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Dear Author and dear Reader,

Welcome to the Armenian Journal of Special Education (AJSE). The aim of the AJSE is to give a highly readable and valuable addition to literature related to the field of the special education, inclusion, and rehabilitation. It is our pleasure and goal to enlighten international authors, readers, and reviewers to become highly qualified and skilled writers, critics, and users of special and inclusive education research on international level, as well as advanced researching practices. The journal is a peer reviewed journal in English for the enhancement of research in different areas of special, inclusive education and rehabilitation.

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.

Editorial board of the journal is delighted to publish AJSE in English to echo diverse issues of international and national special, inclusive education and rehabilitation fields that are relevant for up-to-date dispute. We are looking forward and very pleased to receive contributions for our next issue from special educators, rehabilitation ground specialists, researchers, scholars and practitioners to ensure the reliability and the accomplishment of the Journal.

Sincerely,

MARIANNA HARUTYUNYAN

CONTENT

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OVERVIEW AND ANALYSIS OF THE INCLUSIVE WORKING GROUP ACTIVITY AT THE CHESS RESEARCH INSTITUTE

(Case from Armenian State Pedagogical University (2015-2021))

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ABSTRACT

This article aims to summarize and present the analysis of the results of the studies conducted by the inclusive working group of the Chess Research Institute in 2015-2021. Critical discourse analysis was used as a methodology for this study. The inclusive workgroup that functions in the Chess research institute at the Armenian State Pedagogical University has done a range of studies aimed at exploration of the issue of involvement and participation students with special educational needs (SEN) at chess lessons in 2-4 grades, finding out the attitude of chess teachers to learning chess by these students in conditions of total inclusion, and the effect of chess on the mental development of children with SEN. Analysis of the obtained data unveils the fact that there are still lots of effort to pay to provide equal involvement and participation of students with SEN alongside their peers and other studies are needed.

Key words: studies, research, analysis of results, children with special educational needs (SEN), inclusion, involvement and participation at lessons, difficulties of chess teachers.

INTRODUCTION

The aim of the study is critically analyzing of the work that has been done by the inclusive working group at the Chess research institute, ASPU, since its foundation, and present

a summarized overview that will let to outline the future perspectives. To target the defined aim, the objective to summarize the conducted work and exploration of problems that still need to be addressed is determined.

The chess research institute was founded in 2014 having the purpose to comprehensively study the positive and negative impacts of the “Chess” subject implemented in the 2-4 grades in schools in Armenia, in 2011, the effects of interdisciplinary relatedness, the attitude of teachers, students and their parents and a range of other issues. Here we’d like to note that the chess subject in schools is taught both by professional chess players (trained teachers) and by elementary school teachers (teachers who have been trained in chess subjects). The activity of each working group at the Chess research institute is fulfilled on a complementarity, continuity basis.

The experience of many years demonstrates that there is a constant need to conduct studies and research at schools, as since the implementation of the “Chess” subject the chess teachers, because of not having pedagogical education, face lots of problems such as organizational issues related to the big number of students in their classes, provision of teaching materials in accessible and available manner, issues related to interpretation and provision of feedback, application of appropriate methods, means and technics, and so on. However, in the range of these problems the difficulties of chess teachers related to teaching chess to students with SEN should be outlined. They are not trained enough to work in their classes with students who have intellectual disabilities, motor impairments, visual, hearing impairments, who have emotional and behavioral issues, or autistic spectrum disorders, or other developmental issues; and these teachers do not even know how to deal with these children, what kind of psychological and pedagogical methods, approaches and technics can be used in this or that situation. This is the issue that has been studied by the inclusive working group at the Chess research institute- studies and research in the 2-4 grades in schools, analysis and take out of the possibilities and abilities of involvement and participation of students with SEN in the chess lessons. The analysis of data and results of the conducted studies have been summarized in scientific articles, presented at conferences, published both in local and international periodicals.

With deep confidence, we can state that studies in Armenia in the field of teaching chess to children with SEN in school have not been done, as Chess Research Institute was founded in 2014 and the same year research working groups were formed, including the inclusive working group. The same can be stated about the studies all over the world, as chess as a compulsory

subject is not implemented in any country in the world, but Armenia. This determines the difficulties of studies that this working group faces.

METHODOLOGY

Critical discourse analysis of the work of the inclusive working group reflected in 9 articles and 2 manuals allowed us to bring together the results obtained during studies done in 6 years to target the achievements and gaps in chess education in schools for children with SEN. Students of 2-4 graded with special educational needs and their chess teachers have participated in these studies.

Since 2015, different studies and research have been conducted, on the bases of the analysis of their results the inclusive working group has elaborated a set of psychological-pedagogical methods for chess teachers of students with SEN, that provides the opportunity to these teachers to maintain the involvement of these students in chess lessons. These are chess games with therapeutic meaning, tasks and exercises that can be used both by parents and teachers in the work with children with SEN. The mentioned materials are summarized in the following manual (Charchyan & Khudoyan, 2015).

As a direction in 2016, finding out the effect of chess in the process of regulation of the behaviour of children with SEN, studying the behavioural specifications of these children in the chess lessons, exploring the possibilities of regulation of students' behaviour through chess was targeted. For this purpose, methods of observation, analysis of video materials, content analysis were used, and the influence of special methods used in teaching chess subject to children with SEN: collaborative (method of projects, mental map), game method (plot-role games), therapeutic (with thread and dough) and incentive methods. It was found out that during teaching chess lessons, the use of psychological-pedagogical methods provides an opportunity to influence the regulation of children's behaviour. The analysis of the results of the given study is published (Charchyan & Khudoyan, 2016).

Another research aimed to find out the effect of chess on the development of cognitive functions, emotional-volitional qualities of children with SEN, to study and analyze characteristics of the cognitive functions of children of 2-4 grades with SEN at chess lessons, elaborate psychological-pedagogical methods, means and technics for development of cognitive functions of children of 2-4 grades with SEN, assess the influence of chess on the cognitive functions of children with SEN.

For assessment purposes the methods of Shulte tables, memory assessment, sensory perception, speech perception, Ye. Torens' "Finish the image" test was used. At the end of the study, it was recorded that chess had a positive effect on the development of cognitive functions of children with SEN when relevant chess assignments had been periodically used. These children are interested in steps of chess pieces on the chessboard; in the beginning, they had difficulties in concentrating attention, memorizing, perception of the assignments, but after having used a range of technics and special methods they demonstrated abilities to fulfil assignments in the certain interim of time. According to the research results, the level of the cognitive functions of sensory perception (for 66.6% in the 2nd grade, 83.3% in the 3rd grade and 100% in the 4th grade) and the imagination (for 66.6% in the 2nd grade, 83.3% in the 3rd grade and 100% in the 4th grade) among students with SEN significantly increased at the end of the research. The development of the mentioned cognitive functions promoted the development of speech perception and logic (for 88.8% in the 2nd grade, 83,3% in the 3rd grade, and 100% in the 4th grade, attention concentration (for 77.7% in the 2nd grade, 66,6% in the 3rd grade and 75% in the 4th grade), development of spatial representations (for 55.5% in the 2nd grade, 66,6% in the 3rd grade and 75% in the 4th grade) among these students. According to the research data, the perception of speech (instructions), colour, numbers, sensory and space, the traditional, that's the nominative aspect of speech in students with SEN developed, the vocabulary and the semantic field of perception enlarged, the use of abilities of cause-and-effect relationships in thought and speech, functions of analyzes and synthesis, appropriate orientation in time and space developed. The research results are summarized and published (Charchyan & Khudoyan, 2016). Shortly, the results of the study are presented in the table below.

In 2016, the influence of chess on the development of cognitive functions of voluntary attention and memory among children with SEN was studied, either. As a result, we recorded that chess promotes the development of children's attention concentration. This is a function when a child makes a transition from representations to thinking in concrete actions. Chess learning and its positive impact are significant in the development of attention, memory, perception, thinking, imagination, speech and communication, it promotes the development of personal qualities of these children, too. We can state that chess as a pedagogical instrument serves to the cognitive development, demonstration of creative abilities of a child. The results of the studies are summarized in an article (Charchyan, 2016).

Table 1.

Analysis of the results of the development of mental processes among children with Special Educational Needs with the help of chess

Indices of psychological processes understudy	Number of Children with special educational needs engaged n=19											
	Before the research						After the research					
	2nd grade		3rd grade		4th grade		2nd grade		3rd grade		4th grade	
	Number of Children 9	On average %	Number of Children 6	On average %	Number of Children 4	On average %	Number of Children 9	On average %	Number of Children 6	On average %	Number of Children 4	On average %
Attention	2	22,2	1	16,6	2	50	7	77,7	4	66,6	3	75
Memory	1	11,1	2	33,3	1	25	6	66,6	5	83,3	2	50
Sensory perception	2	22,2	2	33,3	1	25	6	88,8	5	83,3	4	100
Speech perception and logic	2	22,1	3	50	1	25	8	66,6	5	83,3	3	75
Imagination	4	44,4	2	33,3	3	75	8	88,8	4	66,6	4	100
Space conception	3	33,3	2	33,3	2	50	5	55,5	4	66,6	3	75

Another direction chosen for the studies was an exploration of the role and effect of chess on the learning functions of students with SEN, the importance of chess and their attitude to chess, and the influence of chess on emotional intelligence. For this purpose, children with SEN were offered to write an essay on the following topic: "What did chess give to me?", where a few types of emotional intelligence of 2-4th grades students were reflected, content analysis of the essays was conducted. As a result of the contextual analysis of the essays the concrete attitude of students to the chess subject, the possible effect of chess on children's behavior were revealed; this is how it was formulated by children: chess develops patience, ability to wait, striving to achieve the goal, self-confidence, ability to collaborate. As chess includes collaborative elements, children were offered to periodically change their partners, to solve the chess tasks and assignments in groups, moreover, in each group a student with SEN should be involved who had to offer the first step to solve the problem independently and discuss it with the other members of the group. We also recorded significant changes in the behavior of children with SEN, in the behavior not only during the chess but during other lessons. If before a student with SEN used to demonstrate communication problems and was, somewhat, alien in the group, after the experience, during the Math lesson, e.g., they tried to

cooperate with other children whom they had played a chess game with, some changes were noticed in the self-management, patience, self-confidence, attention concentration and other functions and abilities among these children (Charchyan & Artenyan, 2016).

In 2017, the inclusive working group chose, as a study direction, the development of the ability of advanced reflectivity through chess. Advanced reflectivity in chess is important concerning drawing the sequence of expected steps and actions. During a chess game, the students continually seek to intuitively predict and anticipate the partner's actions. As a result of the analysis of our research data, it was evident that children often apply advanced reflectivity while playing chess. When making decisions, the students rely not only on the current situation but also on what is going to happen. That means, the students use the ability of advanced reflectivity as a means to predict actions. And chess can be used as a tool to develop the ability of advanced reflectivity (Khudoyan & Charchyan, 2017).

According to the research direction chosen by the inclusive working group in 2018-2019, studies were conducted in the 2-4 grades of the special school 14 for children with visual impairments in Yerevan, where children with visual impairments and other developmental issues (intellectual, physical, hearing, speech disorders) combined with visual impairments get an education. The study goal was to explore the involvement and participation of children with visual impairments in chess lessons and to find out the peculiarities of learning chess by students and the difficulties that chess teachers face.

As a result of our studies, we revealed and registered a few difficulties that children with visual impairments experience during chess lessons:

- due to the disorders of spatial representations, students with visual impairments have difficulties in perception and understanding, to be oriented on the chessboard;
- they have difficulties in comprehending the differences between their own and partner's chess pieces;
- they do not feel when the partner makes a step with the chess piece and finishes, the teacher says who's turn is to take a step;
- they are not able to see their partner's look, facial expressions and emotions.

The analysis of the results of this study is published in another scientific research paper (Charchyan & Kostanyan, 2019). In 2019, the inclusive working group initiated studies in the 2-4th grades of schools N l92, 125, 135, 6, 60 that provide inclusive education. The goal of the study was to explore the difficulties of chess teachers in teaching chess subjects to students

with SEN and of students with SEN acquiring chess knowledge, the participation and involvement in chess lessons of these students, and to find out how chess as a means and tool affects the intellectual development of these students.

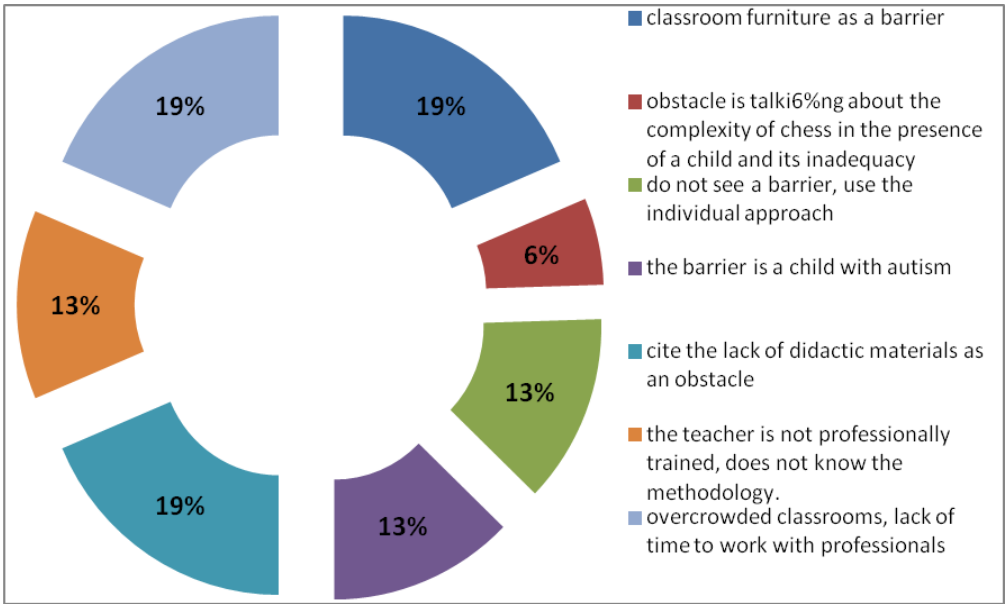
To reach these goals, the methods of conversation, interview, observation, questionnaire analysis, content analysis were applied, in addition to the mentioned methods other special methods to impact the behaviour of students with SEN for teaching chess were used, too: collaborative, playing (cards, puzzles), PCS (picture communication symbols) communication methods, therapeutic (activities with dough) and incentive methods. At the end of the study, we have recorded that during teaching chess the use of special psychological-pedagogical methods provides an opportunity to involve students in the chess lessons, to make these lessons more interesting and to promote the acquisition of chess knowledge: the steps the chess pieces, spatial aspects, etc. (Charchyan, 2019).

In 2020-2021, the teaching manual, "Waiting for step", was elaborated and designed, that is adapted to the educational needs of students with SEN and serves as a guide to chess teachers. In the manual, tasks of different complexity, a range of methods to teach chess to children with different developmental issues are suggested. The manual is in the publishing process.

In 2021, another study by the inclusive working group at the Chess research institute was conducted in Yerevan with chess teachers who teach chess to students with autism to reveal their difficulties, of methods to involve these students in chess lessons and to record the successful and unsuccessful attempts the teachers had in the work with students with autism. As a result of the data analysis, it was found out that the chess teachers mainly need psychological-pedagogical methods that will assist them in the work with children with autism, specifically in the process of involvement of these students. Chess teachers outlined the importance of training on work with students with autistic spectrum disorder, they envision the efficiency of their work in their collaboration with the multidisciplinary team. The results of the study are comprised in the mentioned article (Karapetyan & Charchyan, 2021). Results of the study are presented in bellow mentioned chart.

Picture 1.

Main Barriers to Inclusion of Students with Autism in Chess Lessons and Opportunities According to Teachers.



Around 19% of teachers cite classroom furniture as a barrier; they do not always succeed in communicating in distance learning. 6% of teacher thinks that the obstacle is talking about the complexity of chess in the presence of a child and its inadequacy. Around 13% of them does not see a barrier, use the individual approach, and around 13% of teachers think that the barrier is a child with autism, and the possibility is that other students help these children, communicate in class. during: around 19% of the respondents cites the lack of didactic materials as an obstacle (they have one board for the whole class). Around 13% of the teachers state that the teacher is not professionally trained, does not know the methodology. Around 19% mentions overcrowded classrooms, lack of time to work with professionals and identify opportunities to identify children's strengths.

Most of the teachers mentioned that the students are mainly involved in chess lessons, they are involved due to group work, although they note that they do not know the techniques and methods of working with children with autism, they find it difficult. It would be good for specialists to teach. Some teachers say that 50% are involved in 2nd grade, but in 3rd grade, as the program becomes more complicated, the teacher spends more on presenting the lesson, leaving no time for these children. Children with autism are more involved in the practical lessons than the assignments, for example, learning the board, arranging the pieces, knowing the names of the fields, and so on. There were teachers who, objectively assessing the situation, said that if they evaluate on a 10-point scale, it can be said that they are included with 3-5

points because not everyone has access to chess, they do not speak, but write the task like other children, children with autism cannot be 100% included. There have been teachers who have said that these children are not included, they are just present.

In the given study, the chess teachers' successful and unsuccessful cases were explored; teachers participated in the study equally (6 %) mentioned about them:

- Apply to assistance,
- Use group games, assign points for discipline, encourage with grades, have a positive attitude towards the child, individual approach, encourage and praise,
- Pay importance to homework, teacher-parent-classmate relationship,
- Think that the student's more active participation, mastering the chess material, answering questions is considered a successful experience by the teacher.
- Mention a case when a child with autism, who did not come out from under the table at the beginning of the year, where he spat, hit those who approached him, months later, thanks to the teacher's efforts, sat at the table to do some tasks, such as painting,
- Report overcoming the anxiety caused by a failed experience with a child with autism as a result of working with a specialist.
- Use the teamwork to socialize when classmates help a classmate with autism,
- Say if a child does what he says (the name of the piece, show the piece), he lets him draw,
- Consider the increase in the child's interest in chess as their success,
- State the child's ability to play independently as a success,
- Emphasize giving a few simple, non-tiring and non-boring tasks to children,
- State that they involve the child in chess lessons using assignments,
- Consider not separating children when a student voluntarily joins the role of a teacher and attaches a child with autism. The other students in the class also want to help their classmates with autism.

In this context, the inclusive working group has collaborated with the social project on the chess for children with autistic spectrum disorders, "Infinite Chess", organized by FIDE, as a teum member, along with specialists from Belarus, Canada, has contributed to the development and adaptation of chess tasks for teaching chess to children with autistic spectrum disorders. The goal of the elaboration of the material was to make interesting and easy to organize chess lessons for children with autism, motivate them with the tasks provided. A two-

day international online workshop in frames of these projects was conducted in October 2021. The link to this workshop and chess lessons can be found on the FIDE website.

DISCUSSIONS

The studies conducted by the inclusive working group of the Chess research institute are valuable regarding the exploration of the chess teachers difficulties while working with students with SEN, the difficulties of these students at chess lessons and the effect of chess lessons on these students cognitive, social-emotional development and behaviour. However, these studies are not enough and should be continuous to fill in the gaps in the teaching chess to these children, such as approval of the efficacy of chess as a therapeutic method in the work with them, elaboration of methods, means and technics of sufficient teaching and involvement of these children in chess lessons, to change teachers' attitude towards the importance of chess for the mental development of students with SEN. The studies are mainly conducted in Yerevan, so to obtain a full picture of issues that arise in teaching in schools in Armenia to children with SEN, broader studies are required that can, we assume, show that in regional schools the problems that should be addressed are wider, deeper due to lack of trained teachers, lack of materials, school conditions, etc.

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SCHOOL COUNSELLING SYSTEM IN THE CZECH REPUBLIC

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ABSTRACT

The article deals with the issue of school counselling in the Czech Republic. It informs about the activities of the school counselling centre and characterizes the work of educational advisers, school prevention specialists, school psychologists and special school educators in contemporary schools. In conclusion, current trends are outlined that lead to the professionalization of school counselling and ensure better conditions for the education of pupils with special educational needs.

Keywords: school counselling, educational advisers, school prevention specialists, school psychologists, special school educators, students with special educational needs

INTRODUCTION

The school usually reflects the society in which it is currently located, with values and principles projected therein, on which people in the community not only base their views but the problems that the society experiences as well.

The current period is characterized as hasty, hectic, disparaging moral values and unfeeling towards children and young people are often perceived by the community as problematic. The adverse phenomena of the contemporary society affect all areas of life, including education. The changing society affects people's attitudes, reflects logically in the functioning of school institutions, thereby affecting the change in the life of the school and work of their actors. The school, being educational in its main features, has a large area of action.

Ever-increasing requirements to educate professionals and instill human values are set for teachers. They complete the school curriculum, they are forced to keep pace e.g. with

technical advances, but they also have to deal with groups and individuals where there is a higher risk of undesirable behaviour - truancy, bullying, aggressive behaviour, vandalism, substance abuse, etc. or the so-called risk behaviour. We are troubled by the liberal approach to these pathological manifestations, where the underestimation of the impact of, for example, computer games, alcohol drinking and the growing influence of the media is a major trigger for a wide range of pathological behaviour and has a significant impact on the attitudes of young people to education and solutions to everyday problems.

We know very well that all these undesirable behaviours affect not only the education of students, but also the working conditions for teachers, professional workload of educators, demands on expertise as well as personal characteristics of teachers. There is an increased pressure on the creation of new jobs in schools (besides the teacher, it is the guidance counsellor, school prevention specialist, school psychologist, special education teacher, personal assistant, teacher's assistant, etc.). There are voices that emphasize the involvement of social educators in schools in order to expand the cooperation limits with the family. All of these experts are supposed to assist with behavioural and educational problems of pupils, in which the teacher is either not specialized, or simply not capable to deal with. The ideal situation, when there is working cooperation and coordination between all of the above positions in the school, i.e. the so-called school counselling office, is rather fiction in the current elementary and secondary schools. The aim of this paper is to offer readers a picture of school guidance of counsellors' activities at schools in the Czech Republic and point out some deficiencies and significant changes that should lead to the professionalization of school counselling.

COUNSELLING SYSTEM IN CZECH REPUBLIC

In the Czech Republic, there are several counselling systems at work. Social functions, tasks, content, forms and methods of work of various counselling bodies differ in terms of the range of issues and problems they help to solve.

The first of these falls under **the province of the Ministry of Education, Youth and Sports (MEYS)**. Professional solutions to the problems in education, problems of optimal use of intellectual and other mental prerequisites for acquiring new knowledge and skills require the closest possible links between the school and psychological science; it focuses mainly on the pedagogical-psychological counselling, educational and career guidance.

The second counselling system falls under **the province of the Ministry of Labour and Social Affairs (MLSA)** and provides counselling services especially in the field of career counselling, offers counselling services primarily at employment offices where counsellors and intermediaries provide important services in the *Information and Counselling Centres* at employment offices. There is also a certain solution in the context of preventive social services. E.g. Šándorová mentions the possibility of participation for social prevention service, early care. This service creates conditions for successful social integration and is carried out mainly in the child's natural environment - in the family (Šándorová, 2005).

The third counselling system is **part of the Ministry of Health** (MH) and provides counselling services primarily aimed at influencing lifestyles and the health status of the population.

COUNSELLING FACILITIES AND INSTITUTIONS IN THE EDUCATION SECTOR

There are a number of subjects participating in the current system of educational and psychological counselling within the responsibility of the Ministry of Education: **ministerial departments of the Ministry of Education**, **school counselling facilities** and the schools themselves through the **school counselling department**.

In terms of legislation, the educational and psychological counselling services are enshrined in Act No. 561/2004 Collection of Law, on Preschool, Primary, Secondary, Tertiary Professional and Other Education (Education Act), therefore being an integral part of the educational system.

Basic support in the educational and psychological counselling sphere is provided by **the school counselling offices (SCO)**; the second pillar is formed by **the school counselling facilities**, i.e. **pedagogical and psychological counselling offices (PPCO)** and **special pedagogical centres (SPC)**. The counselling facilities also include **the educational care centres (ECC)**, which do not have the status of school counselling facilities – they are part of facilities for institutional or protective care[1]and act as a preventive educational facility for children with risky behaviour.

At all types of schools, i.e. primary, secondary and higher vocational schools, counselling plays a very important role, implements supporting and assisting activities and thus contributes to the personal growth of students, being instrumental in optimizing the educational process

[1] *The Czech Republic. MEYS: Act No.109/2002 Collection of Law, on the Execution of Institutional and Protective Education in School Facilities and on Preventive Educational Care in School Facilities.*

and preventing and solving problems related to education and upbringing (The Czech Republic. MEYS: Act No.109/2002). The task of the school is to ensure the availability of educational and psychological services in the school itself as well as the necessary quality of those services. High demands and professional pedagogical and psychological skills are required especially from educational counsellors and prevention specialists. Also, teachers are required to acquire new and deeper pedagogical-psychological skills. Schools strive to establish specialized counselling centres in order to create conditions for the early detection of problems in education, conditions for solving teaching and personal problems of students, career counselling and also create conditions for the inclusion of pupils with special educational needs. An important area is prevention of risky behaviour, particularly bullying and various forms of aggressive behaviour, substance abuse and social exclusion. Another very important area, which in the long term is also prevention of insufficient education and long-term unemployment, is career counselling.

Counselling services are not new to the current schools and under the existing law they have been a supportive school system since 2005. However, the changes taking place in the society are reflected in the needs of users of the pedagogical-psychological services. Schools are expected to change the content and organization of the educational and psychological services provided.

A comprehensive change in counselling services has been brought about by the amendment of counselling regulations (Decree No. 72/2005 Collection of Law). Due to the wide range of activities performed by the counselling facilities, the area of the changes is quite extensive and it is not the aim of the paper to describe and give reasons for all the changes. In essence, however, the overall concept of counselling is now evolving from a medical model into a pedagogical model (Homolova, 2013) from determining diagnoses into adjusting the degree of supportive measures. According to Mertin (2013), the problem is that the school system insists on "the paper", i.e. first, it is necessary to determine a diagnosis and then we can work with the child differently. Philosophy of change aims to individualize school work, which means that first the teacher has to help himself/herself. Only if he/she fails to find a good way after repeated efforts, he/she turns to the experts. This brings with it greater demands on teachers themselves and on the expertise of the school counselling staff when the rapid assistance by a counselling expert, albeit only through consultation, can help the teacher enormously. The problem is that schools (and counselling staff particularly) are required to perform activities, for which the necessary conditions have not been established.

SCHOOL COUNSELLING OFFICE

The school is an environment in which students spend a great deal of time. It is therefore a place familiar to them, and therefore an environment in which they manifest themselves most openly. The school counselling office (SPP) is the designation for a team of counsellors who work with pupils in the school environment and thus have a considerable potential to capture signals that something is wrong with the pupils - and respond in a timely manner. They can work not only on the level of prevention, but by early intervention. They can also significantly affect the progress and development of a number of problems which may not directly threaten the life or health of students, but are quite common (poor school results, problems in relationships, career choice etc.). The school counselling office should serve as a sort of bridge for these pupils. It should encourage an intimate climate within the school, which would enable students to seek help naturally and without being forced to, especially when they should subjectively need it themselves. The schools seek to create a fully functional school counselling office that provides counselling and consulting services for pupils, their legal guardians and teachers. The headmaster or an appointed deputy director is responsible for providing counselling services in the school. The current situation in schools shows that schools are claiming increased demand for educational and psychological services. At most schools, unfortunately, there is only **a basic model of the school counselling office,** i.e. there is only **a guidance counsellor** and **a school prevention specialist** working in the school within their full time employment (Ehlová, 2016).

