pISSN 2579-2881
eISSN 2953-7886

ARMENIAN JOURNAL OF SPECIAL EDUCATION

Scientific Methodological Journal

Volume 4 Issue 1

EDITORIAL/ADVISORY POSITIONS AND BOARD

Armenian Journal of Special Education is approved by Khachatur Abovyan Armenian State Pedagogical University Scientific Council and by the Higher Qualification Committee of the Republic of Armenia

MESSAGE OF THE EDITORIAL BOARD CHAIRMAN

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Editing an academic journal is a vigorous and rewarding mission, but also time-consuming and often frustrating. Taking into consideration this we highly appreciate any remarks, feedback and proposals that would help us to improve the objectives and the structure of the Journal. We are trying to keep the track to interwove universally and contribute to global knowledge as much as it is possible.

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Sincerely,

MARIANNA HARUTYUNYAN

CONTENT

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THE IMPLEMENTATION OF SPEECH THERAPY SERVICES AND SPEECH DISORDERS ASSESSMENT IN REGIONAL PSYCHO-PEDAGOGICAL SUPPORT CENTERS

DOI: 10.24234/se.v6i1.302

AUTHORS' DATA

Anna Aslanyan, Doctoral candidate, Speech Therapist

Mary Izmirlyan Medical Centre, Armenia

Contacts: aslanyan.an@mail.ru

ABSTRACT

The formation of a quality education system for children with special educational needs in the Republic of Armenia, the difficulty of applying the study and assessment model for speech therapy assessment is explained by the insufficient numbers of studies and lack of the current problem examination. Currently, regional pedagogical and psychological support centers in the Republic of Armenia provide the assessment of the educational needs of children with special needs and make a corresponding conclusion regarding the organization of the child's education and the special conditions required for the education.

The application of the new model of speech therapy assessment presented to implement the provided support/speech therapy services at a proper level will provide an opportunity to implement the functions defined by the legislation and statutes, which are related to the provision of speech therapy services in general education.

Keywords: children with special educational needs, speech disorders, assessment, speech therapy assessment, education, educational needs, pedagogical and psychological support.

INTRODUCTION

The analysis of scientific-methodical literature, familiarization with the work experience of specialists of psycho-pedagogical support centers and public-school teachers, as well as the studies of the legislation and policies of the Republic of Armenia regarding the study of criteria and tools for the assessment of individual's functionality showed that the issues of speech therapy assessment of children with speech disorders are almost undeveloped.

In the formation of a quality education system for children with special educational needs in the Republic of Armenia, the difficulty of applying the study and assessment model for speech therapy assessment is less examined. From these perspectives, to have a clear understanding of the situation it is

critically important to study and analyze the perspectives of the researched problem in the professional literature worldwide, to analyze the existing criteria and programs of speech therapy assessment from the point of view of the reflection of the researched problem, to study the work of regional psycho-pedagogical support centers from the point of view of speech therapy assessment.

At the same time it is highly recommended to analyze the practical significance of scientific-methodical and teaching-methodical materials and guidelines for psycho-pedagogical field specialists working with children with speech disorders, and study the areas subject to assessment, components, and sub-components covering the functional assessment criteria, functional assessment codes and functional assessment qualifiers, as well as the methodological guidelines for the assessment of the individual's functionality based on World Health Organization International Classification of Functioning, Disability and Health (WHO ICF) (WHO, ICF, 2011), which is currently approved as a disability needs assessment tool and qualifier by the Minister of Labor and Social Affairs of the Republic of Armenia (the Republic of Armenia Law of individual's functional Assessment, 2022).

LITERATURE ANALYSES

The examined literature on functional assessment, as well as the scientific methodical literature reflecting the peculiarities of conducting and organizing the speech therapy assessment of children with speech disorders, were studied and analyzed. In addition, a review of the literature related to the age psychology and physiology of junior schoolchildren, as well as children with speech disorders, was performed (Aslanyan & Hovyan, 2020; Kaminskiy, 2012; Kalyagin, 2004). Selected sources directly related to the research problem were studied and generalized, which allows us to determine the main trends in the development of theoretical and practical requirements necessary for the communication and speech development of children with speech disorders. Also, it enables the process of expanding the possibilities of pedagogical and psychological support services provision (Harutyunyan, Hovyan, Saratikyan, Azatyan, Muradyan, Tanajyan, 2019).

The pedagogical observations carried out within the frame of current research allowed us to evaluate the nature and content of the speech therapy assessment of primary schoolchildren with speech disorders, both in the regional psycho-pedagogical support centers, as well as in the educational process. All these helped to identify the problems that are currently being faced in the speech therapy assessment and work organization process of speech of primary schoolchildren, in the absence of appropriate development programs, in the issues of ensuring the awareness of speech therapists and native language teachers.

The field review and analysis showed that in the Republic of Armenian within the scope of transition and reforms, they are points that need to be clarified by the specialist as soon as possible. This

is vital from a theoretical and significant, as well as from a practical point of view. Thus, the following questions remain subject to research and need to be investigated from an interdisciplinary perspective:

- Basic peculiarities of speech therapy assessment of children with speech disorders in RA (Aslanyan, 2021);
- Effectiveness of educational activities in secondary schools due to correct speech therapy assessment and task setting aimed at overcoming speech problems (Aslanyan & Hovyan, 2020);
- The theoretical conditions and perspectives of the organization and conduct of speech therapy work towards the application of different models of assessment of speech disorders and the role and importance of functional assessment in this process;
- Organization of WHO ICF-based assessment of the speech disorder of schoolchildren, the features of detection, prevention, assessment, and accordingly, the provision of speech therapy services, as well as the thresholds for the assessment of the individual's functionality and determination of disability and further recognition process (the Republic of Armenia Law of individual's functional Assessment, 2022; Order N370 of the Minister of Education and Science, 13.04.2014).

During the pedagogical observations, it was also determined the need to provide speech therapy services modeled from the point of view of the assessment of speech disorders according to WHO ICF component areas and the use of an information database reflecting the relevant codes, which makes it possible to have more accurate and comparable statistical data to assess the current level of the educational abilities of a child with a speech disorder and the development of speech, to explore opportunities, monitor services provided to speech-impaired children, develop policies based on data analysis, perform assessment and needs assessment (Harutyunyan, Hovyan &Harutyunyan, 2018; Harutyunyan & Harutyunyan, 2014; Order N370 of the Minister of Education and Science, 13.04.2014).

Still, the modeling of speech therapy assessment will help to provide more targeted services, and accessible conditions through the introduction of the speech therapy model, taking into account the important fact that one should not rely only on the existing problems, because the medical diagnosis cannot always correctly determine the system of speech therapy services provided by the specialist working in regional psycho-pedagogical support centers.

Since the classification based on functional impairments is often not sufficient for determining the type, period, duration, and volume of speech therapy services from the point of view of assessment, during the implementation of the research, it should be emphasized not only the medical process of function assessment but also the narrow professional intervention carried out by regional psycho-pedagogical support centers specialists, which primarily involves a speech therapy assessment as well.

METHODOLOGY

Desk review has been selected as a basic research methodology in this study. It is known as a type of research that is based on the material published in reports and similar documents that are available in public libraries, websites, data obtained from surveys already carried out, etc. (Villegas, 2023). National policies, regulations, as well as different organizations' stored data can also be used for research purposes.

Within the frame of the current study the desk review has been conducted including the following sources:

- Republic of Armenia Law of individual's functional Assessment, 2022;
- Order N370 of the Minister of Education and Science 13.04.2014 On approving the procedure for providing pedagogic-psychological support services for the organization of education;
- RA Government Decision N 1177 of 28. 07. 2022 On approving personal functionality assessment measurements and tools
- Individuals' functioning assessment protocols, self-assessment questionnaires, and functioning assessment summaries developed by and used by the psycho-pedagogical support centers specialists;

Before the period of reforms in the Republic of Armenia, the effectiveness of the educational activities depends on the correct setting of the speech therapy activities aimed at overcoming the speech problems of children with pronunciation disorders in the educational settings. This took place because the speech therapy activities carried out in these institutions pursue one important goal: the formation of abilities and skills to correctly reproduce speech sounds (Hovyan, 2015; Hovyan, Vardanyan, Amirbekyan, Zohrabyan, 2007).

The importance of practical and scientific research in educational experiments has been emphasized by many well-known scientists and specialists (Thomas, Shulz, & Ryder, 2019; Smith, et. al., 2017). The organization of verification experiments and registration of results was carried out according to the generally accepted methodology, and the obtained results of the research were recorded in protocols specially developed by us.

Systematic observation has been conducted through visits to regional psycho-pedagogical support centers in Yerevan (capital of the Republic of Armenia), Vanadzor (third biggest city), and Goris (16th biggest city) to clarify the existing problems related to the classification based on functional disorders.

RESULTS

The modeling of the speech therapy assessment, that is, the questions related to the speech

problems of the child, the priority of determining the type and degree of speech disorder should be given to the assessment carried out by the speech therapist, also by the specialists of psycho-pedagogical support centers. Examination of speech disorders is the most important prerequisite for the organization of speech therapy work, and the effectiveness of speech therapy work depends on the correct organization of this process.

Since the assessment of a child with special educational needs is a process of collecting and coordinating data about him/her in various stages of development, the speech therapy assessment was carried out in the normal environment of the child to ensure the appropriate planning of the child's educational programs with the decision and need for the provision of professional services.

Within the framework of the research, the features of speech therapy assessment in the process of determining the type and degree of speech disorder are presented in a model that can be universally used for children in healthcare, education, and public spheres which are indicated in RA Government Decision N 1177 of 28. 07. 2022.

However, based on the research aim, as well as in terms of presenting the issue, the studied relevant professional and legislative sources allow us to state that the characteristics of speech therapy assessment currently, according to WHO ICF, the determination of the type and degree of speech disorder, became the basis for the organization of speech therapy services provided in secondary schools.

The accessibility, simplicity, and objectivity of the assessment of the results allowed to increase in the efficiency of the assessment process of children with speech disorders, since the individual learning program of a person, which was previously drawn up as a result of a medical and social examination, where the types and volumes of necessary services arising from the needs of the individual were defined, was replaced by a new assessment model developed, which is based and pedagogical and psychological approaches. It was caused by the fact of changes taking place in national policies and regulations regarding the implementation of the new measures, and in fact, there was a misunderstanding about who is going to be responsible and how to organize the assessment process.

The modeled assessment system, through the implementation of a scientific experiment, allowed recording the data characterizing the speech abilities and skills of the schoolchildren with speech disorders during the conduct and execution of the presented speech tasks, appropriately selected speech material, game exercises, and tasks.

The WHO ICF standards related to the assessment of speech therapy-related disorders allowed us to assess the type and degree of speech disorder of the younger speech disorder according to the relevant characteristics and qualifiers, based on the methodical guidelines for speech therapy assessment. It should also be noted that among the mentioned problems, the most problematic is the full and objective assessment of children's educational needs. To solve this problem, conducted reformers from the

Ministry of Education, Science, Culture and Sports, as well as the Ministry of Labor and Social Affairs with the support of international organizations help to make the road map and have a clear picture for understanding the principles and approaches of assessing the special conditions of children's education and needs, based on the ideology of the WHO ICF.

As in the main version of the WHO ICF, the universal qualifier indicating the severity of the problem in all areas is composed of five levels of numerical magnitude 0-4 (0 corresponds to “no disturbance/violation”, “no difficulty” or “no hindering factor, and 4, to the degree of “profound disorder/disturbance”, “profound difficulty/disability” or “profound hindering factor”). So, when assigning the qualifier of the degree of severity in the proposed assessment system, it is necessary to take into account the functions of the organism, body structure, as well as life activity and participation problem, as it is stated in (RA Government Decision N 1177 of 28. 07. 2022.

The data analyzed included the codes of “**Purposeful Use of the Senses /d110-d129**/” including d110 Viewing, d115 Listening, d120 Purposeful Use of Other Senses, d129 Purposeful Use of the Senses, “**Basic Learning Ability /d130-d159/”** codes, including: d130 Imitation, d131 Learning by doing activities with objects, d132 Gathering information, d133 Learning a language, d134 Learning an additional language, d135 Learning through repetition, d140 Learning to read, d145 Learning to write, d150 Learning to count, d155 Acquiring skills, d159 Basic learning ability, “**Applying knowledge /d160- d199/" codes, including** d160 Focusing attention, d161 Directing attention, d163 Thinking, d166 Reading, d170 Writing, d172 Counting, d175 Solving problems, d177 Making decisions, d179 Applying knowledge, d198 Learning and applying knowledge, d199 Learning and applying knowledge. Also, the assessment of voice and speech functions, voice production features, phoneme production, speech tempo, and rhythm functions, stuttering, fast and slow speaking, speech fluency, rhythm, speed, and melodic functions according to WHO ICF criteria, which is currently not evaluated by a speech therapist, because these problems are classified under “b” codes, which has special medical evaluation need.

While reflecting on such a combination of analysis of speech therapy assessment coding allowed us to assess the problems caused by speech disorders in terms of type, degree, and severity and to highlight the features of speech therapy assessment according to the classification of speech disorder based on WHO ICF criteria and approach. The need for clarification on how the speech therapy assessment is conducted, based on what standards the evaluation is made, and how the type and degree of speech disorder are determined in the RA is obvious.

Pedagogical test experiments allowed an assessment of speech disorders according to clinical-pedagogical and psycho-pedagogical classification features.

To create a more objective profile of the examinees and analyze the results of the research, based on the investigated documents and procedure related to the children's speech assessment, the conclusions

of the psycho-pedagogical assessment of the special educational needs, those with speech disorders are divided into 4 groups according to the functional limitation thresholds accepted by the WHO ICF (Table 1).

Table 1.

Thresholds of functional limitation according to WHO ICF.

xxx.0	no problem, no limitation (not available, missing, noticeable)	0-4%
xxx.1	the problem of mild degree (insignificant, low, mild impairment, and (or) limitation)	5-24%
xxx.2	moderate problem (moderate, tolerable disturbance and (or) limitation)	25-49%
xxx.3	severe degree problem (severe, pronounced impairment and/or limitation);	50-95%
xxx.4	profound problem (very severe, profound impairment and/or limitation).	96-100%

In the process of speech therapy assessment, it has been identified that the problems that do not express the organization of a summarized speech therapy intervention for each child in accordance with the information received on the assessment of special educational needs, since the number of hours of speech therapy support allocated to the child according to the established procedure is 25 minutes per day, with 1 or 2 meetings per week, which is not enough for effective speech therapy work. That point is considered to be the most vulnerable, which influence directly the quality of the provided intervention based on the assessment and later on the quality of life of the child having a speech disorder.

As a result of the speech therapy assessment, the ways of increasing the effectiveness of the speech therapy intervention with schoolchildren with speech disorders in the learning process, the features of collaborative work with parents and teachers, the practical significance of scientific-methodical and teaching-methodical materials, guidelines for both speech therapy assessment and psycho-pedagogical support specialists working with children with special education needs.

Within the frame of this context, the lack of experimentally developed means, methods, and pedagogical conditions for the implementation of speech therapy assessment significantly complicates the solution to the above-mentioned important problem.

Therefore, the review of the documentation and visits to regional psycho-pedagogical support centers in Yerevan, Vanadzor, and Goris made it possible to identify the existing problems related to the classification based on functional disorders and to think about developing ways to optimize speech

therapy assessment and, accordingly, speech therapy further implementations and work.

During the visits, the peculiarities of the organization of speech therapy assessment work in the context of universal inclusion, the existing problems, obstacles, and the process of inclusion implemented in secondary schools were investigated from the point of view of the speech therapy assessment and intervention organization.

The following principles should be distinguished in the process of speech therapy assessment of a child with a speech disorder:

1. Principle of the child systematic assessment and examination.
2. Principle of the complex approach.
3. Principle of dynamic research.
4. Accounting for age and individual characteristics.
5. Principle of qualitative analysis of received data

WHO ICF as a basis for assessing an individual's needs, and level of disability, from the point of view of speech disorders, and in this case, pronunciation disorders, refers mainly to the assessment of abilities and skills, and the information database reflecting the component areas of WHO ICF and the relevant codes enable:

1. to have the most accurate and comparable statistical data to assess the current level of learning abilities of a child with a speech disorder and to study the possibilities of speech development;

2. monitor the services provided to the child with a speech disorder;

3. develop policies based on data analysis;

4. perform an assessment and highlight the need.

CONCLUSION

Systematic observations and assessments allowed us to state that, from the point of view of theoretical and practical applicability, the effectiveness of speech therapy work with children of primary school age largely depends on the process of applying the criteria for speech therapy assessment and psycho-pedagogical assessment of the need for special conditions.

According to the features of the application of the speech therapy model of the proposed assessment, the developed principles and approaches of the assessment, based on the criteria of WHO ICF, the pedagogical and psychological assessment criteria for the assessment for special education needs can be applied with a more precise formulation and clarification of certain characteristics and qualifiers of speech disorders, as we mentioned earlier.

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Published by Khachatur Abovyan Armenian State Pedagogical University Publication

The article submitted and sent to review: 17.07.2022
Accepted for publication: 18.01.2023

Available online at: https://specedjournal.aspu.am/index.php/se

SOCIAL AND PEDAGOGICAL ASPECTS OF PROFESSIONAL TRAINING FOR TEACHERS WORKING WITH CHILDREN WITH DISABILITIES IN THE VORONEZH REGION

DOI: 10.24234/se.v6i1.303

AUTHORS' DATA

Ekaterina Alekhina, Ph.D., Associate Professor

Voronezh State Pedagogical University, Russia

Contacts: t_e_povetkina@mail.ru

Tatyana Povetkina, Ph.D., Associate Professor,

Voronezh State Pedagogical University, Russia

Contacts: t_e_povetkina@mail.ru

ABSTRACT

The article considers the social and pedagogical aspects of professional training for teachers who are to work with children with disabilities. This kind of training is performed taking into account the education environment in the Voronezh Region, which is characterized by interaction and partnership between professional and further education institutions, public organizations, rehabilitation and social service organizations, and parents' communities. The authors present a theoretical analysis of the social and pedagogical factors that impact the quality of education for children with disabilities and emphasize the need for teachers to be properly trained in order to provide high-quality support and education to these students.

Keywords: teacher training, working with children with disabilities, inclusive education, educational environment, professional teacher training, study.

THEORETICAL BACKGROUND AND ANALYSES

Considering the current tendencies in the development of inclusive education, at the moment of great importance is the training for teachers who should be ready to work with children with disabilities (CWD). Such readiness implies that teachers should be able to organize the learning and education process as well as to provide some other social and pedagogical services. It is now becoming more urgent to model the training system and determine the conceptual basis, the main ideas, and the key instruments of professional teacher training.

The purpose of our study was to analyse the social and pedagogical aspects of the training for teachers who are going to work with children with disabilities in the Voronezh Region.

Approaches to teacher training and development of the ability to work with CDW may vary in different regions depending on how well-developed the system of inclusive education is in the region, the number of CDW, the activeness of the parent's community, the degree of inclusiveness of the society as a whole, etc. Training programmers can also be divided into several categories: training for students, training (retraining) for teachers, and training (retraining) for teachers who are to work specifically on inclusion programs (tutors, experts in applied behaviour analysis, etc.).

Inclusive education is a part of the general social policy of the country and a part of the regional education policy. Therefore, the implementation of inclusive approaches demonstrates specific features determined by the social and cultural environment of a particular region.

The Voronezh Region is characterized by a strong influence of organizations and the community of parents of children with disabilities who form a major public demand for inclusive education for their children. Proactive public organizations in the region include a powerful legal community, which has been providing strong support for the demand for inclusive education and has helped to find solutions in particular cases of violation of the right of CWD for education.

Parents of children with disabilities are also assisted by funds that provide expert support of inclusive education and financial help, arrange for facilities and required didactic and methodological provision for the education of CWD and organize supervision of inclusive education by international experts through offline workshops and regular online consultations), assist in the training of teachers, tutors, and psychologists for inclusive schools, which includes learning about the methods of teaching CWD and applied behaviour analysis method in particular.

The Department of Education and the government of the Voronezh Region also work on the implementation of the inclusive education system in the region. They organize innovative platforms, adopt legislative acts and provide financing for the education of CWD.

Another feature characteristic of the Voronezh Region is efficient inter-departmental cooperation. Various departments participate actively in joint projects. One such project is an inter-departmental programme "Autism. Routes of Help", which aims to create an integrated assistance system for people with autism. The project has seen significant improvements in both preschool and school-inclusive education for children with autism.

In 2015-2016, education organizations in Voronezh and the Voronezh Region started to introduce the "Resource room" - a model for teaching children with autism and other mental disorders. The model is based on the applied behaviour analysis approach and the idea of organizing a resource area, i.e. remedial and educational classroom, for individual students and small groups. The room is

meant for children who are not able to attend regular school classes due to their behavioural and communication issues.

Resource rooms are staffed by a teacher, a psychologist, and tutors (most commonly one tutor for each child). Each staff member is skilled in applied behavioural analysis (they complete advanced training courses). They are coordinated by the teacher of the resource room, who works in close cooperation with the psychologist and develops an individualized education programme for each student, a remedial programme, and a behaviour programme for tackling undesirable behaviour. Students in such rooms are primary school children of different ages, and their education programmes may vary.

At resource rooms, children practice social interaction, correct their behavioural patterns, learn about acceptable behaviour, and acquire necessary verbal and nonverbal communication skills (those who are not able to speak use alternative means of communication). In this way, children get ready to attend regular school classes. This is how the inclusion programme commences. The psychologist at the resource room recommends beginning the inclusion of a student in the regular education process based on the following criteria: the student does not demonstrate undesirable behaviour in class for 15 minutes; the student can adequately formulate a request, rejection, and agreement; the student is able to wait and manages to follow the instructions of the teacher/tutor in 80% of cases. The main purpose of the resource room is to ensure the complete inclusion of students in the education process and help children study in regular classes without a tutor's support.

In the Voronezh Region, the “Resource room” education model was at first considered to be an innovative platform. The Department of Education of the Voronezh Region arranged for the financing of special education facilities for students with autism and adopted rules and regulations enabling tutors to support their students in the process of education.

The model is actively developing in the Voronezh Region. Up to date, it has been adopted by 38 education organizations, including 10 kindergartens and 28 schools. The model is to be propagated to other nosologies of children with disabilities.

At the moment, the regional model of inclusive education in the Voronezh Region comprises the following: resources of education institutions, namely academic support from universities, and organizational and methodological support from the Institute of Education Development; social security institutions: a rehabilitation centre for children and teenagers provides remedial help to school students and young children based on networking cooperation agreements; the Department of Health opened Centres for Mental Health which help children with potential developmental problems and their parents. Further education centres also provide a wider range of services now, opening new clubs, associations, and studios for children with disabilities. The partners of the Department of Education and some particular education institutions include public organizations, charity foundations, parents’ communities,

and commercial enterprises and organizations (Povetkina, 2013).

The development of inclusive education requires scientific and methodological support of the education process, training of specialists, and development of the legal framework regulating inclusive education. In order to do this, Voronezh State Pedagogical University opened a Resource Centre for the Support of Inclusive Education.

The aim of the centre is to provide resource support for events aiming to promote and introduce modern inclusive education technologies at the education institutions in the region.

The centre regularly organizes video conferences and webinars with experts in inclusive education who work with people with disabilities.

The centre runs a permanent methodology association for teachers specializing in inclusive education. It organizes workshops on inclusive education, master classes and consultations by the staff of the centre.

Indeed, to arrange for education and remedial assistance to students with disabilities an educational institution has to employ all of its human, educational, organizational, and financial resources. In this regard, it is reasonable for education institutions to cooperate and combine their resources, i.e. to create education networks.

The new law “On Education in the Russian Federation” (Federal Law №273 On Education in the Russian Federation, 2014) introduces the idea of networking education programmes, which can be used to design effective education programmes and provide remedial help to children using the necessary resources of various education organizations.

The Resource Centre for the Support of Inclusive Education of Voronezh State Pedagogical University is working in cooperation with several education organizations, which have become resource centres for inclusive education as a result of their cooperation. These organizations share their experience and best practices in inclusive education. Another resource is presented by special (remedial) education institutions which provide consultations on the organization of remedial programmes for children with disabilities in schools and kindergartens and provide remedial services.

The Resource Centre for the Support of Inclusive Education of Voronezh State Pedagogical University engages students to organize events for children with disabilities, develop volunteer movements, organize educational work in education institutions introducing inclusive education, and assist in the social and cultural rehabilitation of children with disabilities. Every year the university's students organize the following events.

1. “Kindness lessons” in schools (lessons on awareness of disability).
2. Inclusive creativity festival for children and young people “Among friends” with up to 900 participants every year.

3. A photo competition “The world through your eyes”.
4. Inclusive sports event “Non-Olympic Games”.
5. Inclusive creative marathon “We are together”.
6. A film festival dedicated to the life of people with disabilities “Cinema without boundaries - Voronezh echo”.
7. A school of self-advocates for young people with disabilities.
8. Youth student forum “Different but equal” dedicated the World Down Syndrome Day, etc.

