent the actions correspond to their age.

Keywords: Cerebral Palsy, Occupational therapy, assessment, self-care, lifestyle/living, children with Cerebral Palsy.

INTRODUCTION

The Government of the Republic of Armenia on January 9, 2013, approved the “Concept of multilateral personality assessment regarding the concept of implementing a model for assessing disability based on the International Classification of Functioning (ICF) of the World Health Organization (WHO)” (RA Government Decision No. 780-N, 2003). As a model of the CDM, WHO focuses on the strengths of a person, his protected capabilities, promoting more active participation in public life, including in the workplace. It provides an integrated and coordinated approach to policies that address human needs and requirements (WHO ICF, 2008). The WHO ICF provides a conceptual framework, common language, and terminology for birth, childhood, and adolescence, restrictions on participation, as well as important environmental factors for children and young people if properly applied. WHO ICF can be a reliable and realistic basis for the development and change of health, disability, public services, insurance, social security, employment, education, economics, social policy, legislation, and environmental standards (WHO ICF, 2008). A number of authors point out that due to movement disorders, children with Cerebral Palsy (CP) also suffer from daily self-care skills, which as a result of these children depend almost entirely on their environment - parents and carers (Semyonova, Klochkova, Korshikova-Morozova, Trukhachova, Zablockis, 2018). In this regard, it is necessary to conduct a thorough assessment of the problems of the region in detail, as well as to determine the goals and activities accordingly. Obstacles to participating in self-care activities for children with CP are related to their physical condition and environment. For this purpose, the evaluation of ergotherapy helps to determine the effect of a person and environmental factors that influence its implementation. When participating in self-catering activities, children as a participant are satisfied with their wishes, motives, and needs (Christiansen, Manville Baum & Haugen, 2005). In this regard, ICF can find its unique place for rehabilitation staff to conduct an appropriate assessment.

LITERATURE REVIEW

WHO ICF-Children and Youth (ICF-CY) was developed on the basis of the International Classification of Functionality, Disability, and Health (ICF) and is designed to record the characteristics of a growing child and his data on environmental impacts (WHO ICF, 2008). ICF-CY was developed because there is a need for an ICF version that would be possible for children

and young people in the areas of public health, education, and public life. The problems of disability and health in children and adolescents are characterized by their nature and influence on the problems of disability and adult health. Having a functional focus, ICF uses a common language that can be used in various fields, as well as in different countries, to develop services for children and young people, politics. WHO ICF-CY is designed to develop the characteristics of the child's environmental impact data. and participation and strengths for registration (WHO ICF, 2008). In this context, it can be mentioned that human participation is a fundamental and important prerequisite for ensuring the quality of life. WHO ICF's participation in the EU is defined as "human participation in various life situations", representing the public aspect of functionality. Based on this fact, WHO ICF-CY paid special attention to participation, since the nature and environment of the life situations of children and young people differ significantly from the nature of adult life and the environment (WHO ICF, 2008).

CP is currently considered one of the most common types of disability. A number of authors indicate that, due to movement disorders, children with CP also suffer from the child's daily self-care skills, and as a result, these children are almost completely dependent on their environment - parents, carers (Semyonova, Klochkova, Korshikova-Morozova, Trukhachova, Zablockis, 2018; Batishena, 2016). Here it is necessary to describe in detail what self-service is, the ability to take care of oneself, to take care of one's needs, without the independent existence of others, the ability to provide physical independence. Self-care includes meeting daily needs (physiological needs, personal hygiene, wear, eating) and a wider range of household needs (shopping, cooking, cleaning, bedding, laundry, large and small, heat accumulator, lock, switches, cranes, various household appliances, telephones, etc.) (Brentnall & Bundy, 2009). Underlining all this, the ICF represents the most appropriate tool that allows you to make multiple assessments for children with CP and allows them to see the effects CP in everyday life.

Moreover, there are no recommendations on the assessment and further intervention of children with CP, so there is a problem of choosing the best assessment tool (Bottari, Swaine & Dutil, 2007). And based on this fact, occupational therapists should take into account three main factors: the first factor is the best-applied assessment, which is also the basic idea of ergotherapy, namely: what do they want to do and what do they need to do in everyday life with children with CP (Blesedell, Cohn, & Schell, 2009). Christensen, Baum & Haugen (2005) notes in their workbook, Participation, and Prosperity, that barriers to the participation of children with a mental evaluation

of ergotherapy helps to determine the effect of a person and environmental factors that influence its implementation. When participating in self-catering activities, children as a participant are satisfied with their wishes, motives, and needs (Christensen, Baum & Haugen, 2005). Taking all this into account, the purpose of the study is to develop a tool for evaluating a diverse study of the qualitative and quantitative picture of the self-realization of a child with CP for further ergotherapy interventions. In this case, such a tool was chosen as a questionnaire developed on the basis of WHO ICF -CY, consisting of self-service operations and a life cycle.

METHODOLOGY

The methodology for collecting and analyzing data is based on quantitative and qualitative methods. The questionnaire was used to conduct a survey based on self-service codes and WHO ICF household units. The method of collecting information as method of collecting information during the survey was based on 9 codes selected from WHO ICF- CY for assessing the needs of children with CP, studying the functional state, and participating in daily activities. Monitoring was also carried out because the information obtained through therapeutic observation is the basis for informal and standardized assessments used to develop a therapeutic intervention plan (Brentnall & Bundy, 2009). The monitoring assessment tool is especially effective when working with visitors who do not have independent and precise self-management due to their own problems or are unable to answer the questions (Sturman, 1997). Performance-based assessment is often used to evaluate its functionality and security in the visitor environment (Christensen, Baum & Haugen, 2005). As a qualitative type of research, a case study was also chosen, which allows to consider and study individual cases. According to Sturman (1997), “case study is a general term for studying personality, group, or phenomena.” Accordingly, according to Mills, Direpos and Wiebe (2010), the case study is a comprehensive description of the individual case and its analysis. namely, a description of the subject, event, and event, as well as the research process (Mills, Durepos, & Wiebe, 2010).

Participants

Children from 3 to 18 years old were selected to be assessed while performing self-care activities. Before starting the assessment, parents and children were provided with the purpose of the study, as well as information about the privacy of study participants. Parents of children

participating in the survey gave their written consent and participated in the whole process. The importance of the parents' awareness of the assessment conducted with the child at the moment, as well as the establishment of mutual trust relationships with the children, was highly prioritized in the study and the parents were present throughout the whole assessment process. That is, participants in the study are children with 20 CP and their parents.

More detailed information about children with CP and their parents is presented in Tables 1 and 2.

Table 1.

Information about children

Children					City placement	
Gender distribution		Age distribution				
girl	boy	3-8	8-15	15-18	Gyumri "Emili Aregak" center	Yerevan "Full Life" NGO
8	12	4	15	1	10 children	10 children

Table 2.

Information about parents

Parent/caregiver		Age distribution		Education	
Mother	12	20-30	6	Secondary	10
Father	5	30-40	10	Vocational	6
Grandmother	3	40 and older	4	Higher	4

Ethical considerations

Taking into account the fact that currently in the Republic of Armenia there is nobody for scientific research, subject and procedural approvals, which will be responsible for establishing ethical labor standards, therefore the topic of the master's thesis was first discussed and agreed upon with the supervisor. Then it was confirmed by the Department of Speech Therapy and Rehabilitation Therapy. Before the start of the fieldwork, permission was obtained from parents

of children with disabilities who were informed in writing about the purpose of the study and the conditions for their participation. After the above processes were implemented, the original work began.

Data collection

Combined quantitative and qualitative methods are selected within the frame of this study.

To collect data, the questionnaires were based on 9 codes selected from ICF-CY, which were used to assess the needs of children with CP, their functional status, and degree of involvement in daily activities. When developing the questionnaires, ICF codes were selected from self-care and activity sections and were evaluated in accordance with the qualifications included in the activity, participation, and environmental factors in the age group 3-18 years old.

The codes contained in the questionnaire were evaluated by the ICF CY qualifiers:

- 0 – no problem, a person is able to complete the task without any difficulty;
- 1 - mild, a person can perform this operation independently, but with difficulty,
- 2 - moderate, a person can perform this action in case of certain support, in the presence of a suitable object or with the partial support of another person,
- 3 - severe, when the complexity/problem is serious, and a person can do it only with the help of another person,
- 4 - complete, when a person cannot perform an action at all or does not participate at all in the action, even in the case of assistance (WHO ICF, 2008).

To assess the self-care of children, the following codes of ICF-CY were selected from the part Self - care:

- d510: Washing oneself
- d520: Caring for body parts
- d530: Toileting
- d540: Dressing
- d550: Eating
- d560: Drinking

At the same time the mentioned below codes were selected from the part Domestic life:

- d630: Preparing meals
- d640: Doing housework
- d660: Assisting others

In general, the 9 codes mentioned above were chosen as they provide complete information about the child's self-care problems and difficulties, and through using these codes the specialist is able to observe and collect information about the child's daily activity, activity, and participation, functionality, and disability.

Data analysis

The data were analyzed on the basis of qualifications obtained from the 9 codes given in the questionnaire based on ICF- CY. As a result, the responses received from the questionnaire were included in the appropriate software - Microsoft Excel database, where the collected data were analyzed using the FX function in the program, with a choice of the method of obtaining digital and percentage ratios of the data and the corresponding numerical and percentage indicators. This analysis led to a clear set of problems related to childcare services provided for children with TA, which were clearly identified using codes. It was clear that daily activities (self-care, domestic life) of children with refueling complexes are organized and provided mainly by their parents or caregivers, which leads to restrictions on children's participation, and as Christensen, Baum, and Haugen (2005) "Participation and Prosperity" have declared it influences the participation in significant activities for children which has a clear and significant impact on their health and quality of life.

According to general data analysis non of 20 children participants of the study have 0 qualifiers in their activity performance.

RESULTS

Self - care activities

d 510 Washing oneself

While washing themselves children with CP mostly meet challenges connected with:

- difficulty while keeping balance and coordination;
- lack of concentration;
- lack of eye-to-hand coordination;
- difficulty while performing sequential actions;
- Inability to use both hands functionally.

According to the results of the assessment of the activities connected with washing it is possible to state that that one of the children has moderate difficulty (5%), seven children have severe difficulty (35%), twelve children have complete difficulty (60%). The child who has moderate difficulty is able to wash herself/himself, has difficulties while taking a bath but overcomes those ones on her/his own. Seven children that have severe difficulty can perform washing activity, have a bath themselves but with some additional support. They need supportive devices such as a special shower chair with a fixed height of the shower, slip-resistant flooring, or someone's assistance. Children who have complete difficulties (as a total of 12) can have a bath and wash only with assistance and with available assistive devices and a modified/adapted environment (Table 3).

d 520 Caring for body parts

Usually, children care for their bodies according to the habits developed since childhood. These individual habits are part of daily life, and as long as they do it independently, they become a part of their daily responsibilities, that are paid more or less attention to. Children with CP meet different difficulties while caring for body parts, because of their functional condition, participation, lack of keeping balance, motor disabilities, and so on.

According to the assessment of body care, seven children have severe difficulties (35%), 13 children have severe difficulties (65%). Those seven children need supportive devices such as customized toothbrush, nail cutting tool, comb and etc, or someone's assistance: 13 children that have complete difficulties can take care of their body parts only with the help of someone and partly with the help of supportive devices (Table 3).

d 530 Toileting

Toilet use is one of the self-services functions that requires knowledge and application of a number of skills. Having muscle tension or weakness, also low muscle tone, the child with CP has difficulty or is unable to take any steps for toilet use.

During the toileting, the child with CP meet difficulties such as:

- problems with body position while sitting on the toilet, which can be caused by muscle weakness or tension;
- problems with sitting on the toilet, motor disability;
- reflex disorders (a disorder can lead to urinary incontinence and urinary urgency);
- problems with maintaining the sequence of steps to use the toilet.