Based on the Counselling Services Concept (The Czech Republic. MEYS, 2005), the division into full and incomplete counselling offices was introduced where the **basic** variant (incomplete counselling office) includes a guidance counsellor, school prevention specialist as well as classroom teachers, art and music teachers and a specialized methodology teacher for the preparation of school educational programmes. The **extended** variant (full school counselling office) supplements the basic variant with a school psychologist and/or school special educator. The fact that there are psychologists working at some schools, especially elementary schools, was initially allowed by economic projects co-financed by the European Social Fund (ESF) and the Czech Republic. All these projects followed one another in terms of time and programme up since 2005. Initially, it was the introduction of the position of school psychologists and school special education teachers, and then the projects were targeted to support the development and methodological guidance of school counselling services. After the completion of the projects, schools must seek means for maintaining the position of the school psychologist and/or the school special education teacher. Whether these positions are staffed by

the school is decided by the headmaster with particular regard to the economic situation of the school.

Currently, there are guidance counsellors and school prevention specialists working in the field of school counselling at all schools (except for small schools) counsellors, while in exceptional cases, both of these jobs are performed by one teacher. It is thus a basic SCO model. Some schools then complement the services of this teaching staff with services of school psychologists and school special education teachers (mostly in the form of external collaboration or part time jobs). Practice shows that the presence of a school psychologist or a school special education teacher is desirable especially in schools that educate a large number of students from disadvantaged backgrounds and students with special educational needs.

For the SCO to work properly, close cooperation between the counsellors is necessary. At many schools, these offices are passive teams, i.e. the counsellors know about each other, but they do not always communicate with each other when finding solutions to problems, they rarely share information about the steps taken by their colleague, their services overlap, they meet minimally or not at all, rarely communicate with each other, sometimes only by phone or e-mail (Ehlová, 2016). If we want to create an active counselling team of experts, it is necessary for the team members to meet regularly, look for possibilities of solving problems in a managed way, invite pupils and their parents to meetings if need be and consult suggestions for solutions with them.

According to Hellebrandová (2006) the biggest barriers hindering multidisciplinary cooperation or even making it impossible - the different status of the professions, competition between organizations and experts, stereotypes, lack of confidence in the competence of other experts in the team, the unclear roles, lack of cooperation or power interests.

STAFF OF THE SCHOOL COUNSELLING OFFICE

Guidance counsellor

Guidance counsellor (GC) is a teacher appointed by the headmaster to perform professional counselling services beyond his/her normal teaching activities. According to the Education Act (The Czech Republic. MEYS: Act No. 561/2004), the guidance counsellor has to work on all primary, secondary and higher vocational schools. With the changes in social needs after 1989, the role of educational advisers transformed as well and their activities today represent a modern counselling service with relatively clearly defined areas of services. With regard to the scope of their activities, the currently used term *"guidance counsellor"* and

"educational guidance" feels a bit outdated. The present concept views the guidance counsellor not as someone who guides or provides guidance to parents, but as someone who provides professional assistance to students and their parents in solving problems related to education.

Given his/her daily presence and thus easy availability at school, the guidance counsellor is often the first adult person to whom the student or his parents turn with their problem. The required competence lies in the completion of specialized studies for school counsellors covering 250 hours, which takes place in the context of lifelong learning (Decree No. 317/2005 Collection of Law). The studies emphasize particular disciplines focused on education and school counselling, vocational and career counselling, counselling to support talented and gifted individuals, counselling focused on preventing and dealing with socio-pathological phenomena. Professional erudition also means the ability to work with the school as a system, communicate about students' problems with the school management, with teachers and parents and thereby create a collaborative environment that helps in solving problems of individual students and entire classes. The role of these professionals in the schools is significantly preventive as well as therapeutic and intervention-based. An equally important task of the guidance counsellor is to provide professional career development counselling services, which is followed by specialized services provided by other entities. The aim is to increase the efficiency of the choice of profession in accordance with the possibilities and individual abilities of students so that their choice coincides with societal demands. Career counselling should be seen as a bridge between the worlds of education and work. Above all, cooperation and coordination between the two systems is necessary.

Given that the counsellor provides counselling services in addition to his/her other job (teacher, headmaster, deputy headmaster), the extent of his/her educational activities gets reduced. The weekly extent of counselling services varies according to the number of pupils in the school. The guidance counsellor's weekly extent of direct teaching activities is correspondingly reduced from 1 to 5 hours. The low number of teaching hours of the reduced workload really begs a discussion of whether or not the guidance counsellor has sufficient space to perform quality counselling. The probability that this activity will turn, for reasons of time constraints, into routine administration in the form of, for example, administration of applications for secondary or higher vocational schools and universities and thereby overlays major consulting services is very high.

Due to the low number of lessons, guidance counsellors can do no more than monitor emerging problems, but they do not have space to implement measures and long-term care of pupils. Situations in practice appear to be problematic when headmasters have excessive

demands on the counsellors' activities, but have only minimal capacities to create adequate labour conditions for them in the school. Also, students' parents have the notion that counsellors are professionals having a special, profound knowledge and effective recipes for every problem. Unfortunately, they often do not accept their fault, expecting positive changes with minimum endeavour. Subsequently, they measure the counsellor's quality using criteria of practical changes and rapid solutions to often complex problems. Such an expected ideal of services shifts the counsellor's role into a sort of a mission that brings with it unrealistic demands on qualification and the amount of time spent, which together with teaching duties breeds high professional workload.

School prevention specialist

In accordance with the Education Act, the office of school prevention specialist (SPS) is also mandatory in every school. The headmaster appoints a prevention specialist from among the teachers, whose role in implementing effective prevention and anti-drug activities for children and youth in the school is crucial. SPS works primarily in the area of prevention of socially undesirable phenomena. His/her specific tasks include assistance in developing and implementing the programme for the prevention of substance abuse and negative phenomena in the school, innovation of prevention strategies, provision of professional guidance and methodological assistance to teachers with the implementation of the prevention programme, coordination of educational events for teachers, cooperation with institutions that provide professional assistance in the prevention issues, ensuring the awareness of students and parents in the area of prevention as well as care for children who have addiction issues, etc. (Zapletalová, 2010). To be allowed to perform their duties, the school prevention specialists need to have undergone specialized studies within the further education of teachers in the duration of at least 250 teaching hours completed with defence of a final written exam and an examination before the commission.

School prevention specialists also have complicated position as they have no relief for their work from the teaching workload. As is the case of the position of guidance counsellor, it can be assumed that the functionality of the service also depends on personal interest and self-motivation to engage in preventive work with pupils. In a research study carried out by Procházka (2012), the complex issue of implementation of school prevention programme is described and the results suggest problem situations. Teachers are appointed to this position while usually being "forced", i.e. the survey data clearly confirm the assumption of a formal course of introducing this position in practice. The appointment of school prevention specialist

is of great significance for the school only if the teacher has space to actively complete the school prevention concept, monitor and evaluate the activities implemented, and observe and innovate the scheduled programme. The school prevention specialist makes it possible for parents and children to find a mentor and expert at the school who is prepared, motivated and able to carry out prevention and help solve problem educational situations (Procházka, 2012).

At school, there are a number of occasions in which guidance counsellors and prevention specialists work closely together and it is mainly a matter of mutual agreement which one of them will take particular actions. It happens in some smaller schools that this function is cumulated and both positions are occupied by the same teacher (Krejčová, 2010). One of the many disadvantages of such cumulation is too many duties arising from both roles and, at the same time, a minimal chance to share and consult the issues arising with someone at the school and then seek solutions.

School psychologist

Since 1990, there has been a spontaneous demand for **school psychologists** in the Czech Republic, not only in primary schools, but also in secondary and higher vocational schools. Before 2005, school psychologists worked only rarely in schools, usually they were categorized as teachers or headmasters employed them for several hours in a month and paid them as a service to the school. Their activity was not defined in the legislation, they were not given methodological guidance and neither their education was systematically addressed. For the first time, standard activities of these specialists were defined in 2005 and anchored in Decree No. 72/2005 Collection of Law, on providing counselling services in schools and school counselling facilities. Also, the **Concept of Providing Counselling Services in Schools** was created (Krejčová, 2010), which characterized the counselling office as a team of experts comprising of a guidance counsellor, prevention specialist, school psychologist and school special education teacher. These efforts leading to anchoring school psychologists and school special education teachers in Czech elementary and secondary schools culminated in the ESF VIP - Career project. School psychologists and special educators thus started working systematically in schools. At each of the schools, there was one, rarely two experts (school psychologist, school special education teacher) who formed part of the school counselling department. The main objective of the project was to bring psychological and special educational services to pupils, their parents and teachers. This project was followed by other projects supporting the school counselling offices at many other schools. Workloads of the

school psychologist and school special education teacher were co-financed by the European Social Fund and the Czech state budget.

After the completion of projects, schools had to seek means for maintaining the position of the school psychologist and/or school special education teacher. The services of school psychologist may also be provided in cooperation with the counselling psychologist who, at the request of the school, comes to the school only for a few hours a month. In practice, the introduction of school psychologists in schools does not mean that school psychologists substitute the work of educational and psychological counselling offices and counselling psychologists. It is rather a reaction to the increasing prevalence of school problems, causing an increase in the number of clients in the counselling offices. A big advantage of the presence of the school psychologist in the school is timely intervention concerning students with learning difficulties, methodological support to teachers in follow-up care for pupils with specific learning disabilities (SLD) and increased possibility of rapid intervention in emergency situations. By filling the position of school psychologist, it would be possible to reduce the excessive workload of guidance counsellors and other school employees.

School special education teacher

Another counselling position we often encounter in elementary schools and even more often in special schools is that of the special education teacher. Under the Act on Educational Staff (The Czech Republic. MEYS: Act No. 563/2004), special education teachers are required to have completed the accredited master's Education (Special Education) study programme in the field of Special Education. The special education teacher’s role lies in the correction of learning and behavioural disorders and the process of integration of disabled pupils (Zapletalová, 2009). This is how the special education teacher’s activities differ from the above-identified guidance counsellors’ job description. His/her duties include preparing and influencing the conditions for the integration of children with disabilities, long-term monitoring and regular assessment of the integration process of the child, special educational diagnostic activities, re-education care for pupils with special educational needs (Zapletalová, 2001). Their competence covers students with diverse special needs, whether they attend to them through individual re-education and consultations with parents or in group work in the classroom. The Czech School Inspectorate reports that although the elementary school system seeks inclusion (the number of pupils with special educational needs increases) there is a lack of special education teachers in schools (Czech School Inspectorate, 2018). For example, in the Pardubice Region, a total of 46 460 pupils were educated in primary schools in the 2018/2019 school

year, of whom 981 (2.1%) were in special classes. A total of 6,019 (13.0%) pupils were educated with special educational needs (The Annual Report of the Czech School Inspectorate for the School Year 2012/2013). Region Also, secondary schools have a long experience in identifying disadvantaged students and those with disabilities, including students with learning disabilities or behavioural disorders. However, in secondary schools, school special education teachers work rather rarely. Schools therefore rely on cooperation with school counselling facilities and together they prepare specific compensatory and support measures, including individual education plans for integrated pupils.

A risk factor is that apprenticeships show increased incidence of pupils with special educational needs and also their specific support is rather rare (only 17%). While schools have integrated functional systems informing teachers about pupils with special educational needs, including suggested approaches and practices, their own implementation in the classroom is very often only a matter of personal responsibility of individual teachers. Monitoring activities of the managements of conventional secondary schools are only rarely focused in this direction (The Annual Report of the Czech School Inspectorate for the School Year 2012/2013).

RECENT TRANSFORMATIONS OF SCHOOL COUNSELLING SERVICES

The comprehensive change leading to the professionalization of the school counselling system is not related only to the professional staffing of the counselling department at schools. The current trend is to support pupils with special educational needs (SEN) and incorporate them into mainstream education, i.e. into ordinary schools. The basic activities of the guidance counsellor and tasks of the school counselling department also include supporting these students, creating conditions for their education and development and thereby preventing their segregation in the society. Even though education provides significant specific benefits to students with disabilities, it is usually more difficult to achieve adequate educational levels and choose an appropriate study specialization. When choosing schools, in addition to their limits, students are also faced with many obstacles and barriers arising from wider economic, social and technical conditions. To make sure that these students achieve the highest possible level of knowledge and skills with regard to their personal potential, the main mission of schools is to pay great attention to this group of students, including individual counselling care that can only be ensured within the school by high-quality, professionally functioning school counselling department.

Currently, considerable attention is focused on documents dealing with the education of pupils with SEN. In recent years, inclusion in education has been an issue not only for professionals, but also on the political scene. For some representatives of political parties, the issue has become a tool for gaining publicity, or for creating appealing gestures, and that is in particular why inclusion is approached rather emotionally than constructively in the society-wide scale. Political developments have paralyzed this issue and we are failing to establish a professional discussion for its further development in favour of the society or in favour of the school system of the Czech Republic.

In the recent past, we have seen quite a significant transformation of the educational system in the Czech Republic, which began with the adoption of the new Education Act in 2004 and has steadily continued to this day. As part of these changes, all components of the Czech education system are reconsidering their place and function. Despite all the measures adopted, however, the Czech education system is still sharply criticized for the high degree of segregation in education and the ensuing reproduction of social inequality. This criticism has been heard coming from international and national institutions. The ongoing reform is attempting to remedy that situation, but there is no consensus on which system is best suited for education. Representatives of different opinion factions are not able to find a communication platform for a constructive debate.

Within the elementary education system, the system has long been on the road between segregation and integration, and now it finds itself rather somewhere between integration and inclusion. Not all components of the system are ready for this transition, and therefore there is a paradoxical situation where pro-segregation, pro-integration and pro-inclusion activities of educational institutions are mixed together. In an inclusion-oriented school, pupils are not divided into children with needs and children without them, the disabled and the intact, children with a disability or without it. They are all seen as individuals who show a need to take their personal characteristics into account.

The new Education Act, mentioned above repeatedly, introduced the concept of special educational needs. Particularly problematic was the use of the institute of the so called social disadvantage, especially its absent compensation in schools. In general, this model of defining a pupil with special educational needs has been criticized as a whole. The professional community (e.g. Association of Pedagogical-Psychological Counselling Centres) has repeatedly urged a change in legislation in favour of a concept of multi-level support the pupil is supposed to get. It is no longer relevant why the pupil has certain disadvantages, but what

kind of support measures he/she is supposed to get. Each category of support, or its level, would then be properly funded.

At present, there is a new document being produced, the **Catalogue of Support Measures** for students with disabilities and physical handicaps. The Catalogue of Support Measures should serve as a practical guide advising teachers how to work with a child who is failing in the classroom - whether because of his/her physical handicap, mental disability or health or social disadvantage. Every handicap has five levels from the simplest to the one where the student needs entirely individual lessons. Based on this scale, support during the education process is determined. Most of the Catalogue of Support Measures for children with special educational needs has been completed. The Catalogue of Support Measures (Edition 2015) lacks only a separate part focused on supporting pupils with learning disabilities and behaviour. In the future, however, professional and financial opportunities will certainly be found to modularly fine-tune these important-in-practice parts. Based on this guidance material, teachers and counsellors will choose appropriate ways to help children with special educational needs in their inclusion in mainstream schools. The comprehensive manual of the Catalogue of Support Measures has already been introduced in its electronic version, which is now running in trial operation. The Catalogue of Support Measures is internally divided into eight parts that provide pupils with the need for supportive measures, their teachers, but also their parents and other interested parties with an overview of possible means of support in education (Catalogue of Support Measures, 2015-2016).

With the support measures put into practice, which is expected in September 2018, and with the levels of support applied in schools, there will be an increase in demands on communication and cooperation of the entire team school counselling department. It is yet to be seen after it is put into practice whether the new way of support has any actual positive impact in the daily lives of children, parents, teachers and guidance counsellors at the school.

CONCLUSION

The aim of the school counselling services is to ensure consistency between the requirements of the environment and the capabilities of students and respond to their demands. That implies the dual role of counsellors - on the one hand, to help children develop skills appropriate to their age and, on the other hand, to ensure greater sensitivity of schools and the society in relation to the needs of children. The question remains to what extent the current school is ready to reflect the changing needs of children and respond to these changes. The

paper mentioned some areas of the school counselling staff's activities that undoubtedly require a considerable amount of work and great expertise. The ideal situation would be a fully professionally represented school counselling office at every school. In this case, the work of its members would be spread out more and many issues would be resolved more easily and quickly in their fine mutual cooperation.

On the other hand, Zapletalová (2013) mentions that there are only a few countries where such an office is in every school. For example, in Israel or England, but also in Austria or Germany, there are substantially fewer of them than the schools. The work of the counselling staff is unquestionably very extensive and the school environment is very dynamic and fast. Therefore, it is necessary to make sure that counselling services are always flexibly adapted to arising conditions. Therefore, it is necessary to implement an effective support system throughout the area of counselling, and the forthcoming legislative or ideological support is not enough. The functionality of counselling services depends largely on the material support that is consistently overlooked in the Czech school system due to insufficient funding of the entire education system.

Regarding inclusion, experience from abroad shows that embedding inclusion into the education system is not just an isolated matter of education and funds. Inclusion efforts are primarily a social matter. Inclusion of children in mainstream schools has an overlap in care of the family, which lies within the responsibility of other ministries as well. We can see a significant multi-application effect in that other issues are also addressed through the education system and, e.g. the issue of equality and social inclusion. In the Czech Republic, inclusion is the first step, and the consistency, perseverance and ingenuity come next. Still, problems cannot be avoided; the difference lies in the willingness to solve them. European countries that set an example in terms of inclusion show a symbiosis of inclusion and the counselling system. After the Norwegian reform in the 1990s, special schools for handicapped students were transformed into counselling centres for teachers in mainstream schools. These centres provide support to schools in the education of students with special needs, which appears to be - and the experience of schools proves it - a very effective method of coping with the transition of the system to another structure (Kartous, 2015). Teachers from originally special schools do not feel to be sacrificed for the reform; on the contrary, they are in the position of expert counsellors. Regular schools and common teachers thus gain valuable support and assistance in adapting to the education of a larger number of pupils with special educational needs so that they are able to meet the children's needs in the best possible way. All components of the system thus profit without having feelings of injustice that resonate, for example, among Czech

teachers of practical schools out of concern about the future of their jobs and the staff of counselling facilities out of fear of overloading the system.

From the perspective of professionalization of the counselling services, as for the aforementioned changes, it is important that experts in the position of special education teachers or psychologists are present at every school. The comprehensive educational-psychological process will thus take place at the school the pupil attends, and only if not even strong support for education is successful, additional support comes from outside, i.e. from the supporting pedagogical and psychological apparatus.

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COMPARATIVE ANALYSIS OF QUANTITATIVE INDICATORS OF THE PEDAGOGICAL-PSYCHOLOGICAL SUPPORT TEAMS' ACTIVITIES IN ARMENIA

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ABSTRACT

The following study aims to describe and compare the action of pedagogical-psychological support teams within the scope of new functions stated after recent reforms taking place in the Armenian education system. Three regions were selected as pilots within the reforms towards universal inclusive education.

Within the frame of the current study quantitative methodology pursues to compare three regions for a few result variables. Participants of this research are parents of children with special educational needs (n=440), and pedagogical-psychological support team members (n=85) living in Tavush, Lori, and Syunik regions.

In general results of the study reveal the need for pedagogical-psychological support teams and relevant specialists in schools, which is confirmed by the teachers, parents, and teachers' assistants at the school. To hand are some problematic issues between support centers and parents related to the child's further education. Also, serious conflicts with the parents, as the issues of further education of the child involved in inclusive education are not clarified, remain to be on the list.

Keywords: universal inclusive education, pedagogical-psychological support team, pedagogical-psychological support service, parents of children with special educational needs, school, education, teacher, teacher assistant.

INTRODUCTION

To implement the policy of universal inclusive education in the Republic of Armenia, following Article 17.1, Clause 1 of the Law of the Republic of Armenia on General Education, pedagogical-psychological support services for learner education are provided at three levels: School level, regional level, and national level (RA Minister of Education and Science Order N 370-N of April 13, 2017).

At the school level, services are provided to learners who have been duly assessed and identified as having special educational needs. At this level, the services are provided by the pedagogical-psychological support service of the general educational institution (teacher assistant, special pedagogue, psychologist, social pedagogue-nurse). The duration, scope, and provision schedule of support services provided to each learner with special educational needs are developed by the support team of the institution, approved by the principal, who is responsible for ensuring the quality and efficiency of the services. If there is a shortage of the mentioned specialists in the institution, they are invited by the Regional Center serving the given institution (Order N 370-N, point II of the RA Minister of Education and Science of April 13, 2017).

At the regional level, the services are provided by the regional center for pedagogical-psychological support based on the application of the directorate of the secondary education institution or the child's parent/ legal representative. Regional Center specialists visit the school and assist the school support team in developing support services for the learner. In case of a child not attending school /kindergarten/, support is organized at the Regional Center.

After the approval of the Individual Learning Plan, the school principals of the Regional Center and school jointly sign and validate the volume of services provided by the Regional Center to the school (learner, teacher, parent), the schedule and the schedule of the Regional Center's specialists to attend school. In addition, when making the schedule, it should include specialists visiting the school at least once a week. The schedule is attached to the Individual Learning Plan.

If the service provided to the learner requires appropriate adapted space, equipment, and facilities, the Regional Center may, with the consent of the parent, provide the support services based on the Individual Learning Plan of the child. The provision of services to the child in the Regional Center is carried out free of charge, with the funds of the regional Center, after classes, according to the planned duration and volume. At the end of each day, the staff providing support services to the Regional Center records the work done in the relevant sections of the individual curriculum (Order N 370-N, point II of the Minister of Education and Science of April 13, 2017).

The regional center provides the necessary consultancy and professional support on the organization of learner education to the learner's parent, members of the school pedagogical-psychological group, and teachers, providing constant communication between parents, professionals, and teachers in the form of mutual visits, telecommunications, online consultancy (Order N 370-N of 13, point III RA Minister of Education and Science of April 13, 2017). In cases where the analysis of the child's school-level assessment results indicates the likelihood of a child having functional impairment, the institution, with the parent's consent, applies to the Regional Center for a regional-level assessment. Regional level assessments can also be made directly at the request of the parent.

By the order of the Regional Center director, a group of pedagogical staff is formed in the educational institution to assess the child at the regional level, which includes at least 3 specialists of the regional Center: a special pedagogue, a psychologist, and a social pedagogue. This assessment lasts for at least a week, after which the child assessment protocol and the assessment conclusion are developed and submitted (Order N 370-N, point III of the Minister of Education and Science of the Republic of Armenia of April 13, 2017).

METHODOLOGY

Quantitative methodology seeks to compare three regions for few outcome variables (Doody & Bailey, 2016). The quantitative approach is based on developed questioners and tend to be precise and can be categorized as comparative Applicable questions highlight the respondents, dependent variables and design (causal-comparative), and the link between the research question and the design (Onwuegbuzie & Leech 2006; Kloda & Bartlett 2013).

Participants of these research are parents of children with special educational needs (n=440), and pedagogical-psychological support team members (n=85) living in Tavush, Lori and Syunik regions.

DATA ANALYSES AND RESULTS

The data presented in the table below provide an opportunity to refer to the qualitative facts in digital terms, that is, is it possible for such a small support team to provide qualified services to children with special educational needs, and at the same time follow the type and period of planned support services defined by Order N 370-N of the RA Minister of Education and Science of April 13, 2017. The conclusion here is one - definitely not. This viewpoint is shared by both the directors and the members of the support team of all the regional

Pedagogical-Psychological Support Centers of the target regions that participated in the qualitative research.

At the same time, the same order, as part of the support, separately mentions environmental adjustments, which include customized items and technologies for everyday use, assistive devices, accessible literature, Braille books, manuals, and audio materials, large-format material, simplified and easy perceptible and legible material, movable and immovable ramps at entrances and exits, wide doors, thresholds at the floor, adapted toilets, special markings, technologies), equipment and technologies to assist a person with mobility, as well as support for others and extra time. All this should have been the basis for universal inclusion, and the overall process should have been built on existing resources. However, today, three years later, environmental adjustments in schools and support centers are either completely absent or present in very small quantities.

Table1.

The data in the table presents the number of support professionals and children receiving services in three regions

Center by location	Number of assistants	Number of children receiving service
Tavush region		
Dilijan	8	78
Ijevan	14	212
Berd	9	80
Noyemberyan	11	87
Lori Region		
Spitak	30	123
Vanadzor	26	357
Stepanavan	27	223
Alaverdi	13	200
Syunik Region		
Sisian	21	118
Goris	22	128
Kapan	23	136

The above-mentioned becomes a subject of serious consideration for both state and non-state institutions of the Republic of Armenia, which operate within the framework of inclusive education, social and educational issues of children with special educational needs and or disabilities.

One of the preconditions for the effective implementation of any activity related to universal inclusive education is the availability of appropriate environmental conditions, which

presupposes the availability of appropriate conditions for the geographical and physical location, movement, and relocation of the relevant facility.

From this point of view, the availability of the geographical location of the regional pedagogical-psychological centers of the Tavush, Lori, and Syunik regions have been studied according to the ratio of the distance between the center and the settlement (Figure 1, 2, 3).

Most of the surveyed parents in all target regions (Tavush region: fathers 45.5%, mothers 36.6%; Lori region: fathers 87.5%, mothers 73%; Syunik region: fathers 77.8%, mothers 31.9%) considered the geographical location of the Pedagogical-Psychological Support Center unfavorable in the context of the ratio between the settlement and the center. The above-mentioned indicators give rise to quite serious reflections, as the qualitative indicators prove that children with special educational needs visit the regional pedagogical-psychological center only in the Tavush region. While in Lori and Syunik regions, these children mostly receive services at school during visits by support team members. The fact should also be taken into account that children with special educational needs in urban areas receive services at school twice a week, while in rural areas these children receive services only once due to barriers to specialist visits.

The free observation also allowed to reflect on the geographical location of the regional pedagogical-psychological centers and the accessibility of the road leading to those centers. It should be noted that the special schools, which were reorganized into regional centers and built during the Soviet era, are quite far from the settlements, even within the city. Examples of such centers are the regional centers of Vanadzor, Alaverdi, Stepanavan, Kapan, which are difficult to reach not only by private transport (public transport does not work) but also almost inaccessible on foot.

Figure 1.

Geographical location of the Tavush Region Support Center (distance of the center from place of residence).

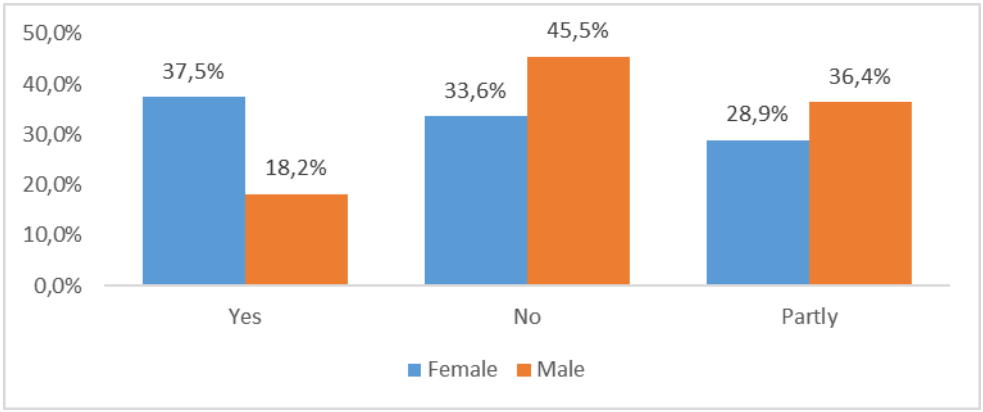


Figure 2.

Geographical location of the Lori Region Support Center (distance of the center from place of residence).