These events are organized by students from the Faculty of Humanities, the Faculty of Psychology and Pedagogics, and the Faculty of Art and Artistic Education, who act as volunteers, moderators, animators, etc.

Let's now focus on the training for teachers who are going to work with CWD in education organizations.

The above-described specifics of the education environment in the Voronezh Region determine the requirements for the training of teachers who will implement inclusive approaches at education organizations. In 2015, Voronezh State Pedagogical University opened a master's degree programme "Pedagogy and psychology of inclusive education" as part of the "Psychological and Pedagogical Education" academic field.

Following the education policy of the Voronezh Region and the framework of the programme “Autism. Routes of Help”, the master’s degree programme includes a separate module “Inclusive education for children with autism spectrum conditions”. This module includes the following courses: “Differential diagnostics of mental disorders”, “Peculiarities of guidance and education for children with autism spectrum conditions”, and “Applied behaviour analysis basics”.

A lot of attention is paid to tutor training within the course “Tutor support for students with developmental disorders” and internship programmes.

Professional development requires teachers to maintain a social partnership with organizations involved in inclusive education (Shakurova & Netsenko,2016). Communication with organizations, institutions, and ministries allows experts to identify the public demand for the training of professionals in inclusive education and adjust the education programme for master's degree students. Master's degree students complete their internships throughout their first year. The internships take place at schools running inclusive education programmes twice every year.

There are also master's and bachelor's degree programmes in "Psychology and social pedagogy".

Back in the 1990s, the university's teachers determined the major conceptual principles which are still implemented in the training of social counsellors. These principles are listed below.

- Training is based on the theory of social education developed by A.V. Mudrik (2000). The theory

made it possible to consider a broader definition of the social and pedagogical services and include a wide range of courses in the education programme (“Formation of the social experience of an individual”, “Social and pedagogic function of education”, “Game technologies practice”, as well as courses in cultural leisure activities, pedagogical animation, etc.).

- The university used an integration approach when developing the curriculum and determining the order of the courses. The courses were combined in such a way that while some of them teach students the basics of social education technologies, others provide more detailed and specific knowledge of social security activities ("Pedagogical rehabilitology", "Social security services for children in a difficult life situation", etc.).
- Active use of open and contextual learning makes it possible to teach theoretical aspects and study the actual cases, as well as to watch and participate in the work of social counsellors, social services, education and other organizations in the city.
- Focus on the development of the personal and professional position of teachers. The bachelor's degree programme for social counsellors begins with a socio-pedagogical laboratory and a course on "Assessment of personal and professional resources of social counsellors". It aims to develop a professional mindset and provide students with the knowledge they can use to assess their own personal and professional resources as a key condition for effective work as a social counsellor.
- The education process, internships, and volunteer activities are organized taking into account the specifics of socio-pedagogical work in the region. Students acquire experience working at social and psychological service organizations and other socio-pedagogical agencies. They organize socially relevant events at educational institutions as well as on the municipal and regional levels.
- Space and environment are used as study objects and instruments for professional education. Space and environment are studied within several education courses. We should point out that "space" and "environment" are viewed as different notions, "space" is a more general one. Thus, education space determines the education environment (Shakurova & Netsenko, 2016).

It should be also considered that the interaction of the university’s departments with social and education institutions when training students for working with children with disabilities.

Departments cooperate with regional methodological associations of social counsellors. Senior students participate in methodological workshops on the most urgent issues of social pedagogy. These workshops often discuss the issues of legal support of inclusive education, educational activities for CWD, interaction with parents or guardians of CWD, arranging for the favourable environment for the introduction of inclusive education at schools, etc.

During open environment training, students work with children with disabilities at the Voronezh Rehabilitation Centre for Children and teenagers “Parus Nadezhdy” and public organizations for

disabled children. Within the courses "Pedagogical rehabilitology", "Tutor support", and "Methods of development of social activeness" students learn how to work with different groups of CWD. The main purpose is to create an environment that will help to determine whether students are ready to work with CWD. Working with children, students also have to interact with their parents, which allows them to practice professional interaction with families.

Volunteer activities also play an important role in the personal and professional development of a teacher working with CWD. These activities are implemented together with public organizations including Voronezh regional organization for the disabled "Iskra nadezhdy" and Voronezh regional organization for the disabled "Iskra". Volunteer work can also be divided into several stages.

It starts on the 1-2-year. Students attend inclusive cultural and sports events held in the city and the region first as spectators.

3-4-year Bachelor's degree students and master's degree students participate in these events as volunteers.

Another stage is the participation of students in social projects, for instance, the "Ourselves" project aimed to develop social skills in children and teenagers with mental disabilities. Volunteers support young people with mental disabilities and try to arrange a safe and friendly environment for the development of social skills (going to the cinema, shopping, going to the rehabilitation center, etc.).

Stagewise involvement of students in volunteer activities prepares them mentally and psychologically for their work with CWD.

It can be thus stated that training for teachers who are going to work with children with disabilities is implemented within the regional inclusive education environment. It involves teachers and researchers from Voronezh State Pedagogical University and other education organizations, as well as human, financial, and methodological resources of further education institutions and public organizations. Another important aspect is the promotion of best practices and volunteer activities.

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Published by Khachatur Abovyan Armenian State Pedagogical University Publication

The article submitted and sent to review: 25.07.2022
Accepted for publication: 28.12.2022

Available online at: https://specedjournal.aspu.am/index.php/se

COCHLEAR IMPLANTATION AS A WAY TO OVERCOME HEARING PROBLEMS

DOI: 10.24234/se.v6i1.305

AUTHOR'S DATA

Gohar Musheghyan, Ph.D. in Physiology, Associate professor

Department of First Aid, Emergency and Civil Protection:

Khachatur Abovyan Armenian State Pedagogical University, Republic of Armenia

Contacts: musheghyankens@gmail.com

Gohar Arajyan, Ph.D. in Physiology, Associate professor

Department of First Aid, Emergency and Civil Protection:

Khachatur Abovyan Armenian State Pedagogical University, Republic of Armenia

Contacts: arajyankens@gmail.com

Inessa Harutunyan, PhD, Assistant

Chair of Special Pedagogy and Psychology,

Khachatur Abovyan Armenian State Pedagogical University, Armenia

Chairman of "Mutual support center" a charitable organization supporting people with special needs. Contacts: mscenter.arm@gmail.com

Anahit Ter-Hovsepyan, a 5th-year student of the speech therapy department

Faculty of Special and Inclusive Education

Khachatur Abovyan Armenian State Pedagogical University, Armenia

Contacts: anahit.th@mail.ru

Mariam Matsakyan, Master's degree in Speech therapy

Khachatur Abovyan Armenian State Pedagogical University,

Kidvestor development center, speech therapist, Armenia

Contacts: macakyanmariam@gmail.com

Mariana Isajanian, Associate professor

Department of First Aid, Emergency and Civil Protection:

Khachatur Abovyan Armenian State Pedagogical University, Armenia

Contacts: marianaisajanjan@gmail.com

ABSTRACT

The ear, as an organ of hearing, can be damaged or have problems during intrauterine development. As a result, hearing is impaired, which negatively affects speech, mental development and the communication process in children. Schoolchildren with special educational needs (SEN), suffer not only from general speech disorders and phonetic speech disorders but are mainly related to the damage of the higher cortical centers of the brain responsible for speech, as well as to hearing problems. The

latter can be alleviated by using hearing aids at the early stage or by performing a cochlear implantation process. However, a question suggests itself. Do families that have children with such problems cope with their social and financial problems? An issue requiring public attention and care and is directly related to the improvement of education quality.

Keywords: children with special education needs, children with disabilities in need of special conditions for upbringing, SSD-speech sound disorder, general speech underdevelopment, cochlear implantation.

INTRODUCTION

The ear a sensory organ of hearing can be damaged or simply have functional problems from the period of intrauterine development. Problems that are the cause of deafness and sometimes deafness in children at different stages of individual development, ontogenesis.

Hearing problems have a negative impact on children's speech development, communication and intellectual development. Moreover, currently among students with special educational needs (SEN), general speech underdevelopment (SPE), speech phonological underdevelopment (SPU)/speech sound disorder (SSD), as well as different degrees of hearing impairment are directly related to hearing problems (Harutyunyan, Bakhshinyan, & Shukuryan, 2008).

The results of the social survey conducted in inclusive schools located in Yerevan, as well as some regions of the Republic of Armenia, document that among the students there are many children who have AMT, PRC, mild intellectual disabilities, visual impairments, various degrees of deafness, autism, locomotor system, also developmental disorders accompanied by damage to the central nervous system (Badalyan, 1987).

Disruptions have a direct negative impact on the quality of education. The causes of hearing impairment are various, including infectious diseases, hereditary or genetic abnormalities, hearing-impairing drugs, otitis media developing in the middle ear, the formation of a sulfur plug in the outer ear, nose, narrowing of the auditory canal - stenosis, lack of mobility of the auditory ossicles - otosclerosis, the pathological course of pregnancy, birth asphyxia, the use of aminoglycoside antibiotics, damage to the auditory nerve - neuritis or cerebral blood flow, which damages the auditory centers of the cortex of the hemispheres (Badalyan, 1987).

According to the observation of the Ministry of Health of the Republic of Armenia and Chief Otorhinolaryngologist of Yerevan Artur Shukuryan, deafness in children is mainly caused by chromosomal mutation or congenital deafness caused by birth complications, and in adults, it is the result of certain diseases (for example, meningitis, meningioma) (Khudaverdyan, 2018, Shukuryan, 2017).

Currently, according to the international classification of deafness, deafness is distinguished based on the site of the lesion. According to which there are three categories of hearing loss: conductive (when the pathways that transmit sound vibrations are damaged), sensorineural (when the subcortical areas of the brain that perceive the auditory signal flow are damaged) and mixed hearing loss (when both are damaged). There are different degrees of hearing loss, including 1st degree, when the audibility limit is 26-40dB, 2nd degree, when the audibility limit is 41-55dB, and 3rd degree, when the audibility limit is 56-70dB. , to the 4th degree, when the limit of audibility is 71-90dB. while in the case of a limit of audibility of 91dB and more, deafness is simply recorded. According to its clinical course, sudden, acute and subacute, and chronic deafness is distinguished (Harutyunyan, Bakhshinyan, & Shukuryan, 2008).

It is known that hearing aids are widely used to improve the auditory perception of children and adults with various hearing disorders, which may help improve hearing rather than cure it. It can be used by everyone regardless of age. However, the use of hearing aids does not always lead to a significant improvement in the auditory perception of speech.

Hearing aids are widely used in more than 80 countries. The best approach to regulate hearing is cochlear implantation, which is carried out in Germany, Turkey, Spain, Korea and Israel (Musheghyan et al., 2018). In Armenia, cochlear implantation has been carried out for about 18 years, for the first time it was carried out in the "Erebuni" medical center back in 2004 (Harutyunyan, 2008). According to Artur Shukuryan, chief otorhinolaryngologist of Yerevan, cochlear implantation is targeted only when the problem is related only to the inner ear, in other cases, it is contraindicated.

The cochlear implant does not work effectively if the deafness is caused not by the damage or destruction of the hair cells of the cochlea, but by damage to the auditory nerve or the central parts of the auditory analyzer, which are localized in the brain stem and the temporal areas of the cortex of the large hemispheres.

Two state programs of audiological screening of newborns have been in place operating in the Republic of Armenia since 2007, which include almost all maternity hospitals of the republic (Shukuryan et al., 2017). The latter makes it possible to detect hearing impairment in infants at an early stage, within 36-72 hours of life, thereby preventing muteness, developmental delay, and therefore disability caused by hearing impairment, and finally, thanks to early intervention, to contribute to the integration of the child in the verbal environment.

However, it should be taken into account that the process of cochlear implantation has its indications and contraindications. Cochlear implantation is indicated in cases of bilateral deafness, low effectiveness of prosthetics with hearing aids, high level of oral speech development in adults and adolescents, absence of physical contraindications for surgical intervention, absence of neuropsychological disorders, absence of normal anatomical structure of the inner ear, absence of

physical diseases. In the case of children, cochlear implantation is indicated for children aged from 1-1.5 years (up to 2-3 years).

Cochlear implantation is contraindicated in complete or partial obliteration of the cochlea (when the cochlear tube is closed with 2.5 turns of the cochlea), post-cochlear pathology, a negative result of the promontory test (when there is a negative result of the electroaudiometric test of sound-sensing hair cells), concomitant severe physical diseases, pronounced intellectual disability, brain in the presence of pathological foci in the subcortical and cortical structures. If the patient's hearing problem is in the middle and upper cortical areas of the auditory analyzer, in such cases an intracerebral implant or a retrocochlear implant is used. However, cochlear implantation has its pros and cons (Table 1).

Table 1

Pros and cons of cochlear implantation

Positive aspects of cochlear implantation	**Negative aspects of cochlear implantation**
Applicable for severe hearing impairment	Requires surgical intervention
After implantation the person hears sounds clearly and the way they sound	After surgery, special training and rehabilitation are necessary
After the operation and rehabilitation, the person is able to communicate freely and be more independent	Quite expensive
After the operation, the safety of the person is ensured, for example, the rapid perception of the sound of an approaching car	There are postoperative difficulties, namely dizziness, pain, discomfort
The surgery is applicable to different age groups	Outdoor equipment requires special care and maintenance
Long-term, the cochlear implant is placed for life and can be hidden behind hair	The person is forced to give up many types of sports

THE COMPONENT PARTS OF A COCHLEAR IMPLANT

Cochlear implantation for hearing restoration involves placing an electrode system in the inner ear that provides electrical stimulation of the auditory nerve.

A Cochlear implant consists of 2 main parts.

• external

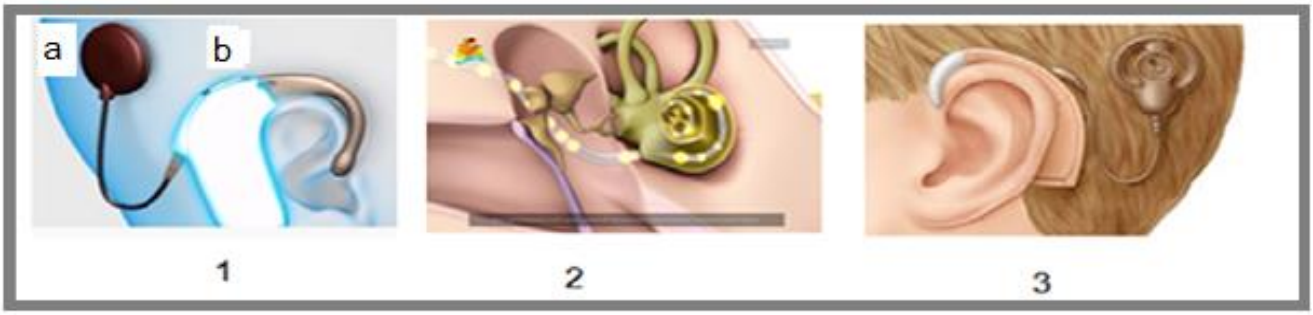
• internal (implantable).

The outer part includes the directional speaker transmitter (the radio transmitter that is placed whit its own mold) and the speech processor, which is the main and most complex part of the cochlear implant and is placed behind the ear. The speech processor is powered by a battery and looks like a hearing aid (Picture 1/1). The internal part of the implant includes the receiver or stimulator, the mold of which is made of titanium or ceramic, as well as the circuit of active electrodes and the reference electrode (Picture 1/2). A chain of active electrodes is placed in the cochlea, it seems to replace the hair cells located in the organ of Corti. When stimulating the cochlear implant with an electric current, it is able to direct the electrical impulses transmitted from the electrode to the brain, which ensures the generation of the hearing sensation (Picture 1/3). The outer part is placed on the scalp and connected to the inner implantable part by a magnet through the skin (Picture 1/3).

Thanks to the cochlear implant, patients are given an opportunity to perceive the sounds of the outside world, understand speech, and information from the world, communicate, and the latter contributes to the activation of human interaction and prevents isolation, as well as ensures orientation in space and surroundings.

Picture 1.

Parts of cochlear implant (1. Outer part: 1a, 1b; 2. Inner part: 2; Placement on ear 3).



THE PROCESS AND CIRCLES OF THE COCHLEAR IMPLANTATION

The whole process of cochlear implantation includes three periods. Pre-operative, operative and post-operative. In the pre-operative period, objective and subjective hearing tests are carried out, as well as radiological, pedagogic and psychological tests. Consultations of a therapist, anesthesiologist, psychotherapist, neurologist and otolaryngologist are also carried out. The purpose of the research is to evaluate the patient's condition, the condition of the inner ear, cochlear impermeability and the effectiveness of the hearing prosthesis. The auditory function, oral speech and the condition of the higher functions of the brain are also evaluated.

During surgery, a chain of active electrodes is inserted into the helix and its functionality is checked/tested at the time of surgery. The actions of the postoperative period are divided into two sub-periods. One month after the surgery is considered a period of healing of the wound. A month later, the long-term rehabilitation of the postoperative period begins, when the speech processor is connected. Psychologists and surdo-pedagogues take an active part in that process, and it should also be noted that from the very first period of work, a parent is involved in the entire course of work and actively cooperates with the pedagogue.

The duration of postoperative work is at least one year, with three meetings a week. During a year, the beginning of speech is ensured, that is, the activation of passive vocabulary and the development of auditory perception, voice recognition and speech perception, in parallel, the formation of verbal abilities and the understanding of the meaning of speech. 1-2 years after surgery, although with defects, the speech should already be formed.

In the postoperative period, the activities carried out by the pediatrician with children of preschool age are aimed at:

- developing the child's auditory perception, speech, phonetic phonemic hearing, cognitive activity, breathing,
- carrying out cognitive communication activities,
- performing voice exercises,
- preparing the vocal and oral cavity organs for articulation
- teaching the child to wear the hearing aid and also preparing the child to lead an independent life.

It has also been revealed that the results of post-operative rehabilitation in preschoolers, depending on a number of factors, may differ, in particular:

- the level of development of children's language ability and speech activity, and individual psychological characteristics are different,
- there are accompanying problems (related to vision and mental development),
- possibility for parents or their substitutes to take an active part in post-operative rehabilitation works.

Over the years, children who have undergone cochlear implantation still experience various difficulties, particularly pain, discomfort and balance problems are also very often observed, but all these eventually disappear after some time (Harutyunyan, 2006).

It has been found out that in terms of hearing recovery after cochlear implantation, the most promising groups are children suffering from congenital deafness and children who lost hearing at the

age of speech formation. Cochlear implantation has a successful outcome even when the patient's speech and pronunciation skills are preserved.

In the postoperative period, the speech environment of the child is also important. Kindergarten attendance is mandatory for young children. In kindergarten, as a rule, difficulties are not observed, difficulty can be observed by not damaging the outer part of the device and maintaining it. At school, the picture is different. In a noisy environment, the device has a problem focusing the sound, and for this, there are FM systems that transmit the sound to the interior via Bluetooth. Problems are noticeable if the child also has other combined problems, for example, vision problems, autism, etc. Children also have problems with wearing the external part of the implant during adolescence, in this case, children have psychological complications.

ABOUT THE OUTPUT OF THE COCHLEAR IMPLANTATION

The outcome of cochlear implantation can be effective or ineffective. It has been found out that cochlear implantation is generally useless in cases where the cochlea undergoes calcification (accumulation of calcium salts in the body tissues, cerebrum), which interferes with the placement of electrodes in the cochlea, thus questioning the success of the operation.

In today's society, many families are unable to take care of their child's hearing problems in time, and in the case of children suffering from sensorineural hearing loss, they are unable to purchase not only simple hearing aids, but also carry out the process of cochlear implantation. Therefore, for many years, children live "in complete silence". As a result, the branches of the auditory nerve gradually die and undergo atrophy due to insufficient stimulation.

ABOUT STATISTICS

It is known that such operations are quite expensive, only the part of the device that is inserted into the cochlea costs between 17,000 and -38,000 U.S. dollars [these links are not mentioned in the footnotes. The statistics of cochlear implantation have an interesting picture in the world, particularly, in Armenia as well. According to the World Health Organization, 360 million people, which makes up 5% of the world’s population, have a hearing impairment, of which 32 million are children.

Since 2004, 176 people have been operated on in Armenia: 150 children (mostly of preschool age) and 32 adults, the youngest of those operated on is 9 months old and the oldest is 70 years old. Up to 40 deaf children are born in Armenia annually. A large number of hearing problems occur between 1-3 years of age., although it also occurs in middle and high school-age children.

Such a statistical picture indicates that, although not in large volumes, the process of cochlear implantation is carried out in RA, which is the only effective approach to overcoming hearing problems in children. Moreover, although today the Ministry of Education, Science, Sports and Culture provides public schools with financial resources to organize the education of children with developmental problems even more effectively, to provide their attached specialists with educational, didactic, non-verbal means, nevertheless, hearing problems are recorded in public educational institutions-children, whose parents either did not take care in time to relatively alleviate these problems, to carry out cochlear implantation or do not have sufficient means to provide it.

As early as 2020, the Ministry of Labor and Social Affairs in RA presented a project according to which, within the framework of state support, certificates can be provided to cochlear implant recipients so that they have the opportunity to purchase cochlear implant speech processor parts. This is a very encouraging and useful approach to helping children with hearing problems.

CONCLUSION

Thus, summarizing the above, it is worth noting that in educational institutions, phonemic disorders of speech and hearing difficulties are directly related to hearing problems among students of special education institutions. Hearing problems have a negative impact on children's speech development, communication, knowledge acquisition and mental development in general. In this regard, it is important to overcome hearing problems, to provide children with hearing problems with hearing aids on time, to regularly monitor and highlight the results in all regions of the country, to try to provide social and financial assistance, public attention and care to many families with children with hearing problems. It should be realized that cochlear implantation from an early age already contributes to the restoration/recovery of hearing and the improvement of the quality of education, which is also the key to having a healthy society.

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Published by Khachatur Abovyan Armenian State Pedagogical University Publication

The article submitted and sent to review: 10.09.2022

Accepted for publication: 11.02.2023

Available online at: https://specedjournal.aspu.am/index.php/se

USING THE GAME APPROACHES FOR DEVELOPING THE SPEECH OF CHILDREN WITH MODERATE MENTAL RETARDATION

DOI: 10.24234/SE.V6I1.308

AUTHOR'S DATA

Lilit Saratikyan, PhD, Associated professor

Chair of Special Pedagogy and Psychology,

Khachatur Abovyan Armenian State Pedagogical University, Armenia

Contacts: saratikyanlilit41@aspu.am

ABSTRACT

The aim of the study was to explore the role of game-based approaches for developing speech in children with moderate mental retardation. More than 40 scientific journals, articles, and educational materials were analyzed in pedagogical and psychological fields to explore the advantages and challenges of using game-based approaches in the process of developing the speech of children with moderate mental retardation.

A literature review methodology was used for collecting and synthesizing the existing scientific theoretical bases of game-based approaches for developing speech of children with moderate mental retardation since this research method created a firm foundation for advancing knowledge and facilitating theory development (Webster & Watson, 2002). The use of the literature review method helped the author learn about the history and nature of the selected topic, and identify research gaps and problems, so the results of a literature review may be presented as an entire report or article (Torracro, 2005).

The current study results have shown that the effectiveness of communication skills and speech formation and development of children with moderate mental retardation was based on the approach of gradually involving children in verbal communication through play activities. As well as the specification and elaboration of the content and tools of game activities provide such pedagogical conditions, which contributed to the expansion of children's communication field, the activation of preserved opportunities, and the demand for verbal communication.

Keywords: moderate mental retardation, play activity, game-based approach, activation of mental function, corrective-pedagogical education.

INTRODUCTION

Among the problems of modern special pedagogy, the issues of improving the effectiveness of the

processes of correcting or overcoming disorders of a child's learning, upbringing, and psychophysical development were still essential. Therefore, the methods and means that were considered tools for their realization played a decisive role (Makarova, Pkhamov, 2020; Pkhamov, 2021; Huda, 2021). Both in national and foreign pedagogy and psychology, the role of play activity had been emphasized as a main manner of preparing the child for life. It was considered to be the most affordable and pleasant way to transfer social experience, create prerequisites for psychophysical development, organize children's education and upbringing, correct difficulties arising during psychophysical development, etc (Sato, et., al 2012; Saratikyan, Harutyunyan, 2017).

In the XXI century, the role of games had grown so much that in the system of modern gaming technologies, high-tech games aimed at optimizing the processes of child development, learning, and socialization were no longer new.

Conducted research studies had shown that highly technologically developed and scientifically based game simulations for children with psychophysical development disorders were still missing in the Republic of Armenia. Despite the opinion of Western researchers that the effectiveness of digital games for organizing learning processes was higher than that of educational games (Alaswad, & Nadolny, 2015), in the correctional education of children with psychophysical developmental disorders, the advantage was given to **"Live games"**, those games during which there was social, tactile, non-verbal and verbal communication.