According to the assessment of toilet use one child has moderate difficulty (5%), five children have severe difficulty (25%), 14 children have complete difficulty (70%). The child that has moderate difficulty feels the need to remove the discharge, but after using the toilet, he spends more time following the rules of hygiene. Five children that have severe difficulty overcome discharge and the toilet use with hardship. Good positioning accommodations are needed, for example, the seat should be fixed at a height to suit the child's needs, also a handle should be installed in the wall near the toilet. 14 children that have complete difficulty could only let know about their need, but cannot overcome discharge. To use the toilet and follow the hygiene can only do with the assistance of a caregiver. Those children mostly use diapers (Table 3).

d 540 Dressing

In addition to the above mentioned, dressing is also considered one of the activities of daily living. Systematic actions aimed at wearing and taking off clothes and shoes for example wearing T-shirts, skirts, blouses, pants, underwear, tights, hats, gloves, coats, shoes and socks, boots, slippers are very difficult for children with cerebral palsy. Depending on the type and level of diagnosis severity of a child with CP, the difficulty for each child is determined by the specific area, such as:

- poor head and torso control;
- high muscle tension;
- uncontrollable, involuntary movements;
- non-functional use of hands;
- impaired balance.

According to the assessment of code dressing activities of 20 children having CP it turns that seven of them have severe difficulty (35%), 13 of them have complete difficulty (65%). The study shows that if there are supportive devices and/or customized clothing with wide, large buttons or chains in that case children can partially dress themselves (Table 3).

d 550 Eating and d 560 Drinking

While performing eating and drinking activities children with CP face a range of challenges such as:

- Unstable body position;
- Disorders of sensitivity and absorption act, jaw, lip, tongue, and cheek movements;
- Disorders of coordinated movements;

- Problems with emotional reactions;
- Lack of special eating utensils, table, chair and so on.

According to the results while assessing the eating process one child has moderate difficulty (5%), seven children have severe difficulty (35%),12 children have complete difficulty (60%). Seven children who have severe difficulty were able to eat on their own mostly in the case of special eating utensils such as a special spoon, plate. The last twelve children could eat or drink only with the assistance of others. The child who has moderate difficulty could eat on his/her own, but still has a hardship bringing food to his/her mouth because of muscle tremors, but if a special parcel to reduce muscle vibration is used that the child can eat on his own.

The analysis of drinking activities suggests that seven children who have severe difficulty in the case of supportive devices, for example, special cups, the bottle could drink on their own. The other 12 children could drink only with the support of a caregiver (Table 3).

Table 3.

Number of children in regards to severity while performing self-care activities

Number of children		
Moderate	Severe	Complete
d 510 Washing oneself		
1	7	12
d 520 Caring for body parts		
0	7	13
d 530 Toileting		
1	5	14
d 540 Dressing		
0	7	13
d 550 Eating and d 560 Drinking		
1	7	12

Domestic life

d 630 Preparing meal and d640 Doing housework

In the daily life of children with CP severe stiffness or uncontrolled muscle movements are an obstacle to prepare the meal (even sandwich), to do housework activities: to sweep, wipe the floor with a damp cloth, clean the kitchen table, collect and dump household waste, to put in order the rooms and shelves, collect, wash, dry, fold and iron the clothes, to use a vacuum cleaner and etc.

During meal preparation or doing housework activities children with CP have:

- complete or partial lack of eye-hand, hand-hand, hand-mouth coordination;
- problems keeping body positions;
- hand symmetrical condition, also complete or partial absence of functional use of the hands;
- disorders of being able to catch something, motor disability.

According to the results, four out of 20 children have moderate difficulty (20%), ten children have severe difficulty (50%), six children have complete difficulty (30%). The picture of the assessment of codes d630 and d640 was similar. It was clear that while performing these activities children with CP mostly need assistance. Those four children, who have moderate difficulty need guidance and can do simple activities partly, for example, to clean the dust or while making dishes to hold the knife and cut some vegetables (Table 4).

d 660 Helping other people

In the process of helping family members or others in self-service, moving around the house or outside, while worrying about the well-being of family members and others or paying attention to it children with CP are not active, have difficulties because of their psychological problems, sometimes they can only let us know about family members' situation when they feel bad saying to take medicine.

According to the results of the assessment five out of 20 children with CP - the participants of this study, can help others partly or with someone's assistance as they have moderate difficulty (25%), ten children have severe difficulty (50%), these children can help in the cases when the situation is simple and familiar to them but they can do it with support. Five children can not help their family members in any kind of activities as they have complete difficulty (25%) (Table 4).

Table 4.

Number of children in regards to severity while performing domestic activities

Number of children		
Moderate	Severe	Complete
d 630 Preparing meal and d640 Doing housework		
4	6	10
d 660 Helping other people		
5	10	5

According to the results, we can conclude that considering the frequency and severity of self-care activity performance level, it is noticed that children at the age of 3-18 with CP most of all have moderate degree restriction according to WHO ICF assessment. According to the above mentioned predominant part is moderate degree restriction, it is 53 %, then comes severe degree restriction 36 %, complete degree restriction is 9%, mild degree restriction is 2 %:

Examining the domestic life sphere it can be proved that children at the age of 8-18 with CP have also severe degree restriction in 9% of cases. Often parents prevent their 3-5 years old children from doing domestic activities not to take a risk for self-harm because they cannot do that activity or experience difficulties while involving in this kind of activity.

Consequently, WHO ICF assessment allows having a more comprehensive overview and identification of issues in this field and is an objective basis to identify self-care problems in a life span of children with CP. This tool helps occupational therapists to perform a detailed assessment to find out which self-care and domestic activities are available to the child, how much the child's activities and personal roles correspond to the current state, to what extent the performance of the activities corresponds to his/her age. After that occupational therapists have a chance to set a clear goal considering the child's problems in self-service and carry out full intervention and consultation.

It is necessary to mention that occupational therapy goals are to improve the life quality of people who have various restrictions, help them to take part in their daily activities, in self-service, and a social environment.

DISCUSSION

An important prerequisite for ensuring equal and affordable conditions for children with disabilities in Armenia is the process of introducing a social model into the process of determining disability, which has already been adopted by our state. According to Government Resolution No. 780-N, the definition of disability should not be limited to a disease that does not provide a comprehensive assessment of a person's needs (RA Government Decision No. 780-N, 2003). In addition, it is also necessary to develop a unified monitoring and evaluation system that will allow to monitor and evaluate the effectiveness of the services provided and to effectively manage the processes. From this perspective, still it is important to state that until now there is no systematic coordination between organizations that provide rehabilitation, educational and social services for people with disabilities in Armenia. All these structures work separately, without any consensus, using assessment methods that do not provide complete information about the self-actualization of a child with a CP.

In this regard, Harutyunyan and others (2018) have stated that the WHO ICF methodology is supportive to the implementation of such a common monitoring and evaluation system in the direction of updating information databases. policies and the ability to fully assess the process of children and adolescents with disabilities aged 2 to 18 years.

Semenovna, Klyuchkova, Botsarina, and Dutil (2007) in their research paper “Breakdowns in everyday life: Understanding the occupational therapist” stated that when working with people with disabilities, the occupational therapist begins his process through interviews and interviews, and also uses various types of questionnaires that give information on the functional and mental abilities of a person, psychological and personal characteristics. and also about the activities of visitors. The same approach is stated Bottari, Swaine, and Dutil, (2007) in their work. In this case, based on the results obtained, it can be argued that such kind of a questionnaire can definitely be used on the basis of codes selected from the WHO ICF-CY sections.

Occupational therapist deals with all actions that take time from people and determine the meaning of their lives. And taking into account that employment includes daily activities (self-care, productivity, leisure), it can be argued that ergotherapy is aimed at giving a person the opportunity to participate in daily activities, thereby reducing the role of a person and improving the quality of life, as well as the development of the personal ability to self-employment/self-service, work, and study, leisure, and entertainment (regardless of the limitations or shortcomings

available to a person to participate in social life (Rocke, Hays, Edwards & Berg, 2008). Authors assume that all of the above mentioned can be assessed on the basis of ICF.

Semyonova, Klochkova, Korshikova-Morozova, Trukhachova, Zablockis (2018) in their work "Rehabilitation of children with Cerebral Palsy" which emphasize the ICF-CY assessment, note that the WHO ICF principles are used to assess the condition of the child, through which it becomes possible to determine the purpose of the intervention: a rehabilitation program, and then overestimate. The conclusion of this work is related to the result of research conducted within the frame of this study.

Thus, the study leads to the conclusion that self-care and domestic activity performance assessment can be carried out using WHO ICF codes as a productive tool to conduct both qualitative and quantitative analysis. Such a comprehensive assessment and analysis is due to professional, in this case, further occupational therapy interventions, which involve individual interventions in self-care and domestic skill, as well as the ability to develop the skills and abilities necessary for personal participation, as well as the environmental adaptation and adaptation of devices clearly implemented only in the case of a qualitative and accurate assessment.

Brentnall and Bundy (2009) have defined the profession in the following way: "Occupational therapists value people using meaningful, meaningful actions to prevent incapacity and develop independent functionality" (p. 64). Thus, the core knowledge and ideology of occupational therapy is the occupation and importance of daily activities. Considering them from a specific point of view, further professional intervention is aimed at the formation of clear and accessible ways for a person based on the desires and needs of a person to ensure his / her active participation and self-employment in this work (Blesedell, Cohn, Boyt Schell, 2009) In this regard, it can be argued that the profession and the free and independent participation of a person in preferred occupations, in this case, are preferred for self-care activities.

LIMITATION OF THE STUDY AND FUTURE IMPLICATION FOR PRACTICE

The main limitation of the survey is the small number of participants - children with CP. From the perspective of WHO ICF more codes with broader fields also might be included. Along with environmental factors, the physical and social environment in which people live and lead

their lives, and the attitude of society towards people might be taken into account and included in the research as well. Still, only self-care and domestic activity codes were selected and assessed.

This study revealed and reiterated the importance of assessing WHO ICF-CY in Armenia and the existence of self-care and domestic activity performance difficulties and problems among children with CP. It is recommended to expand the scope of research and explore the problems and situational issues in the field of self-care of children living in urban, as well as in rural areas. The continues research in the field and survey will help the development of WHO ICF-CY programs in Armenia and support parents and caregivers who want to improve the quality of life of their children with CP, allowing them to have participation in self-care and domestic activities.

CONCLUSION

Summing up the research, the following conclusions are made:

- WHO ICF-CY as an assessment tool for evaluation of self-care activities of the child with CP considered to be productive.
- Daily self-care and domestic activities are a problem for children with CP. There is a problem of creating special conditions under which a child with CP will be able to independently perform the actions that he or she wants, but which are difficult to do on their own.
- Children with CP can independently carry out their self-care and domestic activities, and today this is one of the most urgent problems of rehabilitation work: proper assessment or posing of self-care and domestic problems for children aged 3 to 18, organization of effective work, and maximum intervention.
- The use of the WHO ICF-CY questionnaire and analysis of occupational therapy assessment in two different centers in Armenia may suggest that self-care and domestic activity related questionnaires developed on the basis of WHO ICF-CY evaluate the level of performance based on assessment codes and qualifications, which, in turn, contributes to occupational therapy intervention proper organization, clear definition of the goal, development of the child's intervention plan, and re-evaluation of the individual plan.

- The results of the study show that the practical use of WHO ICF-CY in accordance with the practical possibilities of using an individual questionnaire for children with CP provided detailed information on the self-care and domestic activity performance of children, on the basis of which a number of recommendations were made for parents and children.
- The WHO ICF is a common language and language that helps develop more targeted policies and targeted services, responding adequately to the needs of people with disabilities, allow various centers to communicate with occupational therapists in the same language, and easily transfer information from one rehabilitation center.
- Evaluation based on WHO ICF-CY can be the basis for professionals who describe the functional activity of a person in the current process, as it classifies functions, not the people.
- The WHO ICF-CY classifies health and health-related indicators and gives them the right choice to describe the child in a situation in which the specialist can clearly see the progress achieved.

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VOLITIONAL EFFORT FORMATION IN SENIOR PRESCHOOL CHILDREN WITH SPEECH IMPAIRMENTS USING VISUAL MODELING

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ABSTRACT

The aim of this research is to investigate the process of volitional effort formation in senior preschool children with general speech underdevelopment (GSU) by visual modelling.

The study was conducted using theoretical and practical methods and methods of mathematical statistics. The main indicators of volitional effort formation were determined at the ascertaining stage using methods developed by Smirnova.

Methods were partially adapted for 5-year-old children with GSU, and a map of observations was made. Based on the results of observations of children in experimental and control groups (a total of 38 children), pupils were allocated into four categories according to their behavior in direct educational activities.

At the control stage of the study, (after the special work on volitional effort formation by visual modeling) children in the experimental group demonstrated positive dynamics in volitional regulation. The number of children, achieved a high level in volitional effort formation, has increased, and the number of children with a lower average level has decreased, moreover, none of the pupils remained at a low level.