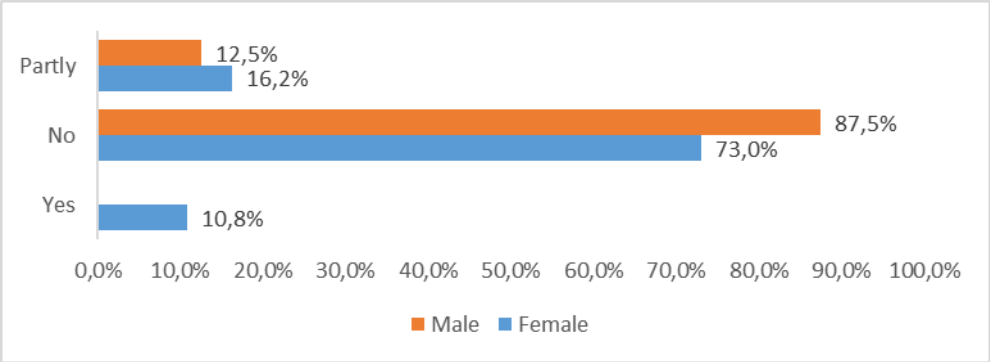
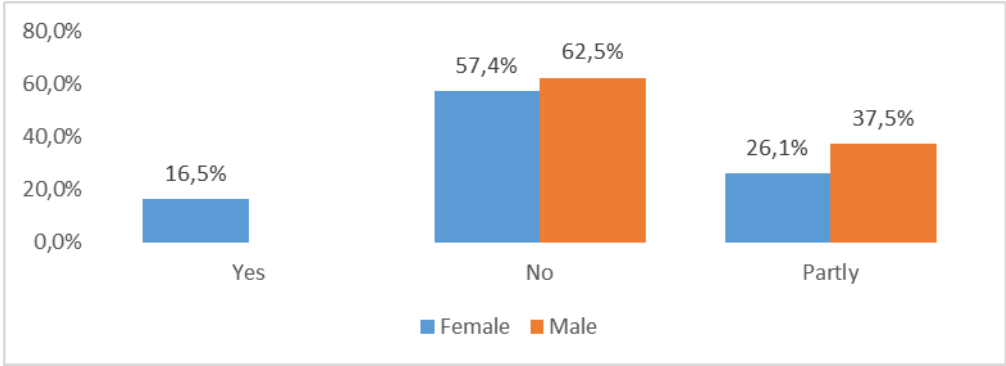


Figure 3.

Geographical location of the Syunik Region Support Center (distance of the center from place of residence).



Taking into account the position of the regional pedagogical-psychological support centers, quantitative and qualitative research was conducted to study the peculiarities of the multidisciplinary team of these centers, their obstacles, and the factors influencing them. It is noteworthy that in all target regions, the number of women in the gender and age group of the multidisciplinary team was predominant (97.4%). Moreover, the age limit of the majority fluctuates between 21-40 years old (see Table 2).

Table 2.

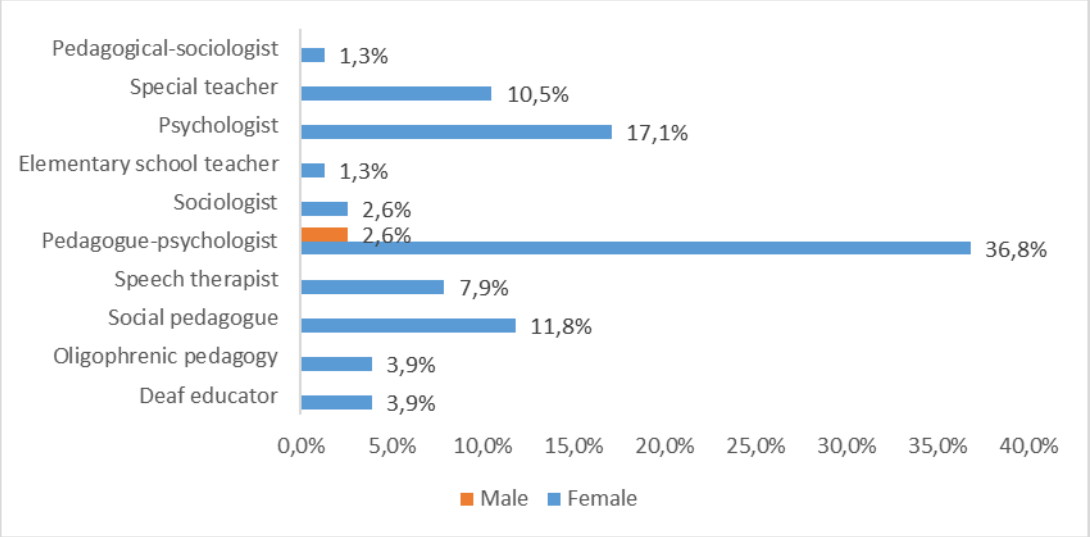
Gender composition.

		Gender		Total
		Female	Male	
Age	21-30	35	1	36
		46.10%	1.30%	47.40%
	31-40	30	1	31
		39.50%	1.30%	40.80%
	41-50	4	0	4
		5.30%	0.00%	5.30%
	51-60	3	0	3
		3.90%	0.00%	3.90%
	61- and above	2	0	2
		2.60%	0.00%	2.60%
Total		74	2	76
		97.40%	2.60%	100.00%

Regarding the profession of the respondents, the majority of the specialists included in the pedagogical-psychological support team of the regional centers were pedagogue-psychologists (36.8%), psychologists (17.1%), and social pedagogues (11.8%). It is noteworthy that according to the adopted regulation, the team of the Regional Pedagogical-Psychological Center provides support services to children with mostly certified special educational needs, with moderate, severe, and profound developmental disabilities, based on which specialists providing special pedagogical services: speech therapist, oligophrenic pedagogue, deaf educator, special pedagogue should have made up the bulk of the team, however, research shows that the presence of these professionals in the team is small (see Figure 4).

Figure 4.

Distribution of professions of specialists working in regional centers by gender



Given the fact that the Regional Pedagogical and Psychological Support Centers serve an average of 158 certified children with developmental disabilities, it is interesting to consider the average number of children receiving services per day.

The figures presented in the table show that the majority of center specialists (58%) serve 1-3 children daily. Moreover, these services are mainly provided by a special pedagogue, psychologist, social worker and a specialist or pedagogue providing pedagogical-psychological support services. It should be added that referring to the qualitative research data, it becomes obvious that the support/special work with each child lasts on average 35-50 minutes.

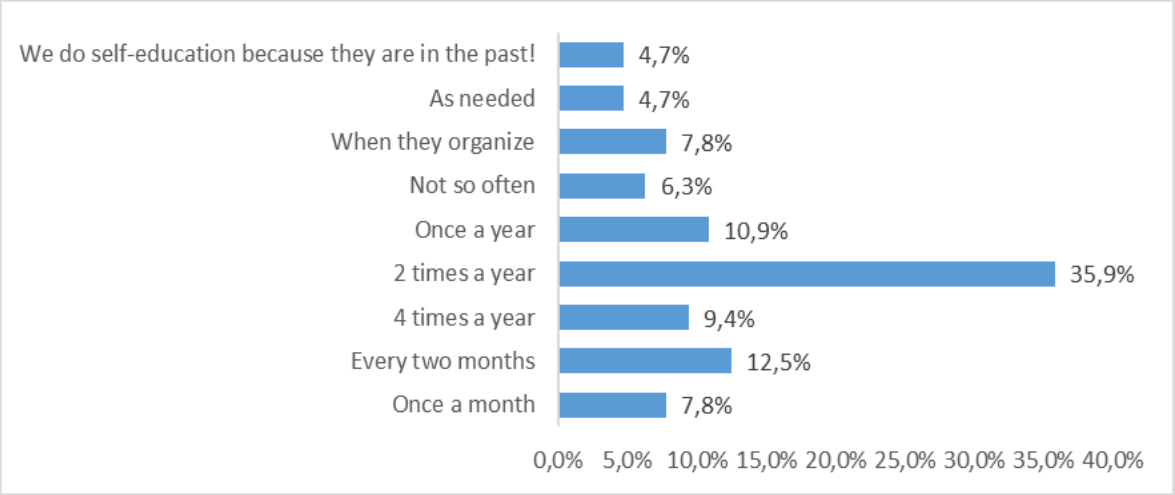
On the other hand, according to experts, the work carried out under the established time norms may sometimes not fix the expected result due to the child's characteristics, socio-economic and socio-cultural factors, for which the specialist has to break organizational norms to increase the effectiveness of support. At the same time, within the framework of the qualitative research, the respondents were not even able to clarify the scope and functions of the specialist or pedagogue providing pedagogical-psychological support services 81.08% of the total support staff participated in the training aimed at improving the skills and professional qualities of the service providers serving these children, the frequency of which is shown in Figure 5. The figures in the chart show that the majority of respondents (36%) attend training twice a year (See Figure 5). The training of other specialists is carried out spontaneously, as needed, through self-education, not so often, which indicates that there is no clear institutional orientation on this issue.

Regarding the content of the training, it should be noted that the majority of specialists give importance to the need for practical work and new methods (22%), training on speech disorders (22%). The need for training with children with special education needs (21%) on social-pedagogical and practical work (11%), as well as courses on autism (12%) was also mentioned as a current topic of training.

Based on the wording of the sectoral definitions of training, it can be stated that the specialists do not have a clear idea of the sectoral divisions; they separated the work organized with children with behavioral disorders from the peculiarities of the work with children with autism. The participants did not clarify the thematic differences between the training for children with complex and multiple problems or with special educational needs, citing the latter as a separate area.

Figure 5.

Frequency of participation in trainings.



Analyzing the problems arising in the process of supporting a child with special educational needs, the conditions for the effective organization of inclusive processes necessary for school, separated by a multidisciplinary team, are especially noteworthy. Moreover, special emphasis is given to physical environment adjustment (28.4%), professional seminars and training (13%), reorganization of schools, professional and environmental re-equipment under the standards of inclusive education (12.4%), development of awareness on inclusive education (8.3%), availability and access of didactic materials and manuals (7.1%) (See Figure 6).

Contrary to these grounded arguments, only 4.7% of respondents stressed the need to clarify the relevant education and functions of a teacher's assistant, and only 2.4% stressed the low number of special education conditions in the classroom.

From this analysis, it is necessary to address the need for training and themes necessary for the effective organization of inclusive education processes, and the results of the surveys conducted within it highlight the following picture (see Figure 7). The majority of respondents (24.2%) need training on behavioral disorders, after which the specialists of the Support Center mention the importance of training on speech disorders, especially stuttering and general speech impairment (21%). As for the need for training on autism, it was highlighted by 14.5% of respondents.

Figure 6.

Indicators of effectively organizing of inclusive processes at school.

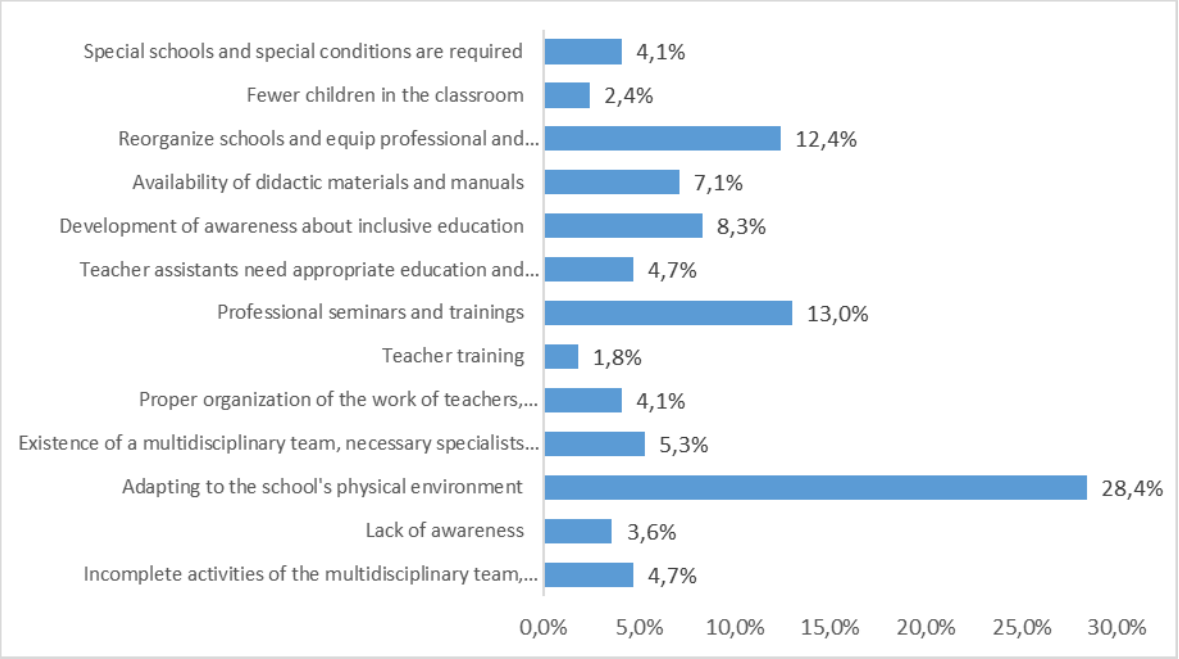
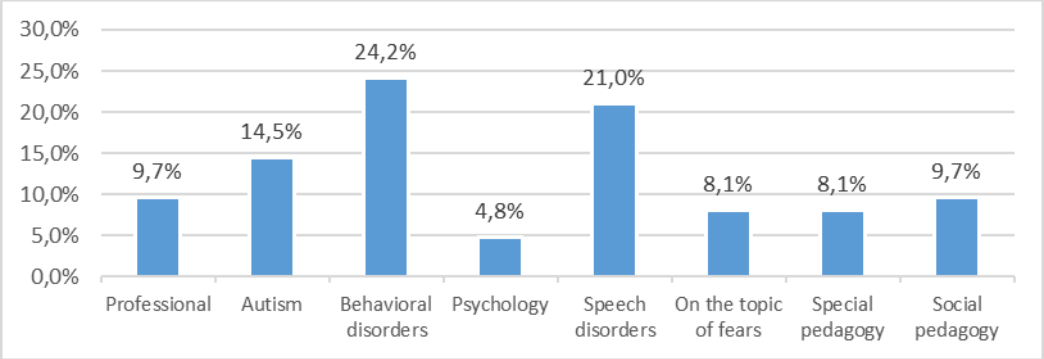


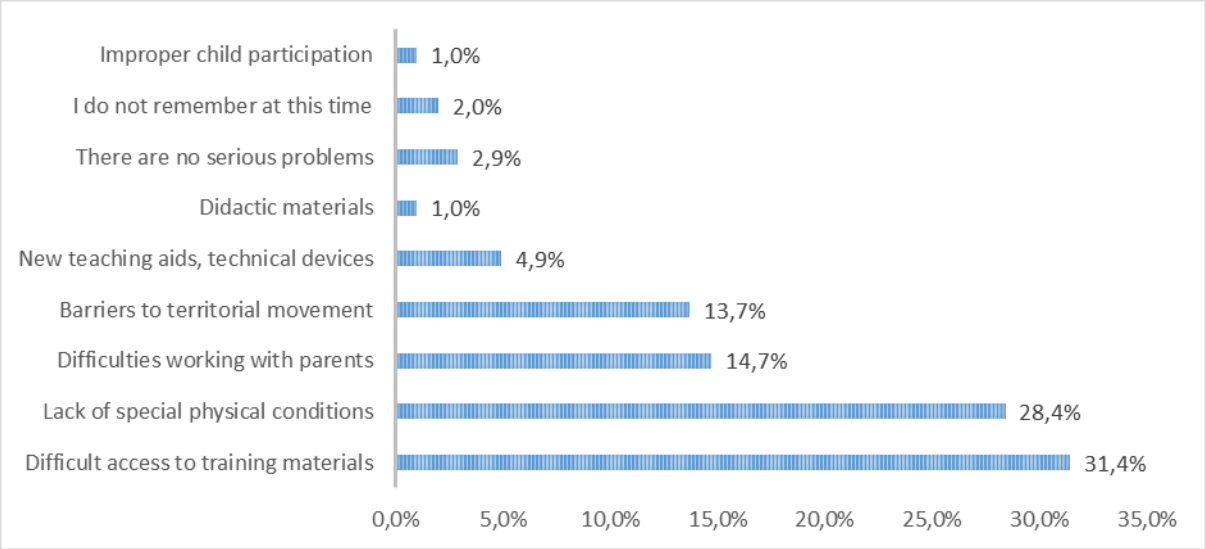
Figure 7.

Needed trainings and topics.



The summary of the results on the problems arising in the process of supporting a child with special educational needs allows concluding that difficult access to educational materials (31.4%) and lacking special physical conditions (28.4%), difficulties in working with parents (14.7%) Obstacles (13.7%) are quite significant in terms of obstructing the work of a multidisciplinary team, which underscores the need for appropriate resources or support tools to improve the quality of this team, according to the results of the survey definitive data. That is, the need for didactic materials (18.5%) and professional literature, methodological manuals, guidelines (15.7%), availability of environmental adjustment and technical equipment (15.7%), tools to facilitate the work (6.5%), and the Importance of new developmental games (5.6%). (See Figure 8).

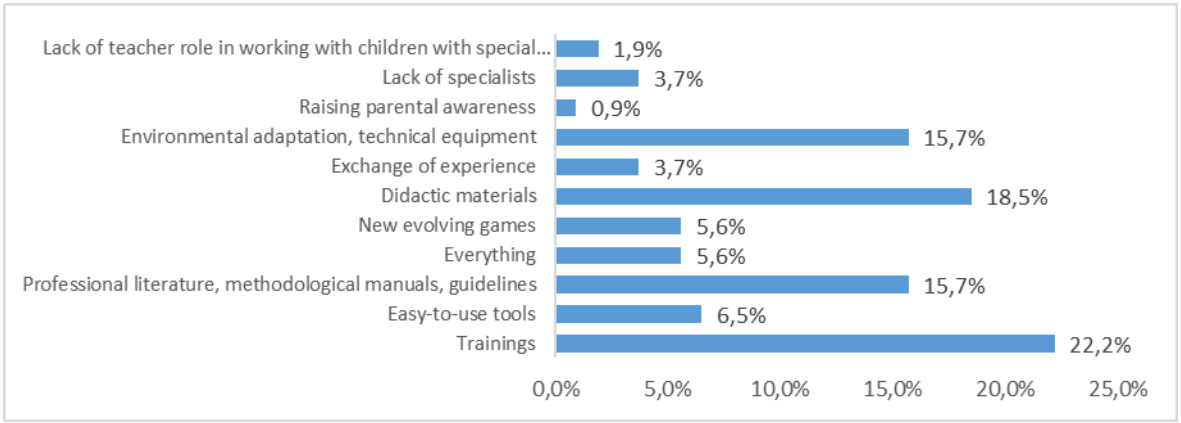
Figure 8.
Main problems of children with special educational needs in the support process.



In contrast to the above percentage, only 3.7% of the specialists supporting the regional centers highlighted in quantitative research the activities of specialists needed to improve the quality of work as an important resource. (See Figure 9) Meanwhile, almost everyone mentioned in the qualitative data collection that the support team was very small, which directly affects the quality of the services provided, this was raised by both the directors of the regional pedagogical and psychological support centers, the support specialists and the school principals and teacher assistants. In fact, this is evidenced by the ratio of the number of specialists in the regional support centers, compared to the number of children in need of support. For example, Vanadzor regional center has 26 support specialists who serve 357 children in need of support.

Figure 9.

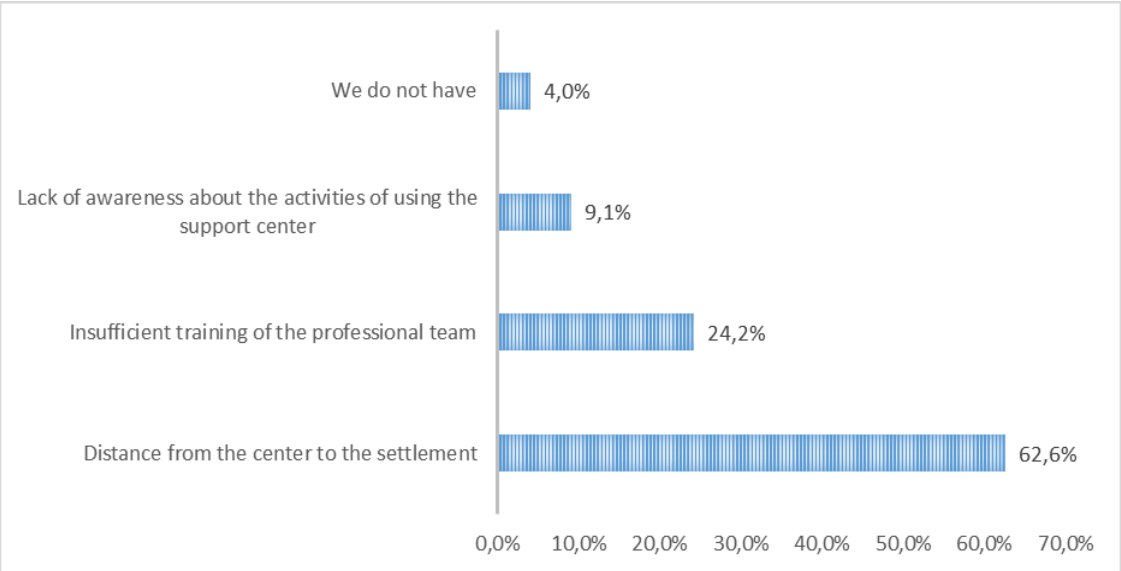
Resources or support tools for improving the work quality.



Surveys to identify difficulties in using the services of the Regional Assistance Center allowed to reveal the following picture. The majority of parents consider the distance from the center (62.6%) as the biggest obstacle to using the services of the regional center, then they mention the insufficient proficiency of the professional team (24.2%), and the lack of awareness about the activities of the support center as a factor. indicates 9.1% of respondents (see Figure 10).

Figure 10.

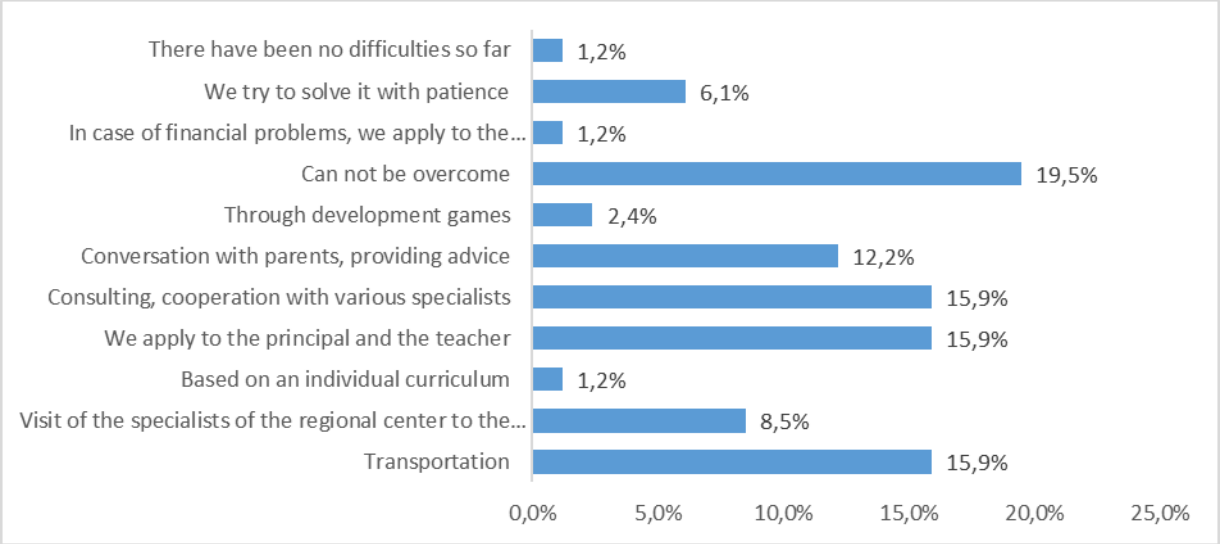
Difficulties faced by the parent and child while using the regional support center.



When asked how they try to overcome the difficulties, the answers given by the members of the multidisciplinary team are worrying in the sense that the majority of the respondents (19.5%) think that these problems are anyway impossible to overcome. Some of them think that transport provision (15.9%), both applying to the principal and the supervisor (15.9%) and consulting and cooperating with different specialists (15.9%) can solve the difficulties that arose. While only 6.1% of the respondents referred to the manifestation of patience, and 8.5% referred to the visit to the school by the specialists of the regional center. It is noteworthy that when perceiving the difficulties, the participants mainly imagined it within the school and did not view it as a problem that arises in the regional center or as an infrastructural problem (see Figure 11).

Figure 11.

Ways of overcoming existing difficulties.



Quantitative analysis of the use of educational standards and support manuals that are important during the multidisciplinary team's activities shows that the majority of professionals (39.4%) prefer the "Development and Education Standards for 0-6-year-olds", 20.2 % give a lot of attention to "Standards for children with mild to moderate mental problems" or other textbooks in the process of organizing their activities, 11.1% mainly use the "Inclusive Education" teaching guide and the book "Special Pedagogy". 11.1% of the respondents mentioned different professional literature, respectively, while the International Classification of the WHO Function indicated 3% of the respondents, and the general education standards 1%. It is also noteworthy that 4% of respondents are convinced that there is no educational standard (see Table 4).

By the way, let us state that the application of the "Standards for the development and education of a child aged 0-6", which is highlighted by the multidisciplinary team, was incomprehensible in this context, first of all for the simple reason that "Standards for the development and education of children from birth to 6 years" (It is noteworthy that this is the correct title of the mentioned criteria, which none of the respondents was able to formulate in their answers) published with the financial support of UNICEF (UNICEF, 2018), which were approved in 2011 by the Ministry of Education, Science, Culture and Sports of the Republic of Armenia are not timely at all. In addition, both in terms of age-leading activities and in terms of preference, they cannot be a guideline and meet the requirements of the universal inclusive education standards; therefore, it was unclear for most professionals (39.4%) to use these standards.

Regarding the "Inclusive Education" teaching guide and the book "Special Pedagogy" published in 2015, the need for which was assessed by 20.2% of the surveyed specialists, we must state that in the first case the teaching guide published by the "Bridge of Hope" NGO is not an educational standard and is only a means of supporting the professional development process of training specialists in the field of inclusive education and teachers of secondary educational institutions. In the second case, referring to the book "Special Pedagogy" as a necessary educational standard, the respondents could not specify the authors of the book, the edition year, and its use as a standard or teaching aid.

The fact that the specialists providing pedagogical-psychological support were not even aware of the educational standards and the need to use them in their work, also stems from the negative position in the field that the activities of specialists in the field of special education are not prioritized within the framework of RA educational reforms giving preference to the functions of teacher assistants, and in practice trying to replace the work of a narrow specialist with specialists who are incomprehensible and do not have the appropriate qualifications. This is why most of the interviewed professionals did not even have information about the staff lists formed during the transition to universal inclusion, their work passports, and roles. This may be the reason why the interviewed specialists were not aware of their functions envisaged by the educational standards and did not have any legislative or legal orientation.

Accepting educational standards and teaching aids as guidelines, however, professionals single out their preferred and effective support methods for working with children with special educational needs. These methods are presented in the chart below, which shows that the main methods used are games development (23.5%), conversation method (14.8%), and art therapy - 9.4%. The data presented in the same table also show that many specialists at the support center had no idea what the so-called "method" was.

Table 4.

Responses regarding educational standards.