Applying game activities, it was possible to activate children's senses, social drives, communication needs, etc. (Makaryan, & Kosacheva, 2014; Colpani, & Homem, 2015). This was explained by the fact that play activity was directly related to the development of the psycho-emotional and psychomotor spheres of a person. Based on the above, many scientific-pedagogical and psycho-pedagogical sources were studied in the framework of this research, in which the close connections between games and child's activity were fundamentally revealed, as well as the foundations of the theory of play activity were investigated.

Accordingly, the games were considered not from the point of view of instincts, but from the point of view of the higher mental processes of children, confirming that they were of the utmost importance in the formation and development of physical, mental, and personal qualities of a person (Elkonin, 1996; Telnova, 2003). It should be noted that this research did not aim to re-analyze the origins of the above-mentioned problem in general pedagogy and psychology, because many monographs, works, dissertations, etc. were devoted to the coverage of the mentioned issue.

In this research, just the application of games was analyzed, especially in the field of special pedagogy and psychology. The well-known theory of Vygotsky L.S (1956) was emphasized, according to which, children with normal development and those with psychophysical development characteristics

used to develop in the same patterns, only the last ones' development proceeds on a damaged biological basis.

LITERATURE REVIEW

Explored studies comfirmed that children with psychophysical developmental disorders were distinguished by their loneliness, various features in the emotional sphere, passivity to perform an activity, retardation of speech, and cognitive processes. Based on the above, many researchers believe that differentiated methods, means, and techniques in the system of correctional work for these children should be used to increase their interest and attract their attention. It has been confirmed that the importance of games in activating the mental processes of children with psychophysical developmental disorders was mentioned in the works of many special educators (Makaryan, & Kosacheva, 2014; Colpani, & Homem, 2015; Bravo, Ojeda-Castelo, & Piedra-Fernandez 2017).

Conducted literature review revealed the effectiveness of game activities from the perspectives of the child's cognitive and emotional development. According to them, children's emotions were directly related to toys. The toy was the means by which a child communicates with an adult at an early age, then with peers and the surrounding world. Mostly, "Game-based learning or game model of learning" was distinguished in foreign literature **("GBL (Game-based Learning)")**, **"Serious games: computer video games",** and the concept of **"Educational games".** Performing comparative analysis among them, from the point of view of efficiency, the advantage was given to digital games (Stancin, Hoic-Bozic, Mihic 2020; Sari, et., al 2020).

Meanwhile, general and special psychological comparative analyzes confirmed that if a toy surprises a normally developing child and pushes him to play, a child with developmental disorders remained indifferent to the latter for a long time (Gavrilushkina, 1990; Van Dayk, 1990).

According to the phenomenon, this was the reason that the specialists working with children with various physical development disorders used the wide opportunities provided by play activity: tempering, and adapting to the environment for developmental purposes.

Considering the importance of mobile games for improving physical development recently it was started to be actively used with children with musculoskeletal disorders and various diseases having the purpose to restore their motor abilities, improving health, develop the ability to adapt to environmental conditions (Laleva, & Sererekova, 2001; Blanche, 2008; Huang, et., al 2014; Sulaiman, Ghazali, 2016). The analysis of specific pedagogical theories showed that speech therapists also used play situations and games in their work (Vygotskaya, Pellinger, & Uspenskaya, 1984; Plat, & Coggins, 1999; Pakhomov, 2019).

Through games and play situations, speech therapists tried to correct, restore and develop the

communication skills of children with speech disorders, the functions of the speech organs, sound hearing, auditory perception, speech and physiological breathing, general and fine motor movements, as well as individual speech disorders (stuttering, dysarthria, aphasia, general underdevelopment of speech, etc.).

For a deep analysis of the researched problem, the study of approaches in that direction in other fields of special pedagogy was also emphasized. It was found that the compensatory and corrective significance of games in the theoretical works of surdo-pedagogues, typhlopedagogues, and pedagogues was the most comprehensive.

Surdo-pedagogues and typhlopedagogues found that games stimulated to activate preserved abilities of children with sensory impairments, compensated for their impaired functions, developed sensory perception, cognition, and speech, and, finally, mastered social experience and independent performance of daily activities. However, at the same time relying on the well-known view of Vygotsky L. S. (1956), according to which the game became a real means of learning and education for the child only when he was taught to play, a system of special game training sessions was offered (Zaporozhetsa, Usov, 1966).

It was noteworthy that in the professional literature, referring in detail to the basic issues of children with special disorders in the development of learning abilities, specialists even gave diagnostic significance to the research conducted in the direction of their gaming activities. This was explained by the fact that these children, unlike children with intellectual development disorders, still have preserved interests in-game activities, and within this, opportunities for "flying" development progress (Dutta, Das & Tulukdar, 1984; Maller, Tsikoto, 2003).

The theoretical studies carried out in the field of special pedagogy and psychology and the analysis of their results confirmed that children with mental retardation today more than ever needed systematic pedagogical support, moreover, without special approaches they cannot be fully included in education and society (Krayg, 2000; Pkhamov, 2018; 2019; Huda, 2021):

As a result of the analysis of complex research, the features of the age development of children with mental and speech development disorders were revealed, with which specialists explain the need for the development of children's activities. Accordingly, the goals, problems, content, and methods of special education were revealed in the relevant sections of educational programs (physical education, games, creative activities, etc.).

In modern literature, the role of natural conditions (family environment, communication with adults, social-play situations, etc.) was especially important in the development process of children with mental retardation. Based on the above the others Smaga (1992), Ushakova (1999), Gadasina (2001), Pardellmov (2019), and others suggested using games, game situations, and exercises in order to

stimulate the activity and development of children with mental and communication disorders. However, unfortunately, the pedagogic-psychological conditions, features, and modern approaches of their application were not scientifically substantiated. The studies carried out in special and general educational institutions of the Republic of Armenia allowed us to conclude that if the above-mentioned games were organized in an unstructured way in the educational processes of children with psychophysical development disorders, without having a clear goal and a special methodological system, then they did not solve the problems that were outlined bt the educators.

The conceptual views of this issue in separate theoretical sources allowed us to notice that the works most often refer to the subject activities of children, the features of the use of didactic, playful, and role-playing games, and their developmental significance (cognition, speech, motor skills, thinking, etc.).

It was important to note, that in the theory of special pedagogy, the issues related to the development features of children with mild mental retardation and their correction methods were more often and deeply discussed than the issues of children with moderate mental retardation combined with current diseases.

The analysis of the patterns revealed that play activities done with children with mental retardation aimed to develop their speech, which, however, were organized mainly in parallel with the general system of games used for the purposes of cognitive activity and thinking development (Cano, García-Tejedor, & Fernández-Manjón 2015a, Gelsomini, et., al 2016). Despite this, advanced special educators based on the developmental characteristics of children with intellectual disabilities have developed and presented the main directions and themes of play education for children with mild mental retardation in the programs of special institutions (Kalmykova, 2007; Bonet-Codina, Barnekow & Pardell, 2015).

However, the same was not about the content of the organization of remedial and developmental work with children with the most profound mental disorders, because they were still carried out with outdated programs and methods, ignoring a number of modern problems and requirements of special pedagogy. Meanwhile, the games used with children with moderate mental retardation were mainly taken from the system of a corrective educational intervention for children with mild mental retardation or normal development and were adapted to their developmental goals.

The existing works and programs aimed at covering this problem, as well as the methods of conducting games used in the process of psycho-pedagogical support of children with mental retardation, are needed for upgrading and re-examining.

Such a demand was explained not only by the multifaceted research of the problem but also by the challenges of the global reforms taking place in the field of education. The inclusive processes

implemented in the field of education had caused serious obstacles, especially for children with mental retardation, so the demand for increasing the effectiveness of pedagogical processes justifies the modernization of scientific research works dedicated to the play activities of children with profound mental retardation.

Therefore, the aim of this study was to explore the role of game-based approaches for developing speech in children with moderate mental retardation.

METHODOLOGY

For current research by integrating the results and perspectives of articles from many empirical findings, the use of the literature review method was applied as an excellent way of synthesizing research findings to show evidence on a meta-level and to uncover areas of game-based approaches for developing speech of children with moderate mental retardation. The implementation of the literature review had the aim to assess, critique, and synthesize the literature on a research topic in a way that enables new theoretical frameworks and perspectives to emerge (Torraco, 2005).

A number of steps were taken and decisions were made to create a review that met the requirements for publication. In the following, the basic steps and important choices involved in conducting a literature review were suggested and discussed using four phases; (1) designing the review, (2) conducting the review, (3) analyzing and (4) writing up the review. This process was developed from practical experience and was a synthesis of and influenced by various standards and guidelines suggested for literature reviews (Davis, Mengersen, Bennett, & Mazerolle, 2014).

Data collection and analysis

Research data collection was done using integrative review that considered **reviews, critiques, and synthesizes** of about 40 scientific journals, articals, educational materials of pedagogical and psycholoigical feild where the use of game-based approaches in the process of developing the speech of children with moderate mental retardation was explored. Selected literature sources were **read, analyzed, evaluated, and summarized according to the** specific topic of the research. It helped the author learn about the history and nature of the selected topic, and identify research gaps and problems (Tonette, and Plakhotnik, 2008).

Data analysis and interpretation are based on a synthesis matrix for organizing target literature that **summarizes and synthesis** the use of play activities and other approaches in the process of developing the speech of children basically with moderate mental retardation. Main studies, articles, and theoretical materials on the chosen specific topic were integrated into a unique interpretation that not

only serves as the foundation of the study but also contributed to the dialogue in the field and established credibility as a scholar (Sally, 2013).

RESULTS/DISCUSSION

Conducted literature review highlighted that according to the modern definitions of mental retardation, it was described as an incomplete or delayed development of the psyche, which was manifested by difficulties in the social adjustment of the person (AAIDD, 2019). Telnova, 2003; Pakhomov 2018; 2021).

Disturbances of mental development were manifested especially in features of thinking, communication, self-care, self-management of behavior, emotions, and other areas. Mental retardation was described as mental underdevelopment, which represented a set of stable, non-progressive syndromes of mental underdevelopment acquired in the early stages of development of a different origin and was expressed especially by the difficulties of social adaptation, the main and primary reason for which was "intellectual disability" (APA, 2013; Garkush, Korjevina, 2001).

Such a feature of their mental development was expressed by qualitative changes (underdevelopment) in the development of the sensory sphere, cognition, speech, thinking, and all other mental processes. Despite their many retained capabilities and potential, the thinking of children with mental retardation did not reach abstract, lexical thinking, but remains prominent at the levels of practical or visual thinking.

Having severe speech and motor impairments, they often needed supervision and support, as they had great difficulty in acquiring (and often do not acquire) social and educational knowledge, abilities, and skills. It had been confirmed that targeted, consistent, and properly organized special psycho-pedagogical support contributes to the formation of their social adaptation, communication, basic literacy skills, and mastery of basic counting skills.

The analysis of selected research studies had shown that activity performance and social motives were preserved in this group of children and accordingly they used to master work skills (self-care and simple household work) relatively easily. Despite the fact that the vast majority of people with moderate mental retardation were people with disabilities, they were still mostly mobile, was able to demonstrate some physical activity and occupations (Markova, Pakhomov, 2020; Makaryan, Kosacheva, 2014; Huang, et., al 2014).

Based on the fact that the correctional preparatory works contributed to these young people’s development, and the social-working motivations of their activities were preserved, the "expectations" of psychological and educational support were anchored in this way.

In the literature review, it was strongly outlined that the formation of these abilities was closely related to the **development of speech**. This was due to the fact that in the system of professional support provided to children with moderate mental retardation, priority was given to speech development. Taking into account the fact that they have a deep disturbance in perception, communication, and interaction skills, the implementation of this approach obtained vital importance (Spivakovskaya, 1999).

The literature review analysis stressed that formulated scientific and methodological approaches and bases for developing each direction of speech were still missing. Thus, this situation had a negative impact on the education and upbringing of this group of children making it unorganized and unstructured. The above-mentioned fact was also most evident in inclusive processes, which cause many difficulties in the modern education system.

Also, current research takes into account the importance of the problem, through analysis of chosen theoretical studies the reasons for the inadequate and incomplete development of the toolkit for the organization of corrective processes (especially speech development) for children with moderate mental retardation had been explored.

It was found that the above-mentioned problem was quite complex since the education of children with moderate mental retardation and other issues was taken into account only at the beginning of the 19th century. It was true that the special features and difficulties in the development of verbal speech of these children had almost immediately attracted the attention of researchers, however, they did not give instructions and justifications regarding the measures that contribute to the development of specific speech (Lalaeva, Serebryakova, 2001). This situation, according to the sources of the studied literature and the existing theories, was also explained by the fact that specialists considering the development of speech of children with moderate mental retardation as such a severe systemic disorder that included all aspects of the functional significance of speech (cognition, behavior regulation, communication, etc.) and was closely related with other mental processes and the way of its development was almost and always connected with the system of corrective-developmental works of general cognition.

The analysis of the scientific-educational literature allowed concluding that existing works were presented in a rather poor and unsystematic way. The need to analyze the patterns of speech development of these children was justified by the original and deep deviations in their verbal communication.

Many authors, both national and foreign emphasized the need for systematic remedial work as the basis of increasing their adaptation factor in the social environment. They suggested introducing a certain system of speech development work in the process of psycho-pedagogical support, but when talking about the toolkit, they mentioned only speech therapy interventions, familiarization with the environment, or forms of children's activities (Katayeva, Strebeleva, 2000; Srinivasan, 2000).

Unfortunately, specific approaches and instructions on how to organize them were missing.

The above-mentioned did not assume that the issues of speech development of children with moderate mental retardation had not been discussed at all in psycho-pedagogical science. According to professional concepts, the not-in-depth observations of the issue even stated that the work carried out in the direction of the speech development of these children should be combined with the gradual development of their daily activities.

The effectiveness of such approaches was also noted by Western special educators, who had developed play therapy approaches for children with moderate mental retardation. But the methods of their organization had no practical justifications and were mainly aimed at rehabilitation of the motor sphere and development of self-care abilities, they did not contain particularly precise methodical for their implementation. However, the need for speech development was clearly reflected in that therapy (Bonet-Codina, Barnekow, & Pardell, 2015).

Although the role and importance of play activities had always been highly appreciated in the national special pedagogy, in practice the emphasis was more often placed on work activities. If in special literature there were a number of programs for the work education and preparation of children with moderate mental retardation (where a special place was given to the development of speech), then it was not possible to state the same about specially developed game programs. Studies showed that they simply still needed to be designed, coordinated, experimentally substantiated, and thoroughly researched. The organization and conducting of game activities for speech development purposes of these children had not been yet investigated (Panfilova, (2000; Yuill, 2011).

According to the analysis of scientific literature, play activities had great importance for these children's development and endowed them with high observation means. For this reason, it had always been implicitly asserted that through the direct application of play activities, it became possible to stimulate the sensory perception of persons with moderate and profound mental retardation.

Based on the current requirements of inclusive education, for each child with mental retardation, an individual learning plan had to include both educational and remedial goals. However, research showed that the tools for planning the education and development of children with moderate mental retardation, as well as the means of its implementation, were very incompletely developed. As in the past, today the problems of this group of children were assimilated into the educational and correctional problems of children with mild mental retardation or normal development (Harutyunyan, et., al. 2017). In that system, clear mechanisms of methods means and pedagogical approaches to correcting and developing their speech were almost completely left out.

Based on the above, even nowadays, the issues of introducing and modernizing psycho-pedagogical support programs for children with moderate mental retardation continue to be an important

research issue. The studies regarding the role and significance of games for the speech development of children with moderate mental retardation confirmed that game situations and play activities stimulated the development of both non-verbal and verbal speech and thinking. A clear proof of this was that in-game situations, children spontaneously learn to solve elementary problem situations (for example, find and take the spoon, etc.).

The literature on special pedagogy also emphasized that remedial works that started early are considered to be more effective. Based on this, the experts confirmed that speech development work with these children should also be started from an early age. This means that children with profound mental retardation should also be encouraged to communicate verbally, but bearing in mind that any speech development training should be interested the child and encouraged him to interact with real objects and toys (Sante, & Leblond, 2023).

Based on the content of the research issue, it was tried to identify what kind of games were used in the corrective development processes of children with moderate mental retardation. It has been found that the most frequently used "objective" musicalized constructive games of the table and the less often the role-playing "mobile" verbal" plot games.

The study of the literature and methodological guidelines have documented that in the absence of plans for the organization of game activities, games were used in an irregular manner. It can be clearly stated that this certainly had a negative impact on the entire corrective development process because the play activity in the life of children with moderate mental retardation was formed with a serious delay and retains its leading significance for a long time even in adulthood.

CONCLUSION

Summarizing the results of literature review analysis it can be stated that speech development interventions for children with moderate mental retardation and the rapid development of the psycho-pedagogical support system had an important social significance. Despite the extensive studies related to the issues of social adjustment and inclusion of children with mental retardation, many issues of their professional support, including the improvement and adaptation of the methods and means introduced in the system of speech formation and development, had not been sufficiently studied.

Today, when the legal requirements of international conventions emphasized the ethical issues of social development and society was fighting for the rights of persons with mental retardation to be fully included in educational and social life, the issues of developing a specific toolkit for speech development and activity performance skills vaguely outline the main paths that should be developed and modeled as a prerequisite for achieving these goals. Speech, being a tool for communication, thinking, and behavior regulation, remains the main problem that hindered the independent life and

activity of people with moderate mental retardation.

Current research had shown that all forms of activity were very important for the development of these children's speech, and some of them, especially issues of work activity, had been little studied. As for play activity, it had been confirmed that despite the wide possibilities of the latter's development, the scientific research conducted in the direction of speech development through games for children with moderate mental retardation was almost missing, and the game systems used in the pedagogical process were unstable, primitive and uncoordinated.

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Published by Khachatur Abovyan Armenian State Pedagogical University Publication

The article submitted and sent to review: 10.06.2022
Accepted for publication: 15.01.2023

Available online at: https://specedjournal.aspu.am/index.php/se

ASSISSTING CHILDREN WITH SPECIAL EDUCATIONAL NEEDS: CONTENT ANALYSES

DOI: 10.24234/se.v6i1.307

AUTHORS' DATA

Mery Aleksanyan, Doctoral candidate, Special Psychologist,

John Kirakosyan Yerevan basic school N 20, Armenia

Contacts: Meri1127@mail.ru

ABSTRACT

The fluctuations in the mental health of children and adolescents were recording the attention of various experts, related to solving different social problems. For the same reason, there are descriptions of these fluctuations and their classifications (educational, clinical-pedagogical, psychoanalytic, psychoanalytic-pedagogical) in scientific literature.

It is estimated that each descriptive explanation of children's fluctuations includes multiple indications or signals of observed fluctuations, without presenting only one profile from the classifications presented in the study.

In the phase of improving healthcare, psychology, and childcare, there is a strong need to accurately describe the physical, psycho-physiological, and psychological descriptions of children in order to effectively address their educational and socio-emotional needs.

Content analyses is used to understand the clear statement of the situation from different perspectives.

Key words: children with special educational needs, children with developmental disorders, support, assistance, quality of life, psychological, pedagogical, social, medical services, interdisciplinary approach.

INTRODUCTION

A strong political consensus has emerged in Europe on the importance of inclusive education, and ensuring children with special educational needs (SEN) are included within mainstream education. This is broadly, although not comprehensively, supported by the evidence base (Drabble, 2013). There is a universal tendency to place children with SEN in mainstream schools - away from special schooling. Still, there remainders substantial alteration in placement shapes. The content of assistance to children with SEN reflects the activities of specialists who provide medications, physical and mental therapy for

children, psychological, including neuropsychological and psychotherapeutic, correction of personal and cognitive developmental disorders, socio-pedagogical activities aimed at teaching children, their education in the broadest sense of the word and social adaptation (Steele, 2005).

Currently, in the system of assisting children with developmental disorders, along with the traditional ones, relatively new directions of interaction are presented, which were either not used in practice before, or were present partially.

Thus, in the last decade, neuropsychology has been actively developing and being included in child support activities. A large number of scientific publications are devoted to art therapy in this regard. Fairy tales, games, music therapy, and others are used in the practical application of child care. The importance of applying psychotherapy in various situations is emphasized in many publications. This extended support system helps the child to learn more deeply, to discover his potential. It makes the help a dynamic entertainment process for the child, which is interesting in its content, attracts the student, is constantly teaching and at the same time differs from traditional educational classes. This, in turn, leads to a rethinking of the essence of providing assistance to such children, an effort to increase the predictability of the results of assistance and remedial development programs.

The concept of "assistance" or "support" itself is growing. The number of profiles of professionals involved in helping such children and the content of support in each profile is also increasing. In case of multi-profile, the support structure is modified.

LITERATURE REVIEW

Quite many studies prove that not only the material support, but teachers' achievements at the level of expert improve children's achievements (Hattie, 2009; Wong, 2014 and etc.) and because of this they have a great number of strategies: they can organize the educational process and to provide its content in the best way; they can make appropriate connections between new knowledge and the previous one, make interaction between the topic of their lesson with other subject areas, etc. It also provides a careful analysis of success and failure factors that cause the further improvement of their own educational strategies. An important component of such work is feedback with students which act as a basis factor for need based assistance (Skrypnyk, Martynchuk, Klopota, Gudonis, & Voronska, 2020).

The educational settings are considered to be a system of influences and conditions which ensure the realization of educational process (Boser, Goodwin, & Wayland, 2014; Klopota & Klopota, 2017). It is also said that in order to increase the effectiveness of teaching and educational process for children with SEN certain adaptive changes such as additional specific group of conditions can be used. These conditions cause prophylaxis of undesired consequences among children with SEN driven by the special aspects of their psychophysical development.

Still, all members of the process should take each other into account through a dialog interaction, striving to adapt their own actions to the activities of each child and the whole school community (Vilpolla & Harutyunyan, 2020).

METHODOLOGY

The qualitative content analysis research method is used within the frame of this study to identify patterns in recorded communication (Krippendorff, 2004). To conduct content analysis, the systematically data collection has been organized from a set of texts from books, newspapers, scientific journals and field related websites.

From the perspective of the current study content analysis is seen as an empirically grounded method, exploratory in process, and predictive or inferential in intent. Based on new conceptualizations and an empirical orientation, contemporary content analysts allow different researchers to join in seeking valid knowledge or practical support for actions and critique (Krippendorff, 2004). That is the point that was acting as a basis for the current paper.

ANALYSES RESULT

The modern school is designed to carry out such a humanitarian mission as inclusive education, which provides equal opportunities to all children who need such structures, which, based on the complex actions of specialists of various profiles, can provide both children with normal development and mental disorders. The success of integrated learning and socialization of children with developmental disabilities very often closely related to the teacher competences. In this regard, it is obvious, that children with and without SEN should benefit from integrated learning.

The complex of necessary measures requires the combined work of psychological, socio-pedagogical, pedagogical (including correctional-pedagogical and speech therapy), medical services, which are organizationally and content-wise included in a single system. In the conditions of inclusive education, they can serve all participants of the educational process, from students to the administrative-government staff, carrying out educational and preventive activities.

These services traditionally exist in the society worlswide, but their interaction is quite limited and not always optimally synchronized. However, it is competent interprofessional interaction and cooperation that create the conditions for effective support of children with developmental problems.

For example, the concept of a complex of parallel services has been implemented in the practice of a number of regions of Russia. The essence of the concept lies in the coordination of the efforts of specialists of different profiles to implement a scientifically based approach to the content and

organizational and methodical provision of optimal life conditions for students, taking into account their development characteristics and level.

In fact, the resulting emotional impact is a unique guide for building the child's behavior, a kind of guide during the construction of a child's worldview, which increases the effectiveness of the mutually beneficial cooperation between the child and his/her “motivator” and enhances the effectiveness of creative and developing work.

Electronic aids are increasingly being used in practice. Also, the conditions for providing assistance have changed, inclusive education is actively developing in the country. New forms of socialization of children are emerging, for example, development and demonstration of their creative abilities (creative contests, exhibitions, concerts, etc.).

All this in general shows the increasing attention of scientists and society to “different” children, reflects the change of society's views on “difference” (related to children with problems), more specifically, the humanization of these views, which creates a need in the modern stage like developing a new approach to helping people and covering relevant current issues.

Taking into account humanistic psychology and modern ideas about the comfort of human life, these problems should be aimed at changing the quality of life of children with developmental problems, strengthening their physical and psychological health, and achieving social well-being. It is about the “acceptance” of children with problems by the society, the corrective and developmental work focused on the child's satisfaction with his life, his social success in activities and communication. It is to these global issues that the learning and development of children and adolescents must be addressed.

The increase in directions for helping children with SEN, the new structuring of this field and the emphasis on problems require the organization of interaction between teachers as well as specialists of different fields, and the support and assistance units of this category of persons. In addition, the solution of new problems implies a change in the professional thinking of specialists helping children and adolescents, and the organization of such a form of interaction between employees of the given field, in which case people with developmental disabilities will meet the modern social requirements presented to them, at the expense of the competent and effective activity of specialists.