The results of the study showed the effectiveness of the work on volitional effort formation using the method of visual modeling.

Keywords: volitional effort, senior preschool children, visual modeling, formation, method.

INTRODUCTION

The concept of volitional effort underlies understanding the main mechanisms of volitional regulation. The Volitional effort is necessary in order to include children in learning different activities and hold their attention in the process. The Volitional effort is needed also for planning, committing actions and evaluating achieved results (Iljin, 2011; Ivannikov, 2006; Selivanov, 1992; Kalin, 1989).

Preschool children with speech impairments demonstrate underdevelopment of regulatory speech mechanisms and difficulties in concentration and self-control (Smirnova, 1998; Mastukova, 1997).

Children with motor alalia may not get involved in the offered activity for a long time (Garkucsha, 2008). The volitional development of children with dysarthria is qualitatively different from the volitional development of children with normal speech (Kireenkova, 2016).

Based on the analysis of provided theoretical data it can be concluded that children with speech disorders experience difficulties in the formation of volitional processes, volitional regulation and volitional qualities.

LITERATURE REVIEW

The psychology of volition studies specific, inherent only in humans, complex mechanisms of higher mental activity that determine both behavior and personality of an individual as a whole (Iljin, 2011).

According to many researchers, volitional actions are associated with making volition efforts, making decisions and implementing them (Basov, 2007). Volitional regulation is involved in the work of main mental processes (perception, memory, attention, thinking processes,

imagination, speech), and volitional regulation determines the development of these processes from elementary functions to higher ones (Vigotskij, 1982).

In many psychological and pedagogical studies, senior preschool age is characterized as a period of intensive formation of volitional behavior (Gavriluk, 2006). Voluntary actions and volitional regulation determine the intellectual and personal development of preschool children and this is one of the main prerequisites for their readiness for school education (Volkova, 2008; Kravcov & Kravcova, 2013). Modern studies show that “the psychological readiness of children for school is often characterized by a fairly high level of intellectual readiness and a low level of willpower” (Gavriluk, 2006; Kislickaya, 2007; Sveshnikova, 2010; Sidyacheva, 2006). Underdevelopment of the volitional sphere in preschool children makes it hard for them to study at school, causes some difficulties for teachers in educating such children.

In senior preschool age, the main problems in the mental development of preschoolers become apparent, but before these problems could be attributed to the age norm. One of these problems is speech underdevelopment (Lopatina & Serebryakova, 1994).

The main issue disclosed in the present study is the insufficient formation of volitional efforts in senior preschool children with general speech underdevelopment. Unformed volitional regulation inhibits correctional and educational processes, reduces their effectiveness, interferes with full-fledged speech activity. Speech is not only a means of communication and cognition, but it is also a regulator of the activity and behavior of children in the early stages of their development (Lubovskij, 1989).

Senior preschool children with speech impairment demonstrate a low level of motivation, self-regulation, volitional attention, memorization, patience, perseverance, determination, courage (Kireenkova, 2016; Pyatnitca & Bashinskaya, 2011; Mastukova, 1997). The behavior of such kinds of children is impulsive and inconsistent and they show insensitivity to verbal influences of adults (Smirnova, 1992).

Cultural ways of cognition and preservation of accumulated experience play an important role in the development of preschool children. The most significant of these ways fixed by culture is a sign-symbolic means which is especially actively formed in preschool childhood based on children's activities. As it is shown in modern studies, the formation of sign-symbolic activity in correctional and developmental work with children may serve as a means of optimizing general

mental development in pre-schoolers with developmental problems (Mednikova & Pekisheva, 2016; Salmina, 1988; Sapogova, 1993).

In accordance with ontogenesis, visual modelling is a form of such sign-symbolic activity in preschool childhood (Venger, 1986). Visual modelling matures within the play and productive activities to senior preschool age and this has long been used in teaching practice. Visual modelling is the specific achievement of preschool childhood and a powerful compensatory learning tool in conditions of impaired development (Pyatnitca & Bashinskaya, 2011; Garcuscha, 2008).

Analysis of modern technologies based on visual models shows their high effectiveness in work with children. Such technologies include information and communication technologies, the theory of the resolution of invention-related tasks, technologies aimed at the development of the cognitive and intellectual sphere and the communication sphere.

The present study detects possibilities of using visual models in conditions of special education for senior pre-schoolers with GSU for the purpose of their strong-willed and, as a consequence, personal development.

METHODOLOGY

The Experimental study took place in a preschool educational kindergarten in three basic research stages (Table 1).

Participants

The sample of participants was selected according to an age criterion (senior preschool age) and a type of disorder (the presence of general speech underdevelopment in pupils, confirmed by the conclusion of the territorial psychological, medical and pedagogical commission). The study was conducted in two groups of combined type, experimental and control.

A total of 38 children of senior preschool age with GSU participated in the study. At the time of the experiment, speech disorders in children were partially compensated.

Children with GSU of experimental and control groups demonstrated a similar level of speech development on average at the time of the study.

According to the data of speech diagnostics, at the beginning of the 2018-2019 academic year, in the experimental group, there were 15 children with III level of speech development, three children with II-III level of speech development, and one child with II level of speech development

who had motor alalia. GSU was complicated by dysarthria in 18 children and by stuttering in 1 child.

At the time of the study, the control group consisted of 16 children with a III level of speech development, two children with II-III level of speech development and one child with II level of speech development. GSU was complicated by dysarthria in all 19 pupils.

Gender differences in experimental and control groups were also minor, in the experimental group there were 12 boys and seven girls, and in the control group, there were 11 boys and eight girls.

Table 1.

Experimental research stages

Experimental research stages	Work timeline	Experimental methods
1 ascertaining stage	October 2018	Ascertaining experiment: the study of psychological, pedagogical and medical documentation, observation, testing, quantitative and qualitative analysis of experimental data, generalization.
2 formative stage	December 2018, April 2019	Formative experiment: goal setting, pedagogical project planning, implementation of the pedagogical project on the research topic
3 control stage	May 2019	Control experiment: monitoring of results of the pedagogical project, generalization and systematization of control materials, processing of the results obtained by methods of mathematical statistics

Data collection

At the present moment, there are no specially adapted methods for studying the state of the volitional sphere in preschool children with speech disorders, and, in particular, with general speech underdevelopment. The problem of investigating volitional efforts in pre-schoolers were

defined in the works of Zaporozhhec (1960,1986), Kotirlo (1971), Neverovich (1986), Cirkun (1991; 2000) presented by Smirnova (2005). The present research is based on the diagnostic tools of Smirnova (2005). She identified the main indicators of voluntary (volitional) behaviour:

- observation of the behavior of children in the process of a direct educational activity (DEA);
- identifying the ability to restrain direct impulsive actions;
- determination of the ability to manage their cognitive processes (perception and attention) in the context of tasks;
- identifying the ability to mediate their actions with a visual example.

These indicators from Smirnova's method were used in this study to identify a level of volitional effort formation in senior preschool children with GSU. The indicators helped to detect the readiness of children to use visual models for regulation of their actions, and this visual modelling was used as the main means of influence in the formative stage of the study. These methods were adopted by researchers with a consideration of the age of pupils and characteristics of their speech development.

Visual material was selected for this study taking into account the limited possibilities of perception and understanding of visual images by children with GSU and their level of speech development according to Levina (2013).

The theme of picture material was chosen to take into account the current lexical topics. The level of tasks difficulty was matched to the recommended diagnostic protocol, used for examining 5-6-years-old children with GSU according to the scheme of Solomaha (2001) and Serebryakova (1999) described in the manual “Diagnostika narushenij rechi u detej i organizaciya logopedicheskoj raboti v usloviyah doskolnogo obrazovatelno uchrezhdenijja”.

The children's observation map was compiled during the DEA process according to 2 indicators, activity and discipline. Besides that, protocols of children examination using the methods “Do not peep”, “Compare pictures”, “Assemble the picture” were made.

Volitional efforts, manifested in behaviour, were identified using children's observation in the DEA process for artistic development (painting) and cognitive development (mathematics and nature-study).

When observing the behaviour of children, two main characteristics were noted:

- 1) children's enthusiasm for the DEA theme, which manifested itself in the activity related to DEA theme;
- 2) compliance with the rules of behaviour, an indicator of this characteristic was discipline in the DEA process.

A quantitative indicator of activity during lessons was a number of initiative actions of children related to the DEA theme (how many times children want to say something by their initiative, raise their hands, ask questions, address teachers or answer teacher questions).

A quantitative indicator of discipline was the number of distractions during the DEA process (distractions were identified as any motor activity and talking unrelated to the DEA theme).

Both indicators were recorded during 20 minutes of DEA. Observations of children's behaviour were made in 5 lessons; after this, average indicators of activity and discipline were calculated for each subject.

Thanks to optimally selected diagnostic tools, it was possible to obtain qualitative and quantitative indicators that were closely related to the research problem when analysing the data.

Data analysis

The data analysis process consisted of 5 consecutive stages through which numerical answers were received. These numerical answers were reduced to an average value and recorded in research protocols. Thus, protocols contained the results of observations of experimental and control groups during the DEA process (1,2 stages) with consideration of demonstrated initiatives and distractions and the calculation of average values in accordance with certain groups of participants (active/passive, disciplined/undisciplined). According to a number of activities, they were converted into digital units and named accordingly. The 2nd stage is the creation of the research database, systematization of the protocol forms. Columns were compared in nominal units (e.g. "initiative", "distraction") and in a number of respondents, who were coded and numbered.

In the 3rd stage, the average time of restraint of activity (successful completion of tasks) was recorded in both groups, and an average value was calculated.

In the 4th stage, the results of the ascertaining (control) phase of the study have been processed by the method of mathematical statistics.

The 5th stage is ranking the research data of experimental and control groups at the ascertaining (control) stage, calculating the results using the methods of mathematical statistics. When identifying themes, those key problems were highlighted that were closely related to the research problem.

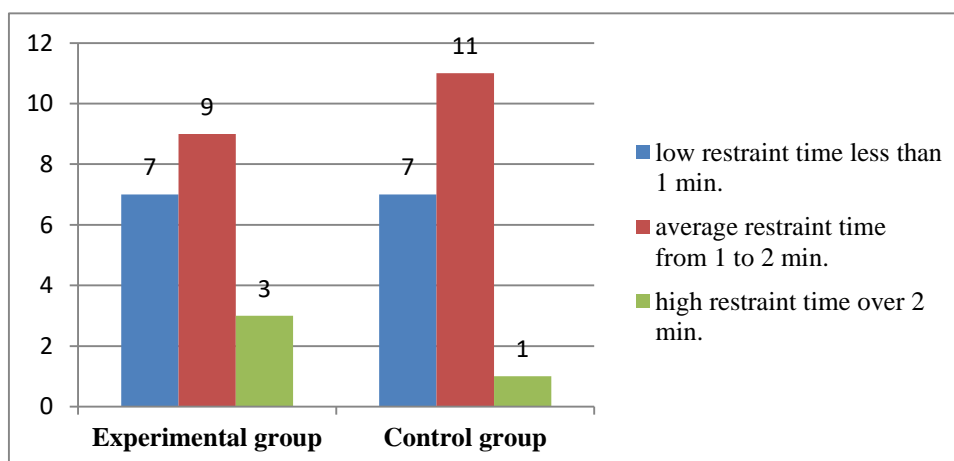
FINDINGS

The first ascertaining stage was aimed at diagnosing the initial level of the volitional effort development in 5-years-old pre-schoolers with GSU in two groups, approximately equal in composition and type of speech disorders.

Volitional efforts, expressed in the ability to restrain impulsive movements, were identified by the use of the “Do not peep” technique. Left alone with a child, the experimenter took out a box with a new unknown toy and promised to play an interesting game with him/her. The experimenter asked a child not to pry for some time, while he was preparing material for the game. A quantitative indicator of volitional effort was the time (in seconds) during which children could restrain their impulsive activity. The desire of children for restraint was manifested in their behaviour, namely in their facial expressions, covering their eyes with hands, inventing various actions to help them to sit with closed eyes. The histogram below (Figure 1) demonstrates volitional efforts to restrain impulsive actions in children of experimental and control groups.

Figure 1.

Distribution of participants in experimental and control groups according to the time of restraint of impulsive actions



Volitional efforts in the cognitive sphere were tested using the material of the method “Compare pictures”. Children were asked to compare two pictures and find 10 implicit differences. In order to detect them, children had to hold their active attention while perceiving them, without being distracted by other actions and other pictures. A quantitative indicator of the successful completion of this task was a number of correctly named differences (out of 10) in two experimental pictures.