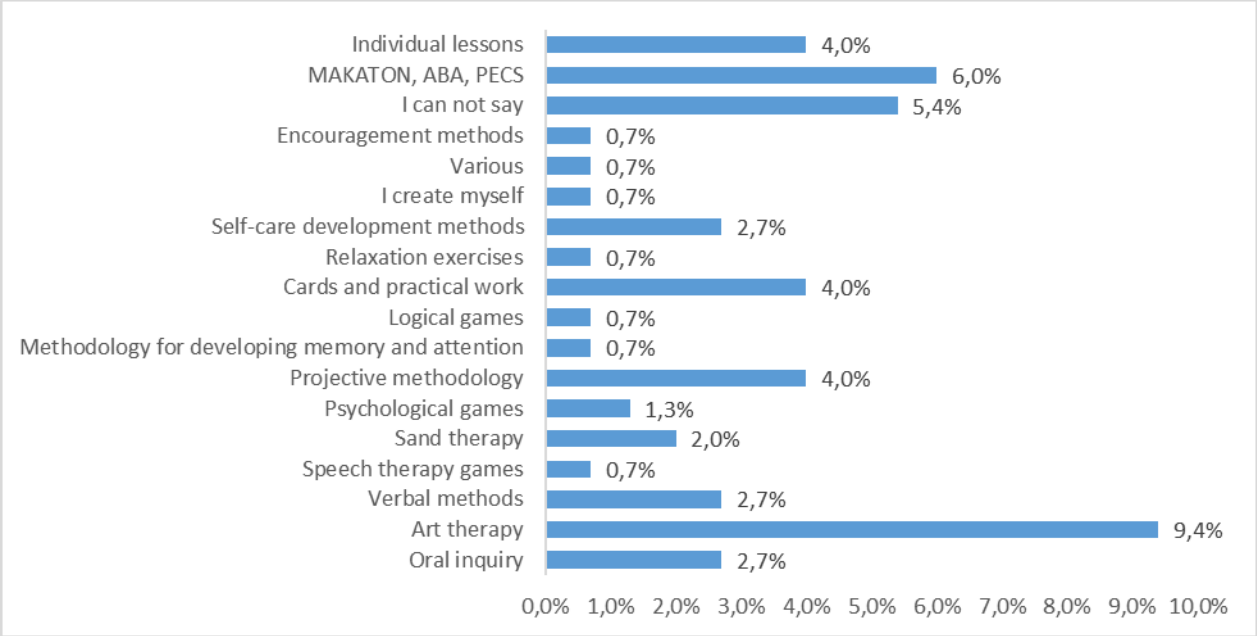
	N	Percentage:
Various professional methodological literature	11	11.10%
Criteria for development and education of a child aged 0-6	39	39.40%
Principles of inclusive education of the child	3	3.00%
Criteria for children with mild to moderate mental problems, other textbooks	20	20.20%
Games	1	1.00%
Individual curriculum	3	3.00%
Inclusive education teaching guide, special pedagogy book	11	11.10%
Speech therapy manuals	1	1.00%
Internet	2	2.00%

General education standards	1	1.00%
We do not have	4	4.00%
International classification of WHO function	3	3.00%
Total	99	100.00%

The percentages are based on the answers, as each respondent could indicate several answers.

This is evidenced by such answers as: "... I cannot mention the method, individual lessons, various, oral questions, I create myself, didactic materials, professional literature, etc ..." (see Figure 12).

Figure 12.
Methods of support used while working with children with special educational needs.



CONCLUSION

Thus, summarizing the presented quantitative analysis, it can be stated that support center visits to schools were also ineffective. Even according to them, getting to school is already a huge waste of time, which is impossible to avoid. Very often it is possible to support one child for only 15 minutes, which is certainly ineffective. Many answers from teachers and parents also testified to that. According to some specialists of the support centers, they are idle until 13:30, because "... there is no child with whom they have to work, instead they wait for the time to go to school…" At the same time, both support centers and school multidisciplinary team members have very low levels of professional knowledge. To the question of what resources are needed, specialists give vague answers, because they do not even know what

didactic materials and methods should be used in the process of teaching children with special educational needs, what materials are needed. Or what special professional and educational games, toys, technical means, or educational and didactic items are there. They have no idea what kind of materials they need or how they can be used. Their lack of professional knowledge is also evidenced by the lack of coordination of their knowledge, abilities and skills, sometimes their complete ignorance. For example, the answer to the question "In case of development, which disorder do you have the most difficulty with?" It is not understood what skills he has as a specialist, what kind of work he lacks, or how his strengths are expressed. "Our work is not a problem for us ..." or "The school has a problem with intellectual disability, not us ..."

The mismatch between the small support team and a large number of certified children cannot be guaranteed quality pedagogical and psychological services. Support centers, mainly due to their inaccessible geographical location, not only deplete effective time management and professional potential, but also deprive many children of access to support centers, access to specialists, and bad weather or other external factors.

There are some problematic issues between support centers and parents related to the child's further education. There are serious conflicts with the parents, as the issues of further education of the child involved in inclusive education are not clarified. That is why parents avoid including their children in the above-mentioned system, they have even caused serious disagreements. They are often concerned only with the question of what will be written in the child's graduation certificate, whether they can continue their education in colleges or other educational institutions with that certificate. In addition, the order of attestation examination for such children is not clear, according to both the school teachers and their parents. Teachers and the school's multidisciplinary team, as well as teaching assistants, often encounter inconsistencies between assessment results and the child's actual abilities.

Also, there are differences in the procedure for providing support services in three regions of Armenia: Tavush, Lori and Syunik, which need to be regulated and clarified. It is worth stating, that the need for multidisciplinary teams and relevant specialists in schools was confirmed by the teachers, parents, and teachers' assistants at the school. Still, the education system is staffed mainly by female educators and the inclusion of male educators in the education system in this system and in general in connection with the upbringing of the generation is of paramount importance.

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THE SITUATION OF DIGITALIZATION OF INCLUSIVE EDUCATION AND THE PROBLEMS IN ARMENIA

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ABSTRACT

There is no doubt to state that the 21st century is the century of digital information and endless technological possibilities. A century when thousands of new high-tech mechanisms are being created at an incredible speed, the main goal of which is the most comfortable and convenient life for people. Digital technologies have filled almost all spheres of human life and activity. Today, a large number of countries in the world have a successful experience in the introduction and use of digital technologies in education. Undoubtedly, they play a special and important role in the education of people with disabilities, the disabled and people with special needs.

The exercise by persons with disabilities of the right to education, a fundamental human right, is fraught with several challenges. The lack of necessary conditions for full participation in the educational process that meet the individual needs and abilities of students, as well as the use of insufficiently effective teaching methods, leads to the fact that the youngest people with disabilities cannot get a good education and profession. The inaccessibility of education is one of the main reasons preventing the full inclusion of disabled people in the life of modern society.

Results of the study indicate that the correct use of the capabilities of modern digital technologies by the teacher will contribute to effective work to overcome violations of psychophysical development.

Key words: digitalization, digitalization inclusive education, technological possibilities, digital transformation of education, e-inclusion, motivation for learning activities.

LITERATURE REVIEW

The problem of barrier-free access to education is of particular importance in the light of the entry into force of the UN Convention on the Rights of Persons with Disabilities, which

indicates the need to ensure the availability of “information and materials in the field of education and training for all children” (Convention on the Rights of Persons with Disabilities - Conventions and agreements - Declarations, conventions, agreements and other legal materials, 2006)

The creation of suitable learning environments for students with disabilities can be achieved through the use of the potential of information and communication technologies. Information and communication technologies allow not only optimize the educational process, increase the availability of educational resources, but also create the necessary prerequisites for the assimilation of knowledge, the activation of creative abilities and the development of a holistic worldview of the individual. Modern information technologies provide disabled people with unique opportunities to receive information, communicate, and carry out research activities, which they were deprived of from birth due to natural disasters, military conflicts or human violence.

Armenian teachers consider the digital transformation of education (DET) to be an inevitable process, including a change in the content, methods and organizational forms of educational activities, unfolding in a very rapidly improving and developing digital educational environment. In their opinion, this process is aimed at fulfilling the tasks of the country's socio-economic development.

Recently, the new term e-inclusion has been added to the concept of inclusion. E-inclusion is the use of digital technologies, which is a complex of technical devices and information and communication technologies (ICT) in the formation of inclusive education (Handbook of Research on ICT-Enabled Transformational Government: A Global Perspective, 2011).

The digital transformation of inclusive education was studied by such scientists as Alyokhina S.V. (Alyokhina S.V., 2013), who presents the difficulties of organizing inclusive education in the modern world developing more than 10 point guidelines to help young teachers organize inclusive lessons. Khukhlaev O.E., Chibisova M.Yu. (Khukhlaev et al., 2015) referred to an inclusive approach to the integration of migrant children in education, which is one of the problems of the modern world - the organization of inclusive education in the conditions of active migration flows. The analysis of Shemanov A.Yu. (Shemanov, 2016) deserves special attention. This paper discusses the application of digital technologies in the development of inclusive education from the point of view of collisions between individual and social models of inclusion, technological determinism and contextual approach. It examines the range of approaches to educational integration. Following K. Abbott, it examines three areas of research of digital technologies (concerning training and repetition, supporting the educational

process and creating learning opportunities). It also regards the place of each approach to the development of inclusion in education. In conclusion, it discusses the problems and perspectives of development of this area of research and development.

The relevance of the study of this topic, no doubt, is determined by its social significance. The number of children with disabilities in the world is almost 240 million, according to a new UNICEF report. Children with disabilities, in contrast to children without disabilities, are in a more unfavorable position when it comes to calculating child welfare criteria.

Also, the relevance of the topic is due to 2 main reasons. The first reason is because of the rapid development of digital devices and information and communication technologies, i.e. digital technologies, greatly change the behavior and lifestyle of a person, including in the learning process. The second, and most important, reason for the relevance of studying this topic is that, despite the active use of digital technologies in the field of education, the concept of using digital technologies in inclusive education remains underdeveloped. When we talk about e-inclusion, it is very important not to oppose general and inclusive education, but to consider the latter as a way of a general reformation of the former, in line with the concept of expanding social inclusion in general.

ANALYSIS OF THE CURRENT SITUATION IN ARMENIA

The Republic of Armenia declares universal inclusive education as a guarantee of ensuring the right to education of every child. The inclusive education policy is aimed at ensuring the quality of access to education for every child, the opportunity for equal participation.

On December 1, 2014, the RA National Assembly adopted the RA Law on Making Amendments to the RA Law on General Education (HO-200-N), which envisages the transition to universal inclusive education in the general education system. According to the law, the system of universal inclusive education will be introduced in the republic by August 1, 2025.

Teacher assistant positions will be introduced in the state secondary schools of the Republic of Armenia, the number of which will be determined by the ratio of 10% of the average annual number of students in the given school, according to the procedure approved by the RA Government (ESCS, 2017). The system of universal inclusive education will be introduced by August 1, 2025, according to the action plan և schedule approved by the Government of the Republic of Armenia.

If observance and execution of these legislative acts are ensured, then, in the end, society will come to understand that "inclusive education is a step towards achieving the ultimate goal - creating an inclusive society.

Both foreign and our experience shows that joint education of children with disabilities (children with disabilities) and healthy children is quite effective, however, despite this, inclusive education experiences several difficulties and problems. The most important problem of inclusive education is the lack of qualifications and special training necessary for teachers. Teachers in ordinary schools, as a rule, do not have the necessary skills and abilities to involve a special child in the educational process. To solve this problem, it is necessary to organize the work of tutors in schools. A tutor is a person who has special education and is exempt from teaching lessons. Inclusive education tutors are needed to carry out a dialogue between teachers and experts who have the necessary skills in this area, as well as to improve the skills of teachers through webinars, lectures, etc.

Of course, the problem of insufficient funding of organizations that implement inclusive education is of great importance. For children with disabilities to be able to study without difficulty in ordinary schools, special technical equipment is needed. For deaf and hard of hearing children - electro-acoustic equipment, for children with disorders of the musculoskeletal system - ramps, elevators, an automatic door opening system, personnel call buttons, etc., for children with visual impairments - a sound informant, contrast and tactile markings, etc. Also, it is necessary to create rooms for therapeutic physical culture, rooms for classes with a speech therapist, psychologist, speech pathologist.

Another problem in the implementation of inclusive education is the non-recognition of children with disabilities by people. We are talking, first of all, about the unwillingness of parents of healthy children to conduct training together with children with disabilities. It seems to them that this will reduce the quality of education, and care for a child with health problems will be carried out to the detriment of care for other children. To combat these stereotypes, it is necessary to conduct medical and psychological education of the society.

To solve these problems, it is necessary to develop a set of measures for the development of joint education of children. To do this, it is necessary to improve the legal framework, material, technical and staffing of this process. For people with disabilities to receive a full-fledged education, assistive technologies are being developed and applied (ICT in inclusive education) which are devices aimed at providing comfortable conditions in everyday life.

Even though the ways of using ICT in the inclusive education of people with disabilities are extremely diverse, the following main areas of their use can be distinguished:

1. **Application of ICT for solving compensatory problems**. The use of technology as an assistive device allows students with functional limitations to take an active part in the learning process. For example, in the case of visual impairments, technologies make it possible to perceive information through hearing or touch, and in the case of impaired

motor function of the hands, they allow the student to enter text on a computer. In other words, technologies help compensate (compensate) for the lack of natural body functions and, thus, optimize the process of obtaining information, and also create conditions for the assimilation of knowledge.

2. **The use of ICT for solving correctional problems**. The use of ICT significantly increases the possibilities of the correctional and educational process in such areas as diagnosing and monitoring the development of knowledge, skills and abilities of students; restoration and replacement of lost or impaired functions. The technology used to educate students with disabilities has significant potential to enrich their life experiences.
3. **The use of ICT for solving didactic problems**. The use of ICT as a didactic tool contributes to the maximum realization of the intellectual and creative potential of students, creates conditions for the application of modern teaching strategies and knowledge control. In addition, to meet the educational needs of students who are unable to attend regular school classes, ICTs are often used as a means of distance learning.
4. **Application of ICT for solving communication problems**. Technologies act as intermediaries in the process of communication, and sometimes even are the only way to communicate with the outside world. For each category of users experiencing difficulties in the communication process, special assistive devices and software are being developed.

The main problems that students with motor disabilities have are related to the use of the keyboard and mouse to enter text and control the computer. To prevent simultaneous pressing of several keyboard buttons in case of motor impairments of mild and moderate severity, it is recommended to use specialized overlays placed over the standard keyboard and facilitate access to the keyboard buttons. To facilitate computer management, the capabilities inherent in the Access Windows program are widely used: control over response time and repetition of commands, control of a combination of buttons responsible for special commands and functions, control of the mouse cursor through the numeric keypad on the keyboard.

In case of severe movement disorders, alternative keyboards are used. Larger keyboards facilitate selection and precision with fewer buttons and larger buttons than a standard keyboard. Keyboards with small and closely spaced buttons are used in cases where the user cannot perform large movements and is prone to fatigue. In some cases, touchpads are used that have a touch-sensitive surface, which is divided into programmable areas. Speech recognition

technology provides the user with the ability to both control the functions of the operating system and enter text using voice.

To facilitate the manipulation of students with movement disorders, various types of pointing devices are used. The user makes his choice with suitable devices having various shapes, sizes and levels of sensitivity; they can be activated by hands, feet, head, short and strong exhalation, voice, muscle movements, and in other ways, depending on the user's capabilities (see Table 1).

Table 1.

Devices designed to facilitate the manipulation of students with motor disabilities.

Device/program name	Device/program characteristic
Manipulator TrackBall	Changing the position of the ball causes the cursor to move on the screen, such devices are equipped with programmable buttons.
Touchpad	It has a flat, tactile surface, mainly used in notebooks, but can also be used on desktops.
Joystick	Moving the lever in different directions allows you to control the cursor on the screen, the system control functions using the joystick may differ depending on the user's functional needs.
Electronic pointing devices	They allow a person to control the cursor on the screen without the help of hands, cursor control is carried out using ultrasound, infrared rays, muscle contractions of the hands, eye movement, nerve impulses, and also waves emitted by the brain.
Touch screen	The device is equipped with a special surface on the outer part of the screen that is sensitive to touch and performs all the functions of a mouse.

GoTalk speech simulators are actively used in the world. They are devices for people to communicate and are needed to master, develop or restore speech skills on their own or with the help of a specialist. This tool has a voice recorder necessary for recording and subsequent playback of the recordings made. A recording can consist of a single sound or whole sentences. As a result, what has already been learned can be deleted or left on the device, gradually supplementing with new entries. This device is also used for the rehabilitation and simplification of communication between adults after a serious illness.

For students with language and speech impairments due to severe intellectual, somatic, neurological or neuropsychological disorders, Augmentative Alternative Communication (AAC) systems are a means of communicating with others (Sigafoos, J. & O'Reilly, M.F.

2004). The use of alternative communication systems is based on the use of a different way of encoding information, different from speech. Depending on the needs of the user, alternative communication systems can use photographs, diagrams, drawings and symbols, including handwritten ones.

The use of alternative communication systems is based on the use of a different way of encoding information, different from speech. Depending on the needs of the user, alternative communication systems can use photographs, diagrams, drawings and symbols, including handwritten ones (ISAAC – Home, n.d.).

A special place among high-tech means of communication is occupied by auxiliary communicative scoring devices (Voice Output Communication Aid, VOCA). In size, such devices, as a rule, are no larger than an ordinary notebook, they are equipped with special buttons or special fields, the impact of which leads to the reproduction of recorded words or short phrases. Most assistive communication devices use so-called digitized speech, that is, the human voice recorded in the device's memory.

The computer can be an excellent means of motivation for learning activities for students with intellectual disabilities, which is associated with the desire to imitate adults. However, the use of a keyboard and mouse to control a computer can present serious difficulties for such students due to slow and inaccurate hand-eye coordination, difficulty in perceiving and identifying a stimulus, as well as memory and attention disorders. To overcome these difficulties, various devices and programs are used to make it easier for users to access and control a computer. Among the input devices, one can note the use of various types of keyboards, manipulators and positioning devices.

The increased complexity of the software interface (quality and type of text, graphics, sound, feedback principles, etc.) can create difficulties for mentally retarded students. The background of the program, overloaded with illustrations and saturated with various colors, interferes with orientation on the screen and is unsuitable for such categories of users. For this reason, it is recommended that you choose and configure your software carefully.

Despite individual differences and the capabilities of users with intellectual disabilities, it is recommended to avoid a large number of icons on the computer desktop, as well as background images. Depending on the needs of the user, the shape and size of the cursor, its color, and contrast can be adjusted. In addition, the combination of many stimuli during the actualization of the same object (that is, the demonstration of the image itself, the sound signals, and the written designation of this object) can contribute to the process of its recognition.

The needs of people with visual impairments for assistive technology depend on the degree of loss of visual function. Visually impaired students need help in using the available visual possibilities in the most rational way, as well as in mastering new technical means and methods of communication through other modalities. Students with complete visual loss need help using technical communication tools in the auditory and tactile modalities.

Visual information is often organized in such a way that it is extremely difficult to use the cursor. Text-to-speech programs or text-to-speech programs and speech synthesizers may sound the label found in some images, which can be disorienting to the user. To make it easier for blind users to work with a computer, a sequence of bookmarks can be used to help determine the position of the mouse cursor on the screen. Another approach involves a combination of voice and tactile information output based on the use of a tactile panel that allows you to "touch" the position of the cursor on the screen, to feel when it passes through menu options or hyperlinks (Convention on the Rights of Persons with Disabilities - Conventions and agreements - Declarations, conventions, agreements and other legal materials, 2006).

To teach and improve typing for students with visual impairments, buttons should be specially labeled (as is commonly used on a standard keyboard) so that the user can enter text using the ten-finger typing method. It is very effective to use special programs that make it easier to check the text and correct errors in it. In this case, programs that support the Braille system can be used.

The Duxbury Braille Translator (DBT) program, which performs bidirectional translation, has also found active use: a regular font is translated into Braille and vice versa. In addition, Duxbury Braille Translator has a complete set of functions with which you can prepare a document for Braille printing in a huge number of languages and a wide variety of encodings. DBT features are:

1) Ability to import files in MS Word, WordPerfect, HTML format.

2) Ability to create text directly in the DBT editor.

3) Ability to enter text in plain or Braille.

4) The program contains a huge number of "formatting keys", that is, functions that allow you to select the desired file format. When creating various combinations of formatting keys, corresponding styles are created that make working with text easier. Basic styles are already included in the program, but the user can create his own. It is also possible to create style templates in the program for further use when creating new documents.

5) The program includes a spelling dictionary consisting of three hundred thousand words.

6) There is a "Quick Find Misspelling" function that quickly detects spelling errors and immediately eliminates them.

7) This program can support almost all available models of braille printers.

Digital technologies are of great importance in overcoming educational and social barriers, as they have become familiar everyday tools for performing elementary tasks in inclusive education. An example is the maintenance of a classroom blog, which creates a certain platform for equal communication of all students in the class as a whole, and those students for whom communication at school is physically difficult. The use of different learning platforms makes it possible to track the progress of each student because this is very important when children with different educational needs study in the same class.

Currently, special software tools have been developed to support graphic activities on the computer of blind users. Such programs are based on feedback through a complex set of audio signals (Cook,1998).

Hearing impairments, on the one hand, make it difficult or even prevent the perception of auditory information by a person, and on the other hand, do not allow you to control your own speech. Such shortcomings, in turn, lead to severe speech disorders and difficulties in mastering the norms of the language. Due to insufficient mastery of the lexico-grammatical and syntactic components of the language system, students experience serious difficulties in their educational activities (Grassman, 2002). In turn, violations of expressive and impressive speech lead to other difficulties in those areas of educational activity that are associated with the verbal function of a person (cognitive processes, logical operations, generalizations of reality in the form of abstraction, etc.). In turn, violations of expressive and impressive speech lead to other difficulties in those areas of educational activity that are associated with the verbal function of a person (cognitive processes, logical operations, generalizations of reality in the form of abstraction, etc.).

There are various approaches to using assistive technology to develop and improve the communication skills of people with hearing impairments. So, one of the approaches assumes the presence of feedback based on visual or tactile sensations. Another approach is to use various alternatives to oral communication, such as subtitles or simultaneous translation into the national sign language. Automated systems enable teachers to create audiovisual material with subtitles. Some technologies allow simultaneous translation of oral speech into written (presented on the monitor screen) and, thus, help to perceive the teacher's oral speech in the classroom. However, such systems are very expensive and their use is justified for a large group of students with hearing impairments. To improve the perception of auditory information in large rooms (for example, in classrooms), wireless auxiliary acoustic systems using radio

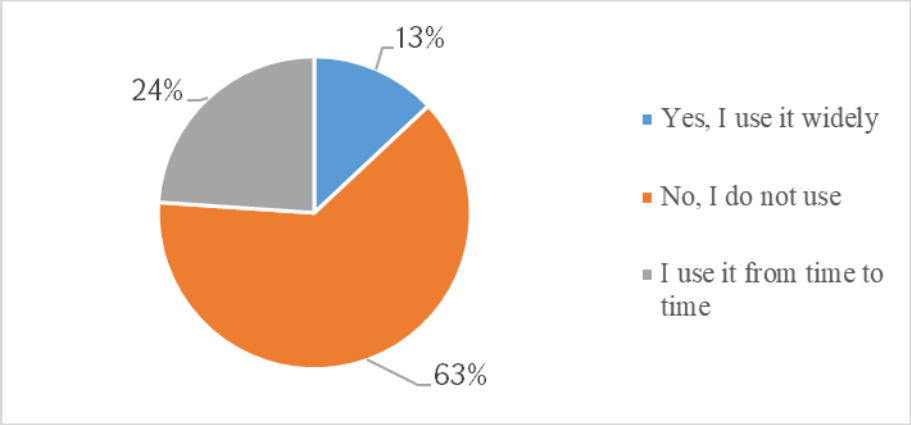
frequencies, as well as infrared and induction systems, are used. Some software tools allow you to provide visual feedback that reflects some characteristics of your own spoken language (for example, tone and pitch). Such software is mainly used for rehabilitation purposes. Standard use of a personal computer and software by deaf and hard of hearing students does not require the use of special techniques in work. The possibilities of "Access Windows" allow, in some cases, to transform sound prompts into visual ones, thanks to the actualization of the necessary information using special characters and selected text.

To raise the issues of the use of information and communication technologies in the process of providing inclusive education in the Republic of Armenia, we have organized a social survey.

More than 80 teachers from Yerevan, who provide inclusive education, took part in the social survey. Present the results .

Question 1.

Do you use ICT in an inclusive course?



13% of the surveyed teachers state that they actively use ICT in their teaching process. In private conversations, they argued that ICTs help teachers to include children with special educational needs in the classroom, making the learning process person-centered. They note that specialized computer programs open a wide field of opportunities for teachers and students, but at the same time, they state that today such software resources are limited. 63% of the surveyed teachers mentioned that they do not use ICT tools during their activities. Moreover, they found that computer programs and tools were not very effective in working with children with special educational needs. And 24% of the participants mentioned that from time to time they use technological means. In particular, this group of surveyed teachers mostly mentions the Youtube video database, which allows them to watch videos with different content, use them in different stages of learning to work with children with special educational needs. Some teachers mentioned that they use several specialized programs for speech development, which were developed on their own initiative. As a result, we can state that some

teachers use ICT tools in their activities, but they are not systematic and universal, that is, inclusive education can not be considered digital yet.

Question 2.

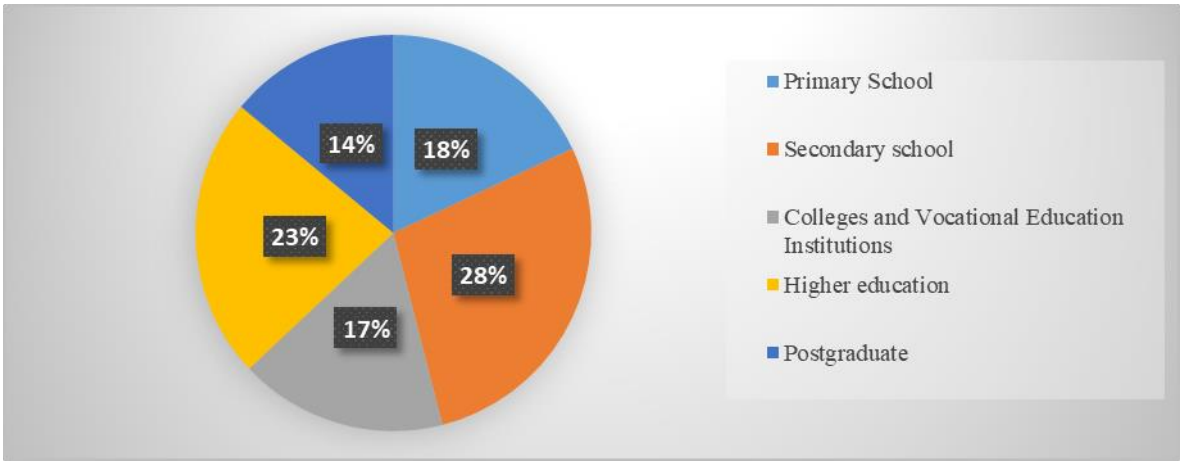
What types of specialized software and hardware (assistive technologies) exist in your organization?

Braille display	3%
Speech synthesizer	2%
Braille printer	0%
Speech recognition programs	4%
Built-in operating system capabilities	27%
Voice guidance programs	7%
Keyboards with longer keys and increased font size	5%
Special devices allowing you to control the mouse cursor with head movements	1%
Specialized software	16%
Other	35%

3% of the surveyed teachers state that they have used Braille display during their professional activity. They claim that they acquired the special professional equipment and software with the help of benefactors. In this matter, they expect the state's attention. The largest number of respondents mentioned the "other" version. In private conversations, they mentioned that in the organization of inclusive learning, they use the most accessible means at that time - videos, software built-in software.