The structure of the organization of parallel services can be presented in the form of interconnected, unified complex and, at the same time, fairly independent departments (modules). In each of them, the social problems are distinguished, the solution of which makes it possible to develop the individual capabilities of students.

The following modules are identified and elected in this regard:

- Complex diagnosis and counseling;
- Medical aspect;

- Psychological aspect;
- Socio-pedagogical factors;
- Corrective-pedagogical work.

In this particular case the term “module” is used to express a functional node, block or direction of a unified, multi-faceted activity of entities. Such activities provide an opportunity for a balanced combination of interaction with the maximum implementation of professional efforts and assistance of the specialists (teachers, psychologists, speech therapists, neurophysiologists, doctors, etc.). The work of specialists is based on intra- and inter- professional interaction.

The main principle of this concept is the idea of complexity, which requires coordinated interaction of entities in providing support and assistance to children of different ages, continuity in work, as well as interaction of educational institutions.

The building blocks of the concept are interaction and cooperation.

Interaction as a philosophical category is a phenomenon of connection, interaction, transition, development of various objects under the influence of mutual activity on each other and other objects (Gould, 2002)**.**

An interaction involving at least two objects implies at the same time that each of them is also associated with another interaction. These philosophical insights determine the essence of interaction and cooperation of professionals of different profiles.

In the system of parallel services, specialists of various profiles act as subjects of interaction, who provide assistance to a child with developmental apathy at various stages. Such entities can also be institutes that unite professionals who provide assistance to handicapped children or participate in such activities.

The organization of professional interaction of professionals of different profiles, with its complexity and multidimensionality, requires solving questions about the structure, mechanism, technology and effects of interaction. Such an approach allows to analyze the system of determinants that determine professional interaction and the emergence of a number of psychological phenomena that do not fit within the strict framework of a single concept.

The interaction perceived as a unique type of professional activity that has a multi-level structure. These activities include both individual actions of each of the participants, as well as their joint actions aimed at achieving a common goal. Interaction also includes a set of operations—the means of performing those operations. The interaction mechanism consists in maintaining the consistency of actions of specialists in solving these problems.

The search for determinants of interprofessional interaction required conducting a psychological analysis of interprofessional activity as a system containing separate psychological structures and blocks.

Within that system, interprofessional interaction is considered as a set of determinants that determine both the status of the participants of the interaction and its specificity.

In connection with this, the efficiency of interprofessional activity of specialists working with children with developmental problems is, on the one hand, a systemic activity, a process of interaction of common goals, and on the other hand, a method of professional interdisciplinary knowledge.

For the success of joint actions, the ability to combine **informative, predictive and managerial functions of mental development of children in one's own work is necessary.** Thus, interprofessional interaction-cooperation is expressed by sequential and parallel joint actions of specialists in solving global problems of multidimensional diagnosis, specialized counseling and support of a problem child. This ensures the effectiveness of corrective and developmental work and the overcoming of difficulties in all aspects of the child's development. At the same time, the agreement of actions with a clear division of responsibilities of specialists becomes an important condition. For this, it is necessary to implement a number of steps in order, which give coordination to the multifaceted corrective and developmental work.

They include:

- conducting a multi-aspect, complex examination of the child (result: agreement and diagnosis);
- the separation of its direct and indirect problems (the result is the determination of general and private problems of aid);
- identification of the child's primary problem and its description from the point of view of different specialists (the result is the determination of the main "target" for the construction of the support program - Different in helping strategy);
- development of resources (near and distant goals and the ways of their implementation, the result by determining the amount of time and participation of each of the specialists in the overall assistance plan);
- decision-making and division of functions (result in preparation of specialist tactical plans).

The results of such interaction can be expressed in the form of a child's pathological card and a strategic plan of work with him by various specialists**.** Interaction-cooperation is determined by the interests of improving the quality of life of children, the psychological ecology of their health, optimal development and is based on:

- on the generality of views of the child's problems and the possibilities of helping him;
- on the acceptance and respect of the personality and rights of a child with developmental problems;
- on the ability to understand and apply the conclusions of subjects of complex influence in their field, competently build interprofessional communication;

- on awareness of the role and responsibility of each participant in diagnosis, counseling and remedial development programs.

The final effect of the interaction is a qualitatively new result of solving the problem, which expresses help to the child in changing the quality of his life, strengthening health and achieving social well-being. The result of interaction can be not only direct, but also indirect, delayed in time and space.

At the stage of adoption of the remote services system, the issues of personnel preparation become a priority, especially from the point of view of ensuring their close cooperation. First of all, it is not the preparation of individual specialists, but of teams.

One of the main problems lies in the formation of complete, complex thinking and the mastery of interaction technologies in the conditions of specialization and demarcation of actions.

All subjects of activity in such services work with children with developmental disabilities, therefore:

1. They should get deep and versatile knowledge about the child.
2. Their in-depth professional knowledge should be combined with knowledge of related professions.
3. They must master the technology of professional communication and interaction (both within each institution and in institutions of different profiles and intended for different age groups).
4. It is important to base the training of personnel for parallel services on the results of psychological and socio-psychological research, to equip the subjects of activity with the necessary technology.
5. Such preparation ensures the direction of the vector of professional thinking to the side of interaction and equips children's aid entities with the necessary technologies.

CONCLUSION

Thus, to conclude it should be said that the proposed results confirm the benefits of developed socio-psychological measures of optimizing assistive team management, interaction, and increasing enthusiasm and ability for proper and purposeful cooperation. A joint activities and the partnership of all assisting team members has contributed to improving the learning and development of children with SEN, and in the general atmosphere in a class that is conducive to the development of all the children, and at the level of teacher’s professional, interindividual and individual levels. At the same time direct and indirect interaction might have great impact on the development and proper assistance provision to the child with SEN.

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Published by Khachatur Abovyan Armenian State Pedagogical University Publication

The article submitted and sent to review: 15.04.2022

Accepted for publication: 17.11.2022

Available online at: https://specedjournal.aspu.am/index.php/se

AUGMENTED REALITY IN EDUCATION FOR CHILDREN WITH SPECIAL NEEDS

DOI: 10.24234/se.v6i1.304

AUTHORS' DATA:

Samvel Asatryan, PhD in Education, Associated professor

Chair of Informatics, Head of Department for Educational Processes Management and Reforms

Khachatur Abovyan Armenian State Pedagogical University, Armenia,

Contacts: asatryansamvel@aspu.am

Araksia Svajyan, PhD in Education, Associated professor

Deputy Minister of Education, Science, Culture and Sport, Republic of Armenia

Contacts: araksia.svajyan@escs.am

Shushanik Antonyan, MA in Education Management

Specialized Children's Home of Kharberd, Republic of Armenia

Contacts: sh.antonyan@gmail.com

ABSTRACT

Augmented reality (AR) technology is a promising educational tool that can be used to enhance learning experiences for children with special needs. AR technology has the potential to provide a more engaging and interactive learning environment, allowing children to better understand and retain information. This article reviews the existing literature on AR and its effectiveness as an educational tool for children with special needs, including those with autism spectrum disorder (ASD), attention deficit hyperactivity disorder (ADHD), intellectual disabilities, etc. The benefits and challenges of using AR in special education and offer suggestions for future research are discussed. The article also presents a number of cases related to the issue.

Keywords: augmented reality, new technologies, children with special needs, learning environment, AR in special education, case study, a multisensory learning experience.

INTRODUCTION

Children with special needs often face challenges in traditional learning environments due to difficulties with attention, social communication, and processing information. Advances in technology have led to the development of educational tools such as AR, which has the potential to create an interactive and engaging learning experience. By overlaying digital information onto the real world, AR can provide a more immersive and memorable learning experience for children with special needs.

Notwithstanding the key importance of the perception of consecutive time, in most countries the educational systems do not teach it as such.

In this article, we explore the potential of AR as an educational tool for children with special needs, review the existing literature on AR in special education, and discuss the challenges and limitations of using AR in special education.

LITERATURE REVIEW

AR technology is effective in improving learning outcomes for children with special needs. Several studies have investigated the use of AR in teaching vocabulary to children with ASD, showing that AR technology can enhance motivation and engagement (Wu et al., 2013; Tang et al., 2020). In addition, AR technology has been shown to be effective in teaching geometry to children with ADHD, resulting in improved attention and learning outcomes (Lee et al., 2016). Other studies have investigated the use of AR in teaching social communication skills to children with ASD, demonstrating that AR technology can improve performance on social communication tasks (Alqassimi & Alghamdi, 2019; Cheng & Tsai, 2014).

AR technology has also been used to teach life skills to children with intellectual disabilities. A study by Bae et al. (2020) used AR technology to teach cooking skills to children with intellectual disabilities, resulting in improved learning outcomes and increased interest in cooking. Another study by Reinoso et al. (2019) used AR technology to teach money skills to children with intellectual disabilities, resulting in improved performance on money-skills tasks.

While the literature on AR and special education is promising, there are also challenges and limitations to consider. AR technology can be expensive and may require specialized training for educators. In addition, children with special needs may require individualized instruction and support, which may be difficult to provide in a group setting. There is also a need for more research to explore the long-term effectiveness of AR in special education and to identify best practices for its use.

The following cases are presenting the hypothesis of the study.

Case Study 1: Using Augmented Reality to Teach Math to Children with Autism

Introduction: The following case study describes the use of an augmented reality (AR) system to teach math concepts to children with autism. The AR system was designed to provide an immersive and engaging learning experience that would help children with autism to better understand and retain math concepts.

Methods: The study included 10 children with autism, aged 7-10 years, who were enrolled in a special education program. The children were randomly assigned to either an experimental group or a

control group. The experimental group received math instruction using the AR system, while the control group received traditional math instruction.

The AR system consisted of a tablet device and an AR application that displayed virtual math objects in the real world. The application used interactive animations and visual cues to help children understand math concepts such as addition, subtraction, and multiplication. The children were able to manipulate the virtual math objects on the tablet screen and see them appear in the real world through the tablet's camera.

Results: The study found that the children in the experimental group showed significant improvements in their math skills compared to the control group. The children in the experimental group also showed higher levels of engagement and motivation during math instruction. The AR system was particularly effective for children who had difficulty with traditional math instruction methods.

Conclusion: The use of augmented reality technology in special education has the potential to enhance learning experiences and improve outcomes for children with special needs. The case study described above demonstrates the potential of AR technology to improve math skills in children with autism. Further research is needed to investigate the effectiveness of AR technology in other areas of special education and to identify best practices for its use.

Case Study 2: Using Augmented Reality to Improve Attention and Engagement in Children with ADHD

Introduction: The following case study describes the use of an augmented reality (AR) system to improve attention and engagement in children with ADHD. The AR system was designed to provide an interactive and engaging learning experience that would help children with ADHD to stay focused and motivated during academic tasks.

Methods: The study included 8 children with ADHD, aged 8-10 years, who were enrolled in a special education program. The children were randomly assigned to either an experimental group or a control group. The experimental group received academic instruction using the AR system, while the control group received traditional academic instruction.

The AR system consisted of a tablet device and an AR application that displayed virtual objects in the real world. The application used interactive animations and visual cues to keep children engaged and focused on academic tasks such as spelling and reading. The children were able to manipulate the virtual objects on the tablet screen and see them appear in the real world through the tablet's camera.

Results: The study found that the children in the experimental group showed significant improvements in their attention and engagement compared to the control group. The children in the experimental group also showed higher levels of motivation and enjoyment during academic instruction.

The AR system was particularly effective for children who had difficulty staying focused and engaged in traditional academic instruction methods.

Conclusion: The use of augmented reality technology in special education has the potential to enhance learning experiences and improve outcomes for children with special needs. The case study described above demonstrates the potential of AR technology to improve attention and engagement in children with ADHD. Further research is needed to investigate the effectiveness of AR technology in other areas of special education and to identify best practices for its use.

Case Study 3: Using Augmented Reality to Enhance Spatial Awareness in Children with Visual Impairments

Introduction: The following case study describes the use of an augmented reality (AR) system to enhance spatial awareness in children with visual impairments. The AR system was designed to provide a multisensory learning experience that would help children with visual impairments to understand and interact with their physical environment.

Methods: The study included 6 children with visual impairments, aged 9-12 years, who were enrolled in a special education program. The children were randomly assigned to either an experimental group or a control group. The experimental group received spatial awareness instruction using the AR system, while the control group received traditional spatial awareness instruction.

The AR system consisted of a tablet device and an AR application that displayed virtual objects in the real world. The application used haptic feedback and audio cues to help children understand the position and movement of virtual objects in relation to their physical environment. The children were able to explore and interact with virtual objects using touch and sound cues.

Results: The study found that the children in the experimental group showed significant improvements in their spatial awareness compared to the control group. The children in the experimental group also showed higher levels of engagement and motivation during spatial awareness instruction. The AR system was particularly effective for children who had difficulty understanding spatial concepts using traditional instruction methods.

Conclusion: The use of augmented reality technology in special education has the potential to enhance learning experiences and improve outcomes for children with special needs. The case study described above demonstrates the potential of AR technology to enhance spatial awareness in children with visual impairments. Further research is needed to investigate the effectiveness of AR technology in other areas of special education and to identify best practices for its use.

Case Study 4: Using Augmented Reality to Enhance Literacy Skills in Children with Dyslexia

Introduction: The following case study describes the use of an augmented reality (AR) system to enhance literacy skills in children with dyslexia. The AR system was designed to provide a multisensory learning experience that would help children with dyslexia to improve their reading and writing abilities.

Methods: The study included 8 children with dyslexia, aged 7-10 years, who were enrolled in a special education program. The children were randomly assigned to either an experimental group or a control group. The experimental group received literacy instruction using the AR system, while the control group received traditional literacy instruction.

The AR system consisted of a tablet device and an AR application that displayed virtual letters, words, and sentences in the real world. The application used auditory and visual cues to help children understand and decode written language. The children were able to interact with virtual letters and words using touch and sound cues and receive immediate feedback on their reading and writing abilities.

Results: The study found that the children in the experimental group showed significant improvements in their reading and writing abilities compared to the control group. The children in the experimental group also showed higher levels of engagement and motivation during literacy instruction. The AR system was particularly effective for children who had difficulty decoding and recognizing written language using traditional instruction methods.

Conclusion: The use of augmented reality technology in special education has the potential to enhance learning experiences and improve outcomes for children with special needs. The case study described above demonstrates the potential of AR technology to enhance literacy skills in children with dyslexia. Further research is needed to investigate the effectiveness of AR technology in other areas of special education and to identify best practices for its use.

Case Study 5: Augmented Reality for Speech Therapy in Children with Speech Sound Disorders

Introduction: The following case study describes the use of an augmented reality (AR) system to support speech therapy for children with speech sound disorders. The AR system was designed to provide a fun and engaging way for children to practice their speech sounds.

Methods: The study included 12 children with speech sound disorders, aged 4-7 years, who were enrolled in a speech therapy program. The children were randomly assigned to either an experimental group or a control group. The experimental group received speech therapy using the AR system, while the control group received traditional speech therapy.

The AR system consisted of a tablet device and an AR application that displayed virtual scenes with objects that contained speech sounds. The application used interactive animations and visual cues to help children practice their speech sounds. The children were able to interact with virtual objects using touch and sound cues and receive immediate feedback on their speech productions.

Results: The study found that the children in the experimental group showed significant improvements in their speech sound productions compared to the control group. The children in the experimental group also showed higher levels of engagement and motivation during speech therapy. The AR system was particularly effective for children who had difficulty with traditional speech therapy methods.

Conclusion: The use of augmented reality technology in special education has the potential to enhance learning experiences and improve outcomes for children with special needs. The case study described above demonstrates the potential of AR technology to support speech therapy for children with speech sound disorders. Further research is needed to investigate the effectiveness of AR technology in other areas of special education and to identify best practices for its use.

DISCUSSION

The potential of AR as an educational tool for children with special needs is significant. AR technology can create an interactive and engaging learning environment, which can help children with special needs to better understand and retain information. However, there are several challenges and limitations that need to be considered.

One of the main challenges of using AR in special education is the cost and accessibility of the technology. AR technology can be expensive, which may limit its availability in schools and classrooms. In addition, not all schools and classrooms may have the necessary hardware and software to support AR technology. Educators and policymakers need to consider ways to make AR technology more accessible to children with special needs, such as providing grants and funding for AR equipment and software.

Another challenge is the need for individualized instruction and support. While AR technology can provide an immersive and engaging learning experience, it may not be sufficient for all children with special needs. Some children may require more individualized instruction and support, which may be difficult to provide in a group setting. Educators need to consider the unique needs of each child and provide individualized instruction and support as needed.

Another limitation of AR technology is the need for specialized training for educators. AR technology is a relatively new and complex technology, and educators may require training to effectively use it in the classroom. Professional development programs and training opportunities can help educators to become proficient in using AR technology and effectively integrate it into their teaching practice.

Finally, more research is needed to explore the long-term effectiveness of AR in special education. While there is promising research on the use of AR technology in special education, there is a need for more studies to investigate its long-term effectiveness and to identify best practices for its use.

Researchers should also explore the potential of AR technology to address other areas of special education, such as behaviour management and emotional regulation.

CONCLUSION

Augmented reality technology has the potential to be a powerful educational tool for children with special needs. AR technology can provide an immersive and engaging learning experience that can help children with special needs to better understand and retain information. While there are challenges and limitations to consider, educators and policymakers should explore ways to make AR technology more accessible and provide individualized instruction and support to children with special needs. By doing so, AR technology can be used to enhance learning experiences and improve outcomes for children with special needs.

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Published by Khachatur Abovyan Armenian State Pedagogical University Publication

The article submitted and sent to review: 15.09.2022

Accepted for publication: 17.02.2023

Available online at: https://specedjournal.aspu.am/index.php/se

CHALLENGES EXPERIENCED BY LEARNERS WITH VISUAL IMPAIRMENT ON HIGH-STAKE ASSESSMENT

DOI: 10.24234/se.v6i1.306

AUTHORS' DATA

Setseetso Matobako, Ph.D. in Curriculum Studies, Curriculum Specialist,

National Curriculum Development Centre, P. O. Box 1126, Maseru 100, Lesotho

Contacts: setseetso@gmail.com

Maretsepile Molahloe (Doctoral student)

The University of the Free State, South Africa, Republic of South Africa

Contacts:matsepimolahloe@gmail.com

ABSTRACT

Recent studies show that there is a very low enrolment rate of learners with special educational needs (LSEN) in institutions of higher learning locally. This might be because most LSEN attain low achievement scores in the terminal examinations which make them not meet the admission requirements of such institutions. Consequently, the number of professionals with disabilities would then be very meagre. There might be a wide range of contributing factors that turn out to be realized at the terminal examinations stage even though the root causes could have been identified and dealt with at the earlier grades. The extreme manifestation of this challenge occurred when the 2017 cohort of learners with visual impairment in one regular school attained a 100% fail rate in Junior Certificate examinations. This definitely calls for investigating the reasons that led to this unfavourable outcome. The paper aims at presenting the facts from the perspective of learners due to their direct involvement in this issue. Data was generated from the interviews conducted with three visually impaired learners. Data were analysed using social justice education theories and capability framework. There are two main findings revealed in this study. Firstly, learners were not involved in deciding on the format of the question paper they preferred. Secondly, it was indicated that the terminal examination did not align with both instructional practice and formative assessment. This article recommends that learners should be involved in decision-making concerning their welfare. Apart from that, summative assessment should be aligned with instructional practice.

Keywords: inclusive education, assessment, visual impairment, limited opportunities for inclusion.

INTRODUCTION

The provision of education for learners with disabilities has been at the top of the agenda in international conventions and protocols which many countries approved (UNESCO, 1994; United Nations, 2006; Rieser, 2012). This issue also dominates debates in studies interested in inclusive education (Committee on the Rights of Persons with Disabilities, 2012; De Beco, 2014; Broderick and Quinlivan, 2017). Most arguments of recent studies seem to be centred around giving access to learners with disabilities in mainstream institutions. Mosia and Phasha (2018) reveal that there is a low enrolment rate of learners with disabilities in local institutions of higher learning. There could be a wide range of contributing factors to that. For example, the findings of a survey conducted by Porter and Lacey (2008: 60) uncovered that "the schools provided limited opportunities for inclusion." Their study established that the schools lacked the capacity to provide the support that could enable learners with disabilities to access the curriculum. Additionally, the findings of a study conducted by Gray (2009) revealed that there was a small number of visually impaired learners in higher-level examination classes in Northern Ireland. This according to Gray (op cit.), could be a result of some restrictions imposed on visually impaired learners for accessing certain curricular subjects due to health and safety reasons among other issues. One of the limitations identified in this study was its failure to take the views of learners into consideration.

Results of a recent study focusing on learners with visual impairment show that irrespective of learners' gender differences their learning achievement was generally satisfactory (Shakir, Shafiq & Khalid, 2021). This suggests that learners with visual impairment have the potential to perform well academically. Another study revealed that the verbal reasoning abilities of learners with visual impairment do differ (Heled, et al., 2022). Taking this into consideration could be helpful before developing any intervention strategies. This suggests that accommodations for visually impaired learners should be provided in accordance with individual needs. However, these studies did not address challenges linked to assessment that learners with visual impairment are confronted with in their academic journey. A study that dealt with this issue only focused on challenges experienced by learners with visual impairment regarding teaching and learning mathematics. Most of the challenges reported emanated from the method of instruction, the assessment used and the inadequate provision of instructional materials (Oyebanji & Idiong, 2021).

Hence this study seeks to find out how learners with visual impairment in one inclusive high school attained 100% fail rate in Junior Certificate (J.C.) examinations from their own perspective. The article commences with a literature review which particularly discusses possible factors that might affect learners with special education, especially those with visual impairment to access education. It then outlines the theoretical underpinnings of this study followed by a brief explanation of the methodological

approach. The paper subsequently presents results, after which the discussion of findings follows. It provides the concluding remarks and recommendations towards the end.

BARRIERS TO ACCESSING QUALITY EDUCATION FOR LEARNERS WITH VISUAL IMPAIRMENT

Oka and Nakamura (2005) argue that learners with special educational needs, especially those with visual impairment have been deprived of opportunities for full participation in regular classrooms. This coincides with Diaz, Hoag, Shasteen, Schade, and Larwin (2016) whose study seems to suggest that learners with visual impairment in inclusive classrooms feel neglected to some extent as compared to their sighted counterparts. Oka and Nakamura (2005) argue that a full inclusion setting has some challenges for visually impaired learners because it might not allow them to acquire specific skills required for their type of disability. They point out that the acquisition of such skills is likely to occur in a separate educational setting (op cit., 2005: 547). One of the challenges they brought forth is that of communication for visually impaired learners who they argue should be trained in Braille literacy.

One can challenge their argument by pointing out that it could be beneficial for visually impaired learners, able-bodied colleagues as well as teachers in an inclusive classroom to acquire such skills. This can improve social relations between peers in the classroom and can enable them to help each other when the need arises (Carter, Cushing, Clark, and Kennedy, 2005). This can also help to improve the quality of care given by teachers (Diaz et al., 2016). According to Diaz et al. (op cit.: 87) when learners with visual impairment "feel more cared for in a school, this could improve their grades". We are of the view that this can bridge the existing gap which has been identified in the literature reviewed by these researchers which indicates that the visually impaired learners have for a long time endured adverse circumstances such as academic and social isolation within the general classroom settings.

ALIGNING FORMATIVE AND SUMMATIVE ASSESSMENT FOR THE BENEFIT OF LSEN

Assessment is a very important tool that can be used to measure the level of acquisition of knowledge and skills. It serves the purpose of providing feedback to learners, educators and any other relevant stakeholders. At the classroom level, it provides ongoing information to a teacher and individual learners on the kind of progress the latter make in terms of their understanding of the taught concepts based on the curriculum prescriptions (Heppen, Faria, Thomsen, Sawyer, Townsend, Kutner, Stachel, Lewis & Casserly, 2010). Usually, it could be administered in different ways including but not limited to small-scale tasks, quizzes, assignments and tests. This type of assessment which informs instructional practices is called formative assessment. According to Happen et al. (2010: 7), feedback from formative

assessments can be used in specific contexts such as special education to provide "a basis for the use of regular and systematic assessment to inform instruction". It can be deduced that formative assessment can provide evidence that could be used for devising accommodations for learners with special educational needs, especially in inclusive settings. That could enhance their effective learning and ultimately help them realize improved academic achievement.

The other type of assessment is called summative assessment which usually entails sitting examinations upon completion of a grade or programme. Its main function is for deciding who should proceed to the next level or who should be awarded a certificate depending on their academic accomplishments. It can be argued that inclusive assessment practices should be guided by the individual learner's needs (Florian, Dee & Devecchi, 2008). This suggests that modifications in assessment should be made to meet the demands of individual learners. Effective planning and implementation of equitable instruction that meets the needs of a diversity of learners might require "[some] adjustments to instruction, assignments and assessments that differentiate for those learners who still need extra scaffolding and support" (Eva & Walker, 2010: 19-20). For example, question papers given to learners with disabilities should be made available in an accessible format. Another argument that can be advanced is that there should be some form of alignment between formative and summative assessment when it comes to necessary accommodations. This might be helpful for learners with specific types of disabilities such as visual impairment to perform to their full potential. The next section provides a more detailed discussion of the assessment-related accommodations for learners with visual impairment.