Volitional efforts, manifested in the process of action according to a visual model, were revealed with the help of the game “Assemble the picture”. A child had to assemble a picture diagonally cut into 6 parts in accordance with the sample. The task was considered unfulfilled if the assembled picture did not match the sample and there were no attempts to correct errors. Results of the ascertaining stage of the study were recorded in protocols. Scores were given for each indicator.

As in the study by Smirnova (2005), all children were divided into 4 groups by their behavior in DEA according to results of observations at the ascertaining stage:

- 1) active and disciplined children, with high indicators of initiative and a low level of distractions - seven children, accounted for 18%,
- 2) active and undisciplined children with high indicators of initiative and high and medium levels of distractions - 15 children, 40%,
- 3) passive and disciplined - eight children, 21%,
- 4) passive and undisciplined - eight children, 21%.

The data of the ascertaining stage of the study showed, that according to the results of the four methods the lowest indicators of volitional efforts are observed in children demonstrating passivity and indiscipline in DEA. Passive and disciplined children were also among those who did not complete the tasks. Half of the active and undisciplined children also had difficulties.

The data of mathematical analysis showed that there were no differences between the two samples in terms of a level of volitional effort formation at the ascertaining stage. Consequently, it can be considered reliable that at the ascertaining stage both groups were statistically equal in terms of a level of volitional effort formation.

The revealed features of the volitional sphere in senior preschool children with GSU may serve as an obstacle to full-fledged speech therapy correction and the implementation of educational activities. Obviously, the identified categories of pupils (2nd, 3rd and 4th groups) need

special psychological and pedagogical assistance, as such kind of help contributes to mastering an approximate adapted basic educational program of preschool education.

At the same time, the study showed that most 5-years-old preschool children with GSU have a formed ability to act according to a visual model. The active use of this ability in the correction process may have a positive effect on the development of the volitional sphere in this category of pupils and, as a result, increase its effectiveness.

The formative stage of the study took place in a preschool educational organization. The experiment involved 19 5-years-old children with GSU (experimental group).

Children sequentially mastered three types of actions: substitution, modelling, mental experimentation.

The implementation of the pedagogical project was conducted in three stages:

1. Organizational and preparation stage (October 2018).
2. The main stage is the project implementation (November 2018 - May 2019): the use of visual modelling according to a long-term plan in individual, subgroup and frontal speech therapy classes. The involvement of teachers and parents in the correctional process for volitional effort formation by joint productive activities with children.
3. Final stage (May 2019).

Correctional and developmental work was done in five main areas. Visual modelling was used:

- 1) in individual-subgroup lessons on formation of sound pronunciation (once a week)
- 2) in subgroup lessons to improve lexical and grammatical structures and to develop coherent speech (once a week);
- 3) in lessons on the development of phonemic processes and preparation for learning literacy (once a week);
- 4) in productive activities with parents (1 - 2 times a month);
in independent activity of children through the organization of a developing subject-spatial environment of the group and a speech therapy room (during the entire project).

Modern pedagogical and special speech therapy technologies and methods of visual modelling were used in the process of the project implementation such as speech therapy self-massage, finger gymnastics, methods of phonemic perception development, methods of formation of phonemic representations and preparation of children with GSU for learning literacy, methods

of formation of vocabulary and grammatical structures in children with GSU, methods of the development of coherent speech in children with GSU, information and communication technologies, game technologies.

The educational subject-spatial environment was equipped with all materials necessary for the project implementation according to the main areas, i.e. the centres of activities: the centre of individual and subgroup work, the centre of sensorimotor development, the centre of frontal and subgroup work.

Much attention was paid to the equipment of centres with pictures, tables, diagrams, waste material, materials for painting, drawing, modelling designing by sample. Created materials included:

- a card index of manuals on the development of articulatory, mimic and manual motor skills; these are complexes for articulatory, finger, mimic gymnastics, self-massage in pictures and diagrams;
- cards with schemes of articulations for sound correction, albums with labyrinths and cards with pictures and verses for automation of correctly pronounced sounds;
- cards for syllabic word analysis and tokens for sound word analysis;
- a set of stencils for silhouette drawing of subject images on lexical topics was selected;
- a finger pool was equipped with beans, small plastic fruits and vegetables;
- handmade small figures, diagrams and tokens to indicate the main characteristics of sounds;
- picture material was selected and diagrams were made to develop the skills of coherent descriptive and narrative speech;
- sound boxes were made for the development of auditory attention;
- hand-out picture material was selected for all studied sounds;
- demonstrational letters, a magnetic alphabet, a ruler Abacus to form syllable fusion skills were made with the professional help of parents.

A card index of electronic resources was collected:

- presentations for automating sounds in a word,
- demonstrational picture material on lexical topics.

The final stage of the project ended with an open final speech therapy lesson “In Search of the Keys of Knowledge”, in which children of the experimental group showed their ability to

decipher schemes, to follow a plan-scheme, to select and differentiate pictures into sounds similar in pronunciation, to model and recreate letters from fragments, pictures from parts, words from given letters. The behavior of children was distinguished by restraint and discipline. All children successfully coped with the game tasks offered to them, showed initiative, and there was no single case of distraction. An example was the children's project "Alive Letters", one of the stages is shown in Picture 2.

Picture 2.

Modelling letters of the Alive Alphabet

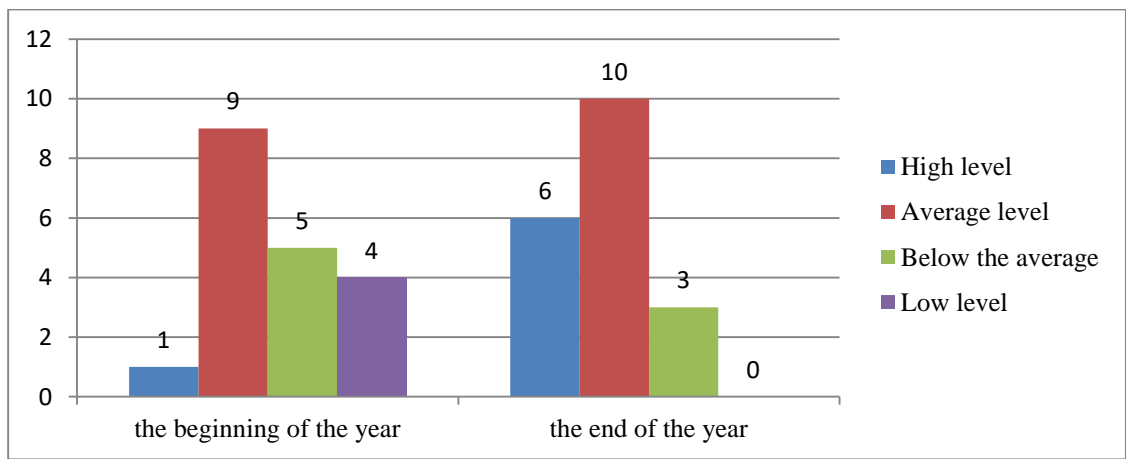


At the control stage of the study, children of the experimental group showed positive dynamics. The number of children who have reached a high level of volitional effort formation has significantly increased (by 26%), the number of children with a lower average level has decreased (by 10%), none of the pupils remained at a low level.

The histogram below (Figure 3) demonstrates quantitative and qualitative changes in the dynamics of volitional effort formation in senior preschoolers with GSU in the experimental group according to the results of all four methods.

Figure 3.

Dynamics of volitional effort formation in senior preschool children with speech impairments in the experimental group



In comparison with children of the control group, qualitative differences are seen in the dynamics of volitional effort formation, i.e. an increase of volitional effort indices in the experimental group occurred due to a rise of the proportion of high indices, while in the control group the dynamics occurred only due to an increase of low indices.

The control stage of the study showed the effectiveness of the work on volitional effort formation by the use of visual modelling, and this is confirmed by the methods of mathematical statistics, namely the Wilcoxon T-test for two dependent samples and the Mann-Whitney U-test.

DISCUSSION

The aim of this research was to study the process of volitional effort formation in senior preschool children with general speech underdevelopment using visual modelling.

At the present moment, emotional and volitional immaturity is a frequent manifestation of various forms of dysontogenesis. Most of the children of this category are preschool children with general speech underdevelopment (GSU).

Researchers note that preschool children with speech disorders have difficulties in motivation, self-control, concentration, voluntary memorization, and a weakening of volitional qualities associated with them (Kireenkova 2016; Pyatnitca & Bashinskaya, 2011; Mastukova, 1997; Selivanov, 1992b). The problem of volitional underdevelopment in senior preschool children with GSU is often exacerbated when children enter the school and this is transformed into a problem of psychological readiness for schooling.

Volitional regulation is known to be **carried out** due to the mediation of higher mental functions by sign systems (Mednikova & Pekisheva, 2016). One of the correction ways is visual modelling as an additional sign activity that mediates volitional processes.

The present study was based on the assumption that the use of visual modelling in correctional work with senior pre-schoolers with GSU will contribute to volitional effort formation in them as this is a mechanism of volitional regulation of activity. It was assumed that volitional effort formation through visual modelling will have a positive effect on the effectiveness of overcoming GSU in senior preschool children.

To confirm the research hypothesis, the problem of volitional effort formation in senior pre-schoolers with DEA was investigated using theoretical analysis and a practical study. The

project on volitional efforts formation by visual modelling in senior pre-schoolers with GSU was developed and implemented.

The formative stage of the study took place in a preschool educational institution. The experiment involved 19 5-years-old children with GSU. Correctional and developmental work was done in subgroup and individual speech therapy classes and in conditions of unregulated productive activity with parents. Besides that, conditions for independent activities of children with the use of visual models were created in the group of the preschool educational institution. 5-years-old children with GSU mastered three types of actions in sequence:

1) substitution; 2) modelling, 3) mental experimentation (Kravcova, 2011; Kravcova, 2009).

The study proved that visual modelling, while included in the correctional and educational process, has a positive effect on the process of volitional effort formation in the activity of preschool children with GSU. Visual modelling also contributes to the formation of volitional regulation of activity and this is manifested in discipline, restraint, the management of cognitive processes. Besides that, visual modelling helps to effectively develop speech skills.

At the end of the academic year pupils of the experimental group successfully participated in the city, regional, nationwide Russian events, festivals, and competitions:

- two pupils became winners with a Winner's diploma (II place) in the Nationwide Russian creative competition for children and teachers “Talantokha – 61”, in the nomination "Acting skills", children read poems by their favourite children's authors,
- one pupil took part in the XVI international traditional heuristic project “Day of Defectology. Childhood Ecology of a special child”, the girl read a poem from the stage of the NSPU assembly hall (Shilova & Piskun, 2019a);
- 6 pupils became winners of the open regional festival for children with disabilities “I ask for words” in the nomination “Theatrical creativity”. Children performed on the stage of the regional puppet theatre with an excerpt from the play “The Golden Goose”.

The project itself became a laureate of the XI city competition of projects “Innovations in Education”, in the nomination “Special Child - Equal Opportunities”, Department of Education of the Novosibirsk Mayor's Office, City Centre of Education Development, 2019 (Shilova & Piskun, 2019b).

The implementation of the pedagogical project resulted in the children's project “Alive Letters”, in which the pupils of the experimental group participated. Within the framework of the

project activities, the children were able to demonstrate the skills obtained in a classroom such as skills of volitional regulation of activity, visual modelling, speech planning, forecasting and self-control. As a level of volitional effort formation is a key to the success of children when they enter school, the importance of the findings of the research is proven by the relevance to the problem under study.

LIMITATION OF THE STUDY

To a less degree, the use of visual modelling affects the development of motivational components of will such as activity and initiative. This is evidenced by the low dynamics of indicators of volitional effort formation in children with low activity and in passive undisciplined children. For the development of these components of will in these categories of pupils, along with the use of the method of visual modelling, it is necessary to use the following methods for a long period of time:

- the use of a team approach of all specialists and teachers of preschool educational organizations in psychological and pedagogical assistance in relation to children and their families;
- constant monitoring of the dynamics of special educational needs in children in these groups due to their psychophysical state of health and the interaction of specialists in psychological and pedagogical support with medical specialists and parents (legal representatives);
- expanding the range of applied methods and techniques influencing volitional sphere formation,
- longer periods of psychological and pedagogical correction.

Noncompliance with the above-mentioned conditions results in negative dynamics of the development of volitional efforts.