Question 3.

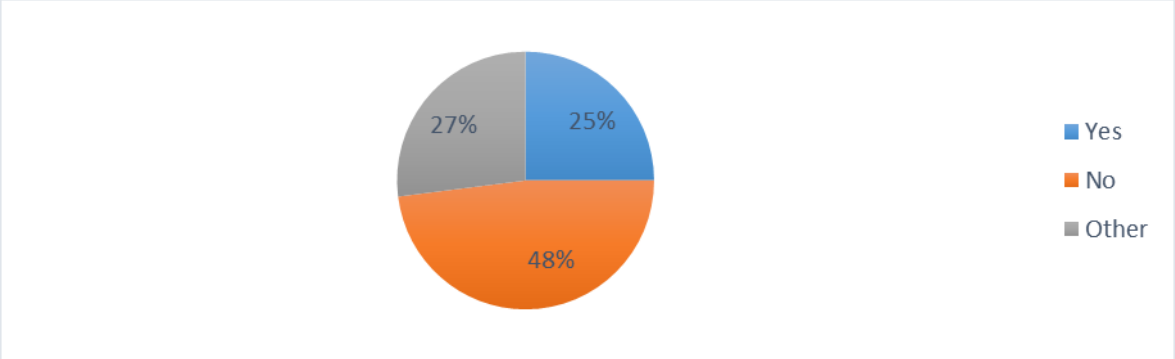
At what level of education, in your opinion, is there the greatest integration of ICT in the education of people with disabilities?



Quite an interesting picture was obtained. The participants of the survey almost equally mentioned that the use of ICTs in all levels of education is relevant and important today. This proves that it is necessary to develop a state policy and invest in the development of various specialized programs at the state level.

Question 4.

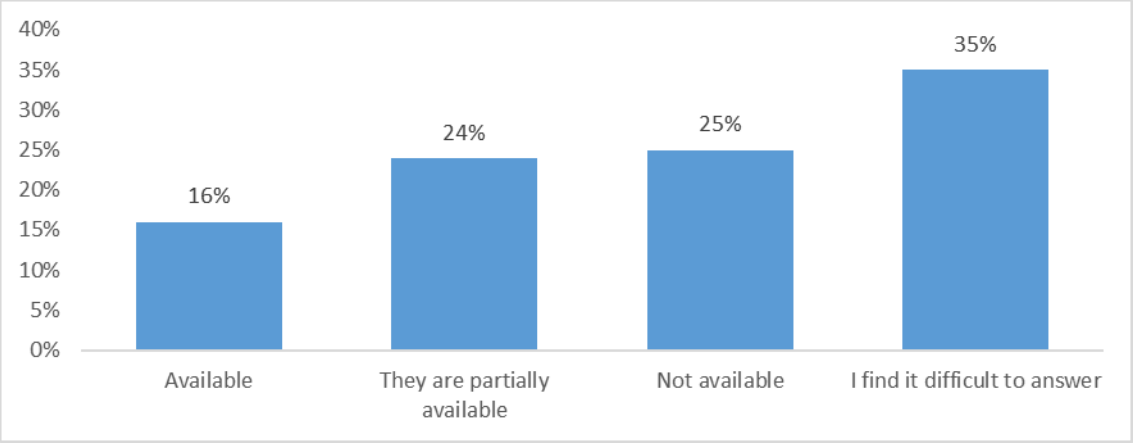
Are regular workshops and seminars held in your region (country) aimed at raising awareness and developing professional skills among teachers in the use of ICT for the education of children with special educational needs?



48% of the surveyed teachers stated that they do not participate in any workshops related to the process of digitalization of inclusive education. Twenty-five percent of teachers surveyed said they had attended various seminars, workshops, and webinars related to the digitization of general education, while the remaining 27 percent said they had attended unique, non-regular events.

Question 5.

Are there conditions in your educational institution that will allow children with special educational needs to be fully involved in the learning process?



Sixteen percent of those surveyed said that their school has access to technologies that allow the teacher to fully include children with special needs in the learning process, and 24 percent said partly because the use of ICTs in their school is not universal. 1/4 of the respondents stated that they do not have access to ICT tools to implement inclusive education effectively.

CONCLUSION

Detail of the application of distance form training, when working with ice cream with special educational needs, made in the first instance of completing such a task as the formation of necessary conditions for the completion of full education without any hardships and limitations, provision of guarantees for individual education based on inclusive income. I note that the fact that half of the full-fledged barbaric education of people with limited health benefits is, in its view, a pledge of successful socialization.

The process of formation of inclusive education, the transformation of its system and content is still relevant today. Providing educational institutions with modern technical equipment is a mandatory part of the modernization of the educational environment in the organization of an inclusive process, ensuring its accessibility for children and adults with different needs and individual developmental characteristics.

The correct use of the capabilities of modern digital technologies by the teacher will contribute to effective work to overcome violations of psychophysical development, and the improvement of the technical capabilities of digital technologies will allow addressing the problems of successful learning and adaptation in a social society, taking into account the needs of each person with disabilities.

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HOW VISUALLY IMPAIRED LEARNERS CONSTRUCT OPPORTUNITIES TO LEARN MATHEMATICS?

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ABSTRACT

Many studies view inclusive education practices as having the potential to improve equal access to education, where the existing barriers are reduced. In mathematics specifically, it is believed that providing more opportunities to learn for learners with special educational needs can improve their performance and result in scaling down the mathematics achievement gap. A differing perspective from recent empirical research that focused on mathematics instruction involving learners with special educational needs in regular classroom settings, however, found that these learners did not benefit much in the mathematics lessons when equal opportunities to learn were provided. The present study reports on how learners with visual impairment perceive and engage with the teaching of mathematics in inclusive classrooms of Lesotho. The study follows a qualitative case study design using the framework of opportunity to learn (OTL) as the main theoretical resource through which conditions that facilitate effective teaching and learning of mathematics are examined. The article argues that what are often defined as opportunities to learn do not always translate into effective learning opportunities for learners with special educational needs. The opportunities to learn are mediated through the learners, who select what is and/or is not useful for them at a given point in time. Empowerment of both learners and teachers in the mediation of opportunities to learn will be a critical factor to ensure the success of interventions for inclusion in such mathematics classrooms.

Key words: curriculum, inclusive education, learners with visual impairment, mathematics education, opportunities to learn.

INTRODUCTION

Inclusive education has caught the attention of educational systems around the globe and triggered interest among many educational researchers. Inclusive education stretches beyond just providing access for learners with special educational needs to regular schools (Mitiku et al., 2014). It is a dynamic process that is constantly evolving which might bring differing outcomes when applied in different contexts (Mariga et al., 2014). Erkilic and Durak (2013) considered inclusion as an approach intended to provide equal opportunities for all learners with diverse learning needs within regular schools, while Ainscow and César (2006) viewed it as an approach aimed to create educational opportunities for learners with special educational needs within regular school settings.

Inclusive education practices are perceived to have the potential for promoting learning that can lead to positive outcomes in terms of learner achievement (Agunloye & Smith, 2015; Dyson et al., 2004). However, successful implementation of inclusive education depends on satisfying certain conditions. Erkilic and Durak (2012) argued that inclusive education practices require, among other things, "comprehensive institutional restructuring" as that can result in generating a conducive learning environment for learners. It should also be taken into consideration that the realisation of inclusion might not only demand the development of a curriculum that could cater for learners' diverse learning needs (Erkilic & Durak, 2012). It would also necessitate the restructuring of pedagogical approaches (Ahmad, 2015). This concurs with the view held by Mariga et al. (2014) that inclusive education necessitates change of "attitudes, behaviours, teaching methods, curricula and environment to meet the needs of all children" (p. 27).

Das (2021) specifically focused on inclusive mathematics education. He contended that teachers are expected to be aware of learners' different educational needs in mathematics classrooms, with the purpose of offering them appropriate academic support. Das (2021) argued that this can be demanding as it calls for competent teachers with a clear understanding of practices that can best address diverse needs of learners. Apt teachers for this are those with a strong knowledgebase and skills that would enable them to transform their classroom practices in such a way that creates "rich learning opportunities" (Das, 2021, p. 1).

Durmuş and Ergen (2021) pointed out that inclusion is very important for improving the self-confidence of learners with special educational needs. Their study found that participating teachers were using a variety of teaching methods, which include demonstration, groupwork and activities such as games/plays/drama, in the mathematics classroom. However, time constraint did not permit them to assign individual activities to learners. Hence, additional time was needed for giving learners opportunity to engage in individual activities. In that regard,

break sessions were often compromised for individual support, which took place in the supportive education room instead of mathematics class.

It is against this background that the present study aims at exploring factors that can improve mathematics teaching and learning in inclusive classrooms in a manner that favours learners with visual impairment. The discussions in this article are primarily centred around visually impaired learners' experiences of learning mathematics in a regular school setting.

The paper starts by reviewing pertinent literature that delineates the empirical focus of the study with the purpose of identifying gaps. It also provides a discussion focusing on a curriculum for inclusive education. The issue of visually impaired learners' experiences in regular school settings, which is central to this paper, is also discussed. Furthermore, arguments about the academic potential of learners with visual impairment are explored. After that, the conceptual framework and rationale for its selection are explained.

Subsequently, an explanation of the research methodology used is provided, including the approach and the design employed, sampling designs and procedures, as well as the ways in which validity, credibility, and reliability of the instruments were enhanced. The manner in which data were collected and analysed is presented, as well as the ethical guidelines that were adhered to in conducting the study. Thereafter, interpretation and discussions of the findings, including their significance and implications, follow. More so, the limitations of the study are stated and then conclusions are drawn and recommendations made. The paper ends by suggesting areas worthy of consideration in future studies.

LITERATURE REVIEW

Literature has consistently indicated that learners with visual impairment show relatively low academic achievement in mathematics (Beal & Shaw, 2008). This can result in widening the achievement gap between these learners and their sighted peers (Ukeli & Akem, 2013) when they are taught mathematics in inclusive classrooms. Visual impairment can affect learning as it may result in "a generally slow pace of work, which can only be improved to a limited extent with the help of technical aids" (Bartz, 2020, p. 223). Different degrees of visual impairment may differently affect how learners engage in classroom activities; for example, Braille readers may require more time to read mathematical expressions than learners who use print (Van Leendert et al., 2019).

Another issue that emerges from the literature is that learners who have coexistence of visual impairment and learning difficulties would be characterised by low academic performance in mathematics. It is unarguable that among learners with visual impairment there are those with learning difficulties in subjects such as mathematics. Nonetheless, considering

all learners with visual impairment as having learning difficulties would be a misconception. For learners with visual impairment, learning difficulties have always been confused with visual impairment in cases where they coexist (Jones et al., 2015). Jones et al. (2015) recommended that a teacher should undertake prior assessments to diagnose a learner's actual condition as that could help when selecting an appropriate instructional intervention strategy. Thus, effective classroom-based support can advance learners' competences that enable them to confidently exert greater effort to attain outcomes similar to those of their sighted peers (Jones et al., 2015).

Research has shown that learners with visual impairment encounter a lot of challenges when learning some mathematics topics that involve visual content, including statistics and geometric-figure representations (Gorlewicz et al., 2020). Gorlewicz et al. (2020) found that it can sometimes be a challenge for learners with visual impairment to create "a mental image of the [geometric] shape due to the amount of information" (p. 24) that they are expected to memorise. Some studies have shown that early intervention of appropriate graphic teaching methods could enable learners with visual impairment to cognitively access mathematics content with graphics (Zhang & Malasig, 2016).

It is widely reported that learners with visual impairment have a potential to attain improved academic scores (Shahed et al., 2016), especially when conditions that favour their learning are all met. Wieckert's (2021) study revealed that there is no significant difference in the self-concept development of learners regardless of whether they are visually impaired or not. The findings of the study also showed that when learners are engaged in activities that require them to gauge their competences, that enables them to build a realistic self-concept. Wieckert (2021) encouraged teachers to create enabling environments for learners to rate their own mathematics competences. It is reported that this approach has helped teachers to prepare lessons that are more inclined to the use of various bodily senses instead of focusing on visual learning methods only. Evidently, variation of the teaching methods not only benefits learners with visual impairment, but all learners in the inclusive classroom (Wieckert, 2021).

Gervasoni and Peter-Koop (2020) posited that while there are international pressures compelling for realisation of inclusive education, there is little published research focusing specifically on inclusive mathematics education in schools. Though teachers are expected to provide high-quality inclusive mathematics education that enables all learners to thrive, achieving this still remains a challenge for them. Rudinger (2020) identified the research gap in literature by indicating that the issue of best practices for instruction is not adequately addressed in educational research that involves learners with visual impairment. In view of this,

the paper aims at addressing this gap by undertaking an investigation on how learners with visual impairment construct opportunities to learn in inclusive classrooms.

DESCRIPTION OF OPPORTUNITY TO LEARN

The framework of opportunity to learn (OTL) is the main theoretical resource through which learners' experiences of learning mathematics are explored. OTL is widely viewed as a multifaceted concept (Goos, 2014). However, some scholars view OTL along the lines of learners with special educational needs (Cawthon et al., 2012; Taub et al., 2017). Cawthon et al. (2012) stated that OTL might be concerned with raising learner engagement in inclusive settings, so as to ensure that learners with special educational needs access the general education curriculum. This framework might also be useful to assess learners' level of access to educational resources. Besides, OTL deals with learner placement in regular schools that practice inclusive education. A higher degree of OTL is not only determined by placement of learners with special educational needs in the least restrictive environment, but it should take into consideration that their needs are catered for through effective instructional approaches (Cawthon et al., 2012). Trevisan et al. (2020) mentioned the learning opportunities generated by the use of the classroom as a professional teaching and learning environment. Some of the opportunities that they took notice of included exploring ways that can promote learners' active involvement in discussions.

Taub et al. (2017) postulated that opportunities to learn for learners with special educational needs can be described in terms of improving access to "the intended, enacted, and assessed curricula through the planned curriculum that includes purposefully designed practices in classrooms" (p. 129). Among other issues that these researchers mentioned as having a potential to create opportunities to learn is provision of support and resources that can assist learners to actively participate in the classroom activities that facilitate learning (Taub et al., 2017). Sganzerla and Geller (2021) contended that assistive technology devices are the most important aids to facilitate early construction of number concept by learners with visual impairment at lower grades. These researchers held a strong view that these learners are as capable as sighted learners to learn mathematics concepts, especially when given the opportunity of accessing the assistive equipment.

Kohanová's (2010) study focused on OTL in relation to teaching of mathematics to learners with visual impairment in inclusive classrooms. She emphasised the importance of the use of technology for learners with visual impairment to learn mathematics. She argued that the use of information technologies can lead to improved educational opportunities for learners with visual impairment, so that they can "handle mathematical expressions quickly and

efficiently in the same way as their sighted classmates" (p. 8). Chabongora and Jita (2013, p. 173) argued that "a better understanding of the OTL mathematics lies in the examination of what goes on during the teaching and learning of mathematics in the classroom". Suurtamm et al. (2016) perceived that it is through assessment that learners can develop understanding of mathematics. These researchers were of the view that teachers should employ a wide range of assessment strategies that can create more opportunities for learners to demonstrate their learning.

This discussion shows that previous researches on OTL used the classroom as their unit of analysis. Besides, OTL is viewed by many educational researchers as a teacher-dependent variable that mainly focuses on instructional practice.

RESEARCH METHODOLOGY

This paper reports on a qualitative case study conducted in two regular high schools accommodating learners with visual impairment. The choice of this design was influenced by its benefit of enabling an in-depth exploration of the research questions and which can as well generate rich data (Gustafsson, 2017). The research population comprised visually impaired learners within the targeted classroom, with specific attention to the secondary level of schooling. Detailed information was gathered about the experiences of individual learners with visual impairment, each considered as a distinct case. Two major sets of data were collected in the course of study. The major part of the data was gathered through the narratives of visually impaired learners in Grades 8 and 9 and direct observations of mathematics lessons were used for triangulation.

The data generated from transcripts of narrative interviews for each of the two cases were coded and arranged into themes that emerged from the evidence. Basically, each of the two cases was explored and analysed independently and, later on, comparisons were made in order to find similarities and differences.

Ethical issues were adhered to before and during the investigation. We followed appropriate procedures to seek clearance before commencement of data collection. The focus of ethics was more generally on protecting the identity of participants, considering the sensitivity of the research as it involved vulnerable groups. We were also expected to ensure that anything that might subject the participants to endangering incidents was avoided (Flick, 2009; Willig, 2013).

PRESENTATION AND DISCUSSIONS OF THE RESEARCH FINDINGS

This paper presents data with respect to how Ketsahalo and Pheello (research participants) engaged with the teaching of mathematics in inclusive settings. Both participants are partially sighted learners. Their visual impairment condition has made them less effective when participating in classroom activities, especially those activities that require a sense of vision. They therefore also have a challenge when reading small font or reading from a chalkboard. Their narrative stories provide a sense of what kind of opportunities to learn, if any, their mathematics teachers created during mathematics lessons. The focus is also on how these learners with visual impairment made use of the available opportunities.

Ketsahalo's story on the teaching of mathematics in his classroom

Ketsahalo narrated how his mathematics teacher conducted the lessons in his classroom, by stating that: "She starts by introducing a certain mathematics concept and then gives us classwork." Ketsahalo provided details of how this was done in the following way:

> Our mathematics teacher gives us an example first. That example makes us understand the concept. If you clearly understand how the example is done, you know exactly what to expect in the exercises from the textbook given as classwork.

Data demonstrated that the teacher usually provided examples before giving classwork. Ketsahalo believed that the examples helped him to develop a better understanding of the concept being taught, since he refers to them as he works on the exercises that are assigned. The teaching approach used in Ketsahalo's class can be likened to what Hodgen et al. (2018) referred to as "explicit instruction".

It was evident that the teacher taught mathematics in what Gallagher et al. (2017) referred to as "traditional form of instruction". The teacher seemed to prefer writing on the chalkboard when teaching mathematics in class. However, Ketsahalo seemed to encounter difficulty in reading some words written on the chalkboard. He narrated his version of the story regarding what transpired in one of the lessons: "When I was reading those words, I was not able to see clearly. Where it was written 'as' I was not sure whether it was 'as' because to me it appeared as 'are'."

This gives the impression that Ketsahalo confused some of the words, because he was unable to access the information displayed on the chalkboard clearly. Ketsahalo pointed out that: "I should be taught using visible handwriting and small cursive writing should not be used. This is because I often don't see what has been written." The implication here is that Ketsahalo's teacher wrote illegibly and that resulted in his difficulty in reading. Therefore, it is important to consider that teaching of mathematics to the visually impaired learner requires the teacher to use legible handwriting.

When talking about the normal procedure that the teacher used when marking classwork, Ketsahalo said: “Your book gets marked when you have got correct answers. When you have incorrect answers, you are guided as to how you can approach the task. After that, I make some corrections and I resubmit.” On the issue of whether his work on mathematics always gets marked, Ketsahalo stated: “When I get incorrect answers, I make corrections. But sometimes we would be told that the time is up; as a result, I would not be able to resubmit in that case.” This statement shows that there are instances when Ketsahalo fails to get his work assessed. In that case, it would be difficult for him to discern his level of understanding of the concept being taught. He talked about the time he normally takes to complete a task in mathematics: “I sometimes finish mathematics tasks on time. But, when we are given too much work, I am not able to complete it in the stipulated time.”

In light of this, it is clear that Ketsahalo could not finish the task within the stipulated time. Ultimately, his work on that task would not be marked, meaning that he might be excluded from participating in the task on the basis of being slow when writing. This suggests that Ketsahalo might require more time than other learners to finish the tasks given. Jessup et al. (2017) mentioned this factor as one of the challenges that often prevent visually impaired learners to complete the school curriculum. These researchers emphasised that the value of time should be respected, as it is very important for the visually impaired learners to maintain academic parity with their sighted peers. Aside from this, Ketsahalo’s poor sight impacted on his copying information in the textbook accurately, as he explained:

> I sometimes get wrong answers, because I write incorrect things from the textbook. I am trying my best to copy properly from the textbook. […] Even when I write things from the textbook, they come out to be wrong. Now I am trying my best to closely look at the book in order to be able to copy them properly.

The evidence reflects that Ketsahalo’s level of vision made it difficult for him to copy accurately from the textbook and that led him to get unexpected answers. Evidently, Ketsahalo took too long to complete a task given by the teacher, and his slow pace made him fall behind with his schoolwork. This is consistent with scholarship that shows that a visually impaired learner can take longer than the stipulated time to complete a task (Bardin & Lewis, 2008). These researchers found that even capable learners with visual impairment can also encounter a challenge of keeping up with the pace of the lesson.

Based on the evidence presented, it can be concluded that Ketsahalo’s mathematics teacher provided him minimum opportunities to learn in class. The teacher seemed to prefer using the chalk-and-talk teaching method, which has detrimental effects on learners’ performance and attitude towards mathematics (Gallo-Toong, 2020). Opie et al. (2017) also

acknowledged that learners with visual impairment encounter challenges in mathematics classrooms, which include lack of teacher preparation and ineffective teaching methods that often involve chalkboard use for solving examples. Taking into consideration that learners often have a negative reaction towards mathematics, Hill et al.'s (2020) study considered understanding learner wellbeing in mathematics education as an important aspect that can lead to improvement of learners' experiences in terms of how they perceive and engage in mathematics instructional practices. Mazana et al. (2019) shared similar sentiments and further argued that learners' performance in mathematics depends on whether they enjoy the subject or not, as well as their attitude towards it. These researchers argued that learners' attitude should not be considered as the only factor influencing their performance in mathematics. Another factor that can lead to unfavourable outcomes in assessment is the teacher's instructional practices, which tend to be didactic in nature.

Pheello's story on the teaching of mathematics in his classroom

Pheello shared his experience on how his mathematics teacher approached a newly introduced topic, by saying:

> When he [mathematics teacher] is about to start a new topic, he gives us notes. He thinks we are taking them, but I never take them. I listen very attentively. I only listen to important elements that would be required when I attempt to answer a specific question. I know very well that I would not be required to give a definition of something in mathematics.

What can be learned from this extract is that even though the teacher gave notes to learners when introducing a new topic, Pheello's remark suggests that he did not copy them. His comment indicates that he seemed to listen only to what he considered useful when answering a particular question and disregarded some information he considered irrelevant.

Pheello was asked whether his mathematics teacher made an effort to ensure that his handwriting is legible to him on the chalkboard during lessons. His response was: "It's not with all teachers that I can see information displayed on the chalkboard. […] I am able to read maths and geography". Pheello's statement demonstrates that his vision still allowed him to read what his teacher had written on the chalkboard. This rules out the possibility that he was not writing notes due to the illegible handwriting. It suggests, instead, that he might be making conscious choices about what he considers relevant or not.

Aside from relying heavily on his sense of hearing, Pheello appeared to be dependent on his memory. This had a likelihood of posing a challenge of accuracy when he produced written tasks, as he indicated that: "If I incorrectly memorise the example, I would get incorrect

answers." He further explained that: "Last year, I relied more on memorising things. This year, we dealt with many topics that I didn't have a clear understanding of."

This suggests that memorisation plays an important role in Pheello's learning of mathematics concepts. He seemed to be aware that his success depended on memorising correct information. However, data showed that memorisation did not help him deal with topics that he found challenging. Memorisation, while not encouraged by scholars, seemed to be somewhat important for this visually impaired learner. The research conducted by Beal and Shaw (2008) showed that visually impaired learners rely on memory for dealing with word problems, accessed through an audio device. However, these researchers argued that learners with severe visual impairment encountered challenges when dealing with higher order tasks. This demonstrates that there are some instances when the use of memory becomes unhelpful to learners with visual impairment.

Pheello was asked whether the teacher used strategies catering for his educational needs during the lesson. He addressed the question by saying: "My teacher is highly competent in teaching learners who are visually impaired." Pheello justified his teacher's competence when he stated that: "I think you noticed that he would be writing and talking at the same time." This was evident in the two lessons observed. For example, during one of the observed lessons, the teacher continued with the lesson as captured in the following segment.

Teacher: So, today we are coming to deal with multiplication of decimal fractions or numbers. (He writes the statement on the board as he speaks. He repeats the same statement twice.) […] [W]e are going to highlight on what is called decimal places (He writes that on the board). Like you highlighted earlier when you are adding and subtracting decimal numbers, you have place value. But when we add and subtract, we make sure that we add and subtract only numbers that fall under the same place. *Akere re ile ra lumellana?* [Is that what we agreed on?]

Learners (in unison): Yes, sir.

Teacher: Even with this one, we have to get a highlight of what is called decimal places. For example, Sefatela (not a real name) refreshed our minds with the place values that we have. And you reminded us that we have units, tens, hundreds, *hana ke efeng moo*? [What should be here?] (He lists them on the board.)

Learner: Thousands.

Teacher: (He repeats after the learner) Thousands, and so on. You can have a decimal

point, and beyond a decimal point we have other place values, which are tenths, hundredths, thousandths, and so on. (He writes all these on the board as he speaks.)

The vignette demonstrates that the teacher was talking and writing at the same time during the lesson. This kind of teaching approach seemed to create better opportunities to learn for Pheello, as he could access information through listening and reading from the chalkboard. This resonates with the view that advances that teachers should be cognisant of the modalities of learners and try to reach each one of them regardless of their differing learning styles (Furner et al., 2005). Elçi's (2017) research revealed that teachers' content knowledge is important for assisting learners as it enables them to use diverse representation of mathematical knowledge and give appropriate examples.

Pheello's teacher made efforts to widen opportunities to learn during mathematics lessons as he would be talking and writing at the same time. The discussion also shows that the teacher provided the learners with written notes when introducing a new topic. However, it appeared that Pheello may not have taken full advantage of the opportunities to learn provided by his teacher. Pheello seemed to depend more on his sense of hearing and memorisation. The fact that Pheello considered his mathematics teacher's handwriting as legible enough implies that he still had an opportunity to use his residual vision to access information displayed on the chalkboard. Nonetheless, he consciously decided to rely on memorising mathematics concepts that only help him to answer specific questions. He, however, co-constructed the aspects of mathematics that he wanted to learn, even though this can lead to minimisation of his opportunities to learn mathematics concepts. According to Van den Heuvel-Panhuizen (2019), learners' individual conceptions and experiences have to be respected and taken as points of departure for teaching and learning.

CONCLUSION

This article devoted special attention to the in-depth narratives of two learners with visual impairment. The narratives of the participants showed that the presence of learners with visual impairment in the classroom might not influence the teacher's normal instructional practices, including the teaching style and pace of a lesson. The observed teachers largely used traditional forms of instruction in mathematics lessons where the visually impaired learners were involved. Heckman and Weissglass (1994) stated that traditional teaching strategies in mathematics do not essentially benefit learners as they fail to stimulate interest and engage learners in purposeful activities. The findings show that even when opportunities to learn are made available to learners with visual impairment, they still have full control over the selection

of opportunities that they consider helpful to them. The data revealed that Pheello seemed to regulate opportunities to learn in his learning of mathematics. On this basis, a conclusion that can be drawn is that learners with visual impairment are aware of ways of leveraging their learning and that also appears to influence their opportunities to learn in the inclusive mathematics classroom. Many current studies perceive OTL as a teacher-dependent variable that mainly focuses on instructional practice. This study further extends this knowledge by showing that OTL is also learner-dependent in the case of learners with visual impairment in Lesotho.