PROVISION OF ACCOMMODATIONS FOR LEARNERS WITH VISUAL IMPAIRMENT

Research has shown that the issue of providing accommodations for learners with the same kind of impairment in assessment might not be homogenous contrary to the expectations of many (Fuchs, Fuchs & Capizzi, 2006). One can argue that even though the collective provision of accommodations for learners with certain impairments could be considered to promote equality, this might result in disregarding a question of fairness. This is because individuals could have different preferences when it comes to accommodations needed. The example these researchers make is that when it comes to visual impairment some learners might prefer the provision of tests in Braille format while others might favour question papers printed in large font. This appears to be similar to the argument raised by Meda (2016: 50) that, "Support should be individualized because two partially sighted students' needs are hardly the same. Some may need braille while others may not."

However, one might argue that in the search for appropriate accommodations for individuals with a disability or educational needs, several issues should be taken into consideration. Fuchs, Fuchs and Capizzi (2006) argue that fairness in accommodations can serve to maintain the meaningfulness of

learners' performance scores in tests. According to them, “Valid accommodations help students with disabilities demonstrate their knowledge and produce scores that evaluate the same constructs that are intended with standardized measurement of nondisabled peers" (Fuchs, Fuchs & Capizzi, 2006: 4). Notwithstanding the benefits of provision of accommodations to learners with educational, they are not without challenges. These researchers identified the matter related to the choice of reasonable accommodations as the likelihood of compromising the validity of assessment outcomes. They are also of the view that "nonstandard administration of standardized tests" can negatively impact the validity of scores (Fuchs, Fuchs & Capizzi, 2006) attained by learners in an inclusive setting.

Arguably, some accommodations might as well give an unfair advantage to learners with disability over their able-bodied counterparts in terms of academic scores. These researchers further argue that accommodations that lead to inflating performance scores could be regarded as unfair because they would not be a true reflection of the competences which learners with disabilities might have. They also contend that the viable strategy to accommodate learners with educational needs could be that of easing standardization requirements. Cawthon et al., 2009 provided a number of accommodations that might require changes to the administration of the tests, which entail “extended time, changes to the test items, such as read aloud, or changes to the student’s response, such as the use of a scribe” (Cawthon et al., 2009: 1).

It appears that the agenda advanced by these researchers is that accommodations provided to learners with disabilities should be inherent to compensate for their specific disability types. They, however, seem not to consider time as one of the contributing factors which could obscure learners with other types of disabilities to demonstrate their knowledge and skills with the exception of those with a learning disability. They appear to take no notice of disabilities like visual impairment. According to Meda (2016: 50) some learners with a visual impairment might need additional time to write a test or examination. He further asserts that “Braille readers cannot skim read and may take up to three times as long as other students to read a text.” Fuchs, Fuchs and Capizzi (2006: 5) seem to focus on fairness and validity as arrive at a conclusion that it is pertinent to identify fair and valid testing accommodations based on “the nature and characteristics of disabilities that impact assessment of learners with disabilities”. They seem not to be explicit about the provision of accommodations based on individual needs. The view held in this current study is that reasonable accommodations should be provided depending on the individual’s needs.

THEORETICAL FRAMEWORK

The theoretical underpinning of this study is based on social justice education theories and capabilities framework developed by a political economist called Amartya Sen. According to Mthethwa-

Sommers (2014), social justice education theorists are mainly concerned with learning environments such as schools. Such environments, according to her, should be conducive to the provision of various traits of democracy including appreciation of coexistence in social diversity. This essentially serves to achieve social justice which she maintains is a manifestation of democracy. Bell (2007) as quoted in Mthethwa-Sommers (2014), is of the view that social justice aspires for maintaining the full participation of all the concerned groups in society on an equal basis. It also ensures equitable distribution of resources depending on the needs of those members who are involved. According to Mthethwa-Sommers, the convergence of social justice education theories is that they are mostly interested in finding out the extent to which regulatory frameworks follow tenets of democracy. This seems to suggest that the aim is to work towards transforming any oppressive systems or practices for achieving participation and utilization of human capacities to inclusively drive change. This according to Bell as quoted in the same paper, can help people develop requisite skills like critical thinking which could enable them to counteract manifestations of oppressive patterns and behaviours within institutions and communities.

Sen's (1979: 220) idea of capability framework had been developed by combining different equality models with the intention of achieving one which can "provide a sufficient basis for the equality aspect of morality". This idea has been used by scholars in educational research focussing on learners with disabilities (Terzi, 2014, 2007, 2005; Toson, Burrello & Knollman, 2013; Florian, Dee & Devecchi, 2008). The argument that Dalkilic and Vadeboncoeur (2016: 131) put forward is that this framework "allows for a dynamic assessment of educational practices". Their conception of this theory seems to suggest that reaching absolute inclusion or exclusion might be impracticable. Hence they are of the view that the capabilities of individuals should be expanded through regular evaluation of intervention measures used so that whenever necessary such measures might need some modifications. This theory is not immune to some form of criticism. De Beco (2017) argues that one of the major limitations of this theory is that it does not come clear about the kind of environment where it can be applied. The blame leveled against this theory seems to be unfair. This is because changing the environment might require heavy budget allocation, which might be a challenge in some schools, especially in developing countries. Therefore, capability theory can as well be useful in low-income countries.

Broderick (2018) also identified some gaps in the capability framework especially for guiding inclusion. She however appears to be aware of the importance of this theory, when she asserts that "this […] framework is nonetheless useful in guiding educational processes, policies and institutions towards a more holistic definition of equal opportunities". She also realized that there is an alignment between this framework and Article 24 of the United Nations Convention on the Rights of Persons with Disabilities (CRPD). She then argues that their joint application can bring positive outcomes in terms of understanding how individuals can be capacitated "towards ensuring [their] full and equal participation

in education for persons with disabilities" (Broderick, 2018: 37). In this paper the theories discussed above have been useful to establish why a selected group of learners

METHODOLOGICAL APPROACH

Cooper and White (2011) argue that it is important to carefully select the paradigm within which the study operates before deciding on the methodologies researchers intend to use. The most fitting research paradigm under which this particular study operates is interpretivism owing to the phenomenon under investigation and also taking into consideration the context in which it occurs (Cooper and White, 2011). This study is situated in inclusive education and follows a qualitative approach.

The research sample used here comprises three learners with visual impairment purposively selected from one regular high school in Lesotho. These participants have been selected from a larger group of learners who sat terminal examinations for Junior Certificate (J.C.) in 2017. Before conducting interviews with them in April 2018, the researchers sought permission from the district education office and school principal. The researchers also got the consent of participants and their parents considering the vulnerability of this group of learners. All the interviews were conducted within the school premises during working hours. There is no mention of participants' names throughout this article in order to conceal their identities.

PRESENTATION OF FINDINGS

It has been established that all visually impaired learners failed Form C and this study sought to investigate factors that might have contributed to that. Analysis of information gathered from the interviews conducted with three respondents has resulted in the emergence of four major assessment-related themes, which are: Lack of consultation; the challenge of reading a question paper presented in braille format; misalignment of instruction and assessment and ineffective accommodation.

Lack of consultation

The evidence suggests that there were no consultations regarding the format of question papers which these participants preferred. This emanates from the first participant's narrative on this issue which goes as follows:

We could have been asked what kind of question papers we would want to use, because we use two papers, sighted and brailed. Those who can see could use the sighted question paper while those who are blind could use the brailed papers. But that was not the case. To our surprise a couple of days preceding exams, we were informed that the personnel from the

Ministry of Education said that we were all going to use brailed question papers. We wonder why our teachers had agreed to that.

This is consistent with the view held by the second participant. When asked whether he was ever given an opportunity to choose a format of question paper in terms of large print or braille, the second participant said: "No, we were only told that time distribution differs when one is given a question paper in braille format as opposed to large print." The statement of the third participant coincides with those of his other colleagues. When asked how the decision of writing examinations using a question paper in braille format was arrived at, he said "shortly before sitting for exams, we were told that all learners with visual impairment will be given the brailed question papers." He explained the process of declaring one's condition of impairment and preference for a question paper format, this way, "We were given forms to fill in as partially sighted and blind learners. Our teacher filled in forms for all of us." This is in agreement with the first respondent's assertion that:

There is a form that should be filled in for providing information on the number of learners with visual impairment and their preferred type of question papers. But last year it was not completed. Unfortunately, we were all given the question papers in braille format in the final examination.

The evidence suggests that the participants were not involved in decision-making regarding the choice of the preferred question paper format. The statements of these respondents seem to shoulder all the blame to those who took decisions for them without any consultation.

Misalignment of instructional practices and summative assessment

Another issue that emerged from the data is that there had been some misalignment of instructional practice and summative assessment. The participants appear to have been filled with dismay by this as evidenced by the statements they make. The first participant states:

One of our teachers knew quite well that he always printed materials for us before class. He printed things like poems and notes for us. He was aware that out of five visually impaired in our class, three used sighted papers and two strictly used brailed papers. I was surprised as he knew very well that when we write tests we used large print papers, not brailed ones. It is his responsibility to transcribe question papers from other teachers into braille format or change them to large print for us. We expected him to know our preferences in terms of the format of question papers each one of us needed. We were given question papers that we were not used to when writing tests in the course of the year.

The third participant alluded to the same issue when asked about what might have contributed to his unsatisfactory overall performance in examinations, he said:

We were always using printed papers in large font in all our classroom activities. But when writing exams, we used brailed papers. We also encountered a challenge when writing subjects like commercial arithmetic, you would find that some signs looked strange in the question paper as the embosser produced things we couldn't understand.

The first participant was adamant that there were no other contributing factors that could be linked to his poor performance in examinations except the type of question papers that were at his disposal. His recollection about what transpired for other groups of learners who sat for terminal examination before, he stated:

Previously, learners were asked to decide on their preferred format of question papers well ahead of time. […] All the partially sighted members of the 2016 group opted for a large print. I consider it very important to use a format that enables you to access information written on the question paper easily. This can help for a better understanding of what the question requires you to do. It is a very challenging task to read a brailed paper with eyes already having problems, especially when written on both sides of a page.

When asked why he reads braille with eyes, he said: "I am not conversant with reading braille using fingers. As I am able to see, I think it's likely to make mistakes when trying to read with fingers." The extract seems to suggest that the second participant's preferred choice of question paper resembled what he had always been using during instructional practice. This emerged when he said, "I chose the sighted question paper because it is the one I had always been using in class. I am not comfortable with the brailed paper." The participant strongly believed that the provided format of question papers contributed immensely to his unsatisfactory performance in the examination. Answering a question inquired why didn't he opt for papers written in an accessible format, he said: "when we were writing commercial arithmetic, we were only told that a printed copy was only available for the invigilator. She appeared to be very busy during the exam and I waited for far too long to get help from her. Unfortunately, time was not on my side."

Ineffective accommodation

All three participants were aware that the choice of a question paper in a certain format had implications on the provision of time for writing such a paper. The first respondent explained this situation as follows: "The practice is that when using a question paper in braille format, you get 100% additional time. This means when a paper is allocated an hour, for those using a brailed question paper there would be two hours given during the exam." In response to a question that sought clarification on how the time is distributed for each of the two mentioned formats, the second respondent stated:

We were told that if we use braille the time given for writing a paper will be increased by 100%. I usually use the sighted papers but we have not been given a chance to decide on how we would like to write the exams. We only became aware of the format decided for us a few days before sitting final exams.

The third respondent also confirmed this issue of 100% additional time. In addressing a question that sought clarification why there is additional time when one gets brailled paper, he explained, “I don’t know, but it takes time to read a paper written in braille as opposed to large print.” This extract demonstrates that an increment of time did not always work in favour of learners, as reading a brailled paper could be more demanding. Accommodation of time increments is not unique to this study. Ofiesh and Hughes (2002) indicate that accommodation related to time increment for learners with visual impairment could range from 50% up to 100%.

Furthermore, he confirmed that all partially sighted learners received question papers in braille format. He also made an assertion that “all partially sighted learners did not manage to finish writing all the papers they sat for the exam." When asked why they did not manage to finish writing the papers they sat for in the examination, he said, "we were always provided with papers in large print, especially when writing monthly tests. So, we were not used to the brailed paper. That’s why we ran out of time.” The other issue which emerged from the evidence is that it was binding to write using Perkins brailler regardless of the question paper format one accessed. In his words, he said, "You always have to write with the Perkins brailler.”

DISCUSSION

The evidence demonstrates that learners were not involved in the decision-making on the format of question papers they had to use. Fuchs, Fuchs and Capizzi (2006) and Meda (2016) are in agreement that accommodations should be individualized as learners with the same type of visual impairment might have different preferences. It can be argued that it would be possible to know about their preferences if ever consultations were made. One can assume that those who were involved in making decisions might have thought they were acting in favour of the learners, as it has emerged that the use of question paper goes along with additional time in exams.

The evidence showed that 100% additional time paid no dividend for the visually impaired learners under investigation; as it has been alleged that they did not manage to finish writing their exams within the stipulated time. The findings of this study seem to refute the view held by some studies which seem to be in favour of extended time for learners with significant impairments in assessments. Lewandowski, Lovett and Rogers (2008) argue that extended time might allow learners with a disability to attempt as many questions as they possibly can, and that could be difficult to achieve under standard time

conditions. Clearly, the issue of context should be taken into consideration, as extended time could not remedy cases where learners might have difficulty accessing information from the given question papers. Based on this, Lovett (2010) raises questions about the appropriateness of extended-time accommodation. It can be argued that access to academic content should be prioritized (Spenceley & Wheeler 2016) instead of providing unnecessary accommodations which could not benefit learners.

In that vein, the results also suggest that partially sighted learners were given papers in braille format. This happened despite the fact that they used to be given papers in print format throughout the year. Especially, when provided with either prepared notes or when writing tests in the classroom. This shows that instructional practices and assessments had not been synchronized. On the contrary, Christensen, Carver, VanDeZande and Lazarus (2011) are of the view that the preferred choice of accommodations should be used consistently for both instructional practices and assessment.

CONCLUSION AND RECOMMENDATIONS

The findings of this study seem to be consistent with those of past research. It appears that the main reason that negatively affected the performance of visually impaired learners in high stake assessments might not be the nature of their vision, but the lack of appropriate accommodations that could help them realize their full potential (Meda, 2016). In circumstances that learners with visual impairment are not provided with question papers in an accessible format, expecting high-performance scores from them would be unfair. We contend that learners with impairment could be hindered to perform to their best capabilities when the aspect of diversity is not considered in the assessment. Consideration of diversity is the component of inclusive practice advocated for in inclusive schools. In this study, learners' needs were not catered for, they were all considered as a group of learners with visual impairment in need of braille to go through the assessment process. The capability framework regards this as an oppressive practice as those who are directly affected are not involved in decision-making. The recommendation of this article is that learners should be involved in decision-making concerning their welfare. More so, summative assessment should be aligned with instructional practice.

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Published by Khachatur Abovyan Armenian State Pedagogical University Publication

The article submitted and sent to review: 31.04.2022

Accepted for publication: 30.11.2022

Available online at: https://specedjournal.aspu.am/index.php/se

ASSISTIVE TECHNOLOGY FOR STUDENTS WITH VISUAL IMPAIRMENTS

DOI: 10.24234/se.v6i1.309

AUTHORS' DATA:

Susanna Muradyan, Ph.D. in Education, Associated professor

Chair of Special Pedagogy and Psychology, Vice-dean for science and international cooperation of the Special and Inclusive Education Faculty, Khachatur Abovyan Armenian State Pedagogical University, Armenia,

Contacts: muradyansusanna41@aspu.am

ABSTRACT

Visual impairment is a disability resulting in partial or complete loss of vision. It results in hindrance to performing daily chores, thereby decreasing the quality of life. This study aims to augment the user's experience with digital interfaces (e.g., the display system of personal computers and smartphones) through the design of an efficient system enabling easier and more effective user navigation.

Assistive technology for the visually impaired and blind people is a research field that is gaining increasing prominence owing to an explosion of new interest in it from disparate disciplines. The field has a very relevant social impact on our ever-increasing aging and blind populations. While many excellent state-of-the-art accounts have been written to date, all of them are subjective in nature. We performed an objective statistical survey across the various sub-disciplines in the field and applied information analysis and network-theory techniques to answer several key questions relevant to the field. To analyze the field, we compiled an extensive database of scientific research publications over the last two decades. We inferred interesting patterns and statistics concerning the main research areas and underlying themes, identified leading journals and conferences, captured growth patterns of the research field; identified active research communities, and present our interpretation of trends in the field for the near future.

The study of the educational process of students with visual impairments shows that they can generally receive a successful education on an equal basis with others. On the other hand, the educational process of students with visual impairments is accompanied by several difficulties associated with the fact that they cannot see.

One of the ways to effectively solve this problem is computer assistive technologies based on programs for the blind and visually impaired, information sources (through sound reproduction, an

auxiliary point, or listening to a large text). Computer assistive technologies are easy to understand and allow you to work independently with a regular personal computer, and general-purpose programs (MS Word, Internet Explorer, etc.) to obtain a normal user experience. For students with visual impairments, these functions have a significant compensatory effect, allowing assistance to the visually impaired (scanning, reading plain text, preparing printed documents, etc.).

Keywords: assistive technology, visual impairments, visually impaired, blind, typhlotechnology, screen readers, JAWS, NVDA, information analysis, electronic travel aids, inclusion, research.

INTRODUCTION

The World Health Organization (WHO) reported that at least 2.2 billion people worldwide have a visual impairment or blindness (World Health Organization, 2022). Unlike congenital blindness, acquired visual impairment has often been diagnosed due to aging, lifestyle factors, or heredity effects (Swenor, Lee, Varadaraj, Whitson, & Ramulu, 2019). Presbyopia caused by aging has had the greatest impact on visual impairment and has been the second most common cause of blindness worldwide (Holden, et al., 2008). 1.09 billion people, over the age of 35, suffer from visual impairment due to presbyopia, and as life expectancy increases, the rate of acquired blindness is expected to increase more and more significantly (Bourne, et.al., 2017).

The field of assistive technology, commonly considered to be technology designed for individuals with some form of impairment (or elderly people), is a vital field expanding at a swift pace since it derives from many disciplines and is mainly driven by technology. Assistive technology for the visually impaired and Blind people is concerned with "technologies, equipment, devices, apparatus, services, systems, processes and environmental modifications" that enable them to overcome various physical, social, infrastructural and accessibility barriers to independence and live active, productive and independent lives as equal members of the society. Vision is an extremely vital sensory modality in humans, the loss of it affects the performance of almost all activities of daily living and instrumental activities of daily living; thereby hampering an individual's quality of life, general lifestyle, personal relationships and career. Therefore, technology that facilitates accessibility, safety, and improved quality of life has a very relevant social impact (Kajimoto, Suzuki, Kanno, 2014). Moreover, with our ever-increasing aging and blind populations, it has the potential to broadly impact our quality of life in the future. This has driven novel research across many disparate disciplines, from cognitive psychology and neuroprosthetics to computer vision and sensor processing to rehabilitation engineering. More recently, advances in computer vision, wearable technology, multisensory research, and medical interventions have facilitated the development of numerous assistive technology solutions for students with visual impairments.

This research is important because social inclusion will contribute to a more correct understanding of the surrounding world and easier understanding and communication. Visual Impairments lead to a lot of secondary disorders. Visual impairments negatively affect the formation of other systems that are closely related to vision: fine motor skills, spatial orientation, object perception, etc.

LITERATURE REVIEW

Learning with assistive technology has some challenges. Visually impaired students must learn how to use technology effectively, having mastered the general information and principles of using technology. A student can not use a computer without proper knowledge. These technologies can be used together, which greatly speeds up the interaction with the computer.

The main part of the computer system for students with visual impairments is the screen access software. This is an intermediary program between the operating system and tools that produce ordinary text and graphic information in audio form. There are many such programs in the world, but the most popular among Windows users are Jaws (Job Access With Speech), and NVDA (NonVisual Desktop Access).

Assistive technologies and devices play a significant role in the professional and social rehabilitation of students with visual impairments. Contemporary assistive technologies for visually impaired students are developing in three main areas: educational, industrial and cultural.

Assistive technologies for students with visual impairments are associated with ophthalmology, tiflopsychology, physiology, radio electronics, telemechanics and automation, biomechanics, as well as with engineering psychology, ergonomics, some areas of cybernetics (technical, biological).

The task of educational assistive technologies is to optimize the educational process of studying the basics of science, as well as the polytechnic and industrial training of the blind and visually impaired. Production assistive technologies are associated with the ability to perform production operations previously inaccessible to students with visual impairments, including control and measurement work, using special assistive technologies, devices and aids.

Moreover, there exists a need for the collaboration of medical skills and modern technology for developing assistive devices for the visually impaired (Siddhartha, Arunkumar, Chavan, & Uma, 2018).

There are several existing products and features to help the visually impaired such as Braille display, screen readers, gesture recognition, image recognition, ultra-haptics technology, launchers on smartphones, and PC operating systems having speech recognition for navigation (Garcia-Macias, Ramos, Hashimoto-Beltran, & Hernandez, 2019)

There are many different optical aids, technical devices, machines and devices designed for low-vision and blind students.

Optical technologies include various types of magnifiers (mechanical, reference, stationary), glasses (microscopic, telescopic, hyperocular), monoculars and binoculars, upper optical devices for the visually impaired, designed for reading, writing, drawing, projection magnifying assistive devices. All these tools can be used for visual work at short and long distances.

Blind students use white canes for spatial orientation in the environment, as well as ultrasound locators that emit and receive signals reflected from objects that contain information about the direction and distance of objects, and various types of sound landmarks.

Several assistive technologies for blind learners demonstrate the phenomena of light reflection and refraction; students can perform photometric work in physics, and get the opportunity to observe the phenomenon of perspective, the apparent movement of the Sun, the Moon, cloud cover, etc. Household items include liquid and bulk food and medicine dispensers, clocks, thermometers and other household items with tactile symbols, needle threads, bread slicers, vegetable peelers and more. School supplies include visual aids designed for tactile perception (tactile maps and globes, relief drawings and diagrams), Braille Typewriters, Perkins Brailler, etc.

To ensure the safety of blind students in an unfamiliar environment or difficult road conditions, several sophisticated electronic devices have been developed based on the principles of light, sound and ultrasound positioning that warn of near obstacles. Assistive technologies are an effective way to compensate for severe visual impairments.

One of the current problems of raising and teaching children with visual impairments has always been and remains the teaching of Orientation and Mobility with assistive technologies. Orientation and Mobility of visually impaired persons are considered by Teachers of Students with Visual Impairments as an important condition for the formation of a full personality and inclusion in society (May & LaPierre, 2008).

For a long period of time there was an opinion in psychology that only the eye is capable of perceiving space. Later it was confirmed that not only the eye but also the hand can perceive space.

METHODOLOGY

To study the level of social inclusion skills of students with visual impairments using assistive technology, we conducted a study using the tools and tasks we proposed.

In the research participated 10 students of the high grade of Yerevan N. Tigranyan special school N14 for children with visual impairments. Before conducting the research, we studied of medical documents of the students. We first explained to the children the methods of performing the proposed task and then started the actual work. The research on the development of social inclusion skills of

children with visual impairments through assistive technologies was carried out in two phases. At first, we tried to find out the extent to which students master assistive technologies.

The first step is to determine the level of ability to use assistive technology. We offer children to perform simple actions: to use the computer correctly, to perform simple steps using a special system.

RESULTS

During the work, it became clear that only 6 out of 10 students can use the computer without external help, 2 of them performed the actions with the help of the teacher, and 2 students could not complete the assignments. 3 students were able to fully use the "Arev" system, 3 students were working with help, and 4 students were unable or refused to complete the tasks.2 students were able to communicate with the help of typhlotechnological means, 3 turned to the help of the teacher, and the others found it very difficult.

During the conversation with the students, we found out that they like working with computer technology, and communicating with friends and family members. However, if students with low vision or partially sighted students do not face problems when using computer technology, blind people have a lot of difficulties when performing these activities. This circumstance is also a reason for the difficulty of social inclusion of the blind.

Table 1.

Indicators of the level of inclusion of students with visual impairment using assistive technologies

Tasks	Research results n=10, 100%							
	Can't use		With difficulty		With help		Independently	
	n	%	n	%	n	%	n	%
Ability to use computer programs	2	20	2	20	6	60	-	-
Communication skills with assistive technology	5	50	3	30	2	20	-	-

Assistive technologies help learners promote communication, improve access to information, and increase independence. These tools, which include low-tech materials (flip boards, boards for pictures),

mid-tech devices (single button, single overlay displays and high-tech devices (electronics, computer software), help maximize a child's ability to transfer information, learn and communicate.