IMPLICATIONS FOR PRACTICE AND FUTURE RESEARCH

This study revealed and once again emphasized the importance of volitional effort formation in children with speech disorders. Research work in this direction should not be limited

to only one type of disorder, this is relevant for all senior preschool children, both who have health problems and who normally developing. It can be assumed that the study will help educational organizations, social protection, health care, public organizations in their work with children.

CONCLUSION

The present study examines the psychological and pedagogical effectiveness of the use of the visual modeling method in volitional effort formation in senior preschool children with speech impairments. The results of the study highlight the importance of this area in assisting children with health problems. The identification of a low level of volitional effort formation shows the need for targeted and systematic measures aimed at overcoming this disadvantage in children with disabilities because this will help them in the transition to school.

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**MULTIDISCIPLINARY TEAM MEMBER CHALLENGES RELATED TO DISABLED
ADOLESCENTS' SOCIAL AND DOMESTIC
PROCESSES OF ADAPTATION**

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ABSTRACT

This study aims to identify and analyze the main difficulties and obstacles faced by multidisciplinary team members - specialists working in the field of rehabilitation while working with disabled adolescents.

A special questionnaire for data collection including open and closed-ended questions was developed. In face and online surveys were conducted with the members of the multidisciplinary team working with disabled adolescents in different rehabilitation centers and specialized institutions in 7 different regions of Armenia.

Detection, study, and evaluation of issues related to difficulties while performing daily activities by disabled adolescents due to the lack of appropriate tools do not allow specialists to carry out a systematic evaluation and monitor the process and progress. The other problem identified is related to the fact that most of the intervention organized in different centers is not continuous and systematic, as it is limited by unfavorable environmental conditions, lack of assistive devices and special equipment, as well as by the awareness and lack of knowledge of the specialists working in the field.

Keywords: multidisciplinary team, disabled adolescents, social and domestic adaptation, rehabilitation, assessment, intervention.

INTRODUCTION

The problems of disabled adolescents cover almost all areas of health and social life, requiring a coordinated approach, close cooperation, and effective pooling of resources.

The social and domestic rehabilitation features of disabled adolescents are the restoration or compensation is connected with the loss of social and domestic skills due to illness, which is anticipated in daily activities of the adolescents. Due to the existence of adapted housing conditions, which should be comfortable, safe, as well as aimed at the adolescent's orientation, autonomy, ability to adapt to new conditions in life it is possible to improve the quality of life of disabled adolescents and to promote their maximum inclusion in family and public life.

The issue of providing services to disabled adolescents, in particular, assessment of social and domestic skills, requires mandatory professional intervention to ensure the necessary level of development of social and domestic skills of the latter.

LITERATURE REVIEW

Adolescence is a transitional stage of physical and psychological development that generally occurs during the period from puberty to legal adulthood (Macmillan Dictionary for Students, 1981; page 14). According to UNFPA (2013) terminology, adolescence is defined as follows: 10-14 years old is early adolescence, 15-19 years old - late adolescence. Still, there are many other different views on the age classification of adolescence.

According to the World Health Organization (WHO) classification, adolescence is defined as a period of 10-19 years old. WHO experts have described adolescence as a period of sexual development, from the emergence of secondary sexual characteristics to the stabilization of sexual behavior and reproductive function, when childhood psychological processes change to adult behavior; adolescents move from economic to social dependence to relative social independence (WHO, 2005).

This work is based on the classification suggested by well-known psychologist Elkonin, according to which there are distinguished two periods of adolescence: junior adolescence (12-14 years) and senior adolescence (early youth) age 15-17 years (Vigotskiy, 1984).

According to the DALY, the health problems of adolescents account for 15% of the worldwide health burden, which is a significant number in itself. Musculoskeletal disorders,

asthma, gastrointestinal diseases, depression, neurosis, insomnia, etc. are more common among adolescents (Gore, et. al, 2011). At the same time, adolescence is not only a time of risks but also a time of opportunity. Adolescence is one of the most important stages of a person's life cycle, and adolescents are at a unique “crossroads of health” (Vigotskiy, 1984). Various biological and social factors in prenatal, early childhood, and school-age have an impact and predetermine the state of health in adolescence. It is not for nothing that Jean-Jacques Rousseau called adolescence “human the second birth” (Melkumova, Movsesyan, Sargsyan, Babloyan, 2019).

At the same, it is very important to state, that other diseases develop during adolescence, behavioral changes occur, which have a long-term effect on human health in adulthood. According to the WHO (2005), about 70% of premature deaths in adults are due to adolescent behavior. With such alarming data, attitudes and conceptual approaches to adolescent health issues have begun to change in many countries worldwide. Many adolescents do not have the experience or practice to seek medical help, which is largely due to health problems. As a result, the improvement in the health of young children in recent decades is far greater than the improvement in the health of adolescents. As a result, the improvement in the health of young children in recent decades is far greater than the improvement in the health of adolescents. The main indicators of the health of adolescents in Armenia follow the world trends (Melkumova, Movsesyan, Sargsyan, Babloyan, 2019). The results of the study reflect the fact that adolescents' health and health behaviour is influenced by various factors, including national traditions, transitional difficulties, the rapid intrusion of information technology into everyday life, etc. All of this has contributed to some of the health problems among children (Melkumova, Movsesyan, Sargsyan, Babloyan, 2019).

As mentioned above, the adolescence of children with disabilities can be influenced by several unique factors that are significantly associated with limitations. This can cause many painful experiences for a disabled adolescent. The situation is especially acute if a disabled adolescent is unable to manage his social behaviour and adapt to the social environment. Obvious differences in physical or mental standards at this age can lead to low self-esteem, negative self-attitude, and, consequently, the formation of a negative social positioning (Bauminger, 2002). Accordingly, it is possible for any specialist working with adolescents (boys and girls) to have a clear idea of the physical, sexual, and psychological characteristics of that age. And this circumstance becomes even more significant when it comes to the most common problems of social, domestic, development, health, educational issues of disabled adolescents. Depending on

the type of disability, there are certain problems in the field of self-care, which are the cause of very serious complications. The person feels dependent and helpless. In this case, it is very important to ensure the adaptation process, as maximum conditions must be created for the person with a disability to be independent. It should be noted that in Armenia reality, the physical environment is still far from being accessible to people with disabilities, depending on the type of disability, in some situations people with disabilities may need constant help. It is very important for a person with a disability to be able to be independent by an adapted environment to regulate the daily activities of a person with a disability (Harutyunyan, 2017).

The problem of social and physical adaptation of adolescents with disabilities is one of the most important issues of the general inclusive system. Recently, this issue has become more urgent due to changes in attitudes towards people with disabilities. However, despite this, the process of adaptation of disabled adolescents in society remains almost unexplored, being crucially characterized by the effectiveness of comprehensive rehabilitation measures provided by professionals working with persons with disabilities (Harutyunyan, 2018). The most important issues related to the matter of disability are related to the existence of various social and physical barriers, which limit the active involvement and participation of disabled adolescents in public life. The current situation is the result of a wrong social policy, during which the system focuses only on a “healthy” society and reflects only the interests of this group of citizens. That is why effective activities, cultural life, leisure planning, and use of social services remain inaccessible and insurmountable for disabled adolescents. A more detailed study of social-physical rehabilitation technologies distinguishes two directions: social-domestic and social-environmental rehabilitation.

The process of helping a person who has suffered an illness or injury restore lost skills and so regain maximum self-sufficiency (Shiel, 2010). The concept of “rehabilitation” implies a system of measures, the purpose of which is the most complete recovery of the abilities of a child or adolescent with illness or disability and his/her return to an active life. Rehabilitation differs from conventional treatment in that it helps the adolescent to adapt optimally to the environment, and treatment in this context is understood as a process that has a greater impact on the body within the current situation. It is necessary to state that rehabilitation is more person-centered and future-oriented (WHO, 2020). Maximum rehabilitation impact and its efficiency are possible only through a multidisciplinary intervention approach.

The peculiarity of social-domestic rehabilitation is reflected in the following definition: Creating a safe and comfortable living environment for independent living. Domestic living conditions play a big role in a person's life because domestic and household activities themselves are an integral part of a person's life. That is why the social-domestic conditions for the person must be comfortable and safe, correspond to all the standards of sanitation, living space, equipment, technical means of restoration.

Adaptation of housing conditions by the functional abilities of the disabled adolescent is a very important point in the process of rehabilitation. That means an installation of special auxiliary equipment and assistive devices, accessible daily activities, individual approach to each disabled adolescent, development of daily activities' plan, proposed by a multidisciplinary team, etc. In this regard, social-domestic rehabilitation includes social-domestic adaptation with sufficient assistive and adapted devices. While social-domestic orientation means recognition of the environment and needed equipment and devices.

Socio-environmental rehabilitation includes socio-environmental orientation, perception, and adaptation. Socio-environmental orientation is the process of developing the ability of a disabled adolescent to orientate in the concrete environment. Very often socio-environmental adaptation is designed for adolescents with mobility difficulties. Many authors address the issue of social adaptation of disabled adolescents. For instance, Voroshilova and others (2017) in their practical manual reflect the functional abilities of children with hand injuries aged 3-7 years, as well as the peculiarities of developing social and domestic skills through the use of the play method, considering it as the primary and main occupation of preschool children. The authors emphasize the role of developing the social and domestic skills necessary for self-care and daily life activities in the process of social adaptation of children with hand injuries. Statistics on the functional abilities and social skills of children with physical disorders demonstrate the effectiveness of play therapy in the early development of fine and gross motor skills (Voroshilova, et. al., 2017).

Shipicina and Mamaychuk (2004) in the methodological paper "Psychology of children with motor disorders" point out several problems that hinder the process of adaptation of children and adolescents with physical disorders. The authors particularly highlight the problems of differentiated psychological-pedagogical-medical-social care, the almost complete lack of professional qualification-training programs for specialists working with children with physical

disorders, as well as the need for methodical elaboration of medical, psychological-corrective-pedagogical work (Batisheva, 2012).

In conclusion, it can be stated that the problems of restricting the living activities of disabled adolescents can be solved by providing them with the daily occupation, social inclusion, and the main goal of professional activity is to support active activities within their capabilities, to protect people's right to participate in everyday public life as a full member of society.

METHODOLOGY

Data collection

An online survey was designed for the data collection within the frame of this study. Online data collection carries the potential of accessing a large and geographically distributed population, along with being time and cost-efficient for the researcher (Lefever, Michael & Matthíasdóttir, 2006).

An open and closed questions questionnaire with 3 questions was designed to collect data from MDT members' perceptions about working with an adolescent with disabilities on housekeeping rehabilitation. It helps in focusing the respondent's attention on all the significant items (Bryman, 2012). As it is given in a written form, recording of the response from the respondents ensures uniformity.

Participants

Participants of the study are multidisciplinary team members working in different rehabilitation centres or organizations in 7 different regions in Armenia (Yerevan, Gegharqunik, Shirak, Ararat, Lori, Aragatsotn, Syunig). The following organizations were included in the survey: “Emili Aregak” foundation, Specialized children's home of Kharberd, “Astghavard” centre for disabled children and parents, “Full life” NGO, Children's centre of Kapan, Rehabilitation centre of Kosh, “Luse” NGO.

200 multidisciplinary team (physical therapists, psychologists, speech therapists, special educators, art therapists, and other specialists) members took part in the face-to-face and online surveys.

Table 1.***Demographic data of participants.***

MDT	Sex				Age							
	Male		Female		20-29		30-39		40-49		50-59	
	n	%	n	%	n	%	n	%	n	%	n	%
Physical therapist	22	11	24	12	19	9	16	8	6	3	5	2
Psychologist	36	18	2	1	21	10	16	8	1	1	-	-
Speech therapist	39	20	2	1	20	10	13	7	5	2	3	2
Special educator	30	15	2	1	17	8	9	5	2	1	4	2
Art therapist	13	7	2	1	15	7	-	-	-	-	-	-
Other specialists	25	12	3	1	18	9	3	2	1	1	6	3
Total	165	83	35	17	110	53	57	30	15	8	18	9

Ethical considerations

Taking into account the fact that currently there was no research ethics committee in the Republic of Armenia, gaining an official ethical license for the research was not possible. Participants were given the written information on the research aim, their rights, and the ethical obligations of the researcher. Also, informed consent was introduced to the participants. The names of the participants were kept anonymous and not used in the study.

Data analysis

A quantitative method of data collection and analysis was chosen in the current research as it allows to conclude the obtained data through certain numerical patterns, to put forward new hypotheses, or to confirm and refute the existing ones (Moss & Hendry, 2002).