The sample size could be considered a limitation of this study. The cases discussed here are vulnerable members of society. The major challenge that was likely to emerge would be the reluctance of participants to divulge precise information. For example, if ever they had experienced discrimination before, there would be a little apprehension about the kind of treatment they would receive after disclosing some evidence. This paper was interested in finding out how visually impaired learners perceive and engage in the teaching of mathematics in the inclusive classroom. A possible challenge associated with this includes participants feeling that the researcher intruded into their private space, which they might regard as exposing their weaknesses. Cohen et al. (2007) highlighted that some issues in educational research might be sensitive and the researcher should always be cautious when dealing with them. In this study, we were able to be reflexive enough to represent the experiences of the cases studied in a balanced manner that did not seek to cause embarrassment, or even to unnecessarily embellish them in any way.

The fact that the observed teachers used strategies that treated all learners as if they were sighted illustrates their lack of capacity and exposure in terms of teaching learners with visual impairment in inclusive classrooms. Based on this, there is a need to empower teachers with the relevant skills for teaching mathematics to learners with diverse learning needs. For them to efficiently perform their mandate as expected, an intensive in-service programme can be conducted. There is also a need for the Ministry of Education and Training to develop an adaptive curriculum guiding teachers on effective strategies to teach mathematics to learners with educational needs, especially those with visual impairment. Future studies may explore approaches to teaching mathematics that are aligned to the needs of learners with visual impairment.

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OPPORTUNITIES FOR INCLUSIVE EDUCATION DURING THE PANDEMIC

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ABSTRACT

Equalizing opportunities for everyone to make progress in learning continues to be a challenge worldwide. Pandemic conditions exacerbated attention to the difficulties in organizing an inclusive space, actualized with the forced transition to distance and online learning.

The article shows the main difficulties and possibilities of introducing distance education technologies in the education system of students with disabilities in terms of creating conditions for improving the quality of education and further socialization.

The article is based on theoretical review and analyses of the situation based on the standards and regulations existing at the moment since the pandemic has spread worldwide.

Keywords: students with disabilities, inclusive education, pandemic, COVID 19, online education, distance learning.

INTRODUCTION

Ensuring better health conditions, rehabilitation, and education for persons with disabilities and persons with special educational needs are the most important main and inalienable conditions for their successful socialization, full participation in society, effective self-realization in various types of professional and social activities. However, providing everyone with an equal opportunity to make progress in learning continues to be a challenge around the world.

The UNESCO Convention against Discrimination in Education (1960) and other international human rights treaties prohibit any attempt to deny or restrict access to education based on socially imputed or perceived differences such as gender, ethnicity/social origin, language, religion, nationality, economic condition, and abilities.

In this regard, UNESCO promotes inclusive education systems that remove barriers that limit the participation and success of all students, take into account different needs, abilities, and characteristics, and eliminate all forms of discrimination in the learning environment. In 1994, the Salamanca Declaration on Principles, Policies, and Practice in the Education of Persons with Special Needs was adopted, which gave rise to the slogan "Education for All". From now on, inclusion is not limited to persons with disabilities, it includes the education of persons with cultural, linguistic, and other characteristics.

The situation associated with the spread of a new coronavirus infection COVID-19 has become a source of many problems, which, as practical experience and the results of online research show, many countries were not ready to solve. Among these problems, the problem of the transition of a significant part of educational organizations to distance learning forms stands out.

ANALYSES OF THE SITUATION

In August 2020, UN Secretary-General António Guterres launched the concept note “Education in the era of the COVID-19 pandemic and beyond”, warning that “the pandemic has caused the most severe disruption to the world’s education systems in history and threatens to destroy skills and knowledge that can cover more than one generation of students. The paper calls on national authorities and the international community to work together to bring education to the forefront of recovery programs and to invest in education.

Higher education is likely to see the highest dropout rate and a projected 3.5% decline in enrollment, resulting in a 7.9 million decline in enrollment, according to UNESCO. In second place is preschool education: according to forecasts, the number of children attending school will decrease by 2.8%, i.e., for 5 million. According to these projections, 0.27% of primary school students and 1.48% of secondary school students, corresponding to 5.2 million girls and 5.7 million boys, are at risk of dropping out of school. Conferring to UNESCO General Director Audrey Azoulay: “These findings highlight the urgent need to ensure continuity of learning for all in the face of this unprecedented crisis, especially for the most vulnerable”.

The concept note made recommendations in four areas to mitigate the effects of the pandemic, one of which is “Strengthen education systems for equitable and sustainable

development. Restoring resilience requires prioritizing equity and inclusion through measures that address the needs of the most marginalized and vulnerable students and ensure that economic hardship and gender norms do not prevent girls from returning to school. Risk management capacity needs to be strengthened at all levels…" (Amelan, 2020).

The situation with the coronavirus pandemic has made life-changing adjustments to the global education system. The crisis caused by a dangerous new coronavirus required urgent measures to reduce the risks of the spread of infection in various areas of people's lives and activities. In the field of education, an urgent transfer of the educational process to a distance from using e-learning technologies was chosen as such a measure. Among the difficulties of introducing distance learning the following important factors were mentioned:

- **psychological** (as a result, a decrease in the effectiveness of training due to an unusual format of classes and a drop in motivation),
- **socio-psychological** (family-friendly responsibility for organizing distance learning for students),
- **methodological** (difficulty in transferring some activities to online environment, the need for additional training for teachers in new teaching methods),
- **political** (insufficiency of management models that describe the transition to online learning).

In connection with the vital need to create special educational conditions for persons with disabilities, the need to study the possibilities and features of using distance technologies in an inclusive educational space has been identified. The pandemic has also provided a chance to rethink the need for accessible education for students with special needs. At the same time, it is known for sure that the violation of accessibility functions in electronic materials, online courses, and online learning platforms can lead to the exclusion of a person with disabilities from the educational process and socialization. These data are presented in the reports of various international organizations (GPE, 2020; UNICEF, 2020). As a basic message, these reports indicate that people experiencing social disadvantage and marginalization are known to be disproportionately impacted by ill-health and within the frame of the COVID-19 pandemic, persons with disabilities may have an increased risk for exposure, complications, and death (GPE, 2020; UNICEF, 2020).

Thus, in the works of researchers from different countries, the question is raised of improving the system of organizing distance learning for students with disabilities and special educational needs during the period of self-isolation caused by the spread of the new coronavirus infection COVID-19.

A group of researchers conducted a rapid published literature review by searching six online databases to summarize original research findings on the impact of the COVID-19 pandemic on people with physical disabilities (Eskytė, Lawson, Orchard, Andrews, 2020). The reconfiguration of public space needed to ensure that physical distancing is possible provides an opportunity to improve accessibility and inclusion in city streets. The impact of the pandemic was also analyzed from a different perspective while reflecting the experience of building and developing an inclusive environment in England and Australia (Kavanagh et., al, 2020). The results indicate that while some countries, as well as Australia, have enhanced access to high-quality health care for people with disability others, like England, have failed to support their citizens with disability within the context of the pandemic.

Pandemic influence on school and college life has been also analyzed within the scope of the readiness of New York colleges for distance inclusive education (Meleo-Erwin, Kollia, Fera, Jahren, Basch analyzed, 2020). Analyzing the availability of distance learning and counseling resources on the websites of colleges and universities for people with disabilities, the authors state the fact that only 17% of colleges (universities) did not have links to services for people with disabilities on their websites. Of the remaining 127 institutions, only a few provided the above resources on the page for students with disabilities. At the same time, the most common resource was the provision of remote psychological assistance to students. The relationship between the size of the educational organization and the above resources was not statistically significant (Meleo-Erwin, Kollia, Fera, Jahren, Basch analyzed, 2020). Authors in the article highlight the opportunities the crisis presents for embedding accessibility and inclusion of persons with disabilities more firmly into the fabric of streets and call for renewed resistance to policies and practices shaped by ableist norms and attitudes (Meleo-Erwin, Kollia, Fera, Jahren, Basch analyzed, 2020).

As a result of these studies, the authors identified the following aspects:

1. The situation caused by the COVID-19 pandemic has become a source of problems related to the organization of distance inclusive education for students with disabilities and special educational needs.
2. The dissatisfaction of the majority of students with disabilities and special educational needs with the quality and accessibility of online learning is associated with the lack of a system for their support, individual forms of education, and interaction with teachers.

3. The special educational needs of students with disabilities require the development of special technical means of communication that facilitate the perception of educational material by people of different ontological groups.

4. Improving the effectiveness of distance inclusive education requires the development of a system of individual support for students with disabilities and special educational needs, as well as ways to enhance their educational activities.

These provisions are the main conditions that must be taken into account when organizing an inclusive educational environment in the context of distance learning.

CONCLUSION

The implementation of educational programs using e-learning and distance learning technologies is the most significant form of organizing the educational process for people with disabilities and disabilities, especially for students with limited mobility and students with complex developmental disorders. The use of distance learning technologies makes it possible to make adjustments to the organization of the educational process for persons with special educational needs at the stage of recovery from diseases, during rehabilitation activities when students are unable to attend classes. The individual training schedule allows them to stay in a "familiar" home environment, making it possible to combine study and rehabilitation treatment.

An important and responsible stage in building the educational process, taking into account the use of distance learning technologies, is the choice of platforms and messengers and the implementation of primary monitoring of the capabilities of students with disabilities and (or) special educational needs, the identification of communication channels, familiarization with the possibilities of asynchronous (off-line) and synchronous (online) modes. However, it is necessary to consider the following important points:

- systematization of verbal material, its schematization, translation into tables, diagrams, supporting texts, glossary;
- accompanying the material being studied with clarity;
- division of the studied material into small logical blocks;
- increasing the share of specific material and observing the principle "from simple to complex" when explaining the material;

- introduction of the practice of anticipatory reading: preliminary selection of unfamiliar and incomprehensible words and fragments, their explanation, entry into the dictionary;
- adaptation of the text (refusal of long phrases and complex sentences);
- compliance with the requirements for educational texts (breaking the text into parts; highlighting the supporting semantic points; using visual aids);
- dosing the use of verbal and visual components in lectures / practical tasks, etc.

The use of special textbooks, teaching aids, and didactic materials is possible due to the availability of access to electronic forms of textbooks, electronic applications for textbooks on publishers' websites, as well as a large number of educational Internet platforms and various services, including the ZOOM video conferencing service, Learning-Apps.org - a service for creating multimedia interactive exercises, Google services - Google Drive cloud storage, the service for exchanging tasks between a teacher and students Google Class, services for creating route and worksheets, surveys, tests - Google Forms, Presentations, Documents, etc.

Counseling, training of parents and (or) persons replacing them become special tools for using special methods of training and education in the distance educational process. This is necessary because It is the home environment that acts in these pandemic conditions as a “shell” of the educational space.

So, persons with disabilities and (or) special educational needs should have the same opportunities as everyone else in obtaining an education. In modern conditions, the possibility of using distance learning methods in inclusive education has been updated. The main problems in the transition to the online format were named: limited access to the technical infrastructure, insufficiently developed competencies in the field of online pedagogy, and the requirements of specific areas of knowledge that are incompatible with the distance learning model. At the same time, COVID-19 has increased virtual mobility as an alternative to the physical mobility of persons with disabilities and (or) special educational needs.

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ANALYSIS OF PARENTAL AWARENESS REGARDING THE ROLE OF ART THERAPY IN THE DEVELOPMENT OF CHILDREN WITH COMPLEX MULTIPLE DISABILITIES

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ABSTRACT

Emphasizing the need to develop the creative abilities of children with complex, multiple disabilities, within the full implementation of the educational process, both at home and in school, the need to raise the level of awareness of parents in regards the issues under study is greatly emphasized.

This article analyzes the level of awareness of parents about the developmental role of art therapy, the existing problems, as well as the concerns parents have.

In the frame of the current research the quantitative research is use for collecting and analyzing numerical data. It is called to make predictions, and generalize results to wider populations.

The results of the presented research prove the role of the parent, and the family in general in the further development of the child, ensuring the full-fledged educational process. In this context, it is considered extremely important to ensure the level of awareness of parents about the current approaches to the implementation of the educational process of children and their further development.

Key words: art therapy, children with complex and multiple disabilities, parents, creative abilities, development.

INTRODUCTION

Art therapy is a modern branch of psychotherapy, based on the principle of creative self-expression. The name itself tells us the meaning of the term. Art therapy is nothing but therapy based on and including different art avtivities. One can describe that it is a developing field based on psychology on the one hand and art on the other, which has found its wide application in the modern world (Kisileva, 2006; Yermolaeva, 2001; Kopitin, 1999). In order to develop the creative abilities of children with complex multiple developmental disorders through art therapy, which acts as a means of developing the creative abilities of children with complex developmental disorders, it is important to analyze the level of awareness of parents in regards of the therapy.

LITERATURE REVIEW

The analysis of scientific-methodological literature (Kopitin, 2016; Lyashenko, 2014) proves the important role and significance of art and psychological therapy in the process of child development. This direction of psychological support, which appeared in the middle of the last century, took its unique place in the world of psychology and related fields, an continue spreading more and more all over the world and in Armenia. Mostly, literature on art therapy and disability is conquered by the perspectives of therapists who are non-disabled, so far hold the position of expert in relation to people with mental illness or disabilities (Hewitt-Parsons, 2021).

At the beginning of the 20th century, the famous Swiss psychologist Carl Gustav Jung began to use mandalas as a tool to study his own personality. Every day he kept a diary in which he outlined his emotional state in a symbolic way. Most often, these drawings looked like rings. In the field of art therapy, mandala therapy is widely used today as a means of restoring mental harmony and integrity. Mandala (translated from Sanskrit means circle) and mandala therapy is the application of a picture taken in a circle (Slegelis, 1987).

Art therapy has been introduced in the United Kingdom since 1999 and is central to supportive activities in health related fields. In contrast to the United Kingdom, art therapy is generally not widely practiced in Colombia; here therapists are generally trained abroad. In the United Kingdom, on the other hand, art therapy is thought out and planned within the framework of health programs (see Art therapy and online world). At present, art therapy is used not only in hospitals, psychiatric centers, but also in a number of other centers as a form of self-therapy, as well as a continuation of a number of group therapies. A number of art therapy professionals in North America continue to work based on Freud and Jung's concepts. A number of experts in this field have felt the great influence of humanistic psychology and have

come to the conclusion that humanistic theories provide greater accuracy in their work than psychoanalytic theories (Kil, 2004).

However, the art therapy arena has long provided services for people with disabilities, it has not fully engaged with the multiple and complex conditions that lead to full social exclusion, mental distress, and discrimination (Hewitt-Parsons, 2021).

The arts therapy engages people in creative interventions to address clinical goals in numerous domains and improve overall well-being and functioning. From this scope it is more than important while reflecting children with complex multiple developmental disorders. Because of their difficulties in adaptability, art therapy helps to focus on motor, communication, psychosocial, cognitive and emotional goals (Ahessy, 2020). Art therapy are resource-based and concentrate on what children can do, promoting independence taking into consideration the fact of child's ability and level of participation. At the same time according to research results conducted in Hong Kong it is stated that expressive art therapy intervention has different effects on the emotional and behavioral well-being of male and female participants (Ho, Chan, Fong, Lee, Lum, & Suen, 2020). This point might be more brightly seen while we talk about children with multiple disabilities.

It is noteworthy that starting from 2018, in Republic of Armenia, the regional pedagogical and psychological support centers were established, to provide complex services to children with special educational needs based on the parents' application. The centers provide various services: support, evaluation, and consulting to children with educational needs. The provision of services to the child in the regional center is provided free of charge, with the funds of state. Then, at any stage of education, if the child has persistent difficulties that prevent the child from participating in the learning process to the best of his/her ability, the evaluation phase begins, which includes a study of the results of observation of the child's parent, teachers, and psychologists. Within tis frame od services art-therapy is also included as intervention men and can be provided by, occupational therapists, art0therapista, speech therapist and psychologists.

Based on the data provided by different sources of the scientific-methodological literature, the results of practical activities and the above-mentioned assertions, the main purpose of this study is to reveal the level of awareness of parents of children with multiple developmental disabilities within the scope of art therapy intervention.

METHOD

As a basis of the study, the survey was selected the main method from all other Psycho-pedagogical methods, which has been used in the combination of parents of children with

complex and multiple disorders. In this context, individual questionnaires consisting of 15 questions were prepared in advance. The survey was conducted anonymously. The priority of the analysis of the questions presented below was mainly used in the questionnaires. The main purpose of the survey is to find out the level of parents' awareness and ideas about art therapy in the process of developing the creative abilities of children with complex and multiple disorders through a questionnaire.

The was conducted with the parents of children with complex and multiple disorders visiting Yerevan school No. 162, Yerevan School No. 192, and Yerevan No. 2 regional Pedagogical-Psychological Support Center children with complex and multiple disorders. Twenty parents participated in the survey. 18 parents from 20 who took part in the survey had higher education.

RESULTS

According to the question, are they familiar with art therapy as a therapeutic tool for developing the creative abilities of children with complex, multiple disorders? 65% of parents surveyed answered yes, 25% answered no, and 10% found the question difficult to answer.

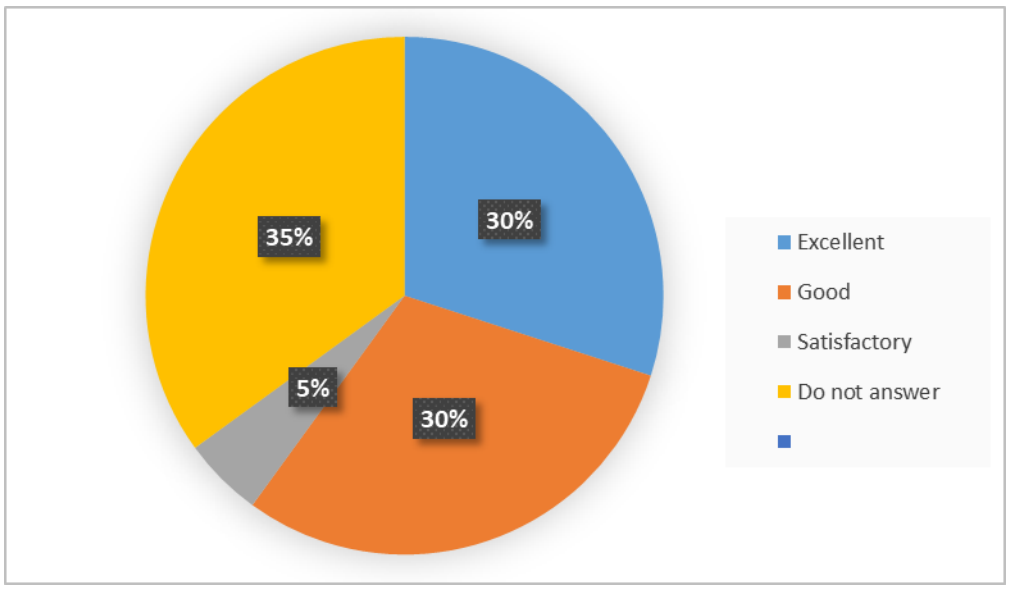
At the same time to the question, if parents consider important the use of art therapy in works aimed to develop the creative abilities of children with complex and multiple disorders? Results indicate that 60% of the parents who took part in the survey gave a positive answer, and 40% found it difficult to answer the question.

It is noteworthy that all the parents who took part in the survey consider important the use of art therapy to develop the creative abilities of children with complex and multiple disorders.

To the question, do specialists perform art therapy in classes with children with complex or multiple disorders? About 55% of the parents who took part in the survey answered positively, and 45% found it difficult to answer the question.

Figure 1.

According to the parents who participated in the survey: The effectiveness of art therapy services provided by specialists in the development of creative abilities in children with complex or multiple disabilities.

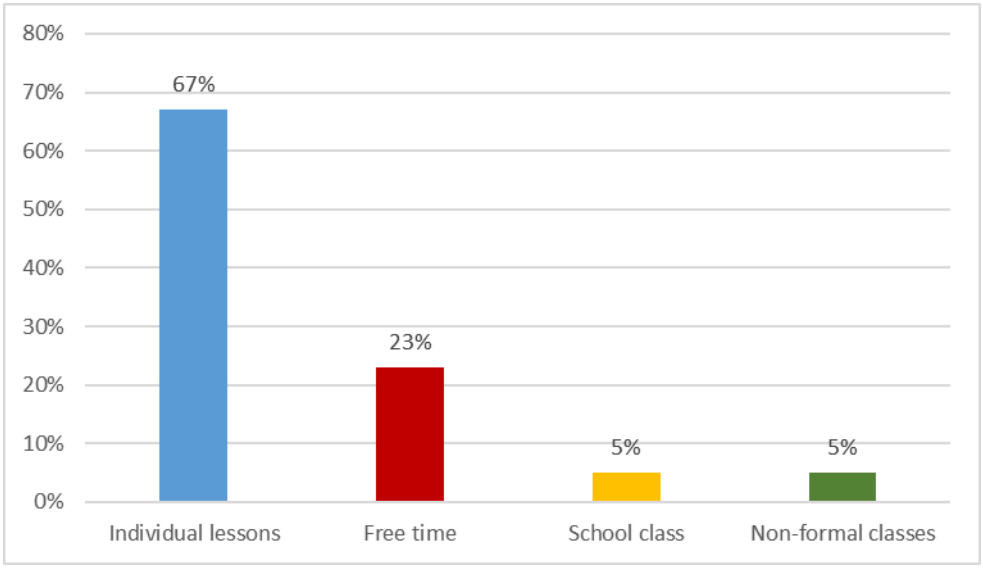


And to the question of how they evaluate the effectiveness of the art therapy provided by specialists in the work aimed to develop the creative abilities of children with complex or multiple disabilities?

At the same time, 30% of the parents who took part in the survey answered excellently, 30% - well, 5% - satisfactorily, and 35% did not answer the question (Figure 1).

Then, to the question of in what period and format the specialists mentioned art-therapeutic works, answered only 18 parents from 20 who took part in the survey, according to which 67% mentioned during individual training, 23% - during free time, 5% - during school classes, and the other 5% - during non-formal classes or extracurricular activities (Figure 2).

Figure 2.
The result of a parent survey on the issue of performing art therapy with children with complex and multiple disorders.



To the question, what measures do professionals use to develop the creative abilities of children with complex or multiple disabilities? Most of the parents consider important the use of music therapy, puppet therapy, dance therapy, caviar therapy, sand therapy, fairy tale therapy, painting therapy, bibliotherapy.

To the last question, if they have any concerns or suggestions about how to develop the creativity of children with complex or multiple disabilities, most of the parents mentioned the following:

- Provide information about art therapy;
- Use artwork more often by the specialists;
- Presence of specially equipped rooms for art therapy sessions;
- Ensuring continuous use of art therapy;
- Ensuring the diversity of applicable tools and methods;
- Providing more awareness and information to parents, about art-therapeutic methods and tools.

DISCUSSION

The above mentioned proves in a way that art therapy, being between the subconscious and conscious, is a connecting bridge between brain and soul. The use of this technique can solve many problems. At the same time, there is a need for parents to provide relevant and accurate information about the use of the toolkit and becomes possible to solve stable, clear problems with children at the level of use art, metaphors and images.

According to the parents who took part in the survey, it can be the best way in the context to normalize relations with their children and to develop artistic abilities and self-esteem.

According to the famous art psychologist Gudmen, whene the term "art" is used, people do not think about words, but they imagine colors, complex feelings, images, lines, etc., which are difficult to express through language. According to the specialist, this is evidence of the complexity of the charm of the profession (Gudmen, 2020). That was kind of understanding of parents while thinking about art therapy influence on their child development.

And according to Keduson, Schaefer's aesthetic feelings always have a transformative effect, and the aesthetic object forms the basis of the transformed experience (Keduson, Shefer 2001). This is exactly what the results of the research prove, analysis of the results of the parents' survey. And so the results of the parents' survey prove the fact that color gives us the warmth of life, feelings, emotions and indescribable nuances of feelings that the intellect is

unable to distinguish and express. According to the majority of the parents who took part in the survey, the color and musical sound are the direct means of expressing mental feelings, those emotions and feelings that cannot be determined, expressed through the mind. Therefore, according to the parents' testimony, this is one of the modern models of psychological-pedagogical influence, which in a way provides the emotional connection between the parent and the child. There is simply one problem that arises here, which is due to the mastery of the toolkit for applying the method. After summarizing the results obtained, it is worth to mention some important preconditions that should be provided within the topic:

- Ensuring parents' awareness of art therapy, particularly mandala therapy;
- Providing parents with appropriate tools for the use of art therapy, in particular mandala therapy;
- Providing parents with appropriate scientific and methodological literature and methodological instructions;
- The importance of a child's condition in the context of the use of art therapy, particularly mandala therapy;
- Taking into account the peculiarities of the child's development and age factor in choosing mandalas.

CONCLUSION

Thus, the results of the parents' survey on the implementation of art-therapeutic work with children with complex, multiple disorders prove, that although the implementation of educational activities with these children is quite widespread today, the need to use the latest approaches, tools and methods, but in some cases, all this is not available to parents. The priority is to equip parents with practical skills in the studied issues, to provide appropriate tools, to raise the level of awareness. To make these practical skills available to parents, consultations and trainings provided for parents by the specialists of the Regional Pedagogical-Psychological Support Center are now being organized. In this way, we can inform parents about the potential of art therapy, which can not only be provided by a multidisciplinary team, but they can also participate in these works.

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TUTORSHIP AS A CONDITION OF VOCATIONAL INCLUSION OF PEOPLE WITH DISABILITIES

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ABSTRACT

The process of supported employment for people with disabilities is described in the article. Tutor and assisted support are considered as one of the conditions of professional inclusion of disabled people. The necessity of full-time employment of tutors and assistants at enterprises is justified. The psychological and pedagogical characteristics of the foundations of such activities as well as promising techniques for the specialists when constructing activities for organizing tutorship and other types of support for people with disabilities during the process of promoting their employment have been proposed.

Keywords: people with disabilities, tutorship, proximity, supported employment, vocational inclusion.

INTRODUCTION

Every year, both globally and in the Russian Federation, the number of people with disabilities is increasing. Such tendency may be explained by demographic trends and an increase in the number of chronic diseases.

According to the World Health Organization, more than 1 billion people (about 15% of the world population) have some form of disability (WHO, 2021). According to the data on January 1, 2020 (FSSS,2021a) there are 11,875 thousand persons with disabilities in the Russian Federation. 3,456 thousand of them are of working age (2,157 thousand men and 1,299 thousand women) Considering the total number of citizens of the Russian Federation (82,678 thousand people), the persons with disabilities of working age amount to 4% (FSSS,2021b).

Citizens' employment is an essential issue that directly influences the economic development of the country. In this situation work of people with disabilities assumes special political, economic, social, and psychological importance, thus facilitating personality's self-

fulfillment, eliminating community stigmatization and discrimination, improving the financial situation of people with disabilities and their families.

In this regard, an issue of creating conditions for people with disabilities of various nosological groups arises.

Professional development of a person starts with the process of choosing the future profession and continues during the stages of professional education, establishment as a specialist, and further expertise development. Support and assistance for persons with disabilities are essential at all these stages.

One of the trends in the promotion of employment for disabled people today is supported employment. According to the Law of the Russian Federation No. 1032-1 "About employment of the population in the Russian Federation" dated 04/19/1991 (as revised on 12/08/2020), during the process of promotion of disabled people employment, special attention should be paid to their support. Herewith the "support for promoting the employment of a disabled person means individual assistance to an unemployed disabled person in his/her employment, the creation of conditions for him/her to work and accelerate his/her professional adaptation at the workplace, and the formation of a route to the place of work and back home and on the territory of the employer."

Such support may be provided by population employment services. Assistance in traveling to/from the place of work may be provided by non-public organizations.

The aforementioned law states that "the employer with the consent of some employees may appoint mentors, who will provide support for the promotion of the employment of a disabled person by: 1) assisting him/her in mastering his/her job duties; 2) making proposals to the employer on issues related to creating conditions for a disabled person to access the workplace and with additional equipment for his/her workplace."