- The audio description describes visual information. You can turn on the audio description loudly so everyone can hear it, or turn on an assistive listening device (ALD) so that only the student wearing headphones can hear;
- Computers that can be used in the classroom as assistive technology to demonstrate assignments. Computers have many accessibility settings that make them easier to use; zoom, large print, high contrast display, etc.;
- E-books that include large print or text-to-speech functionality;
- Image descriptions or alternative text, read aloud and describe what is shown in the image using a screen reader;
- A large-print keyboard, with one model having bright yellow keys and large black letters, although modifications to conventional keyboards such as braille or large-print stickers are also applicable. High-contrast virtual keyboards are also available for most smartphones and tablets;
- A screen reader is a program that reads all text on a computer screen using a synthesized voice. Screen readers aren't just on computers, many smartphones and tablets also have their screen readers. But not every website or software application is accessible to screen reader users, tactile materials allow users to learn by touch. Tactile materials can be outlines or full 3D models and can include Braille;
- Virtual assistants, sometimes called voice assistants, perform tasks or services for users based on spoken instructions or questions. Virtual assistants can read information aloud or perform tasks without requiring the user to look at the screen;
- External displays can be used to further enlarge the information on the screen. Some learners may have multiple external displays or simply use it to project information from a smaller display (Svajyan, et. al., 2022).

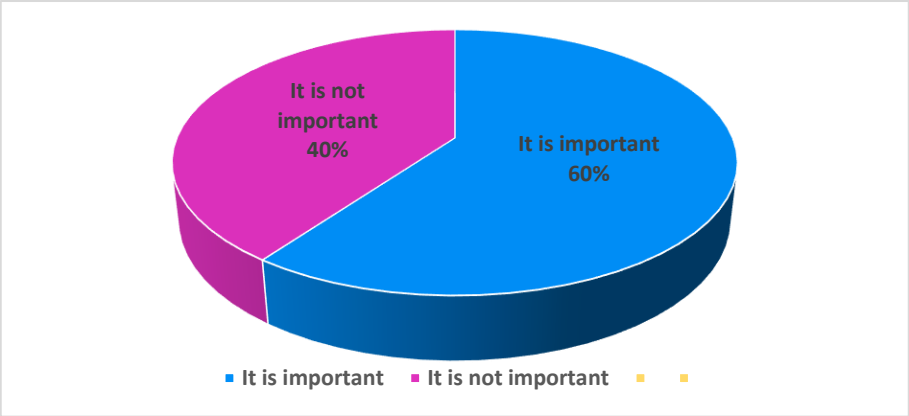
During the research, the following methods were used: a study of special literature, analysis and comparison of leading experience, conversation, and survey. In the research participated teachers and tutors of Yerevan N.Tigranyan special school N14 for children with visual impairments. The survey was conducted with a special questionnaire developed by us. Various answers were given to the questions. The majority of respondents emphasize the role of typhlotechnologies in the process of inclusion, but do not use specially developed methods, of typhlotechnologies.

In the course of the research, we tried to find out how the studied specialists treat this problem, what place they allocate to the development of the process of inclusion using typhlotechnologies, special devices in the educational process or the routine of the day, what methods and means do they use for this purpose?

The results of the research show that the majority of the teachers and educators interviewed (60%) value the role of technology in the process of inclusion, and 40% do not value the role of technology in the process of inclusion of children with visual impairments (Figure 1).

Figure 1.

Indicators of the importance of the role of typhlotechnology in the process of inclusion of students with visual impairments

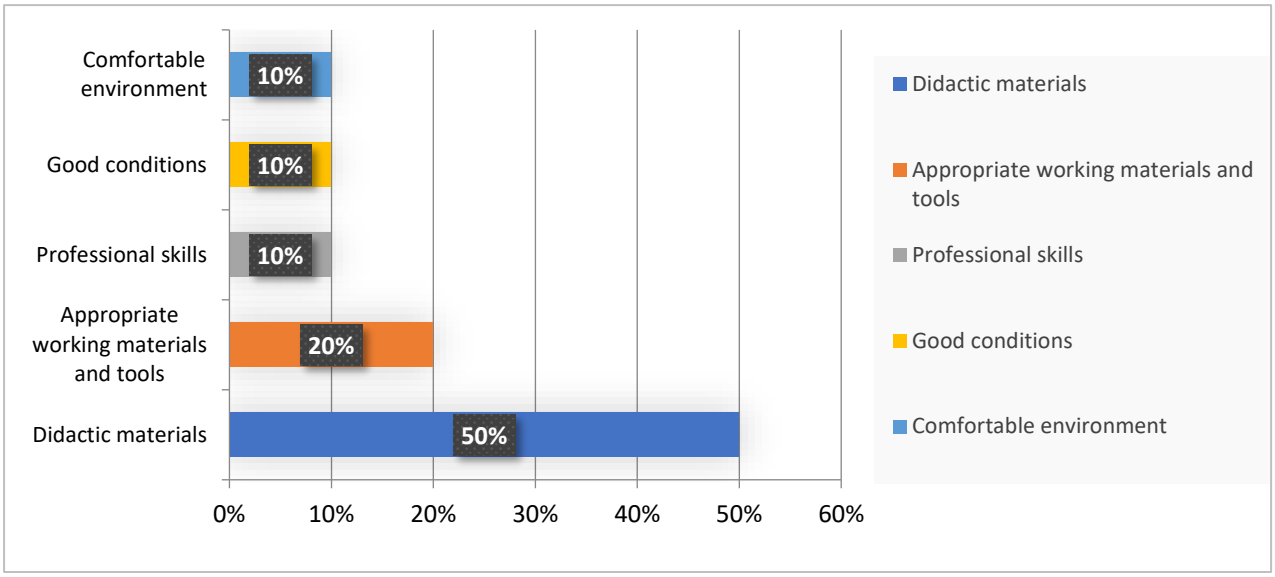


However, the respondents gave different answers to the question of what conditions are needed for inclusion. For example:

1. “Didactic materials” - 50%,
2. “Appropriate working materials and tools” - 20%,
3. “Professional skills” - 10%,
4. “Good conditions” - 10%,
5. “Comfortable environment” - 10% of responses (Figure 2).

Figure 2.

Indicators of the level of awareness of teachers and tutors about the necessary conditions for the inclusion of students with visual impairments.



Thus, it became clear from the surveys, observations, and conversations that on the one hand, all the respondents mentioned the significance and importance of the development of inclusion of students with visual impairments through typhlotechnologies, but on the other hand, they did not use appropriate means and methods. A part frankly states that they don't know and don't use special literature, and they don't have relevant knowledge and experience on the inclusion of children with visual impairments through computer technology.

As a result of surveys conducted among teachers and high school students, it became clear that only the “Arev” system is used in the school. They note that the system has many shortcomings: the quantity of languages is small, the possibilities are limited, and the pronunciation is inconvenient.

Some of the visually impaired students are only able to fully use this system, others can use the “Arev” system with difficulty or with the help of a teacher.

Now, all over the world, people with visual impairments use modern technologies, and special devices, which provide a wide opportunity for education and active development of social life.

Students with visual impairments use computer speech programs (JAWS, NVDA) to read almost anything on the computer out loud. For example, if a program says that a file is in mp3 format, a blind person will understand that it is an audio file. JAWS can say out loud when a file was created, what size it is, and what color a letter of text is.

“Talking" programs enable students with visual impairments to independently use the computer, and the Internet, “read”, edit texts in different languages, listen to music, communicate and other

opportunities. They play a huge role in a visually impaired student's education, work, as well as communication and information.

Most people around the world use JAWS, NVDA, and other “talking” programs. The “Arev” system was created in Armenia, which was developed by Armenian scientists at the Yerevan Research Institute of Mathematical Machines. The program was created in 2004. A center was opened in the building of the institute, where blind people attend and learn how to use “Arev”.

The "Arev” system has made a big revolution in the lives of blind people living in Armenia, but there are certain disadvantages that reduce its use. The number of languages in “Arev-4” is less, “Arev-4” is a modified version of the “Arev” system, which has 6 languages, and languages can be easily added if necessary. It has different pronunciation speeds, works with the Windows system, allows you to use the Internet, the program is in Armenian. And “Arev-2” is designed for blind musicians, who can listen to notes and compose using this system. “Arev” also has a video scanner (scanner) that recognizes the text, turns it into a computer voice, and reads Armenian, Russian and English.

However, many visually impaired users report several problems with the Armenian “talking” program.

Many blind students claim that the pronunciation of “Arev” is inconvenient. They mainly use the NVDA (Non-Visual Desktop Access) program because they consider it a great advantage that the program includes more than 40 languages.

NVDA also provides the ability to control the sound - slow it down, boost it, stop it. This program is used in more than 120 countries of the world, it is portable and can be downloaded.

This almost flawless JAWS program, which is the most popular in the world, does not have Armenian, it is available only in English and Russian, which are of better quality, promote social inclusion and give better opportunities to users, in particular, to use all the possibilities of the Internet.

Below are the advantages and disadvantages of computer typhlotechnologies revealed as a result of the survey, conversations, and observations.

Table 2.

Indicators of the results of a survey conducted among teachers and students about the positive and negative aspects of typhlotechnology

Computer typhlotechnology	**Advantages**	**Disadvantages**

JAWS	Can mention: • file creation date, • file volume, • text font color.	The program is not Armenian. They do not teach and practice at school.
NVDA	More than 40 languages.	The program is not Armenian. They do not teach and practice at school.
,,Arev" system	The program is in Armenian. Allows. • learn the system independently (in Armenian and Russian), • learn the keyboard by yourself.	The pronunciation is awkward. There are few languages. Opportunities are limited. They do not teach and practice at school.

The goal of the "Arev" typhloinformation system is to implement communication of visually impaired students through computers and to support their integration into society.

As a result of the survey conducted among teachers and students about the positive and negative aspects of computer technology, as well as our observations, it was found that not all students fully use the "Arev" system.

DISCUSSION

The research problem is most relevant, it is of great importance in the process of the pedagogical-psychological adaptation, physical environment, and inclusion of students with visual impairments, but teachers are not enough aware of the means of developing this process.

Despite the importance of the formation and development of the process of adaptation to the pedagogical-psychological and physical environment, the inclusion of students with visual impairments in special literature and practice is still considered little studied. Studying this issue and selecting, developing, and coordinating appropriate measures will contribute to the inclusion of students with visual impairments.

As a result of our research, it was found that assistive technologies contribute to increasing the level of inclusion of students with visual impairments.

CONCLUSION

The needs of the visually impaired and blind students are greater than ever before. Assistive technology as a mature field will continue to gain prominence and impact the lives of visually impaired and blind individuals (and elderly people) in ways not previously possible. The increase in functionality of mainstream mobile technologies, advances in computer vision processing algorithms, miniaturization of electronic devices, and cutting-edge new medical interventions are expected to drive this field further toward the challenges and reality of creating successful assistive technology.

After studying the technical means mentioned above, we concluded that these means can serve as "artificial vision" for people with visual impairments. The application of all this contributes to the development of spatial orientation of the blind, orientation in macro and micro environments, visual perception, social inclusion, and the development of other important functions.

Thus, computer typhlotechnology can be an indispensable gift to blind and visually impaired students and will be indispensable until all hidden human possibilities are fully revealed.

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Published by Khachatur Abovyan Armenian State Pedagogical University Publication

The article submitted and sent to review: 31.05.2022

Accepted for publication: 30.11.2022

Available online at: https://specedjournal.aspu.am/index.php/se

STUDENTS' ATTITUDE TOWARDS THEIR PEERS WITH DISABILITIES: CASE OF GYUMRI SCHOOLS

DOI: 10.24234/se.v6i1.310

AUTHORS' DATA

Tigranui Akopyan, MA, Graduate Institute of International and development studies

"Emili Aregak" Foundation, Director, Armenia

Contacts: t.akopyan@caritas.am

ABSTRACT

Objective: This study aims to understand children's attitudes toward their peers with disabilities in the city of Gyumri (Armenia). As the inclusion of students with disabilities in regular schools has been increasingly promoted worldwide in the last few decades, starting from 2016, full (universal) inclusive education entered into force in Armenia, and children with and without disabilities are included in the classrooms in all regular schools in the country. Based on the new changes related to inclusive education, the research on children's attitudes toward their peers with disabilities is valuable and essential.

Method: A narrative qualitative approach is used as a methodological basis of this study to uncover the attitudes of non-disabled students towards their peers with disabilities. Qualitative in-depth interviews with 60 students from inclusive schools in Gyumri have been conducted within one month. Analysis of the interviews was performed using the thematic analysis method.

Findings: The findings suggest four essential categories of responses: **Looking forward**, **Belief in overall inclusion**, **Pessimistic view**, **and Unfavorable conditions**. Each topic is formulated based on themes that describe the interview's global and detailed expression and formulation. In general, it was found that both personal and environmental variables relate to the attitudes of students without disabilities, such as experience with inclusive education, knowledge about disability and social participation, and social inclusion of students with disabilities.

Keywords: inclusive education, students with disabilities, attitude, inclusive school, students without disability, narrative.

INTRODUCTION

Incentives for Conducting this Research

The structure of education in the whole world is changing and developing continually. Education is a constitutional right of each student with and without disabilities and it is not a privilege given to them which is listed in the Constitution of the Republic of Armenia.

Inclusive education is a means of securing equal educational rights for all persons (Haug, 2017). Inclusive education is one of the most sensitive topics. It is a fact that not all children gain an educational experience to develop their full potential (Mag, Sinfield & Burns, 2017). Still, according to many authors, inclusive education is defined as "a process of high-quality implementation of aspects that are important for the psycho-emotional and academic development of students with and without special educational needs" (Schwab, Sharma & Loreman, 2018; p. 32; Lübke, Pinquart & Schwinger, 2021). During the past ten years, development towards inclusive education has gained momentum in the Republic of Armenia. Like many other developed countries around the world, Armenia also ratified the Convention on the Rights of the Child (CRC). It declared inclusive education as a non-discriminatory approach to teaching that serves the child's best interest.

The researcher chose this topic because of the observed inconsistency between the implementation of state and non-state organizational initiatives and the reality on the ground. This research will conclude and make recommendations from on-the-ground observations.

The discrepancies between the theory, practical implementation, and the reality on the ground will be explored. The research will zoom in on attitudes toward inclusive education held by the main stakeholders – the students of the mainstream schools themselves. These students have been exposed to the practical reality of inclusive education in the context of the "full" or "universal" reforms introducing inclusive education as of 2016 (The Protocol decision of the Government of Armenia N6 as of 18.02.2016). Thus, their attitudes are quite valuable within the context of understanding the recent post-reform reality in Armenia.

According to the United Nations Convention on the Rights of Persons with Disabilities (UN CRPD) (2006), the Armenian government has ratified the commitment to "ensure and promote the full realization of all human rights and fundamental freedom for all persons with disabilities'" (Article 1). According to the Protocol decision of the Government of Armenia N6 as of 18.02.2016, all regions in Armenia have shifted, are shifting, or will shift towards so-called "universal" (direct translation from Armenian) inclusive education, which means that special schools are relocated into regional educational-psychological support centers, and support services specialists of these centers start to provide in-school services to children with special educational needs (Harutyunyan, Hovyan, Saratikyan, Azatyan, Muradyan, & Tanajyan, 2019).

This study contributes to research on inclusive education, and its recommendations can support the Armenian government, non-governmental organizations, teachers and other educators, as well as parents of children with disabilities.

There is little published research on inclusive education practice in Armenia. Since 2016, since shifting to so-called "full" or "universal" inclusive education in Armenia, there has been no research precisely focused on the attitudes of students without disabilities toward their peers with disabilities. There is little knowledge about children's perception of mainstreaming and the situation through their eyes. As they are key players in the positive outcome of inclusive education efforts, children must be included in the research. In settings where some students are not part of the main groups (those who are different), exclusion and lack of will to integrate into other groups can result in their marginalization or isolation. Because of this, children with disabilities often might not seek the company of others because they are concerned about not being accepted (Juvonen, Lessard, Rastogi, Schacter, & Smith,2019).

M. Gaboyan discusses the integration level of and educational benefits for children with disabilities in inclusive public schools of Armenia (Gaboyan, 2016) to understand the attitudes of children with and without disabilities towards each other and to measure progress accomplished over the recent year. This article discusses "integration through tendencies in friendships and neglectful attitudes based on disabilities and its impact on academic performance of disabled children" (Gaboyan, 2016). Building upon Gaboyan's article, the current research conveys key messages about progress in inclusive education implementation.

Motionless, inclusive education is a process of taking into account the diversity of the needs of all students, taking into account the involvement 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 maximize their educational and social development (Khosrovyan, 2021). According to Gaboyan (2016), within the frame of inclusive education, the cooperation of children is not a friendship yet, and that underlines the negative attitudes between children in the school environment.

Conceptual/analytical framework and definitions

UNESCO defines inclusive education as a process intended to respond to students' diversity by increasing their participation and reducing exclusion within and from education. It is related to the attendance, participation, and achievement of all students, especially those who, due to different reasons, are excluded or at risk of being marginalized (UNESCO, 2017).

The Republic of Armenia ratified many international agreements on inclusion, such as the Salamanca Statement (U.N. Educational, Scientific, and Cultural Organization, 1994). In 2014, the Armenian Government ratified the Convention on the Rights of Persons with Disabilities (UN CPRD)

where the concept of inclusive education and education for all children can be found under Article 24. The UN CPRD recognizes the right to inclusive education for all persons with disabilities and states that *parties should provide an inclusive education system at all levels, ensuring that children with disabilities are not excluded from the general education system based on disability and that they can access inclusive, quality and free education on an equal basis with others in the communities in which they live.* The Republic of Armenia ratified the UN Convention on the Rights of the Child (UN CRC) in 2010, which refers to children with a disability and their right to a full and decent life in conditions that promote dignity, independence, and an active role in the community. By ratifying the UN CRPD, the Republic of Armenia took the responsibility to revise its national legislation in correspondence with the Convention (Article 23 of the UN CPRD).

The narrow definition of inclusion is described as a pedagogical approach developed to place children with special educational needs in regular schools and teach them alongside their peers without disabilities (Kruse & Dedering, 2017). In addition to this universal fitting, it seems reasonable that different strategies could be more or less important to support the confident academic and social needs of learners. Focusing on precise capacities of support rather than diagnosed disorders discourses the fact that even students with the same diagnosis have different needs for school support (Lübke, Pinquart & Schwinger, 2021). Despite the fact, that inclusion is often shortened to the placement of students with disabilities in regular classes, it goes far beyond this (Mitchell, 2014) (p. 302). A shared aspect of many methodologies to define inclusion is the adaptation and modification of education taking into consideration peculiarities and the individual needs of students (Macedo, 2013; Loreman, 2009).

At the Governmental level, the policy impact is observed in the organizational design of the Ministry of Education, Science, Culture and Sport, the Department of Education, and contiguous departments. Until 2016 there were three types of schools existing in Armenia: special schools (schools for children with auditory disorders, schools for children with visual disorders, schools for children with learning disabilities, etc.), regular schools (schools not recognized as those who can provide inclusive education and not financed by the state accordingly), and regular schools providing inclusive education services (schools recognized as those who can provide inclusive education and funded by the state accordingly). By 2025, all public schools will be transformed into inclusive ones, and the number of special schools will be decreased (Protocol decision of the Government of Armenia as of 18.02.2016).

Problem Statement and Rationale

The inclusion of students with disabilities in regular schools has been increasingly promoted worldwide in the last few decades. At the same time, students with disabilities are lagging in social participation in general education. At this point, negative peer attitudes are often mentioned as the main barrier. Taken together, there are various theoretical and conceptual interpretations of social exclusion

in educational settings. Children of different ages gravitate toward alike peers and away from different classmates, in this manner contributing to a lack of integration, inclusion and participation (Juvonen, Lessard, Rastogi, Schacter, & Smith,2019). Still, it is a matter of fact that the lack of contact or competition maintains preconceptions and consequently may result in exclusionary behaviors, especially when teachers do not encourage diverse children interactions and relationships in school activities and daily life. It is critical that teachers and other specialists working with children in schools and out understand all these peculiarities and dynamics to be able to prevent and decrease the social exclusion of children with disabilities in schools (Juvonen, Lessard, Rastogi, Schacter, & Smith,2019).

Based on the information above, the main problem within the framework of this study is to understand to what extent the attitudes of non-disabled students influence the social participation of disabled students in mainstream schools. This point is discussed in the context of recent reforms taking place in Armenia and the implementation of inclusive education in each school in the country.

The Armenian government called this reform "universal." After its protocol decision on 18.02.2016, the government now regulates "full" inclusive education. Unfortunately, the field was not prepared for this kind of global change. Without preparation, such a drastic upheaval in the education system could not bring about significant positive results in its first years of implementation.

After 2016, all special schools were reorganized into regional educational-psychological support centers over a short period of time. Children with disabilities no longer attended school at these institutions (Harutyunyan, Hovyan, Saratikyan, Azatyan, Muradyan, & Tanajyan, 2019). It was an emotional and psychological shock for children, parents, and families. Little to no preparatory work had been conducted beforehand to understand the real needs of students with disabilities and their families. Parents were not properly prepared or equipped for the change, and they were not included as key voices in the transition. This insufficient groundwork is likely one of the primary reasons for the finding which indicates that the overwhelming majority of parents of children with disabilities believe a "special school" to be the best place for their children to get an education.

Another problem is the "othering" experienced by disabled students in mainstream schools. The transition from special schooling to mainstream schooling did not sufficiently prepare students with disabilities to face the challenge of being "othered" or prepare students without disabilities to accept their peers as one of their own. Research shows that students with disabilities in mainstream schools have frequently been labeled as "inclusive schoolchildren." This is not an official term, but rather, one used in schools by teachers and children without disabilities. Most of the interview respondents mentioned the word "inclusive schoolchildren" or "inclusive child." Though few research papers have been written on inclusive education in Armenia, the term "inclusive children" has also been used in these articles. According to this research, "inclusive schoolchildren" tend to be less accepted by their peers

without disabilities than the latter group among its own. To note, the terms “inclusive kid/child” or “a child from inclusive class” are perceived as stigmatizing or stereotyping in nature. These expressions are no longer acceptable, and stakeholders in the field try to avoid their use.

In sum, the journey toward integration and inclusion has been a bumpy road with just a few success stories. There are many well-grounded challenges related to perceptions and attitudes that will be difficult to overcome. Disabled children continue to be isolated psychologically and socially from their classmates (Gaboyan, 2016). This fact reinforces the importance of studying the attitudes of students without disabilities toward their disabled peers.

More inclusive schools lead to a more inclusive society. The vital aspects of inclusion in the community are students’ attitudes, intentions, and behaviors toward their peers with disabilities. These are important to students’ mutual co-existence and development in the school environment and community life. Social interaction between students with and without disabilities is necessary for optimal conditions to promote status equity and discourage stereotypes. Therefore, this research will focus on the importance of the attitudes of students without disabilities towards their peers with disabilities as a crucial success factor and metric in the implementation of inclusive education in Armenia.

Hong, Jeon, and Kwon (2014) found that children’s understanding of disability is positively correlated with their prior contact and experiences with people with disabilities. Children’s understanding of disabilities was a significant moderator of the relation between their behavioral intentions and activity contexts or types of disabilities (Hong, Jeon & Kwon, 2014).

Attitude change toward people with disabilities is a long journey that entails social interactions and the positive coexistence of people with and without disabilities (Huskin, Reiser-Robbins & Kwon, 2018).

Attitudes toward individuals with disabilities have been one of the most important and focal topics in disability studies. Generally, people who had regular contact with persons with disabilities, across all types of disabilities, tended to have lower social distance scores than those who never had contact or sometimes met individuals with that disability type (Huskin, Reiser-Robbins & Kwon, 2018). In this regard, school is the place where challenges while interacting with children with disabilities might occur, and this problem is considered to be holistic, and schools are not going to accomplish it alone.

Integration, let alone inclusion, cannot be achieved by simply placing diverse people in the same classroom. Laws and policies, in the same way, are not the only prerequisites for the successful implementation of inclusive education.

The ideology of inclusion is a social phenomenon, and inclusion at schools depends not only on laws but also on the perceptions and attitudes of students and society at large toward people with

disabilities (Gaboyan, 2016). That is to say, the enactment of laws is not enough to change attitudes toward disability and specifically toward students with disabilities who attend school but are not fully integrated and are categorized as "inclusive children" (Gaboyan, 2016).

Obstacles toward full inclusion are not any more governmental or institutional issues. Legislations endorsed by governments will not solve the barriers and challenges facing people with disabilities (Huskin, Reiser-Robbins & Kwon, 2018).

Research objectives and research question

This study aims to understand children's attitudes toward their peers with disabilities. The current study will be the first one of its kind in the field of Inclusive Education in Armenia, where students' attitudes toward their peers with disabilities are explored through open in-depth interviews. There is little knowledge and research about children's perception of mainstreaming and inclusive education in Armenia. Thus, research with students without disabilities was necessary for seeing the reality on the ground.