The strength of quantitative research is that no matter how many researchers conduct it, they will all come to the same conclusions, as the methods and methodologies for identifying social reality are accurate (Babbie, 2010). In this study, a standardized survey method belonging to a series of quantitative methods was used, the process of which is formal, the researcher interacts with the respondent to a minimum to have as little effect on his answers as possible (Babbie, 2010; Moss & Hendry, 2002). That is, in this case, the purpose of the study is to measure and interpret the phenomenon through numbers.

As a result, the answers received from the questionnaire were entered into the relevant software database (Microsoft Excel), where the collected data were analysed and the digital percentage points were presented.

RESULTS

During the planning and implementation stages of the research, the aim was to identify the main difficulties and obstacles faced by professionals in rehabilitating and adapting social and domestic skills while working with disabled adolescents.

Consequently, the results of the question “What are the main difficulties that you face while working with disabled adolescents?” have shown that 100 (50%) of respondents mentioned the main reason for the existing difficulties lack special equipment in the centres where they work. Under the special equipment and devices, the multidisciplinary team members mean the need for various devices for personal use in everyday life, such as adapted dishes, furniture, kitchen appliances, which will promote the safe and independent involvement of disabled adolescents in the social process.

A bit smaller number of respondents 72 (36%) have mentioned the main difficulty as unfavourable environmental conditions, environmental inaccessibility, for example, access to a nearby store, lack of ramps and handles, access and mobility for disabled adolescents with physical disorders. A significantly big number of participants 60 (30%) mentioned the lack of practical skills and awareness as the main difficulty, in particular, emphasizing the need to know the latest methods, approaches, techniques to improve social skills, as well as the exchange of experience and the acquisition of relevant skills. Group of respondents 30 (15%) consider features of mental development, such as difficulty concentrating, maintaining difficulties, managing behaviour, and so on as basic difficulties in their work. At the same time, 26 (13%) respondents have mentioned other features of an adolescent with physical development, such as muscle tension, spasticity, difficulty in maintaining body position, moving, etc.

While concluding the analyses of the results it is possible to state the two most important points as main difficulties: unfavourable environmental conditions (1), and lack of practical skills and awareness (2).

To the question “Are there special equipment, assistive devices in the institution where you work that facilitate or help to organize rehabilitation process more effectively?” 83 (41%) of the respondents answered negatively, in addition to the negative responses, 37 (9%) mention positively identifying adapted spoons and knives as main assistive devices. In the case of the concepts of “accessories”, 13 (7%) mentioned the presence of walkers and wheelchairs, and 33 (16%) indicated the presence of jaws, trolleys, adapted knives, and knives.

In the framework of the current research, it was also necessary to find out and study the presence and availability of social and domestic skills intervention carried out in the above-mentioned centres. As a result, 110 (55%) of the surveyed specialists give positive responses and mentioned the activities performed. Those are shopping and finance management, cooking, serving. At the same time 48 (24%) of respondents who work with disabled adolescents in their centres, have mentioned that all interventions including developing skills related to shopping, managing money, choosing and purchasing goods for everyday life, are not provided on systematic and continuous nature due to lack of financial resources and availability of necessary assistive devices. Also, it must be said that 52 (26%) respondents mentioned that the centres carry out group work aimed at developing culinary skills, such as the planning and preparation of simple meals, in which case, as an obstacle, the specialists raised unfavourable environmental conditions, lack of specially adapted dishes, lack of equipment and modified environment.

And here are 100 of the interviewed specialists (50%) who stated that their centers carry out activities aimed at developing self-care skills, in particular, certain interventions aimed at their self-participation in the self-care activities of adolescents with disabilities: washing, dressing, and eating (Figure 1).

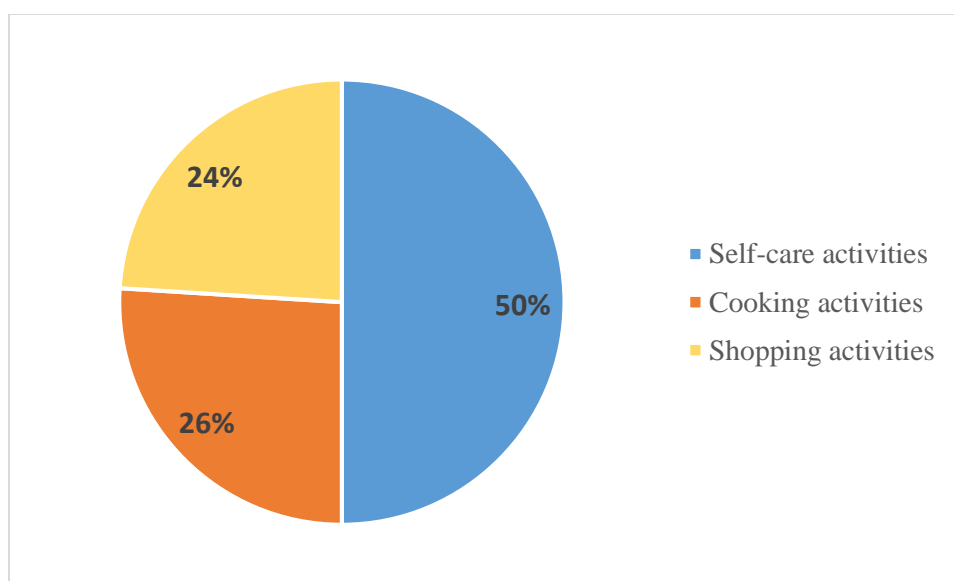
As a result of the study of the implementation of work aimed at the development of social and domestic skills, it is considered possible to address all the shortcomings and difficulties encountered by professionals in the process of planning and implementation of the above-mentioned intervention activities while working with disabled persons.

While reflecting on the question included in the survey questionnaire “What are the gaps or difficulties you face in the process of organizing work with disabled persons?” it is also very important to refer to tools for assessing the needs of disabled adolescents which are used or might be used by multidisciplinary team members. As a result of the research, according to the confirmed data, 180 (90%) of the respondents mentioned the lack of a comprehensive need assessment toolkit

as the main omission in the effective organization of work, providing at the same time stating that each of them, as an assessment tool, mainly uses observation, interview, and in some cases, questionnaires developed by them. At the same time, teaching and adaptation of effective social-domestic skills, from the point of view of the intervention organization, requires a systemic, need-based, clearly developed, as well as planned impact. Still, 100 (50%) of the respondents mentioned the lack of training of the multidisciplinary team members as a difficulty, interpreting it as a lack of experience in organizing social work, due to the lack of relevant literature, methodological guidelines, and in most cases, the absence of the mentioned foreword.

Figure 1.

Distribution of performed social-domestic activities in different organizations.



DISCUSSION

The few existing types of research on the social-domestic difficulties of disabled adolescents reflect the peculiarities of the adaptation process and have so far been conducted only in the framework of separate, exclusively foreign researchers by very few authors (Voroshilova, 2017; Batisheva, 2012).

Shipicina and Mamaychuk (2004) in the paper "Psychology of children with motor disorders" talk about a variety of problems that hinder the process of adaptation of adolescents with physical disorders. The authors particularly highlight the problems of differentiated

psychological-pedagogical-medical-social care and issues connected with the preliminary and deep assessment that should be a milestone in rehabilitation work organized by all multidisciplinary team members. The result of this study identifies the same problems and thus proves their validity.

Thus, referring to the study of the organization and implementation of multidisciplinary teamwork in regards to social-domestic skill in the service centers, it should be noted that the identification of difficulties and problems related to the development of social-domestic skills of disabled adolescents, assessment and evaluation, identification of occupational performance issues due to the lack of appropriate tools does not allow specialists to carry out a systematic evaluation of more productive work and further monitoring. As a result, most of the work carried out is not continuous-systematic, as it is limited by unfavorable environmental conditions, assistive devices, special equipment, as well as by specialists due to lack of practical knowledge.

CONCLUSION

The peculiarities of the development of social skills and abilities of disabled adolescents require in-depth and comprehensive study. The job responsibilities of the multidisciplinary team members include the discovery of social and domestic abilities and skills, assessment and investigation, identifying strengths and weaknesses, as well as opportunities for adolescent life. All this is needed to organize future participation of the disabled adolescents in the abovementioned activities and clarification they need for implemented resources.

In the context of the conducted research work, it is possible to single out the following disadvantages: the small number of people who participated in the research (200 multidisciplinary team members). It is believed that if there were more numbers, the data received could have been more comprehensive, more reliable, more inclusive of information related to the research question.

The quantitative method of data collection and analysis was chosen within the frame of current research.

It is supposed that in the case of a combination of quantitative as well as qualitative methods, in addition to numerical indicators, our research would also have the qualitative features, patterns, differences of the data obtained by all the specialists who participated in the research, which showed the nature of the most comprehensive study of our work.

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SENSORY ASYMMETRY ASSESSMENT OF 8-11 YEARS OLD CHILDREN WITH AND WITHOUT LEARNING DISABILITIES

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ABSTRACT

Symmetry-related symptoms may be important seems to be very important while child development and schooling. In science, there are two approaches for the evaluation of hemispheric differences: method of determination “of rucote” through the survey (Edinburgh test) and the method of active identification of motor and sensory asymmetry by Bragina and Dobrokhotova. The methods are widely represented in the modern scientific literature, but no studies have been found that assessed the relationship between the results of testing the functional asymmetry of the brain using the Edinburgh test and tests to determine motor and sensory asymmetry. For this purpose, the author studied and tested research methods aimed at the examination of the inter hemispheric asymmetry in normally developing and mentally retarded children aged 8-11 years identifying the degree of inter hemispheric interaction.

The research was carried out in the scientific laboratory of the faculty of special and inclusive education of the Khachatur Abovyan Armenian state pedagogical university.

The study involved a total of 131 children aged 8 to 11 years, 73 of them are healthy schoolchildren, as well as 58 children with mild mental retardation.

Keywords: sensory asymmetry, techniques, tests, mental retardation, assessment, speech asymmetry, visual asymmetry, inter hemispheric interaction

INTRODUCTION

So far in science, there are two approaches for the evaluation of hemispheric differences: method of determination “of rucote” through the survey (Edinburgh test) (Luria, 1973; Oldfield, 1971) and the method of active identification of motor and sensory asymmetry by Bragina and Dobrokhotova (Bragina & Dobrokhotova, 1988). The Edinburgh test is widely used in the world: it is used in the study of behavior (Pankova & Romanov, 2014), emotions (Aron, et al., 2005), and as a preliminary test for the selection of participants in neuroimaging studies (Mikhailov & Tkachenko, 2009). Test for the determination of the leading limb and the lead eyes were used to assess the impact of the lateralization of the brain to intelligence and mathematical ability (Khokhlov & Kovyazina, 2013), when studying the adaptation possibilities and physical development of boys and girls, as well as the formation of the stress resistance of the organism (Lisova & Shilov, 2015; Ananyev, 1990). This implies that both methods are widely presented in the modern scientific literature, but we have not found studies that would assess the relationship between the results of testing functional asymmetry of the brain using the Edinburgh test and tests for the determination of motor and sensory asymmetry.

Functional studies were conducted in the morning, in conditions that meet the hygienic requirements for educational institutions (San PiN 2.4.2.2821-10, 2013). The study complied with the ethical requirements set out in the Helsinki Declaration (The World Medical Association, INC, 2008).

MATERIALS AND METHODS OF RESEARCH

The research was carried out in the scientific laboratory of the faculty of special and inclusive education of the Khachatur Abovyan Armenian state pedagogical university. The study involved a total of 131 children aged 8 to 11 years, 73 of them are healthy schoolchildren, as well as 58 children with mild mental retardation.

The degree of mental retardation was assessed on medical grounds, the degree of social adaptation, the degree of intellectual functioning, and the development of the school curriculum in the process of training in a special educational institution.

Each category surveyed was divided into 2 age groups: 8-9 years and 10-11 years.
Control group of healthy schoolchildren:

- 8-9 years - 38 children, including 20 girls and 18 boys;
- 10-11 years 35 children of them 17 girls and 18 boys;

The Experimental group of children with mental retardation:

- 8-9 years – 28 children, including 11 girls and 17 boys;
- 10-11 years 25 children of them 12 girls and 13 boys;

Children were selected for the experimental group on the basis of accompanying documents with an approved diagnosis of "mild mental retardation". After reviewing the results of clinical, laboratory, pedagogical and psychological examinations with family members and guardians signed a voluntary agreement on the participation of the child in research.