In our opinion, in addition to the indicated areas of support, the provision of tutor support and assistance for people with disabilities in the process of fulfilling professional tasks, the tasks of which are significantly different from the functions of mentors, is of particular functional importance. Our study aims to analyze the basic directions of such assistance in the working process at enterprises.

EXISTING CHALLENGES

After ratification of the Convention on the Rights of Persons with Disabilities in 2012, the Russian Federation assumed obligations to provide disabled people with all their rights. Some principles of the Convention on the Rights of Persons with Disabilities include respect for the inherent dignity of persons, their personal autonomy, including the freedom to make their own choices, and independence; non-discrimination; full and effective involvement and inclusion into the community; equal opportunities; accessibility, etc (UN CRPD, 2006). However, as the preamble of the mentioned Convention says "disabled people continue to face barriers in their participation as equal members of society and violations of their human rights in all parts of the world".

Unfortunately, in terms of realizing the right to work and having just and favorable conditions of work, not all requirements of the aforementioned Convention are met. Oftentimes, at different pretexts, employers do not hire people with disabilities, limit their rights, and make some types of inaccessibility for work due to the physical inadaptability of people with disabilities for various types of activities.

Employers often refuse to hire disabled people because of the absence of knowledge and skills in communicating with this category of citizens. The employers do not want to understand the problems of people with disabilities and create for them the required conditions of work considering special equipment for the workplace, the required free space, work reduction or special work schedule, etc. These things play a key role in the employment of this category of the population.

A person with a disability has several psychological factors reflecting his/her position on the employment market and forming his/her attitude to the community. Disabled people belong to the category of people with limited mobility and are the least protected as well as the most vulnerable part of society. First of all, it is associated with the defects of their physical condition, caused by diseases that resulted in a disability. Psychological problems arise in the case of isolation of disabled people from the real world due to the existing illnesses and as a result of their inadaptability to the environment. The absence of specialized equipment for disabled people and the breakage of day-to-day communication play a key role.

While the absence of supported employment of people with disabilities and health limited abilities in different regions of the Russian Federation just aggravates the situation.

PROBLEM SOLVING

To increase the efficiency of promotion of employment of people with disabilities, it needs to work both with disabled people themselves and employers on improving their knowledge in the field of communication and creation of conditions for persons with disabilities of various nosological groups. Full-time employment of tutors and assistants to provide technical assistance for persons with disabilities and health-limited abilities will significantly increase the efficiency of employment of this category of citizens and allow providing them with favorable work conditions.

PSYCHOLOGICAL AND PEDAGOGICAL BASES OF WORKING

Issues of inclusion of persons with disabilities are deeply studied both by modern foreign and Russian scientists and are reflected in the existing psychological and pedagogical theory and practice.

The modern understanding of inclusion is based on the belief in the advisability and possibility of joint learning/activities if the necessary support and assistance are provided. The group of researchers (Nevzorov, Zaguzina & Bokov, 2016) determine the continuity of the implementation of inclusive practices as a central condition for obtaining a quality education

and ensuring further opportunities for the effective implementation of the labor potential of people with psychophysiological disorders (Nevzorov, Zaguzina, Bokov, 2017, pp. 29-30).

Many researchers consider the inclusion problem through the lens of changing the attitude to people with disabilities. Typically, the problem of forming a positive attitude towards “others” has been developed in the field of optimizing interethnic interaction. The scientific literature often defines the positive attitude as "tolerance". The meaning of this term is usually interpreted as "conciliation" and "toleration" but not as "acceptance". In our opinion, the most adequate term to describe the essence of “acceptance” of the “other” is the term “proximality” (Rayfshnayder (Makarova), 2015. pp. 972-973).

Modern researchers in the tutorship are based on a description of its functions in the educational field and describe the main strategies of a tutor's activities to involve students with special educational needs in educational activities. Thus, for example, D.O Doherty, H. Mc Keague and other researchers point to close coordination of the tutor's work when supporting students with disabilities, where the support specialist does not offer ready-made solutions but creates the necessary prerequisites for conscious and independent work, achieved through the active student involvement in search and dialogue activities to address psychological, pedagogical and social difficulties (Doherty, Mc Keague, Harney, Browne & McGrath, 2018). While developing the idea of the continuity of the provision of support services in various fields of the life of an individual with exceptionalities, M. Grove and T. Croft justify the need for tutor support at the stage of obtaining postgraduate education by a disabled person and his/her further professional development (Grove & Croft, 2019, pp. 229-234).

In addition to this, in E. Zappella's opinion, an initiative to provide information and psychosocial assistance to a person with a disability during his/her initial employment is a key factor in the adequate adaptation and high-quality socialization of such an employee in a new place, which, in turn, contributes to the achievement of cognitive flexibility in the performance of his/her job functions and the development of a creative and analytical approach to solving non-standard work tasks (Zappella, 2017, pp. 217-219). This is another task of the tutor support.

In our opinion, such understanding of the continuity of a disabled person's support contributes to the effective educational and further work socialization of a person with psychophysiological disorders and the formation of successful life paths in general. At the same time, we consider it advisable to describe certain techniques of tutoring that can be used in the process of supported employment of an employee with a disability, and during the full-time employment of labor tutor at enterprises to provide the disabled person with the necessary assistance in performing professional functions:

- the technique of continued duality, when the various specialists, including an assistant and a tutor, provide support for exceptional students both directly during the educational process and in the course of practical training within the educational process to reinforce the necessary production skills;

- the technique of reliance on multiple intelligences, when a tutor, having psychological and pedagogical professional competencies, builds a system for providing support in the workplace, taking into account the psychophysiological and personal characteristics of an employee with a disability;
- the technique of constructing a personal life path, which implies the fundamental possibility of developing multiple positive life scenarios for any person, regardless of any present health disorders and social position, but which is in direct interrelation with the person's desires, preferences and leading motives of activity;
- the technique of exposure associated with the conscious immersion of a disabled person in an initially not completely comfortable environment in order to develop the necessary skills of adaptability, stress resistance, and independence when solving various difficulties at the workplace or during the course of study;
- the technique of conductive influence, which involves the work of a labor tutor or other specialist in the field of education through the closed social environment of a person with a disability;
- the technique of positive normalization of exceptionality, focused on the creation by a tutor together with a psychologist of acceptance of any types of exceptionality both of the person with special needs and of employers, teachers, and the broader society in general;
- the technique of providing an alternative choice, associated with the creation by the tutor of multiple variabilities of decision-making by a disabled person, which contributes to the formation of integral and logically-based thinking both in educational and work activities;
- the technique of resistive dialectics, characterized by the stable support of the tutor when the disabled person him/herself or his/her closed social environment refuses from the stagnant system of views and stigmatizing attitudes;
- the technique of predictive design, expressed in the joint development by a tutor and a disabled person of the path for the implementation of his/her labor activity, both in the direct performance of job functions and in the context of broader prospects.

The listed tools of tutor activities will allow creating the needed prerequisites for employees with disabilities solving various challenges in their labor activities, including at the stage of their transition from direct educational activities to the employment process and successful functioning at their workplaces.

CONCLUSIONS

In the conditions of economic development of constituent entities of the Russian Federation, the problem of employment of persons with disabilities and health limited abilities is emphasized quite sharply. The process of promotion of employment of persons with disabilities involves organizations of different institutions (employment services, professional educational organizations), non-commercial organizations, etc. Currently, these activities are

limited only by the process of employment and support of disabled people at the first stage of their work. These are clearly not enough. The data show that often employees with disabilities quit the job immediately after the probation period or before the end of the 6-month period because they can not perform their job functions or the enterprise lacks the required conditions.

Full-time employment of tutors and assistants at enterprises can help increase the efficiency of the supported employment process and create conditions for employees with disabilities to perform their job functions throughout their work at the enterprise. The tutor functions include help in explaining the work assignments, assistance in professional development, organization of a high-quality support process using psychological and pedagogical techniques, etc. The assistant's main tasks are to provide technical assistance in the performance of job functions, movement in the building, on the territory of the enterprise, and on the way from home to work and back.

The formation of the practice of professional inclusion of disabled people through the organization of tutors and assistive support makes it possible to ensure a comprehensive personal fulfillment of an employee with a disability, and not only to positively influence political, economic, social, and psychological processes but also to create the foundation for the development of civil society in general.

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BRAIN INTERHEMISPHERIC INTERACTION IN CHILDREN WITH MENTAL DISABILITIES WITH SPATIAL ORIENTATION DISORDERS

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ABSTRACT

Children with intellectual disabilities can freely orientate in everyday situations only if their orientation is properly developed. They can orient aided by their peers and the environment. However, the slightest change or complication of the route from one familiar place to another cause's confusion and sometimes helplessness in the actions of children. Unlike their normally developing peers, children with intellectual disabilities cannot mentally imagine the location of the kindergarten and combine all its premises in one space.

Neurophysiological mechanisms for children with mental development disorders defined as functional insufficiency of the left or right hemispheres and the features of intra - and interhemispheric interaction in the developments of mental functions.

Children with intellectual disabilities or mental development disorders can freely circumnavigate in everyday situations only if this task is carried out in a situation which is known and familiar for them. However, the slightest change or complication of the route from one familiar place or space to another cause's confusion and sometimes helplessness in the actions of children.

Keywords: interhemispheric interaction, brain functions, spatial orientation disorders, intellectual disabilities.

INTRODUCTION

Changes for both functional specialization of the hemispheres and interhemispheric interaction, based on integration of brain functions, cause complex violations of cognitive activity observed in children with mental disabilities. Differences and deviations from the normal functioning of the left and right hemispheric systems in children with developmental

and mental retardation reflect the features of neurophysiological mechanisms that provide integrative brain activity.

Intellectual and emotional-volitional processes of children development and improvement are closely associated with the development of neurophysiological mechanisms of functional specialization of the left and right hemispheres of the brain, with the formation of interhemispheric interactions, with an increase in the regulatory role of associative systems in the cerebral integration of intra-hemispheric and interhemispheric relations.

There are several points of view regarding to the occurrence of hemispheres functional specialization of human brain in ontogenesis. According to the following view, postnatal development of both hemispheres functionally have equal potential and ability of the right hemisphere to the speech development in the initial stages until approximately 2-4 years equal to the level of abilities of the left hemisphere. Experimental data showed that there is still no strict dominance of the left hemisphere for speech and the functions of the hemispheres are interchangeable for 3-year-old children.

At the same time, there are another data featuring to the early occurrence of hemispheric asymmetry, the early specialization of the hemispheres. According to the researchers compelling data are given based on the observations of preschoolers with a defect in the development of hemispheres.

Experimental data indicate that the hearing impaired with a gross violation, speech smoothed hemispheric motor asymmetry disturbed are the processes of formation of functional asymmetry of the brain. So, why in fact, delayed development of speech functions hinders the development of right-hand preference for more complex forms of arbitrary activity? Obviously, the main reason is that speech disorders disrupt the processes of speech regulation of various forms of active undertaking of the child. It is necessary to track how these processes occur in ontogenesis. For a deeper understanding of this internal connection of the development of the processes of generalization of objects, various actions with objects, their verbalization with the development of functional asymmetry of the brain.

It is shown in numerous psychological observations that the process of child speech development is closely related to the development of the motor sphere. Thus, almost in the first months of life the word causes more intense motor reactions in comparison with non-verbal signals.

As many researchers note there is the greatest increase in lateralization of functions and domination of the left hemisphere in 3-to 7-year-old children. There is a qualitative leap in the peculiarities of the neurophysiology of laterality among children born after 2000.

According to the results of several studies there were children with balanced right-left laterality in brain processes within the ambidextrous groups. In our opinion the more applicable term for this phenomenon is «ambicerebrality». It is crucial to adopt the following working formulation: ambicerebral is the ability of the human right and left hemispheres alternately, or concurrently and simultaneously carry out the processing of information. We consider that this is a more exact recording of a new attitude that differs from the "two-handed" - ambidextrous.

It should be noted that the processing of information switching in the right and left brain occurs spontaneously for such children. Though, during maturation, both hemispheres start processing information parallelly and at the same time, demonstrating qualitatively new possibilities of brain activity.

METHOD

Educational activities of first-grade students have significant requirements for orientation in space, including orientation on a sheet of paper. In the well-known test of D. Elkonin (Shif, 1995) "Graphic dictation" interesting data were received. The left-handed and right-handed students performed equally well under dictation task, but the analysis of individual work showed obvious differences. Higher indicators were seen in the performance of lefties during their individual work. They saw the patterns as a whole and wonder where to hold the next line, the next piece of the pattern, completed the task confidently, quickly and without any mistakes. The difference between the data obtained during the individual work of the "Graphic dictation" test between left-handed and right-handed was statistically significant.

From our point of view, the best results in left-handed children in the tests "Graphic dictation" and "Koos cubes" are explained by the synthetic method of information processing. Children with dominance of the right hemisphere perceived features of a pattern, both in two-dimensional and three-dimensional spaces.

Neurophysiological mechanisms under mental development disorders in children are defined as functional insufficiency of the left or right hemispheres and the characteristics of intra - and interhemispheric interaction in the processes of mental functions.

DISCUSSION OF THE RESULTS

Studies on the functional asymmetry of the hemispheres of the brain allow us for better understanding the objective causes and mechanisms underlying disorders and deviations in the cognitive activity of children with various developmental disorders. Each hemisphere contributes and plays its own role in the realization of higher mental functions.

The specificity of the integrative activity of the brain in violation of mental development and mental retardation in particular, revealed in psychological, pedagogical and electrophysiological studies, due to differences in the nature of deviations from the norm of the system organization of structures of the left and right hemispheres and features of interhemispheric interaction in the processing of information.

Changes for both functional specializations of the hemispheres and interhemispheric interaction, based on integration of brain functions, cause complex violations of cognitive activity observed in children with mental disabilities. Differences between deviations from the normal functioning of the left and right hemispheric systems in children with developmental and mental retardation, reflect the features of neurophysiological mechanisms that provide integrative brain activity.

The processes of lateralization functions in ontogenesis in a person is nonlinear, with alternating dominance of the right and left hemispheres, a gradual transition from duplication of functions to their specialization. Delayed lateralization of functions disrupts the cognitive and emotional development of the child and creates prerequisites for learning difficulties.

With mental retardation, the violation of interhemispheric interaction is manifested by a marked change in the transmission of sensory information from the left hemisphere to the right. According to the results of the analysis the data obtained by the method of evoked potentials, afferent signals from the structures of the left hemisphere enter the right hemisphere more dispersed, asynchronously due to the slowdown in the processing of information in the left hemisphere or changes in the system organization of sensory processing in the left hemisphere. This manifest itself in a reduced amplitude, a slower development and changed the configuration of indirect EP in the right hemisphere.

As the interhemispheric communications transmitted complex, processed in "itself" hemisphere information, informing the other hemisphere about the case in this hemisphere, preparing it to receive and process addressed directly to its information (Velichkovsky, 2006; Elkonin, 1989) the violation of such transmission, undoubtedly leads to a violation of the right hemisphere and to a change in the integration of the hemispheres of the brain in the process of perceptual activity. Extending the period of development of EAP on complex stimuli, slowing down the time of interhemispheric information transferring reflect the specificity of signal perception in mentally retarded children. Slowing down the visual perception, requiring more than usually for recognition of objects, stresses the psychologists as well.

According to psychologists and teachers, the lack of functions of the right hemisphere in mentally retarded children manifests itself in violation of the holistic nature of perception, in violation of visual and spatial perception. At the same time, the difficulty of establishing verbal

connections and verbal mediation is characteristic (Petrov & Belyakova, 2012) which reflects the violation of left hemisphere functions, revealed during electrophysiological study. Violation of hemispheric relationship interaction in mental retardation manifests itself in the limitation of cognitive activity. It states in that knowledge acquired in verbal form does not have a significant impact on the development of a mentally retarded child due to the fact that sensory cognition and practical activities are not sufficiently understood and formalized in the word (Ushakov, Sharaev & Kartashov, 2016). It can be assumed that the change in interhemispheric interaction in the processing of sensory information reflects to some extent the neurophysiological mechanisms of brain integration in the process of activity. Considering the functional specialization of the hemispheres, as well as the role of joint activities of both hemispheres in the exercise of higher mental functions, it can be assumed that the violation of interhemispheric information transmission distorts cognitive integration in intellectual activity.

Changes in both mechanisms of hemispheres functional specialization and interhemispheric interaction, which is the basis for the integration of brain functions, cause complex violations of cognitive activity observed in children with mental disabilities. Differences in deviations from the normal functioning of the left and right hemispheric systems in children with developmental delay and mental retardation reflect the features of neurophysiological mechanisms that provide integrative brain activity.

The ability to orientate in space is one of the necessary conditions for the harmonious development of personality.

The problem of human orientation in space is quite multifaceted. It includes both ideas about the size, shape of objects, and the ability to distinguish the location of objects in space, the understanding of different spatial relationships. The concept of spatial orientation includes the assessment of distances, sizes, shapes, mutual position of objects and their position referring to the orientation.

The simplest forms of orientation in space, linked to the transition to a vertical position, the development of substantive action, are formed in infancy (Luria, 1969). By the age of three, the child develops a systemic mechanism of spatial orientation, in which vision, kinesthesis, static-dynamic sensations appear in certain relationships.

It is quite multifaceted problem of orientation of the child in space. Penetrating all spheres of interaction between the child and reality, orientation in space has an impact on the development of one’s self-consciousness, personality and is an integral part of the process of socialization. This problem includes both the idea of the shape and size of objects and the ability to distinguish the location of objects in space, understanding of different spatial relations.

The concept of spatial orientation includes an assessment of the shape, size, distance, relative position of objects and their orientation setting. Yarbus A.L. by saying the orientation in space intended to mean "understanding and definition of person by his/her relation to another one's, identified by material body or, that the same, the own reaction to themselves (Drummers, 2014).

At an early stage of ontogenesis, the process of spatial perception and representation formation is caused by the development of several factors. These include: the formation of the mechanism of the child's gaze fixation, the formation of hand movements and the associated development of substantive actions. Forming the subject actions are of great importance for the development of perception of objects as individuals, the accumulation of ideas about their diverse properties, as well as the definition and establishment of various spatial relationships between them (Velichkovsky, 2006; Kok, 1972).

Important role in the development of this process is the formation of locomotor functions in the child (sit, crawl, walk), which occurs normally in the first two years of the child's life. By the 2nd year of life, the child's reflection of space and orientation in it occur only on a practical level.

A very important role in the development of spatial orientation is given to mastering the child's speech. When mastering the speech, the child can move to the second signal level of space reflection, which is higher. We can say that the process of formation of spatial representations and spatial perception is carried out at the visual and verbal levels. Based on practical activities, spatial representations are formed and as children master speech throughout the preschool age, their verbalization occurs.

Schematized spatial representations are the most important type of spatial representations that students should master. They act as a means of visual spatial modeling and are a universal means of mental activity.

In school-age children, the development and formation of spatial representations takes place in the classroom design, visual activities and in a variety of gaming activities, too. Training more complex types of spatial orientation to form new spatial representations should be conducted by the teacher specifically and systematically.

Studies of psychologists and teachers show the possibility and need for systematic and consistent work on the formation of students of different types of spatial orientation. School age is sensitive to this impact.

Persistent difficulties in the development of the space belong to the characteristic manifestations of intellectual retardation. As a result of the interconnected complex of organic, functional and social reasons for the formation of spatial representations in mentally retarded

children is violated in all defining areas, including the mastery of the actions of perception, the acquisition of experience of practical transformation of space, its reflection in the word, productive activities. Disadvantages of orientation, both in the subject and in the social space adversely affect the cognitive and personal development of the child, preventing his social overall adaptation.

Thus, one of the necessary conditions for the child's health is the ability to orientate in space.

The development of spatial orientation in mentally retarded children of school age is subject to general laws. In such children, it is much slower and has a kind of deviation.

The early diffuse damage of the central nervous system provides an unfavorable biological basis for the development of the systematic mechanism of space perception. The maturation of all analyzer systems is delayed, and a delay occurs in establishing a complex set of inter-analyzer links. There is a distortion of the formation of the system mechanism of perception of space. The most prominent form of violation of the spatial orientation arises from the failure or lack of zones formation of the brain cortex that combines the work of visual, auditory and vestibular analyzers.

With the defeat of the visual analyzer occurs evenly concentric narrowing of the visual fields, reducing visual acuity and eye. Insufficiently expressed functional motor asymmetry, which is a consequence of narrowing the perceptual pathways, adversely affects the formation of spatial perception of children (Drummers, 2014; Luria, 1969).

Higher nervous activity in mentally retarded children has several features that complicate the formation of conditioned reflexes: a decrease in the strength of the processes of excitation and inhibition, a violation of their mobility and balance in their course. This leads to difficulties of differentiation, inertia of old connections, especially verbal. The reason for the fragility and slow pace of the formation of conditional connections is the weakness of the closing function of the cerebral cortex. From pathological changes in higher nervous activity in mentally retarded children occurs underdevelopment of complex forms of mental activity, such as arbitrary attention, analyzing perception, memory, etc.

Based on this, the children manifested the primitive of the analysis and synthesis of the perceived objects, instability and blurred recorded images.

The delay in the development of all locomotor functions, the main types of movement is a consequence of early organic damage to the central nervous system. There is a delay in the timing of the expansion of the review of the surrounding space and, as a rule, the movement in it. Children with mental retardation are mastering space from the first years of life which is incomplete and fragmented.

One of the most important tasks of training and education of a child with mental retardation is the formation of spatial representations. An important condition for successful learning in a special (auxiliary) school and in a school with inclusive education is the ability to practically navigate in space and perception of spatial relations among surrounding objects. From the level of spatial representations formation largely depends on the mastering success for the children with intellectual disabilities, writing, drawing, manual activity and other academic subjects.

Underdevelopment of spatial representations, as mentioned by and others, is one of the main reasons causing difficulties in mastering these skills (Petrova & Belyakova, 2012).

Children with intellectual disabilities entering the first grade are not being yet ready for the assimilation of mathematical knowledge. Their numeric knowledge is not fully complete. Children have difficulties in comparing objects in size; they do not know the vocabulary that determines the signs of objects in size. They also poorly orient in space and time, do not understand the words-adverbs and prepositions, indicating the position of objects on the plane and in space (Kinsbourne, 1972). Phrasal speech development is also delayed, which is important in the development of spatial perception and spatial representations. Only through speech it is possible to generalize the reflection of space. The delay of this stage in the development of spatial orientation occurs with a delay of 1.5-2 years.

To reduce the perception of speech and poor understanding of it leads to a significant underdevelopment of phonemic hearing.

For mentally retarded students are characterized by the inferiority of all aspects of their speech activity, the delay in the assimilation of phonetic, lexical, grammatical aspects, understanding and adequate use of speech. In this regard, without the necessary practical basis, the child's speech cannot be used as a full-fledged means of orientation in the surrounding space.

Due to the significant delay in the emergence of mental retarded children subject activity and its inferiority, as well as, in connection with a weak interest in the world, there is no basis for the formation of these children's play activities. In particular, we are talking about the story game. The game affects all kinds of children's activities.

By the age of 7, some children with mental retardation may have formed elementary spatial representations, such as spatial characteristics of objects (shape, size), spatial relationships between objects, directions in space.

By the time they go to school, some children (considering the system of correctional work), as a rule, already distinguish their right and left hands, understand the meaning of the

words "up", "down", "on", "closer", "ahead", "behind", etc., can not only practically reproduce, but also to determine the location of objects relative to himself.

Considering the sensitiveness of preschool age, it is assumed that difficulties in educational activities can be prevented with targeted corrective work on the formation and improvement of spatial orientation in mentally retarded children in preschool age. The program of training and education of mentally retarded children in special preschool institutions, integrated groups, considers the work on the development of spatial representations in various classes: drawing, application, design, physical education, etc., which gives positive results. However, the difficulties of spatial perception and the shortcomings of spatial orientation in mentally retarded children are not overcome until the end of preschool age (Kratkova, Lukyanov, Masherov, Kaverin, 2005).

Children with intellectual disabilities are not being able to operate on their ideas with spatial orientation. As a rule, these ideas, learned only in one standard situation, are not transferred to others, which is due not only to the peculiarities of cognitive activity of children with intellectual disabilities, but also with communication deficiencies. Spatial orientation is more successful in conditions close to the experience of children. The conditions of orientation farther from daily experience and from the usual situation, the harder it is to navigate.

Children with mental retardation have a large discrepancy between active and passive vocabulary reflecting spatial categories. The word can exist by itself, specifically without the image, and therefore often used inappropriately.

Along with the poorly formed spatial orientation, the ability to fix and hold the verbal instruction, as well as to act in accordance with it, prevents mentally retarded children from successfully completing the task. The fixation and execution of an instruction are also affected by its connection to a familiar situation. The analysis of observations shows that the scheme of own body is hardly assimilated by children with intellectual insufficiency (mental retardation) in the senior preschool age. Orientation on itself is formed slowly. Due to the peculiarities of the development of cognitive activity, even the knowledge of which hand is right and which is left does not allow confidently distinguish the appropriate directions.

CONCLUSION

A child with mental retardation is characterized by the inability to act in an imaginary plan, mental turn in determining the sides of a person or object located opposite is not available and is not clear. The child needs a visual display of this transfer, where he or she not only saw, but also acted, moved from his own position to the position of another person (object). Mental transfer remains difficult after multiple corrective-developmental exercises and tasks, but

children get experience of understanding the essence of this mechanism and in some cases, it can help to overcome the problem.

Both for normally developing children and for children with intellectual disabilities, it is a better formed ability to navigate in vertical directions- up and down and horizontal directions- forward and backward. However, motoric difficulties for children with intellectual disabilities prevent more complete assimilation of these areas. The ability to define and verbally denote spatial relationships between objects is a difficult task for children of both categories.

By the end of training level of preschool education, preschoolers with intellectual disabilities show the ability to navigate in such undifferentiated relationships as "in the middle" and "about". Determine the position and relationship of objects in space, marked by the prepositions "on" and "under". However, orientation in such spatial relationships, it is required to differentiate precisely, as from right to left, it turned out to be difficult for the mentioned category of children.

Children with intellectual disabilities can freely navigate in everyday situations only if this task is carried out in a situation which is very close to their daily experience. They are oriented in the space of their group. However, the slightest change or complication of the route from one familiar place or space to another causes confusion and sometimes helplessness in the actions of children. Unlike their normally developing peers, children with intellectual disabilities cannot mentally imagine the location of the kindergarten and combine all its premises in one space.

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THE PERSPECTIVE OF SCHOOL-BASED OCCUPATIONAL THERAPY INTERVENTION TO ENHANCE THE PARTICIPATION OF LEARNERS WITH SPECIAL EDUCATIONAL NEEDS IN SCHOOL ACTIVITIES

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ABSTRACT

The aim of this study was to investigate the participation problems in school activities of the learners with special educational needs in order to establish the possible ways of Occupational Therapy intervention in school settings in Armenia. In total 111 learners with special educational needs were observed and their participation in educational and non-educational activities was assessed using the "Occupational Therapy School Skills Assessment" tool. Since the educational environment considered being crucial for the learners' participation, the school environment was observed to determine the features facilitating or burdening their involvement in all kinds of school activities.

Quantitative research methodology was used to outline and summarize the participation problems of learners with special educational needs for establishing the possible ways of Occupational Therapy intervention.

The results of this study highlighted that in the inclusive school in Armenia the learners with special educational needs still had participation restriction and their involvement in educational and non-educational activities was limited due to lack of individual skills and abilities, as well as not adapted environmental conditions. Learners with physical dysfunctions (62%) experienced mobility problems and had significant difficulties performing self-care activities, about 65% were not able to take part in outdoor events, permanent support and assistance were required. For the learners with autistic spectrum disorder (50%) communication

with peers and staff members was still challenging and participation in the educational process was not effective.