Based on this, the study has as an objective to examine students' perspectives on an effective inclusion program based on the reforms done in Armenia. The research question is formulated as follows: *How do children without disabilities describe their social interaction with their peers with disabilities?*

METHODOLOGY

Narrative as a qualitative approach was used within the framework of this study (Clandinin, 2000) to explore the attitude of non-disabled children toward their peers with disabilities within the inclusive schools in Gyumri, Armenia. Narrative research looks for ways to understand and then present real-life experiences through the stories of the research participants (Creswell, 2005; Clandinin, 2000). Within the framework of the current study, the narrative approach allows for a detailed description of the attitude experiences of children and an exploration of the meanings that the participants derive from their experiences. Here the narrative analysis is used to understand how research participants build their stories and narrative from their own life experiences. Narrative inquiry amplifies voices that may have otherwise remained silent (Wang & Geale, 2015).

Participants

The purposeful sampling method was used to understand the non-disabled children's attitudes toward their peers with disabilities within inclusive schools. The most experienced inclusive schools (a total of 6 schools) with the most significant number of disabled children in Gyumri (the urban municipal community and the second-largest city in Armenia) were selected.

In every school, the principal and vice-principal, teachers, and multidimensional teams were informed about the nature of the study and its confidentiality directly from the researcher. The purposeful

sampling method is based on selecting information-rich cases to illustrate the questions under investigation (Bernard, 2000). After that, the random selection method was used while selecting students for interviews.

By drawing a random sample from a larger population, the goal is that the sample will be representative of the larger group and less likely to be subject to bias (Cherry, 2020). The age range of participants was 12-15 years old (7-9 grade students). Sixty non-disabled students were randomly selected based on the attendance journal every class has. Based on this method, every fifth child has been interviewed.

Ethical issues and Gaining Access

Before data collection, official approval was received from the Head of the Shirak Region of the Republic of Armenia. At every school, the principal and vice-principal responsible for educational affairs were informed about the purpose of the study and its confidentiality. The essence of the interviews was introduced in detail. Also, the first section of the questionnaire clearly stated the confidentiality of the data. It was communicated to every participant and parent of each student that participated in the research was completely voluntary. The data collection was anonymous and they would not be identified individually in the data analysis.

It is worth noting that the permission document also highlighted the value of such a research initiative and that it was being conducted within the framework of the Executive studies at the Graduate Institute of Geneva.

For conducting the first set of interviews, the head of the school administration requested to have a prior meeting to discuss the essence of the interviews and also asked to have copies of the interview papers. The school head, the gatekeeper, claimed that he would give access but then insisted that he would choose the students to be interviewed.

The next day, in the process of interviewing the schoolchildren, the researcher noticed that the answers were all positive and of a similar nature. By preparing the school pupils to answer a certain way, the headmaster (the gatekeeper) stepped strongly into the position of what knowledge they thought was appropriate and tried to take control over constructing the interview. It also reveals a concern that the researcher would hear the 'wrong' answer, thus demonstrating the tension around the issue. In doing this, school headmasters revealed their understanding of ‘the right answer.’ What they identify as 'the right answer' and which 'should' come out at the interview is very telling! It shows what they think *should* be happening - regardless of whether or not it is. What they think *should* be happening shows their reading of what they think inclusive education should be. After the first case of “interview failure,” which was a lesson learned, the approach for conducting the rest of the interviews was changed. Contact with the headmasters was made via email and phone, after which direct contact was made only with vice

principals or school administrators. No interview questionnaire was handed over to school administrators beforehand. They were simply informed about the nature and purpose of the interviews.

Data collection

In-depth interviewing is a qualitative research technique that involves conducting intensive individual interviews with a small number of respondents to explore their perspectives on a particular idea, program, or situation. Within the framework of the current study, in-depth interviews with 60 participants were conducted. All the interviews were conducted in the Armenian language and took place in schools. Each participant was interviewed once.

The interviews were intentionally narrative in nature to understand the students' responses to questions. Indeed, interviews are considered to be the most beneficial means of collecting data while constructing research on the narrative methodology. The objective of this kind of interview was to have the participants restructure their experience within the topic under study. Therefore, the questions were open-ended, focusing on experiences of interacting with students with disabilities in an inclusive school environment. For this purpose, an interview guide was designed and used (Annex 1). The questionnaire of the current study was originally composed in English and later translated into Armenian.

The participants were asked to describe, as concretely and in as much detail as possible, their attitudes and experiences while studying and interacting with students with disabilities. The duration of each interview was 20-30 minutes.

Data analysis

Data were analyzed using thematic analysis, the goal of which is to identify themes, i.e. patterns in the data that are important or interesting, and use these themes to address the research or communicate something about an issue (Maguire & Delahunt, 2017). The themes in this data analysis were derived from the main interview questions. The thematic analysis method was used to analyze the qualitative data which is usually applied to a set of texts, such as interview transcripts. The data has been closely examined to identify common themes—topics, ideas, and patterns of meaning that come up repeatedly (Caulfield, 2019).

The technique suggested by Braun and Clarke (2006) involving four steps of thematic analysis – transcribing the data, generating meaning units and codes, forming categories, and defining and naming emerging themes – was applied to this study. The citations were presented for creating meaning for the category represented (Kvale, 2002).

The 60 interview transcripts were read several times to get a sense of the meaning of each participant’s words. Then, meaning units were identified in the transcripts by locating keywords or phrases (Garland, 2005). All keywords were coded and the codes identified a feature of the data which

was collected into categories of themes. Based on the correspondence and citations of the participants related to the questions, the themes were created.

RESULTS

Within the frame of the current study, the process of enunciating the results helped to understand the problem from the inside, to break it into small fragments, and to understand the research problem from several perspectives. The full results of the paper include data generated from the research.

While articulating their thoughts, understanding, and attitudes about inclusion, participants of the study expressed their thoughts differently. However, there were many common themes. Through thematic analysis, four categories were established:

1. Looking forward,
2. Belief in overall inclusion,
3. Pessimistic view,
4. Unfavorable conditions

Each of the mentioned themes evolved from a logical pathway of codes and categories which were developed based on the citations of the children – participants of the study (see Figure 1).

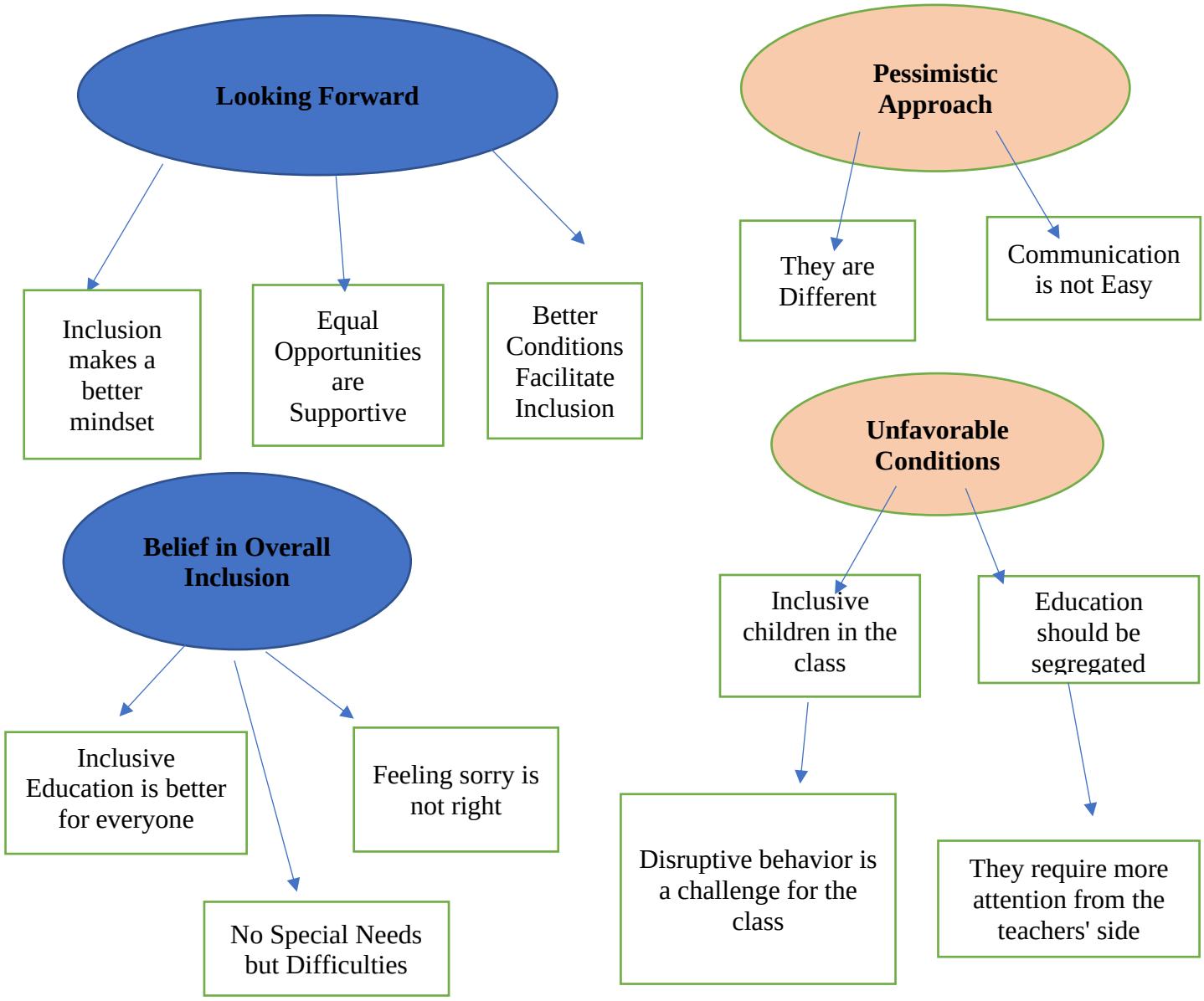
Topic 1. Looking forward: within this topic, the following themes were generated with sufficient quotes coming from the transcribed data.

Inclusion makes a better mindset

Some children noted that having a diversity of students in the classroom positively changes their thinking. *"We communicate and yes, we communicate and talk on different topics during the breaks. It is easy to get along with them"* or *"We should support them, providing them with more knowledge. They need that."* At the same time, comments from students without disabilities who participated in the study reflect that inclusive education is a positive change that they feel is realistic and possible. *"If everyone communicates with him, he will feel better at school"; "It would not be the same. We have a better mindset by interacting with them. They do not make it difficult,"* and *"We have to be next to them so they don't isolate themselves."*

In response to the question regarding segregated education, almost half of the respondents highlighted that students with and without disabilities should study together: *"Because together with us, they feel complete"* or *"Together with us, to feel complete."*

Figure 1. Thematic Map of Attitudes Commonly Encountered



Equal opportunities are supportive

Students without disabilities highlight the point of equal opportunities in almost half of the interviews: *"They should study with us so that they would not feel segregated," "They should study with us because they are not different from us."* and *"I want them to study with us. That will be beneficial for them."* It is interesting to note that some of the study participants mentioned the benefits of inclusive education for students with disabilities. Conversely, the benefits for non-disabled students were rarely mentioned.

Better conditions facilitate inclusion

The respondents frequently mentioned the issue of a lack of adaption and the inaccessible environment for students with physical disabilities. They often stated the need for better conditions and

presented their perspective that students with physical disabilities often have difficulties participating in school activities: *"The school only has to have conditions; for example, my classmate cannot go up to the second floor, there is no device,"* and *"There are no facilities at school; they can't move around if we do not help them."* In sum, the addition of physical accommodations in schools would make them more welcoming for students with disabilities.

Regarding the creation of better conditions for their classmates who have intellectual disabilities, some respondents stated the need for a special professional who would work specifically with students with disabilities: *"There should be good conditions and special teachers only for them so that they could attend the class," "They have to study with us, but if they can't sit in classes, special professionals have to work with them and only then come to school after a while, but they must study with us," "They should stay with us. That way, they will not be different, but the specialists should work with them separately."*

Reasonable accommodations of school settings and their physical environment are often mentioned as hindrances to school participation of students with disabilities and their integration with their peers: *"Let's create conditions so that they can come to class often," "There is no need to support anything. It would be better if they had more books and could learn."* Obviously, from the perspective of students, the inclusion of students with disabilities involves making adaptations and accommodations to enable their participation within a school setting as well as outside of the school environment. This, of course, is beneficial for all members of society, including those with other needs, such as parents with strollers and elderly folks. *"There should be good conditions for them not only at school but everywhere."*

Topic 2: Belief in overall inclusion

Inclusive education is better for everyone

Half of the participants of the study feel the importance of inclusive education; the feeling of belonging and of not being treated differently from others was quite a crucial component for them: *"They should study with us so that they would not feel segregated"; "We should study together; they should not be separated."*

While not stated explicitly in the language of rights, the right to equal opportunities was mentioned by the participants many times: *"Let them learn with us so that they do not differ"* or *"They should study with us because they are not different from us," "I want them to study with us. That will be beneficial for them."*

Other participants made comments reflecting the true meaning of inclusive education: *"There is no need to support them. Everything is fine with them. Inclusive education provides place and opportunities for everyone."*

Through the following comment, some participants indicated that students are first of all students, not people with or without disabilities: *"They should study with us. In this way, our class is accomplished/fulfilled,"* and *"I think they do not need support. If they have, they will say, and we will support them."* And an exciting point was concluded in the following quote: *"There is no need to support them specially. If we pay less attention to them, they will become more independent."*

No special needs, but difficulties

It was intriguing to note how children transform the ideology of special needs into difficulty, and how they perceive a classmate with a disability as having "problems": *"No, we don't have a disabled student in our class, but a student who has difficulties. She cannot sit for a long time and makes strange movements. When she is in a good mood, she shows that she is clever, but most of the time, she doesn't."*

Participants also shared the idea that everyone has difficulties and there is no need to consider them as having special needs: *"No, they don't have special needs. Maybe they have difficulties. Everyone does. They may not learn well or understand everything. Other students may have the same problems,"* and *"They have no special needs. They may have problems learning or moving on their own,"* or *"No. If they were not in our class, we would all be equal; they are learning something a little different. Sometimes they make difficulties."*

Feeling sorry is not right

Participants showed empathy, and at the same time, they did not want to feel sorry for their friends with disabilities. They seemed to feel it was not right to show pity: *"Yes, we communicate. It becomes easier for you to put yourself in their shoes and understand how you would like to be treated if you were one of them. Yes. There is a child who is a little different from us, and we try not to differentiate her from the others. He is different in his way of thinking and his movements. Yes, we communicate. It is easy to communicate with them. Sometimes I feel sorry but I know I should not feel sorry. This is not right. So that they do not feel that they are different from us and we all feel sorry for them".* Here it is possible to see the parallels between being different and feeling sorry, which participants of the study show directly: *"Do not do anything special for them. Do not show you are sorry, no. If she is not given more attention, she will become more independent."*

Topic 3: Pessimistic view

They are different

The expression "they are different" has been used by most of the respondents and discriminatory attitudes have been observed*: "There is a girl who doesn't look like us. She is from an "inclusive" education. She is different with her manners and with everything," "Yes, there is a girl who differs from us with her character/type. She is childish and kind and speaks the truth all the time."* The reality of being different is something outstanding that was interpreted by the participants. Generally, they seemed

to consider it as mostly negative: *"Yes, there is a boy with disabilities in our class. He is different, he is not like us. He would often sing during the classes, he is strange. He often gets excited when we cheer him for singing,"* and *"Yes, they have special needs, they are different. They need to be accompanied by someone. The problem is that other kids at our school would make fun of them and mistreat them. That is not nice, but it is because they are different."* At the same time, participants found that being different might be the reason for the change in the class: "*When she comes, the atmosphere changes, everyone tries to help, but I think she can be upset about it; we should not make a difference. Yes, she is a disabled student, she is different from us, but I don't want to show that she is different so that she doesn't feel bad,"* and *"He is smart, he participates with us, but he is very narrow-minded and insular. I think for this kind of child, a school is a strange place where children are and do incomprehensible things. Because they are different, it is difficult to be integrated."*

Communication is not easy

Students gave a range of answers regarding their levels of communication with peers with disabilities. Some of the respondents mentioned that they communicate with everyone equally. Others noted that communication is very limited with classmates with disabilities: "*We communicate somehow. It has not been easy initially, but now we got used to how to talk to them.*" There were specific cases in which students noted that they communicate extremely rarely: "*He has communication difficulties; not everyone communicates with them."*

In their comments, some of the children mentioned their fear that they would suddenly say something wrong or harm students with disabilities: "*It is tough to communicate with them because they are emotional and take everything close to their hearts."* The ease or difficulty of communicating with classmates with disabilities, according to the majority of respondents, depends on the nature of the difficulties the child has. In other words, communication may differ if the child has a severe mental disability or a verbal communication issue: "*It is not easy; you have to say something to them a thousand times."*

Topic 4: Unfavorable conditions

Inclusive children in the class

All respondents experience learning alongside a child with disabilities in the classroom. For some of the students, disability was particularly associated with walking and physical difficulties. Some respondents called their classmates with disabilities "inclusive" children meaning that he or she has special needs. They hear the term "inclusive children" or "a child from an inclusive class" from the teachers and this is how they refer to their classmates with disabilities: *"There is a child; she is from inclusive education. Well, she is a girl, makes abrupt movements, and speaks little."* The term "inclusive child" is not perceived positively in the Armenian language. It is considered a label.

The lack of friendship between students with and without disabilities was indicated by the respondents: *“Inclusive children have many difficulties, they cannot speak normally, understand, learn, they have few friends.”*

The necessity of friendship was also highlighted*: “They need friends and need to be accompanied.” “I think that he will feel better if everyone talks to him and makes friends with him.” “I can support her by making friends with her and talking to her more often.”*

Most of the respondents mentioned that students with disabilities are often absent from classes because of different reasons and that is a hindrance to frequent communication and the development of friendship: “*If they come to classes often, everyone will be friends with them.”*

For some respondents, making friends with students with disabilities is not easy: *"There are students with whom it is easy to talk to and make friends but not with this boy from our class."* Empathy towards students with disabilities has been detected in some answers and students commented that: *“Some teachers and students need to develop love and care towards students with disabilities”* or *“They have special needs, the problem is that there are many teachers and students in the school who do not accept them.”*

Education should be segregated

When asked whether students with disabilities should study in mainstream classrooms or separately, more than half of the respondents answered that they should study separately. They were ready to point to several reasons for this segregation. Comments included: *"Learn separately so as not to disturb us," "Separately, it will be better for them and us," "Learn separately so that they pay more attention," and "Learn separately because our lessons are slow because of them going on.*”

In some cases, participants mentioned that the classroom should not be segregated, but should include all students. However, they opined that segregated education could be to the benefit of a classmate with a disability. They noted; *“He would disturb the class and make the teacher concentrate only on him. It is OK for us, but I think it’s not OK for him. He should have his environment to study.”*

The question of studying together or in segregated settings is a key indicator of true inclusion and the attitude toward inclusive education. In some answers which were moderately positive toward inclusive settings, students highlighted the role of professionals. “*[Students with disabilities] have to study with us, but if they can't sit in classes, special professionals have to work with them. Then, they come to school after a while, but they must study with us sometimes.” On one hand, students want to study with their peers with disabilities. Some express the perspective that “both options [together or segregated] are acceptable,”* but still mention that, in any case, *“specialists should work with them separately.”*

The students without disabilities commented on the "benefit" of segregated education: *"It seems to me that it will be more convenient for them to study separately, that way the teachers will pay more attention to them."*

Disruptive behavior is a challenge for the class

Even if students are determined to concentrate and ignore distractions, the behavior of other students in the room affects their psychological state and ability to focus in the classroom: "*She doesn't like the school. In the classroom, she cries, makes noises, and disrupts the lesson. This is all because she doesn't like the school*" or "*Yes, I communicate; it is easy and interesting with them; they look at life differently, maybe. But, for example, when my classmate, who has autism, is not in a good mood, he is very aggressive, and sometimes we are afraid…".* Some respondents appear to draw a correlation between the disruptive behavior of students with disabilities and their enjoyment of school. It is also interesting to note that other participants try to find excuses or explanations for the disruptive behavior of their peers: *"Yes, there is a boy who got mental issues after the death of his father. He cannot generally sit calmly during the class, he shouts, and he is mischievous",* and *"Maybe they don't like the school, that's why he shouts during the lesson and wants to leave the class".* From another point of view, students view disruptive behavior as unacceptable: *"Yes, there is a shouting and crying student in our class. I wouldn't say I like loud voices, and it makes me angry when he shouts. He does it always. He makes the learning process difficult and disturbs it always; there are days that he is calm, but still, he disturbs the process."*

Too much or too little attention from the teachers?

The participants of the study reflected on the teachers' role in including all students and the equal (or unequal) distribution of teachers' attention. They made interesting arguments like the following: "*Yes, I know that he has special needs. That's why the teachers work with him more than with other students,"* and *"Yes, they do need more attention. As it is with small children, there must always be people with them so that they are not harmed. In our class, the teacher is mostly responsible for his behavior," "Yes. They need more attention,"* and *"Yes. They need constant attention so that they do not harm themselves and us."*

When asked how the classroom would be different if students with and without disabilities studied separately, one noted*: "Teachers would focus more on us. They do not make it difficult, but they slow it down." Another said: "Yes, teachers will spend more time on them than on us."*

Noticing the importance of equal attention, one respondent made an intriguing comment*: "She loves school, especially the classes during which the teachers treat her well."* In response to the follow-up question "what does that mean?" the student responded: "*That means to pay attention to them equally as we all do, not ignore them.*"

Students noticed the unequal distribution of teachers' attention towards children with disabilities, noting: "*Teachers do not treat her like us, they pay less attention; she always sits at the back of the class. And when she is not noticed, she misbehaves to attract attention"* and *"It would be better if the teachers communicate with and pay more attention to her"* or *"They should also learn separately (in a particular school) so that teachers will be more attentive to them."*

Other respondents noted the importance of a combined classroom while recommending a special professional dedicated to working with children with special needs. Comments included: "*She needs such kind of teachers who would explain to and teach her in an accessible way" and "There should be good conditions and teachers only for them so that they could attend the class."*

DISCUSSION

The research outcomes revealed two radically different perspectives: pragmatic and obstructive. This picture might be connected with the fact that the Armenian government based on its 18.02.2016 protocol decision launched the reform towards "full" inclusive education without properly arranging for this global change. The responses of participants have identified "two sides of a coin" within the scope of perception and understanding of inclusive education from the point of view of children without disabilities.

In their responses, both negative and positive, most of the respondents discussed what is beneficial for students with disabilities and what should be good for them. In an attempt to appease the interviewer, the respondents in some cases mentioned that all the students regardless of their abilities should study together while noting that the teachers should work with them separately or special professionals are needed.

It was interesting that the gender difference was not emphasized in the answers, whereas the researcher might have considered the stereotype that "females would be more sympathetic." Girls and boys presented both positive and negative answers relatively equally.

The pragmatic perspective of the study showed mostly the meaning and importance of equality and equal opportunities for children. This was mostly a humanistic perspective influencing the change of mindset and creation of better conditions. It was clear that children see their peers not as persons with special needs, but as persons who experience some difficulties, and they also mirror themselves as persons having difficulties as well. So they do not see this fact as something extraordinary, but something that is normal and exists, and which affects every human being. In this regard, the position of Huskin, Reiser-Robbins, and Kwon (2018), which reflects the fact that people who had regular contact with persons with disabilities tended to have a closer relationship and less social distance, seems to be compatible with the findings of this study.

The obstructive perspective reflected a negative association between the placement of children with disabilities in mainstream schools and the attitudes of children without disabilities toward their peers with disabilities. Many children were thinking that children with disabilities are different and communication with them is quite difficult. For that reason, children with disabilities need to have their personal space and environment for education, something which would be to the benefit of both groups of children – those with and without disabilities. In this regard, Gaboyan (2016) concluded integration through tendencies in friendships and neglectful attitudes based on disabilities and its impact on the academic performance of disabled children.

It was quite remarkable to see that findings also revealed that the disruptive behavior of students with disabilities is challenging for their peers without disabilities. Peers without disabilities reflect on this point not only from the perspective of communication but also as a challenge while organizing the process of the lesson as a whole. In this regard, from the perspective of inclusive education, there is a need for teachers to deal with very altered situations and diverse difficulties. Hereafter, teachers require a broad repertoire of strategies to cope with heterogeneity and challenging situations (Lübke, Pinquart & Schwinger, 2021).

The role of teachers was also highlighted as an important factor, and the attention distribution in the class was also mentioned. Children feel the difference in a teacher's attitude and her allocation of time. They do not observe differences in attention as normal or natural in the learning process. They took it as something that should not take place. They also felt that the lesson should not be disturbed by the fact that a child with a disability needs more attention. The success and the full integration of students with disabilities into inclusive education practice also depend on teachers' attitudes. One respondent seemed to equate "treating well" meant giving equal attention to all students. Educators play a crucial role in the success of the inclusion process; however, this particular study is specifically focused on the observation of the attitudes of nondisabled students toward their peers with disabilities. There is limited research on the attitudes of teachers toward inclusive education and the exploration of this observation is left for future studies (Alaverdyan, 2018).