TESTING METHODOLOGY

Functional studies should be carried out in the morning, in conditions that meet the hygienic requirements for educational institutions. When conducting the study, observe the ethical requirements prescribed by the Helsinki Declaration (The World Medical Association, INC, 2008).

A. assessment of auditory and auditory-speech asymmetry:

To determine the lateralization of auditory-speech functions, the method of dichotic listening with the definition of the “right ear coefficient” (CPU) is used. Dichotic stimulation can be carried out with two sets of verbal stimuli (words) presented simultaneously through separate channels through headphones in both ears. This technique requires special equipment, while one of our tasks was to use available methods that we could recommend to school psychologists for diagnostic purposes. In this connection, we have taken the following methods: test “Whisper” (Bragina & Dobrokhotova, 1988); test “ticking hours” (Leutin, 2007). In this case, if the test reveals the dominance of the right ear, we put +1 point, if the dominance of the left ear-1 point. A zero score is assigned for undetected dominance of the right or left ear.

To study hearing asymmetries, you can use simple, publicly available techniques and techniques that require the use of special devices.

Test “whisper”. The experimenter says something to the test subject in a whisper. In case of an equality of hearing acuity, the test subject substitutes to the speaker a leading ear, i.e. the ear heard by which is realized easier and faster.

Test “ticking clock”. The test subject is asked to estimate the volume of the clock ticking with both ears. At the same time, it is pointed out to which ear he brings the clock for the first time and whether different ears hear the same volume of ticking. It can be noted which ear the test subject puts forward, listening to something (Leutin, 2007; Annett & Kilshow, 1982).

Test “tuning fork”. The duration of the tuning fork is determined, which is brought alternately to the right and left ear.

B. assessment of visual asymmetry

The following tests are used to determine the leading eye:

1. Test “blinking one eye”. The test subject is asked to blink one eye. Usually, the ignorant eye is closed.
2. Test “Rosenbach”. The test subject holds a pencil vertically in his outstretched hand and fixes it with his eyes on a certain point (better in relation to any vertical line), spaced 3-4 m, both eyes are open. Then the test subject alternately closes one and the other eye. The leading eye is considered to be the eye when closing which the pencil moves in its direction (Luria, 1973).
3. Test “Card with a hole”. A 1x1 cm hole is cut in a sheet of thick paper. Keeping this card at a small distance from the eye, the test subject views the object; the viewing is usually performed by the leading eye (Annett & Kilshow, 1982; Bragin & Dobrokhotova, 1988).
4. Self-assessment of the test subject-the answer to the question of what eye he aims for.

RESULTS

Auditory asymmetry

The frequencies and intensities characteristic of speech are in the center of the human audibility zone: from 20 to 16,000 Hz. Out of human hearing are ultrasonic frequencies — more than 16 kHz and infrared-less than 20 Hz.

Test “Listen to the ticking of the clock”.

The acuity of hearing on both ears is different. The best sensitivity of the left ear is shown. The predominance of the left ear was 50 % of the test subjects, right - 7% symmetry 43% in the study of audiometer and in the study of the tuning-fork — 50, 36 and 14 % of test subjects, respectively (Neimark, 1954). In distinguishing the height of dichotic chords (1650 and 1750 Hz),

alternately presented to one or the other ear through headphones at a sound pressure level of 80 dB, the left ear prevailed in 75%, the right in 25% of the subjects (Gregory A., 1982).

Visual asymmetry

Human vision perceives “electromagnetic radiation in the wave range from 400 to 750 nm” (Grusser, 1985). In binocular vision, the visual impressions of each eye have different strength and quality, “outweighs the impressionable ability of one of the eyes and this prevalence more often in the right eye”. At 92.6% of the studied individuals established asymmetry: right - at 62.6 %, left-sided - 30 %, symmetry-7.4 %. Binocular vision - “the addition of various monocular features” that is “perfect” functions for each eye separately (Ananyev, 1960).

One of the main functions of the visual analyzer, considered in the aspect of inter hemispheric relations, is binocular vision.

The course of determining the asymmetry of the visual analyzer revealed that 60% of schoolchildren aged 8-11 years have the right leading eye, left-15.8% and 24.2% - mixed type. Despite the fact that binocular vision, visual impressions of each eye have a different ability, that is, one eye acquires a leading value (often the prevalence of the right eye), and the other – a subordinate. Most children have predominant right eye functions, probably because the left hemisphere is involved in the processing of verbal information.

CONCLUSION

Complex disorders of cognitive activity in children with mental retardation are due to both general underdevelopments of the brain and changes in inter hemispheric interaction underlying the integration of brain functions. In mental retardation, there is a global, undifferentiated left hemisphere response - this " Gestalt " type of response is normally more characteristic of the right hemisphere. The deficit of the functions of the right hemisphere is manifested in the violation of the visual-spatial and holistic nature of perception. More rudely, than with mental retardation reveals a violation of inhibitory functions cortex. Violation of inter hemispheric transfer of information distorts the cognitive integration of intellectual activity.

The presence of a third of boys and about 40% of girls left-sided profile of individual brain asymmetry is due, as a rule, disorders of the left hemisphere, manifested in the global,

undifferentiated response of the left hemisphere to significant and insignificant stimuli of visual perception.

Of all the asymmetries in our work, the main importance is given to the right-left hemisphere. Right-left reflects, apparently, the most fundamental dissimilarity of the brain's hemispheres, within which all other asymmetries of the hemispheres manifest themselves.

In the course of widespread studies of functional asymmetry of the brain, it is becoming increasingly obvious that the ideas about the autonomy of each of the hemispheres in providing different types of human activity, that as a result of splitting the brain, a person receives, as it were, two brains instead of one.

Clinical experience suggests that neither the left nor the right hemisphere of the brain has advantages. Regardless of the side of brain damage, patients with focal brain damage find a decrease or even impossibility of social adaptation.

The functional contribution of the right and left hemispheres to the formation of the human psyche is assumed to be different because the hemispheres in their paired work function dissimilar in time. Pair work is carried out in the present time so that the right hemisphere is based on the past, the left - on the future time. Therefore, the preservation of paired hemispheres and the structural integrity of the brain - the main condition, without which it is impossible to form a full mental activity.

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INFLUENCE OF THE MOTIVATIONAL COMPONENT OF THE PHYSICAL EDUCATION ON THE STUDENTS' TRAINING SYSTEM

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ABSTRACT

The purpose of the study is to find out the influence of the motivational component on the training system of physical education students who plan to use health-saving technologies in their professional activities in the physical education of schoolchildren who, for health reasons, belong to special medical groups.

Professional education of future specialists in physical education and sports in higher education institutions requires technological changes in physical culture and health work with children and youth, who belong to special medical groups due to their state of health. The solution of this direction of training of future specialists in physical education and sports will be more effective if the motivational component of training is applied in the educational process of students. Studies apply the motivational component of learning. Research determines that the use of a motivational component in the training program for future physical education professionals has a much better effect on the learning process of students, mastering the curriculum, self-development, and self-improvement both in higher education and in future professional activities.

Keywords: specialists, physical education, motivation, research, health-preserving technologies, schoolchildren, special medical group.

INTRODUCTION

At the stage of development of modern society, rapid progress, computerization, and modernization of all spheres of human life, less and less attention is paid to physical activity. This

is especially true for children and young people who spend all their time studying, computers and gadgets. Children spend less and less time on the street, they have almost completely stopped playing outdoor and sports games (Dolinnyj, 2016a; Haivolia, 2007).

This attitude of young people to exercise leads to detrimental health consequences. Children are getting increasingly sick, lose their immunity. Frequent illnesses lead to chronic illnesses and later can even result in disability. In addition, rapid technological progress often leads to injury in people, and this often leads to disability. Therefore, today in the world, the most relevant physical culture and recreational activities, both for healthy people and for people with weakened health and disabilities. Namely, social, physical, psychological, and educational activities that provide an opportunity for children and young people with impaired health, to get as close as possible to a full-fledged social life in the school environment, which in the future will ensure such children's active participation in the main spheres of society.

In connection with the above, in the modern school environment, a significant number of schoolchildren are attributed for health reasons to a special medical group. The preservation of the psychophysical health of children is one of the primary educational tasks, which is emphasized by the Concept of general secondary education. The use of health-saving technologies in the psychophysical education of schoolchildren of special medical groups is an important component in the system of teaching methods for students of physical culture (Prykhoda, 2007; Deminska, 2004).

To solve this direction of state policy, highly qualified specialists in the field of physical education and sports who are trained to work with such a contingent of people are needed, who are able to develop and conduct physical culture and recreational activities, apply health-saving technologies, physical therapy and occupational therapy to people with impaired health or disabilities.

LITERATURE REVIEW

Many researchers have paid special attention to the physical education of various segments of the population in their research papers. The scientific interest for our research is the experience of physical culture and health work of foreign researchers (Bouchard, Shephard, & Stephens, 1994).

In recent years, the socio-pedagogical problem of training future specialists in physical education and sports has been studied in the dissertations of Sushchenko (2016) where the author was reflecting theoretical and methodological principles of professional training of future specialists in physical education and sports in higher education. The other authors in their scientific paper highlighted the importance of theoretical and practical professional training of future specialists in physical education and sports while using information technology (Aghazadeh & Kyei, 2009). Bowker (2006) has shown the relationship between sports participation and self-esteem during early adolescence and described the theoretical and methodological principles of professional training of future fitness trainers in higher education.

However, the problem of professional training, namely the professional competence of future specialists in physical education and sports was not the subject of a separate study during the reform of higher education (Bashkin, 2006).

METHODOLOGY

The survey was conducted on the basis of quantitative and qualitative research to collect research data. For a quantitative study, the testing method was used (Shuster & Wade, 2003). Testing is one of the most common methods in sociology. With this method, quantitative and qualitative indicators can be obtained that contribute to the detection of a research problem. Distinguish between standardized and projective testing methods. Standardized tests have been used as a data collection method during quantitative research because they can be used to quantify (Orzhekhovska, 2011; Popov, 2006).

To process the results of the obtained data, the methods of mathematical statistics were used. Suslakov, Ivanov, Tyurin, Kramer, and others provide the quantitative and qualitative analysis (Shuster & Wade, 2003).

The data were processed using the statistical package of the computer program Microsoft Excel 8.0 for Windows. The assessment of statistical hypotheses was based on a 5% level of significance, which provides the necessary accuracy in pedagogical research (Bielikova, 2012; Pieshkova, 2007).

Participants and ethics

Implementation of the practical component of the system of professional training of specialists in physical education and sports for the health of preserved technologies with students who belong to special medical groups in terms of health was carried out in 12 institutions of higher education in Ukraine. To determine the dynamics of mastering the experimental and general curriculum for future bachelors in physical education and sports were involved 232 students from 2nd to 4th year (2014-15 academic year, 2015-16 academic year, 2016-17 academic year).

Taking into account the fact that at present there is no research ethics committee in Ukraine that has received an official ethical license to conduct research, the plan and topic of the experiment has been agreed upon with the scientific department of the higher educational institution and is carried out in accordance with the state budget research work of the Department of Physical Education and sports.

The educational process in the experimental groups was organized with the introduction of the “Program for training specialists in physical education and sports for the use of health-saving technologies with students who belong to a special medical group in terms of health”. Differences in the study groups depended on the conditions, presented in the general program of training of specialists in this field of training. Classes on the experimental "Program of training specialists in physical education and sports for the use of health-saving technologies with students who belong to a special medical group in terms of health" in the study groups were conducted according to the working curriculum of the experimental program in the amount of 24 hours per week.

Data collection

In order to objectively conduct an experiment on the impact of the motivational criterion of training future specialists in physical education and sports to apply health-saving technologies with students who belong to a special medical group in terms of health, a questionnaire was developed: a study of motivational criterion aimed at identifying educational and cognitive motivation of students (future specialists in physical education and sports) while studying in higher educational institutions of Ukraine.

Data analysis

The data were collected using standardized questionnaires. This made it possible to determine the impact of the implementation of the experimental “Program for training specialists in physical education and sports for the use of health-saving technologies with students who belong to a special medical group in terms of health”.