Keywords: inclusive education, learners with special educational needs, school activity, participation, environment, occupational therapy.

INTRODUCTION

In educational process given assistance to the learners with special educational needs (SEN) assumes the provision of "appropriate" support based on the assessment of the limitations and problem-based "needs", using the specific knowledge, skills and attitude (UNESCO, 1994; "United Nations Convention on the Rights of Persons with Disabilities," 2006). Although the integration and education of learners with SEN in inclusive schools in Armenia have been organized in a special direction, however, scientific research conducted during the period of the 2006-2014 year proved that the process of inclusion of these learners was not fully in line with the use of appropriate social and rehabilitation methods (Harutyunyan, 2014; Saratikyan, 2013). The results of surveys and the study of complex approaches of Occupational Therapy intervention provided to learners with SEN showed that the organization of inclusive education was not sufficient and there were still obvious problems that hinder the independent and effective participation in school activities.

Taking into account that the organization of inclusive education requires comprehensive social and rehabilitation methods, using a combination of different professional approaches, the role of Occupational Therapy intervention is considered to be important and significant which was aimed at improving the learner's participation in educational activity, and ensuring their full involvement in the educational process (Hemmingsson, Borell, Gustavsson, 2003). It is well known that successful implementation of inclusive education for learners with SEN and enhancement of their participation in educational and school activities mainly based on the comprehensive assessment of individual abilities, capabilities, interests and needs as well as the evaluation of environmental conditions (Cohn, & Lew, 2010). Particularly, Occupational Therapy intervention in schools is intended to help the learners with SEN to develop educational and functional skills for everyday life in the areas of self-care, life skills, school work and play.

Therefore, the aim of this study is to investigate the participation problems in school activities of learners with special educational needs in order to establish the possible ways of Occupational Therapy intervention in school settings in Armenia.

LITERATURE REVIEW

Education as a fundamental human right (according to the Universal Declaration of Human Rights, United Nations, 1948) defines the educational right of every child, regardless of any restrictions. At the same time, it excludes the provision of segregated education, viewing it as a violation of the right of learners to appropriate inclusive education, limiting their access to further education. Being philosophical and the combination of pedagogical experience, inclusive education contributes to the educational development of each student to be involved in the system, to be respected, protected, to feel confident in one's own potential in the process (Haug, 2017). In this regard, inclusive education contributed to the process of involving each learner in the educational system, respecting, protecting and feeling confident in their own potential (Harutyunyan, Hovyan, Harutyunyan, 2018). At the same time, inclusive education being based on the principles of fundamental human rights, beliefs and values, promotes the social involvement of each learner in society, supports active participation in the educational process, and contributes to the formation of positive relationships between learners with SEN and their peers in the school environment (Ainscow, 1999).

Since 2014 with the adoption of the RA Law on making amendments to the Law of the Republic of Armenia "On Education" Armenia fixed the political will to transition to the General Inclusive Education. "The Republic of Armenia declares General Inclusive Education as a guarantee of ensuring the right to education of every child." In February 2016, the government approved the "Action Plan and Schedule for the Implementation of the General Inclusive Education System", according to which the process would start in 2016 and end in 2021 (Government of RA, 2016, February 18, Resolution No. 6). The strategic aims of the General Inclusive Education were defined in terms of quality of education and accessibility, which comprised the following:

1) Expanding the opportunities for organizing the education of learners with SEN in secondary schools, moving to a system of General Inclusive education.

2) Introduction of effective mechanisms for identifying, assessing and organizing the education of learners with SEN.

3) Investment of the pedagogical-psychological support services.

Inclusive education practice has shown that multidisciplinary teamwork provides an opportunity to assess each learner’s educational needs from their own professional perspective while addressing their health and social needs that have a significant impact on the learner’s education (Harutyunyan, Hovyan, 2013). However, the active participation of each learner in the school activities was conditioned by the peculiarities of his/her physical-mental development, taking into

account the current and nearest development zones (Luria, and Vygotski, 1965), the educational needs in order to ensure the efficiency of inclusive education (Reid, et. al., 2006). For a more efficient and complete organization of this process, it was necessary to pay special attention to the mutually agreed work of the multidisciplinary team, including different specialists in the field of pedagogy and rehabilitation (Starczewska, Hodkinson, and Adams, 2012). Thus, as a result of a comprehensive assessment and analysis of the needs of learners with SEN, it was only possible to ensure their involvement in the educational process, to develop his/her learning skills and ability to integrate into public life and to become a full member of society in the future (Armstrong, 2012; Bernal, 2009).

Education, which is the learner's primary objective also has been identified by the American Occupational Therapy Association (AOTA) as one of the key performance areas; it refers to the "activities needed for learning and participating in the educational environment" (American Occupational Therapy Association, 2014, p. S20). From this perspective, the occupation of education includes academic (e.g., math, reading, writing), non-academic (e.g., sports, self-care, outdoor events), and prevocational and vocational activities. Since participation in the educational process and in everyday occupations is beneficial for learners' development, health, and well-being (WFOT, 2016; Law, 2002), Occupational Therapy has an important role in the school environment.

Mann et al., (2015) defined that learning or academic performance was a complex multifactorial process that involves demonstrating knowledge, paying attention to instruction, accessing the learning environment and educational materials, and working collaboratively with peers. Accordingly, poor academic performance has been associated with an increased risk of dropping out of school and obtaining poor postsecondary outcomes. Within the multidisciplinary teamwork maintaining a "client-centered" approach occupational therapy expanded the involvement of learners with SEN in the activities of their choice that they want to engage in or that they want to perform (Sayers, 2008). Best practice in school-based occupational therapy emphasize the importance of working collaboratively with school staff, teachers and parents to modify the context and the occupation and to provide occupational strategies to enhance the performance and participation of children in the school environment (Bazyk and Cahill, 2015). It has been already approved that assessment of learner's individual abilities was the first step in the Occupational Therapy intervention process, which was the most important precondition for the organization of inclusive education and ensure the effective involvement of learners with SEN in the educational process based on "child-centered" pedagogy (Agran, Blanchard, & Wehmeyer, 2000).

"Occupation-based evaluation approaches helped the multidisciplinary team make decisions about the learner's ability to participate and perform in the school setting and identify the ways that the disability affects the student's participation in school activities and routines" (Polichino, 2001, p.

35). For this reason, diverse occupational therapy assessment methods were used to focuses on strengths and weaknesses in educationally relevant occupational performance areas, to understand the learner's interests and preferences, to gain important information about his/her social participation, as well as his or her habits and routines. Access to an educational environment is crucial to the equal participation and full inclusion for every learner. School-based occupational therapy intervention ensured the effectiveness of learner's participation in the school environment which includes the classrooms, cafeteria, playgrounds, restrooms, gymnasium, and other spaces (Rens & Joosten, 2014).

For this reason, the aim of this quantitative study was to investigate the participation problems in school activities of learners with special educational needs in order to establish the possible ways of Occupational Therapy intervention in school settings in Armenia.

METHODOLOGY

This study used a quantitative research design, to assess and collect data on the degree of participation in the educational process, the involvement in non-educational activities and independent participation in self-care activities of 111 learners with SEN from 20 schools. The use of the quantitative method made it possible to identify the basic problems of learners with SEN while taking part in school activities that assume educational and non-educational activities and the results have been presented by means of mathematical-statistical calculations. The current study was constructed on activity-based assessment and "Occupational Therapy School Skills Assessment" tool to identify specific challenges of learners in school environments, identify school-based occupational therapy interventions directions and establish guidelines for increasing learners' participation. The "Occupational Therapy School Skills Assessment" tool was translated into Armenian, tested, and adapted taking into account local and cultural specifics.

PARTICIPANTS

For this study in total 111 learners with special educational needs have been observed from 20 inclusive schools in Armenia and their participation in educational and non-educational activities had been examined in order to find out the main problems and difficulties of their participation in school activities. During the study period, the representation of the participants in 20 inclusive schools included the following categories:

1. 38 learners from 4 – 5 grade having physical dysfunction and musculoskeletal disorders: (difficulty in walking, posture, movement, fine motor skills, controlling the movements).
2. 44 learners from 6-8 grade having autistic spectrum disorder.

3. 29 learners with Attention Deficit Hyperactivity Disorder.

DATA COLLECTION

Data was collected using activity-based assessment and the "Occupational Therapy School Skills Assessment" tool to define learners' participation problems in educational activities, the performance of self-care skills, as well as their involvement in non-educational activities, was determined. In the data collection process special attention was given to the assessment of the following aspects:

- Functional skills of the learners with SEN, such as functional mobility (transfer) in the school environment.
- Involvement in educational activities; writing skills.
- Performance of self-care skills at school (participating in activities in the canteen, toilet or other places inside the school).
- Compliance of the educational environment to the needs of the learners with SEN.

In line with activity-based assessment and evaluation, the potential ways and main areas of occupational therapy intervention have justified making the teaching of learners with SEN more effective and focused on their abilities, needs and preferences (Fisher, & Jones, 2014). Since participation in any kind of activity is highly influenced by the environmental condition that can facilitate or make it challenging, in this study school environment appropriateness to the needs of the learners with SEN has been assessed.

DATA ANALYSIS

The data analysis was carried out according to quantitative methodology. The questions of the survey used for this study were of closed-ended multiple-choice format. For analysis, quantitative data were downloaded into a Microsoft Excel spreadsheet and organized by data type and content. The closed-ended questions were analyzed using descriptive statistical analyses, more specifically by calculating percentages and data frequencies. The open-ended questions, which included handwriting, the observation of school environment were coded according to the relevant categories, grouped, and presented in numerical percentage (Yadov, 2007).

RESULTS AND DISCUSSION

The results of collected data analysis gave an opportunity to identify the main barriers and difficulties of participation in the educational process of learners with SEN that limit their involvement in the educational and non-educational activities, as well as performing self-care at school. The main challenging areas of participation in the school environment had been identified and assessed according to the participants' abilities and environmental possibilities. The results of the conducted assessment in three groups of learners with SEN have been categorized, grouped, and presented in numerical percentages.

1. Difficulties in performing functional mobility at school.

Since in the process of classroom activity participation it was important for the learners to be able to move independently, and perform varied activities, the functional mobility skills of the learners with SEN (approaching the blackboard, moving around the school, managing posture), difficulties and the environmental conditions were studied.

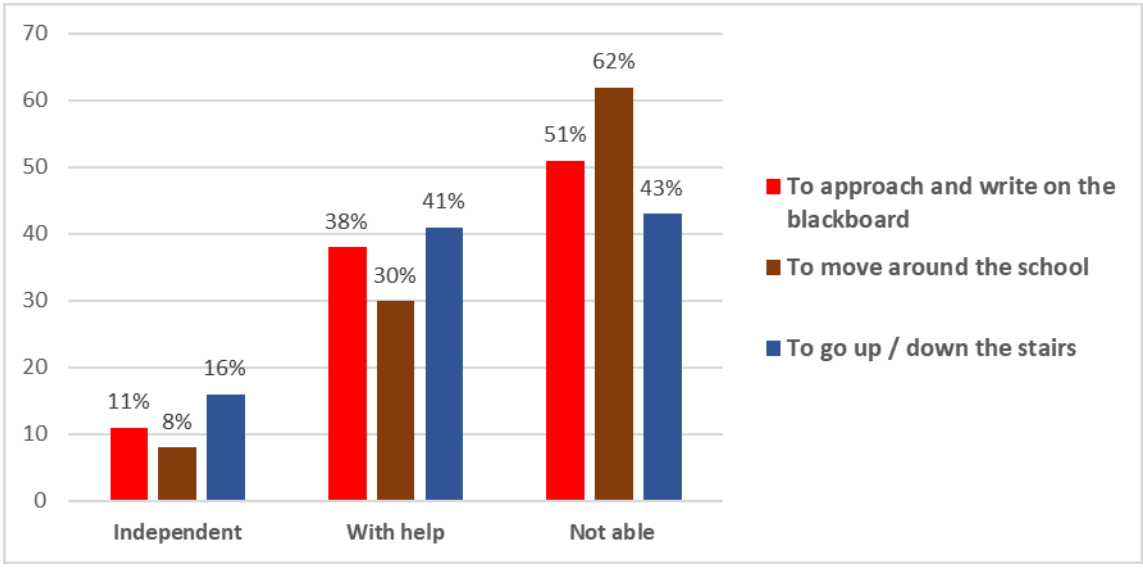
As a result of functional mobility assessment, several issues have been identified that make it difficult for the learners to participate effectively in the learning process. Learners with SEN experienced restrictions on the use of the bathroom, gym, canteen due to unfavourable environmental conditions. They had difficulty managing posture and sitting positions due to an uncomfortable wheelchair or an uncomfortable school desk. Also due to the lack of elevators or ramps inside the school, lessons were organized only on the first floor.

The identified core difficulties in performing functional mobility in the school environment were approaching and writing on the blackboard, being able to move around the school and going up/down the stairs.

According to the results of the assessment, it was possible to state that most of the learners with physical dysfunctions and musculoskeletal disorders (51%) were not able to approach the blackboard on their own both due to limited individual and physical skills (motor skills, movement skills, difficulty maintaining balance, difficulty controlling posture), as well as the presence of uncomfortable environmental conditions. The vast majority of them (62%) were not able to move around the school at all, from one place to another, to the toilet, to go upstairs, and so on. Research showed that these children were helped by classmates and parents, but mostly, they only attend classes on the ground floor. Only small percentage of the learners with SEN (16%) were able to go up the stairs on their own, 41% did it with the help of classmates, staff members or teachers, and the rest of the respondents (43%) had difficulties, was not able to do the above-mentioned activities on their own (Figure 1).

Figure 1.

Functional mobility assessment of the learners having physical dysfunction.



The results indicated that although the communication skills of learners with physical dysfunctions were sufficiently developed, there was still some limitation in their social participation and interaction with classmates, which was reflected in passivity in the classroom, not taking part in outdoor activities. Also, not supportive and reachable physical environment can lead to mobility difficulties and inability to perform daily occupations and can impair the development of normal posture reactions (Case-Smith, 2015).

It should be noted that with sufficient support and specialized intervention it was possible to develop necessary skills and support learners with physical dysfunctions to master their abilities and achieve independence in movements and actions. Occupational therapy based assessment and intervention could be appropriate for defining the level of required external support (adjusted chair, devices for holding the sitting position, accessories for posture deviations) that would ensure movement performance and could have an impact on the quality of performance of learners with SEN (Kardos, Prudhomme White, 2005).

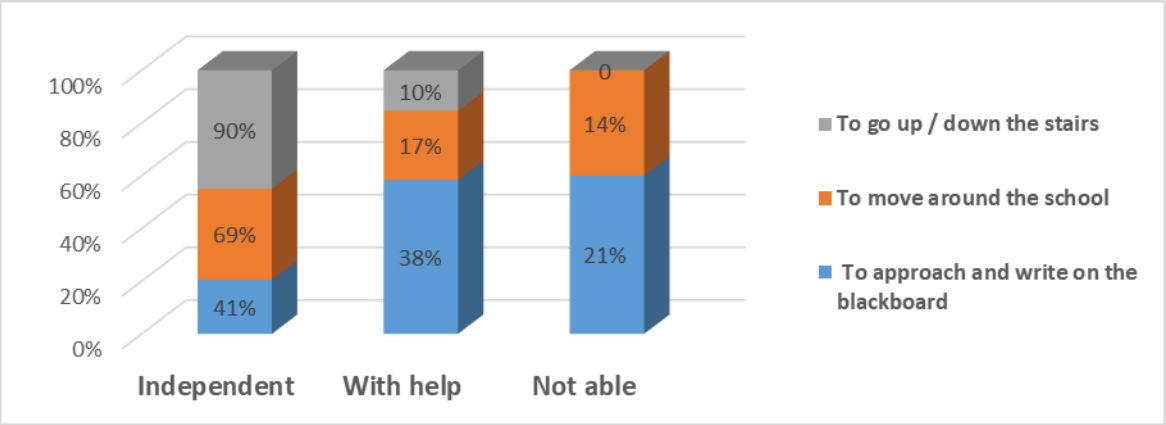
The results of the study of the functional mobility assessment of the learners with autistic spectrum disorder showed that despite the absence of mobility disorders or problems, there was still recorded a low level of independent participation in school activities. Thus, only a part of the respondents (27%) was able to approach the blackboard and write on their own, while the others (39%) had difficulties in performing this activity due to both cognitive and

behavioural problems. The majority of respondents (75%) were able to go up/down the stairs by themselves, but only 43% were able to move independently at the school environment.

Examining the functional mobility of learners with attention deficit hyperactivity disorder (ADHD), it became clear that, especially in the classroom, they had a variety of problems that manifest themselves with difficulty concentrating on a task, resulting in an inability to complete written assignments (Figure 2). The research showed that only 41% were able to approach and write on the blackboard independently, even though they were aware of the teacher's requirements and had completed the tasks. The rest of the participants from this group (21%) had difficulty performing and responding to simple verbal instructions, for example, *"Come to the blackboard, write the date, take the chalk,"* etc. The majority of the respondents from this group were able to go up/down to stairs (90%), and about 69% were able to move on their own at school. However, some of the respondents (17%) needed help to move around in the school environment.

Figure 2.

Functional mobility assessment of the learners with ADHD.



2. Involvement in educational and non-educational activities

a. Assessment of writing skills

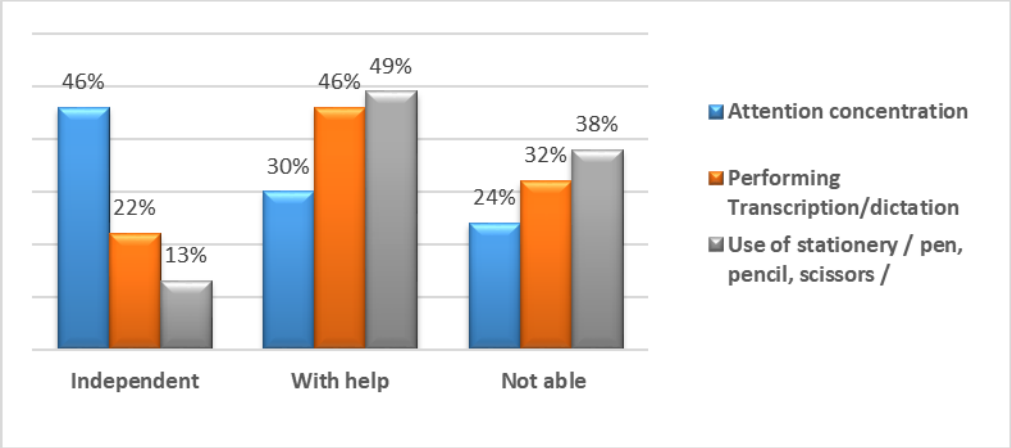
In order to assess the factors that facilitate and hinder the writing process of learners having physical dysfunction, the lesson processes were observed, as well as their skills and concentration, transcription, dictation, and writing on the blackboard abilities were evaluated. During the evaluation, both the individual abilities and the environmental conditions of the schools providing inclusive education were taken into account, as well as provided support level by the teaching staff was determined. Studies have shown that for most learners in wheelchairs, it was difficult to approach and write on the blackboard, as there were a number of

environmental barriers: rows were too narrow to move around in a wheelchair; the height of the blackboard did not correspond to the height of the child in the wheelchair; many teachers did not encourage them to write on the blackboard.

However, the learners with physical dysfunction (without limitation in the upper extremity, having mild mobility problems) were able to complete the given assignment, follow the oral instructions, to focus on the given task. However, most of the learners from this group (24%) had attention concentration difficulty, about 32% (especially having muscle tension and difficulty in moving) were unable to make transcripts and dictations, while the others (38%) were not even able to perform any action related to fine motor skills - to hold a pen, to perform controllable and targeted movements (Figure 3).

Figure 3.

Assessment of writing skills of learners having physical dysfunction.



During the observations, it became clear that learners with SEN mainly used ordinary stationery or did not use it at all because they were uncomfortable. However, personally adapted stationery and special training on usage improved learners' independent performance and participation in the writing process (Schneck, & Amundson, 2010).

Many studies have demonstrated that handwriting interventions were successful at improving handwriting skills in children (Case-Smith, Holland, Lane, & White, 2012; Case-Smith, Weaver, & Holland, 2014; Howe, Roston, Sheu, & Hinojosa, 2013), as visual-motor, visual-perception, in-hand manipulation, and handwriting legibility represented the core skills for participating in educational and daily activities (Mackay, McCluskey, & Mayes, 2010). Therefore, in-depth occupation-based assessment and study of such skills make it possible to identify the difficulties and conduct school-based occupational therapy (Hoy, Egan, & Feder, 2011).

Learners with autistic spectrum disorder were able to perform writing skills and use stationery (52%), about 32% of them showed difficulties and the effectiveness of the writing was directly related to the problems of concentration, and a number of obstacles in the classroom (noise, inappropriate teaching's methods and approaches, etc.). For learners with ADHD difficulties of the writing process were mainly due to their behavioral manifestations, as a result of which they find it difficult to focus on the written work, perform controlled movements, although they had developed fine motor skills, and were able to use stationery as intended.

b. Communication and participation in non-educational activities

In order to identify the level of communication and involvement of learners with SEN in non-educational activities, and out-of-school events, the following tasks among the research participants had been assessed:

- Communicating with classmates and the teachers.
- Asking for help if needed, express wishes.
- Participating in games, out-of-school events.

According to the research results, participation in non-educational activities and out-of-school events among these three groups of recipients was very restricted and independent participation made up a small percentage (Table 1).

Table 1.

Participation in activities.

	I group Learners having physical dysfunction and musculoskeletal disorders (n=38), n= (%)	II group Learners with autistic spectrum disorder (n=44), n= (%)	III group Learners with Attention Deficit Hyperactivity Disorder (n=29), n= (%)
Being independent in:			
Communicating with classmates and the teacher	**15 (40%)**	**12 (27%)**	**14 (48%)**
Asking for help if needed, express wishes	**18 (49%)**	**9 (20%)**	**10 (34%)**
Participating in games, out-of-school events	**5 (13%)**	**10 (23%)**	**11 (38%)**

Learners with physical dysfunction and with musculoskeletal disorders (65%) had major difficulties in organizing their free time in the middle of the classes, participating in play activities or in excursions. These problems were much more significant especially for the learners in a wheelchair, having walking and posture difficulties, they felt isolated from their classmates and did not take part in active games. While assessing the social communication skills of learners with autism, it became clear that they (50%) experienced difficulty in communicating with their classmates and teachers, and most were unable to express their opinions, answer questions, participate in the non-educational process, and ask for help when needed.

The results of the assessment of the above-mentioned abilities among the learners with ADHA showed that this group had significant difficulties in engaging in social interactions and play activities. During communication with classmates, they behaved negatively, aggressively or hyperactively. Despite the fact that many of them (48%) were able to communicate with their classmates, they nevertheless showed restless, persistent behavior in response to remarks made by teachers. The others (41%) had difficulty participating in play activities, often showed verbal or non-verbal aggression during the game, they were hyperactive and had a hard time waiting for their turn. And only 34% were able to express their wishes, opinions and ask for help.

In school environment children based on their social skills engage and communicate with one another that may include both verbal and non-verbal communication, such as the use of language, personal appearance, body language and facial expressions (Durlak, Dymnicki, Taylor, 2011). Thus, current research intended to evaluate the learners' social and communication skills, as communication was a collaboration of two or more people aimed at getting mutual understanding, establishing a relationship, exchanging information that mutually influences self-expression, emotional sphere, well-being (Andreeva, 2004). Indeed, adequate social skills are considered to be an essential facet of a person's personality and behavior (McKown, Gumbiner, Russo, 2009). Occupational therapy trainings are aimed at improving skills to create proficiency for human development and to indigenize appropriate behaviors that provide to deal with the difficulties of daily life in children and adolescents and promote health, and well-being. Especially, where the health issues are associated with behaviors that cause inadequacy to cope with personal and social challenges powerfully, developing psychosocial competence may be an important way to contribute to well-being and health (O'Conner, De Feyter, Carr, 2017).

3. Having self-care performance challenges at school.

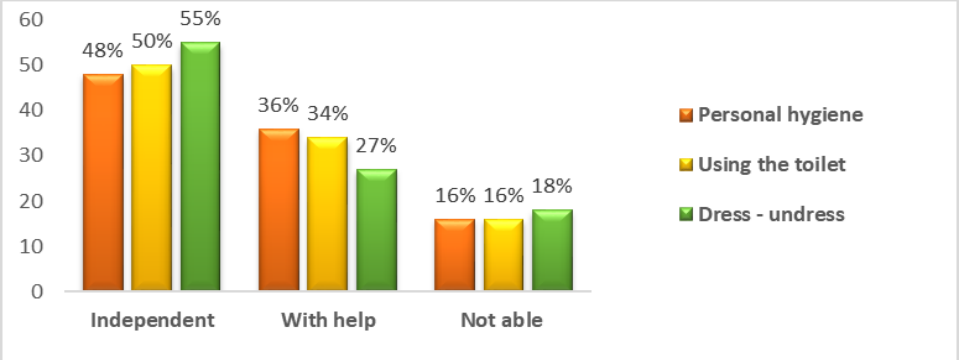
Because, in addition to the educational process, the learners carry out also self-care activities at school, current research has assessed their participation problems in self-care activities at school. The study focused also on environmental conditions to find out possible assisting ways for facilitation and enlarge the learners' performance and their eating, using bathroom/toilet, changing clothes (put on/off) activities and different tasks performance in school environment were assessed.

According to the data analysis, the majority of learners with physical dysfunction and musculoskeletal disorders (62%) were unable to perform self-care activities and constantly needed support and assistance. It should be noted that 84% of the participants could not use the bathroom/toilet on their own, as there was a lack of appropriate skills and the inconvenience of environmental conditions at schools. Only a small portion of the respondents (13%) were able to change their clothes on their own, take off their clothes (coat, jacket), the rest (32%) needed support, and about 54% could not perform the activities on their own. Because at school learners with SEN need to carry out self-care and perform daily activities not only the development of individual abilities was essential, but also appropriate and supportive environmental conditions need to be available (Law, et. al, 1999).

The results of the study showed that self-care activity performance level was relatively higher among the learners with autistic spectrum disorder (48%) and learners with ADHD (69%), as in general they did not have physical and mobility problems and the environmental conditions were appropriate for them. However, due to cognitive, behavioural and emotional problems that experienced learners with autistic spectrum disorder and ADHD, their independent participation in self-care activities was also limited. Most learners with autism (36%), and learners with ADHD (31%) needed help for self-care activities at school. The respondents were not able to use the bathroom/toilet on their own due to spatial orientation, hyperactivity, and other behavioural problems (Figure 4).

Figure 4.

Participation in self-care activities of learners with autistic spectrum disorder.



In summary, the research results stated that the independent participation of the learners with SEN in inclusive schools was still limited; there was a need for Occupational Therapy intervention to advance individual skill training and carry out environmental modification for overcoming the learners' participation restriction in educational and non-educational activities, to develop an appropriate program, and provide permanent support and assistance.

CONCLUSION

This study explored the participation restrictions of the learners with SEN in inclusive schools in order to frame and outline possible Occupational Therapy intervention approaches and main directions in Armenia. In the schools implementing inclusive education, there were still significant difficulties and limitations in the effectiveness of organizing the educational process in all directions. Still, there was a need for conducting individual assistance and developing skills of the learners with SEN for facilitating their functional mobility and participation in school activities, particularly in educational and self-care activities. To increase the effectiveness of participation in school activities of these learners not only individual skills and abilities needed to be advanced but also school environment had to be adapted and adjusted in accordance with their special needs. The main focus of school-based Occupational Therapy was ensuring and organizing an effective educational process while increasing the involvement of learners with SEN in educational and non-educational activities, enhancing their independence and providing a supportive and accessible educational environment.

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