Even if the research outcomes revealed two fundamentally different perspectives, pragmatic and obstructive, it is a matter of fact that decision-makers should listen to and consider the opinions and feelings of children. Pedagogical approaches should be used to formulate and reformulate the values and respect towards "being similar" and "being different." Attitudes of authorities affect children in both beneficial and unbeneficial ways. Policymakers and field specialists should heighten their attention to the perspectives of students to correctly adapt the school environment so that it is conducive to inclusiveness.

LIMITATIONS OF THE STUDY

As the study uses qualitative methods, it has some limitations connected with the generalizability of data. There was a relatively small sample size of study participants. The study cannot be generalized to the whole country since it has been carried out only in six Gyumri schools.

The findings of the study are seen as a small collection of evidence and the fact that the participants have been interviewed individually, without the use of other measures like observations, should be considered a limitation too. In this regard, it will be very interesting to see, for example, how the participants will share their perspectives during focus group discussions when they hear each other's opinions and answers to suggested questions. But still, despite all this, it is possible to notice similarities in students' answers and the results of the data analyses.

CONCLUSIONS

Conclusions derived from the analysis of the findings have formed the basis for the recommendations of this study. Regarding the objective of this study, it can be concluded that students' attitudes are influenced by different factors that can be clustered into opposite poles. The study showed that students might lack knowledge about disabilities and students will likely be more accepting when their knowledge and understanding of peers with disabilities increases. This point needs to be developed further in other studies, using more elements from the analysis of these findings.

To improve attitudes using interventions, it seems logical to focus on ideas that can be used to modify attitudes such as knowledge about disabilities, fostering peer acceptance, or the effect of knowledge about disabilities on students' attitudes. Still, it is essential to realize that attitude change is constant work and it does not happen in one day. All actors in the process of change and transformation into inclusive education should be aware of this while working to implement inclusive education. This point is strongly recommended to take into consideration as a specifying dimension with strict identification of intervals, based on the fact that towards "full inclusion" educational reforms are planned to be completed by 2025 in Armenia.

RECOMMENDATIONS

Based on the study, the following recommendations are made. They are divided according to relevant structures, subdivisions, and official bodies. It is highly recommended to:

- organize large-scale public discussions (including children with and without disabilities, their parents and family members, teachers and specialists, community representatives, and official bodies) based on the concept of inclusive education;

- increase public awareness regarding the importance of fully inclusive education and disability issues and the inclusion of people with disabilities in society through various TV programs, social networks, and social advertising;
- assist the state in implementing regular training programs focused on children with special educational needs and the specificities of fully inclusive education, involving students with and without disabilities, their parents, and specialists working with them in and out of schools at the community level in both rural and urban areas. These kinds of training may be organized in schools and other formal or non-formal educational settings, involve different activities and arrangements, linking directly as well as indirectly to the topic of a suggested training program (excursions, picnics, visits to different cultural places, other joint activities);
- accommodate and modify the classroom environment to help all children become successful learners and active participants in classroom activities and include all children in the class in this process of modification, let children be decision-makers, help them to choose and justify their choice;
- since inclusive education has been implemented in the country as a reform in the field of education, it is very important to adopt a research-based approach to understand best practices in the field regarding forming children's attitudes, as well as perspectives of all stockholders and beneficiaries in the field. It is highly recommended that different state and non-state, national and international organizations and universities, in strong cooperation with the state bodies responsible for education, investigate and conduct in-depth research in the field of inclusive education. They should involve different actors and stakeholders, and the results of this research should be used in the development of state legal documents and policies related to inclusive education in Armenia.

Taking into consideration the recommendation and its link to the aim of the study and research question, it becomes obvious that children's voices need to be heard everywhere, even though they have positive or negative connotations. Those who are responsible for creating a favorable school environment for every child should construct each activity and make every step considering the primary stakeholders' voices. They should build an inclusive education ideology based in part on what they learn from children. keeping in mind those voices and building inclusive education ideology and routes based on it.

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ANNEX 1

The researcher conducted interviews in six schools (N7, N11, N15, N31, N23, N40) of Gyumri, Armenia, in November and December 2021. The interview participants were non-disabled students aged between 12-15 who were selected on a random base, male and female.

See the questionnaire below.

Questionnaire

1. Do you have classmates with disabilities? Who are they? Can you tell me about them?

2. Do you know that your classmates have special needs? Do you think they have any particular difficulties at school? Can you tell me about them/what they are?
3. How do you think they feel about school?
4. Do you cooperate during the class? If yes, then how?
5. Do you speak with your classmates with disabilities]?' Do you spend time with them during breaks?' 'How do you find it? Is it easy to talk/work/study with them?', 'Why (not)?'
6. Do you think the classroom would be different without pupils with disabilities? How? Would you like it more? Do you feel like pupils with disabilities make it harder for you and other pupils to learn? If yes, how does that look?'
7. How do you think we could support the pupils with disabilities in your class? What would make school better for them?
8. Do you think that students with disabilities should study together with you? Or should they look elsewhere? Why?

Published by Khachatur Abovyan Armenian State Pedagogical University Publication

The article submitted and sent to review: 30.09.2022
Accepted for publication: 30.01.2023

Available online at: https://specedjournal.aspu.am/index.php/se

CHARACTERISTICS OF COOPERATIVE WORK OF THE PEDAGOGICAL-PSYCHOLOGICAL GROUP IN THE PROCESS OF OVERCOMING ORAL-MOTOR DYSFUNCTION

DOI: 10.24234/se.v6i1.311

AUTHORS' DATA

Zaruhi Harutyunyan, PhD, University Lecturer

Chair of Speech and Rehabilitative Therapy

Khachatur Abovyan Armenian State Pedagogical University, Armenia

Contacts: h.zaruhi@gmail.com

Vanuhi Babayan**,** MA in OT, Speech Therapist

Support Center of Kotayq Region, Armenia

Contacts: vanuhi.babayan.99@mail.ru

ABSTRACT

The study aimed to describe the characteristics of cooperation among the pedagogical-psychological group members while dealing with the issues of oral-motor dysfunction. The research was conducted using a qualitative methodology. A semi-structured interview method was used for data collection with speech therapists, psychologists and occupational therapists (in total 6 specialists) to highlight the features of group work cooperation in the process of overcoming oral-motor problems. The analysis of the research data was carried out based on the descriptive method.

The results of the research proved that during oral-motor dysfunction, the implementation of joint and mutually agreed activities, preliminary discussions of rehabilitation intervention planning and the ways of its implementation, and synchronizing the main approaches used by different professionals were important prerequisites for the cooperative work among the pedagogical-psychological group members. In addition, the desire of specialists to collaborate, the need to use complementary approaches and the planning of systematic group work discussions also determined the effectiveness of the rehabilitation process and ensured a positive result.

Keywords: oral-motor dysfunction, collaboration, pedagogical-psychological group, occupational therapy, participation.

INTRODUCTION

Taking into account the characteristics of oral-motor problems, pedagogical-psychological group work was very important, because during oral-motor problems both speech disorders and sensory

disorders were observed. Therefore, only the speech therapist's intervention could not overall contribute to the recovery of oral-motor dysfunction, because in the case of oral-motor dysfunction, there was sensitivity, oral dyspraxia, the presence of reduced sensitivity, lesions of jaw, lip, tongue, and cheek movements (Ekici, et. al, 2016). For this aim multidisciplinary group work is required for overcoming the problems connected with oral-motor dysfunction and its influence on participation in daily activities (Howe, & Wang, 2013).

Emphasizing the use of systematic intervention approaches by the pedagogical-psychological group members, the demonstration of cooperative skills of each specialist in the process of overcoming oral-motor problems was also of particular importance. The goal of the cooperation of the pedagogical-psychological group was to be child-centred, as well as work-centred so that different specialists can combine their professional knowledge and skills (Harutyunyan, 2016).

Pedagogical-psychological group work, especially in the case of oral-motor dysfunction, allowed us to evaluate the needs of each child from his/her professional point of view while emphasizing the use of general approaches that had a positive effect on the development and mastery of the child's abilities.

LITERATURE REVIEW

Nowadays, worldwide implementation of an inclusive education strategy, first of all, required the use of coordinated approaches of the multidisciplinary team, which included various specialists interested in the education of the child (general education teacher, special education teacher, occupational therapist, physical therapist, psychologist, speech therapist, and coordinator) and parents of the child (Inclusive Education Strategy, 2019; Barnes, & Turner, 2001). The use of intervention approaches by each specialist had a separate meaningful role in the child's educational process and aimed to ensure a natural process of inclusive education (Saratikyan, Harutyunyan, 2017).

The literature review of the current study approved that in the context of inclusive education, pedagogical-psychological group members worked for helping children with special educational needs deal with the issues in the educational process (Harutyunyan, Hovyan, 2013). Many studies highlighted that the work of the pedagogical-psychological group members was a dynamic process that involves the work of two or more specialists serving one purpose (Azatyan, Harutyunyan, Svajyan, 2019).

The most important link in the organization of inclusive education was the pedagogical-psychological group members to effectively organize the educational process of children with special educational needs, in addition to individual work, closely cooperated and provided advice to teachers for developing more favourable and effective working approaches with these children. It should be noted that each educational setting, or institution, depending on its scope of service provision, can form a pedagogical-psychological group, utilized and developed its comprehensive approaches and regulations

of group work structure, and set the fundamental principles of intervention (Harutyunyan, 2016; Sass, 2000). Many other studies emphasize the benefits of pedagogical-psychological group work for children having oral-motor dysfunction since the rehabilitation process could include unified approaches that are directed to overcome not only oral-motor dysfunction but as well as enhance their participation in educational activities and daily life (Manno, Fox, Peggy et. al, 2005; Domaracki, Sisson, 2001; Ferigollo, Kessler, 2017).

Over the past few years, other researchers demonstrated a strong connection between Physical, Occupational and Oral Motor therapy, based on a correlation between postural control and establishing reciprocal influence between corporal positioning and oral-motor structures and functions (Alghadir et al., 2014; 2015a). Because oral-motor skills represented a sequential progression of increasingly complex movement patterns and were integrally linked with increasingly complex tongue movements any disruption in practice can interfere with or limit the positive oral motor practice, resulting in the loss of advancement in skill development and the learned behaviours. These effects may include difficulties in sucking, swallowing, chewing, breathing and speaking, pronouncing sounds correctly, and other speech and phonetic disruptions (Barton, Bickell, & Fucile, 2017). Apart from this, the oral breathing pattern and neck extension reduce the strengthening of abdominal muscle control. Reduced expiratory muscle strength may negatively affect the child's ability to generate adequate expiratory pressure for voice production, which limited the possibilities of verbal communication, and also result in ineffective cough, placing the child at risk of not being able to clear the airway if aspiration occurs (Brooks, McLaughlin & Shields, 2017).

Children requiring early, intensive intervention often has complex feeding and swallowing issues that required a group work approach to fully evaluate and treat the underlying issues. Low tone, abnormal sensory processing, altered postural alignment and movement patterns were often present in these populations (Steel, & Miller, 2010). When a child presents with a feeding problem, a comprehensive assessment is needed to evaluate what oral-motor pattern the child was using, and also what factors (medical, motor or learned patterns of behaviour) were contributing to maintaining the child's use of that pattern. Once medical stability and postural alignment had been obtained, oral stimulation can be an effective adjunct to feeding treatment. Oral stimulation should provide the child with the necessary sensory and movement input to adequately prepare the child for controlled practice with food (Hodge, 2002; Fucile et. al, 2011). These issues required the strong collaboration of multidisciplinary team members to ensure comprehensive treatment for overcoming difficulties due to oral-motor dysfunction.

Accordingly, a collaborative approach between speech and occupational therapists was a highly effective treatment strategy for oral-motor dysfunction because both speech disorders and functional dysfunction in performing educational and daily activities could be observed. Due to the integration of

sensory and motor abilities into the development of speech, language, cognitive, and swallowing skills, a natural connection between these group members could be organized. Occupational therapy (OT) practice often prioritized self-care, work, play, psycho-social function, motor skills, sensory integration, and related functional issues that impact participation in daily activities (AOTA, 2010). Speech therapy prioritizes functions of communication, cognitive ability, oral motor skills, and swallowing ability that allow individuals to participate in daily activities as well (Howe, & Wang, 2013).

The purpose of this professional collaboration in oral-motor dysfunction directed to explore common ground, work collaboratively with each other to develop a patient/family-centred plan of care and execute a course of treatment. A collaborative session between disciplines, or co-treatment, allows specialists from both professions to use their professional skills to address complementary components of skill development. The successful collaboration allowed the children to also generalize the skills taught within the therapy session into their home, classroom, or daily life (King, et. al, 2009).

Since children with oral-motor dysfunction could have problems in speaking and swallowing as well as a wide range of difficulties in performing their daily and school activities, OT intervention together with speech therapy aimed at providing professional support to children with special educational needs for free and independent participation, both in the educational process and in everyday activities (AOTA, 2010; Harutyunyan, Harutyunyan, Hovyan, & Saratikyan, 2017).

Thus, the study aimed to describe the characteristics of cooperation among the pedagogical-psychological group members while dealing with the issues of oral-motor dysfunction. The research question of the work received the following formulation: how was the cooperation of the pedagogical-psychological group work organized during oral-motor dysfunction?

METHODOLOGY

The qualitative research method was chosen to carry out the study. Within the frame of research, a semi-structured interview was conducted with various specialists (speech therapist, occupational therapist, psychologist) working in the field of overcoming the issues of children with oral-motor dysfunction. The research was aimed at revealing purposeful and effective collaboration ways and means among the specialists, the important preconditions of cooperation of the pedagogical-psychological group members, what preparatory work they do, and with whom they cooperate more often. In particular, a descriptive qualitative approach was used for data analysis, as it enabled to highlighting of the point of view and perception of the sample group regarding the given phenomenon (Nayar, Stanley, 2015). Moreover, the results of the qualitative descriptive analysis were easily transmitted to the researcher and provided an opportunity to understand the interpretation of the situation from the perspective of the respondents (Trochim, 2006).

Participants

In total 6 participants were involved in the current research (2 occupational therapists, 2 speech therapists, 2 psychologists) with whom a semi-structured interview was conducted to highlight the main approaches and characteristics of collaborative work while dealing with the issues of oral-motor dysfunction. The ethical aspect of the research was preserved by providing the specialists with informed consent. The participants agreed to provide information for current research implementation by signing the informed consent which assured that provided information would be anonymous and the results would be used in a generalized way.

Data Collection

A semi-structured interview method was used for data collection, which was one of the most frequently used methods in qualitative research, and allowed to use of "open, direct, verbal questions" for obtaining detailed information (Whiting, 2008). A semi-structured interview was used when there was very little information about the research topic and its structure was considered to be the best way of making deeper understanding and discoveries. Semi-structured interviews were recorded and transcribed verbatim. Subsequently, the text of the semi-structured interview was read, and coded and descriptive analysis was carried out (Trochim, 2006). The questions were formulated according to the research question and in general 8 questions were identified and used for data collection. The questions were aimed at illuminating the characteristics of the collaborative work among the pedagogical-psychological group members and outlining the main approaches used by them in overcoming the issues of oral-motor dysfunction.

Data Analysis

The analysis of the research data was carried out based on the descriptive analysis method that helped to identify the patterns and links by utilizing recent data without going any further. It helped to carry out a comprehensive summary, describing in everyday terms, specific events experienced by individuals or groups of individuals (Creswell, 2015). This type of analysis was considered a better method for collecting information that described the collaboration relationships of different specialists in a natural way making this analysis very real and close to the research.

RESULTS

The analysis of the research results was aimed at highlighting the features of the collaborative work of the pedagogical-psychological group members and the main approaches used during the intervention in oral-motor dysfunction. The analysis of the information provided by the research participants made it possible to identify and explore the important and basic principles that were most effective in the collaborative work of the pedagogical-psychological group members.

Specialists noted that they gave great importance to the cooperative work of the pedagogical-psychological group members especially during dealing with the issues of oral-motor dysfunction, because, due to **joint work it could be possible to achieve positive.** Conducted intervention could bring desired outcomes when specialists cooperate, used coordinated approaches and provided an exchange of experience.

If there was no cooperation during the intervention process among pedagogical-psychological group members, done work would not have a constructive effect and outcome. According to the interviewees, the effectiveness and purposefulness of collaborative work in oral-motor dysfunction, in particular, is based on the usage of combined approaches of speech and occupational therapists since **they complement each other during the intervention process.**

Specialists jointly carry out children's need assessment and conducted structured observations to discover the problems connected with the performance of daily activities, and speech and communication issues due to oral-motor dysfunction. After need assessment and comprehensive observation of existing functional difficulties group discussion and negotiation of intervention approaches were identified mainly by speech and occupational therapists. According to the information provided by the study participants, in case of oral-motor dysfunction, the intervention work with the child is usually started by the occupational therapist based on the need assessment results.

Describing the opinion of the study participants, great attention had to be given to the psychological problems of the children having oral-motor dysfunction. In some cases, the initial stage of the intervention was carried out by the psychologist only, as the child refused to take part in the rehabilitation process and work with other specialists. And after dealing with the psychological problems the rehabilitation team could effectively start the intervention.

Since oral-motor dysfunction is characterized as a set of multiple limitations and constraints everyone needed unique and individual support from the specialists working with them. In particular, the occupational therapist worked to restore sensory problems during oral-motor dysfunction that could appear not only in the oral cavity but also in other parts of the body as well. Dealing with the proprioception issues that could be a result of muscle tone problems OT intervention had vital importance and was considered a starting point for other specialists since the child could not have imagined where the mouth was on the face.

In particular, in the case of oral-motor dysfunction, speech therapists and occupational therapists performed massages within the framework of individual intervention, but they were different from professional perspectives and had separate goals. Thus, the speech therapist performed a general massage of the face, gradually massaging towards the oral cavity contributing to the reduction of muscle tension during the formation of sounds and speech pronunciation in children. At the same time in the

framework of OT intervention, the facial muscle massages were aimed at regulating and overcoming the sensitivity problems to involve the child in performing self-care and other daily activities.

As a result of the data analysis, it was approved that overcoming the above-mentioned problems was largely possible due to both individual rehabilitation work and **the mutually agreed intervention approaches** used by the specialists. These were directed to deal with specific speech disorders and also to enhance the performance of daily life activities. According to the results of data analysis most often **separate and distinct approaches** were used by the pedagogical-psychological group members working with children with oral-motor dysfunction.

In particular, the speech therapist worked in the direction of correct mobility of the speech apparatus, and correct pronunciation of sounds. The psychologist's work was aimed at overcoming the psychological problems of the child, and the occupational therapy intervention was mainly aimed at regulating the sensitivity problems of the facial muscles. However, collaborative work required the application of universal approaches to problem-solving during the implementation of each professional intervention. The application of these universal approaches ensured the effectiveness of the rehabilitation process that aimed at overcoming oral-motor problems.

As a result of the research, the important preconditions of pedagogical-psychological group work cooperation were studied and described, which contribute to increasing the effectiveness of the intervention during oral-motor dysfunction. According to the specialists, **mutually agreed work and team discussions** were especially important, which outlined the directions, working procedures and professional approaches to **ensure the efficiency of the intervention**.

The description of data showed that in the case when a child had not a positive result for a long period, team discussions and analysis of rehabilitation work content made it possible to understand and specify what means and methods should be used to correct the problem, which specialists had to change the direction of intervention and carry out more therapy sessions. There should be cooperative work and group discussions throughout the rehabilitation work, after the work was completed, discussions should be held and an understanding of the results recorded. Collaborative work and group discussions should be present throughout the whole rehabilitation process as well as after the completion of the work for evaluation of the recorded results.

During the analysis of research results the obstacles encountered during the cooperation of the pedagogical-psychological group were also studied and described as follows:

- Lack of mutually agreed work during oral-motor dysfunction
- Absence of comprehensive discussions during the intervention process
- Non-specifying the use of professional intervention approaches

- Pedagogical-psychological group members did not aware of the use of similar intervention methods.

Summarizing the analysis of the results of the conducted research, it could be stated that especially in the case of oral-motor dysfunction, the work of the speech and occupational therapists was the most important and primary, because the occupational and the speech therapists complement each other during therapy intervention but the work of the psychologist should not be excluded as well. During the rehabilitative work of oral-motor dysfunction, group discussions were mainly carried out and led by the doctor, but other members of the pedagogical-psychological group also could hold the discussions. The schedule and duration of discussions were also related to the complexity of the presented problem and the specifics of the professional intervention.

Several important preconditions had to be taken into account while describing the cooperation features of the pedagogical-psychological group members. One of the important prerequisites was **the desire to do mutually agreed and cooperative work with each other**, to have the same knowledge (in the absence of which several problems may arise), to discuss the views of the work being done with each other, to plan the use of approaches while working with the child and to plan the preparations accordingly.

DISCUSSION

The analysis of current research results highlighted the main approaches of pedagogical-psychological group work, which ensure the effectiveness of group work during oral-motor dysfunction. Conducted research convinced the fact that pedagogical-psychological group members' work was very important during oral-motor dysfunction. The cooperation of the pedagogical and psychological groups and the implementation of joint and mutually agreed works have given the opportunity to rich out positive results. Other studies had also addressed the importance of using joint and coordinated intervention approaches in oral-motor disorders since only the performance of united and mutually agreed work of specialists could lead to the desired outcomes (Heather, & Clark, 2005).

Current research again stated the need to use complementary approaches and a clear schedule for organizing group discussions during oral-motor dysfunction that determined the effectiveness of rehabilitation work and ensured desired changes. The rehabilitation work of oral-motor dysfunction required a long-term intervention and the use of special methods, so without the collaboration of multidisciplinary team members there could not be recorded positive outcomes (Lee, 2017; Tian, Yi, Zhang, et., al 2015).

The study emphasized the importance of collaboration between speech and occupational therapists since the provision of oral motor rehabilitation therapy aimed at reducing or eliminating swallowing

disorders and promoting functional feeding (Novak, Morgan, Fahey, et al. 2020). Some other studies suggested that intervention with oral-motor therapy conducted by speech and occupational therapists had a beneficial effect on enhancing functional independence and improving the quality of life (Ernsperger, & Hanson, 2004; Bailey, & Angell, 2005).

As a result of mutually agreed work and intervention, it would be possible to overcome the impact of delayed oral-motor skills, which could play a significant role in determining whether the child would be a successful eater and develop a positive experience with food. For this aim combined work of different specialists helped to consider whether the challenge had originated from a sensory processing perspective or oral-motor difficulty. More importantly, oral discrimination was essential for oral safety and function. When this poses a challenge, children were prone to experiencing food aversions, display sensitivities to textures, tastes, and temperatures and are unable to tolerate certain food types (Kumin, Von Hagel, & Bahr, 2000).

The results of the research showed that the use of mutually agreed approaches by different specialists was also very important during the treatment of oral-motor problems. Treatment plans could vary depending on each child's unique situation. If the child lacks the proper oral-motor skills, a speech therapist can lead him or her through exercises that build the mouth muscles and proper eating techniques (Jadcherla, 2019). If the child has a sensory problem, OT treatment might be recommended or suggested modifying what or how the child was fed (for example, changing the type of utensil or cup) until the child's feeding abilities improved. Hypo-sensitive children might need extra sensory information, such as extra flavouring, to recognize the presence of food. If there's a behavioural component to the child's feeding issue, the treatment plan could include cognitive behaviour therapy (Bala, et., al 2016; Ray, 2015). The analysis of the results of the research made it possible to determine the fact that during the treatment of oral-motor problems, it was very important to plan the direction of the intervention activities, methods, and approaches, and beforehand schedule the group discussions that can lead to creating a reliable atmosphere of cooperative work and establishing stable cooperation between pedagogical-psychological group members.

CONCLUSION

The conducted research allowed us to conclude that during the cooperation of the pedagogical-psychological group members in overcoming the issues of oral-motor dysfunction, many obstacles still existed that sometimes did not allow the group members fully implement the rehabilitation work and record a positive result. The studies carried out during the research work also allowed us to conclude that in the case of oral-motor dysfunction, the desire for the cooperation of specialists, planning the intervention methods, and discussions during the entire intervention were very essential. It was also

important to emphasize the fact that in the case of oral-motor dysfunction, the cooperation of speech and occupational therapists was considered primary. Therefore, taking into account the fact that the rehabilitation work and intervention during oral-motor dysfunction required the use of special approaches and a combination of methods, working cooperatively with the involvement of different specialists was considered to be vital.

Current research concluded that planning the intervention approaches and working methods was very important, also it was quite necessary to use an individual approach based on the degree of oral-motor dysfunction. The results of the study showed the importance of discussions among the pedagogical-psychological group members for identifying the existing problems and highlighting the most appropriate intervention approaches. The summary of research results made it possible to identify the obstacles that appear during cooperative work during oral-motor dysfunction, and the outlined problems were connected with the lack of group meetings, using not agreed intervention approaches, and not using similar methods in rehabilitation work.

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Published by Khachatur Abovyan Armenian State Pedagogical University Publication

The article submitted and sent to review: 28.08.2022

Accepted for publication: 10.01.2023