Analysis of the results of the questionnaire study of the motivational criterion of readiness aimed at identifying educational and cognitive motivation of future professionals in physical education and sports to apply health-saving technologies with students who are in a special medical group during training from 2014 to 2017 year in higher educational institutions of Ukraine made it possible to identify the largest increase in the arithmetic mean differences of high, medium, sufficient and low levels of evaluation of control and experimental groups:

- after the first control test (500 classes): 2.5 times in CG and EG the largest increase in arithmetic mean differences at a sufficient level; 3.5 times in CG the largest increase in arithmetic mean differences at a high level; 2 times in EG the largest increase in arithmetic mean differences at a high level;

- after the second control test (1000 classes): 1.5 times in CG and EG the largest increase in arithmetic mean differences at the average level; 3.0 times in CG the largest increase in arithmetic mean differences at a low level;

- after the third control test (1500 lessons): 1.75 times in EG the largest increase in arithmetic mean differences at a high level; 1.5 times in CG the largest increase in arithmetic mean differences at a low level;

- after the fourth control test (2000 lessons): 1.75 times in EG the largest increase in arithmetic mean differences at a high level [5; 6].

FINDINGS

Based on the obtained indicators of growth of the motivational criterion of readiness, we can conclude that the research of experimental and general programs. The analysis of the study shows that there is a significant improvement in educational performance when applying the motivational criterion in the experimental program training of specialists in physical education and sports for the application of health-saving technologies with students who belong to a special

medical group due to their state of health. That is, the effectiveness of the impact of the implemented experimental program is largely determined by rational methods and educational content of the proposed program and working curriculum in the process of training future professionals in physical education and sports.

DISCUSSION

The purpose of this study is to find out the impact motivational criterion for the training of specialists in physical education and sports for the use of health-saving technologies with students who belong to a special medical group due to their state of health.

This research is based on the idea the implementation of the practical component of the system of professional training of specialists in physical education and sports for the use of health-saving technologies with students who belong to a special medical group due to their health will be more effective if the motivational aspect of the activity is included in the student training program.

The students of the control groups studied in accordance with the general education program for the training of specialists in physical education and sports of the higher education institution. The experiment was based on generally accepted principles and methods of teaching. To determine the dynamics of mastering the experimental and general curriculum for future bachelors in physical education and sports from 2 to 4 years (2014-15 academic year, 2015-16 n.r., 2016-17 n.r.) was taken from the working curriculum the average number of hours for 3 years of study in the amount of 2000 hours at the rate of 22.5 hours per week, taking into account 89 weeks of study for 3 years. Determining the dynamics of mastering the experimental and general curriculum for future bachelors during the experiment was evaluated at 4 control points for the entire period of experimental work (from 2014 to 2017). The first control point from 0 to 500 training hours; the second checkpoint from 500 to 1000 teaching hours; the third from 1000 to 1500 study hours; fourth from 1500 to 2000 study hours. Analysis of the dynamics of indicators of the impact of experimental development and general curriculum for the level of education of bachelors was conducted every 500 classes based on the results of questions (%) of the ratio of motivational, cognitive, the readiness of future specialists in physical education and sports to use

health-saving technologies with students who are in good health belongs to a special medical group (Dolinnyj, 2016a, b).

IMPLICATIONS FOR PRACTICE AND FUTURE RESEARCH

Vocational education of future specialists in physical education and sports in higher education institutions requires technological changes in physical culture and health aimed at working with children who belong to a special medical group due to their state of health. Health-preserving technologies, as well as a large number of children with impaired health on the planet, need highly qualified physical education professionals who are able to successfully implement developmental, educational, and health programs for the improvement and development of children and youth. Modern authors offer different solutions to this area of training future specialists in physical education and sports for the application of health-preserving technologies with schoolchildren. But the use of the motivational component of student learning has a positive effect on the assimilation of educational material and attracts future professionals to the systematic professional development and improvement of their professional knowledge and professional level.

CONCLUSION

This study examines the influence of the motivational component on vocational training specialists in physical education and sports to the use of health-saving technologies with students who belong to a special medical group due to their state of health. The research results emphasize the importance of this area of training future specialists. The main limitation of the study is the relatively small number of respondents who took part in the experiment.

As a result of our research, we have identified the most influential curriculum. At the beginning of the pedagogical experiment, students differed little in terms of educational readiness ($P < 0.05$). Training sessions were held in parallel in experimental groups according to the experimental program of training specialists in physical education and sports to the application of health-saving technologies with students who, due to their state of health, belong to a special

medical group and in control groups in accordance with the schedule of regular work curricula of a higher education institution in an average of 22.5 hours for a week.

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TEACHING IN INCLUSIVE SCHOOLS: PEDAGOGICAL STANDPOINT WHILE WORKING WITH CHILDREN WITH MENTAL RETARDATION

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ABSTRACT

The purpose of education is the change anticipated in a person (or group of people) which is implemented by the use of specially planned educational actions, under the influence of activity. This justification becomes more sensitive when children with special educational needs, especially those with mental retardation find themselves in the new educational environment - in an inclusive school.

This literature review paper aims to describe the issues of education in children with mental retardation in schools providing inclusive education.

The study was conducted using literature on theoretical analytical methods.

The results of the study showed the educational work for mentally retarded children in inclusive schools can be implemented if an optimal educational environment is created, training for educators is held and a strong educational system is created.

Keywords: Inclusive education, mental retardation, the process of education, educational processes, and socialization processes.

INTRODUCTION

The concept of inclusive education appeared to prevent segregated educational practices for children with special educational needs (Manzano-García & Fernández, 2016; Barton, 2008; Echeita & Verdugo, 2005; Arnaiz, 2003). In Europe, the concept of inclusive education develops according to international education laws. That concept focuses its exertions on the educational

non-exclusion of people who are underprivileged both culturally and economically (Manzano-García & Fernández, 2016; Bristol City Council, 2003).

Another opinion is expressed by Sanagi (2011) who notes that a "process that allows expansion of the scope of inclusion to include diversity in individual education needs" (p.103) is a shared aspect of the various definitions of inclusive education. In other words, the target for inclusion is primarily diversity, rather than children in the concept (cited by Sanagi, 2016). Under the concept of inclusive education, separated learning opportunities at special schools and so forth have been affirmed as social resources internationally, such as by the United Nations Educational, Scientific, and Cultural Organization (UNESCO, 1994). In regards to all these definitions, there are still misunderstandings about inclusive education and its meaning and role in society.

While talking about inclusive education, its implementation, and role, as well while reflecting the promotion of inclusive education, Ainscow (1999) indicated that the definition of inclusive education was understood in a confused manner, or not understood at all. After more than two decades, this view is still present and misunderstanding is visible in many countries and within the separate structures functioning in the file of education in many countries, as well as in Armenia.

REVIEW AND ANALYSES

As to diversity, the functioning Armenian special support education system targets only children with disabilities or those with special educational needs. Therefore, it is expected to understand what the role of the inclusive school is for a child with a disability. Is it expected to meet the educational and academic needs of the child, or only socialization and inclusion, and participation are enough? These are all the hot points to reflect when issues in inclusive education are justified and discussed.

Socialization plays a key role in a person's education. As noted by Rozhkov and Bayborodov (2001) from a pedagogical standpoint the uniqueness of the study of socialization is in that, that it studies the influence of regularity and methodology of the pedagogical influence that affects the child's development, to increase the efficiency of social interactions. Currently, education is not viewed in isolation by teachers and psychologists; it is viewed from the positions of activity and a person's systemic, structural dialectic determinism. The process of education has

always been the main focus of researchers throughout the historic development of pedagogic consciousness. That is the reason why in the present time education remains the main category in pedagogy. This phenomenon improves along with the development of practical experience, the science of pedagogy, and its progressive teachings. The passing of social experience from older generations to younger was formed earlier; therefore, the essence of education is interpreted from various standpoints (Mikerova, 2013).

Surroundings and interactions of the social system have a great influence on the educational process and the process of human development.

According to Vigotsky's theory (1987; 1978), the decisive factors of psycho development are located not within the child's organism and the individual but rather outside of it, within the child's socialization interaction situation with other people. Vigotsky formulates the idea of activeness of the processes of learning and education in which both the student and the environment are active. He notes that the basis of education should be comprised of student's individual activity, and the skill of the educator should be the direction and regulation of the latter activity since the social environment is the lever of the entire educational process and the educator's role is in control of the above-mentioned lever.

Based on the theory suggested by Vigotsky (1978) each deviation of the child's development (blindness, deafness, mental retardation, and so on) not only changes its attitude towards the world but primarily affects people's relationships, thus resulting in a decline of child's social position. The decline of a child's social position, deterioration of a person's complete development reduces child's physical and psychological insufficiency to be the resolution of social problems, as well as the formation of the complete development of the person, meaning education.

Vygotsky's theory was further developed by Lebedinsky (1985), which noted that corrective measures should be taken when children are experiencing learning and educational difficulties, otherwise, socio-pedagogic inconsistencies may arise, as well as emotional, personal, and other kinds. According to Lebedinsky secondary disturbances affect a child's learning and education processes. The study of the possibility of recovery among children with developmental disturbances allows researchers to talk about creating an environment that would support the resolution of the problem. There is no doubt that the teacher's personality, ability, and personal orientation play a key role in the formation of the educational environment. Vlasova, Mastjukova, Pevzner, and others contributed greatly in writing about corrective measures, compensation, and

implementation of education measures among mentally retarded children. These writers pinpoint the necessity of a personal approach in dealing with mentally retarded children (Lebedinskiy, 1985).

Danilova, Podvalnaya, and Kameleva (2019) note that special pedagogic conditions should be organized for such children. In their research, they conclude that the schooling system and education in public schools are not optimal enough to efficiently resolve issues of mentally retarded children. It is necessary to create proper, universal, and adequate conditions during the stage of preliminary education because during this stage they have multiple problems in their surroundings.

The authors' opinion is highly shared and agreed, taking into consideration the fact that to organize sufficient education for children with developmental problems early diagnosis and medical-psychological evaluation are required and needed.

Bratus and Zeygarnik (1980) in their papers pay special attention to the preparation and training of teachers working with mentally retarded children. Authors think that teacher and the psychologist should be aware of the conditions which can directly affect children's psychological development. At the same time Gordeeva, Sychev, Sidneva, and Pshenichniuk (2018) also note and highlight the importance of psychological and pedagogical readiness in teachers and educators. Within this scope authors particularly hold the approach that the important component of pedagogical culture is the teacher's ability to understand a child's developmental path and structure. While discovering the common problems of modern education it is very important to state that while organizing school activities, it is crucial to use psychological skills, namely when solving problems connected with educational issues in children with special educational needs. This allows organizing the learning and education processes in public schools in such a way that will consent to the optimal development of each individual child in the school environment.

The overall analysis of the above-mentioned literature allows concluding that in their works they subsequently come to the idea that children with developmental issues need an individual approach while being at school. The teacher that works with such children must have the necessary level of psychological and pedagogic readiness. The content of the educational process, on one hand, must be aimed towards the resolution of children's problems and on the other forms of humanistic approach toward micro surroundings and school environment as a whole.

Korolenko's and Donsky's (1990) research illustrates how various forms of destructive behaviors eventually resulting in inclination to self-destruction are formed, works illustrate the essence of education work from the viewpoint of humanization. And here also the role of teacher seems to be crucial in regard of perception different learners' abilities and behavior.

Kumarina (2007) cultivated a children's education program which reflected a new humanistic direction in the education process. Given that children with developmental issues have problems in communication and the majority of them develop inadequacy, low self-esteem, there is a need to develop their will and emotions. Education systems and education work technologies that discover the purposes and issues of education are cultivated to aid the education of children with mental retardation in schools providing inclusive education.

CONCLUSION

Aside from theoretical interpretations, practical experiments that are implemented in dealing with children with mental retardation are also illuminated. In practice, there are two methods that deal with the education of children with mental retardation. The first is to create appropriate conditions in establishments implementing inclusive education. The second step is to integrate one into the educational collective, ordinary life.

In order to be able to succeed in this, first of all, there is a need in three basic factors, their full arrangement, and availability:

1. Registry and recovery of features of developmental impediments among children with mental retardation.
2. Readiness and preparation of appropriate staff.
3. Disclosure of teacher's human qualities, high proficiency.

Nowadays, taking into consideration the fact of educational reforms in Armenia, the structural and decentralized organization of all these factors is very important.

The main directions of practical work remain to be principal and get the following formulations: processes of socialization and education, providing psychological aid to children's and their families, sequence of education process, primary socio-psychological and professional labor adaptability of graduates.

Thus, the educational work for mentally retarded children in inclusive schools can be implemented if an optimal educational environment is created, training for teachers are held and a strong educational system is created.

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