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Special Remedial Work and Prophylaxis with Reference to Speech Disorders of Bilingual Children

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Abstract

In the current modern education system, there is an inter-scientific integration of general didactics with pedagogical special remedial work. Regarding the development of children's speech, this integration requires changes in the organizational structure of the general education process and becomes its systematizing factor which introduces innovations in learning technology. For the effective solution of this problem in teaching and education of a junior schoolchild with bilingualism it is necessary to introduce these innovative methods into the field of speech development. For this very reason in the 1990s, many scientists began working out specific technologies for the development of speech of junior schoolchildren. In a number of studies it has been noted that the main trend characterizing the image of modern education is integration of general educational and innovative areas in education. Integration is the most important means of education of children with speech difficulties: it modifies the organizational structure of the general educational process, and being a systematizing factor it performs a specific function in changing the learning technologies. Appraising the significance of this process it is necessary to notice that the integration introduces its own innovations. The technology of speech influence as a whole is a complex educational process with a new set of its own structural components, with extraordinary specifics, and moreover, it has definite prospects for further development. The practice guidelines we have examined do not limit the study of new technological solutions in creating our own model of the development of speech as a didactic system. The highlighting of other structural components is of great interest.

Keywords: Special remedial work, Speech disorders, Bilingualism.

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1. Introduction

For the purpose of informative-resource support of a primary school teacher, it is necessary to align the systematizing data of the advanced pedagogical experience carefully and correctly in terms of methodology in respect of each following activity of all process participants.

In this work, we carried out approbation of an example of speech development peculiarities by preschool and junior schoolchildren with speech disorders. In this regard, there is a pressing need for the development of special remedial programs and their practical application regarding to training of future specialists, for example, speech therapists, primary school teachers, educators.

2. Materials and Methods

2.1. Research methods

In the research process, the following research methods were used: analysis of statutory documents and artefacts, method of mental experiment, forecasting, systematization and synthesis of facts and concepts, study and synthesis of experience, diagnostic techniques:

1. Scaling methods. To determine the result of joint work, before and after the logopedic work on overcoming speech disorders a scale shall be contemplated, on which the state of general speech development shall be marked.
2. Card methods. A set of cards with a specific semantic content. Card techniques allow creating a general idea of the overall speech development. Card techniques are used when performing independent tasks, when checking the residual knowledge.
3. Projective methods. A variety of tests meant to determine the level of speech development of a junior schoolchild.
4. Associative projective methods. A set of educational materials was used through game situations that allowed a junior schoolchild with insufficient academic motivation to gain skills in overcoming writing disorders.

2.2. Experimental base of the research

The experimental base of the research was primary forms of secondary school No. 46 of the city Naberezhnye Chelny of the Republic of Tatarstan. Over the course of eight years there took part in total 10575 schoolchildren, 743 of them with problems of speech development.

2.3. Stages of research

The study was conducted in three stages:

- at the first stage - the preparatory stage - the current state of the investigated problem was analysed in psychological theory and practice; a program of research methodology was developed;
- at the second stage - the main stage - the state of the speech and cognitive sphere of children with bilingualism was studied, priority diagnostic materials were selected; experimental work was carried out to verify the effectiveness of the project in the practice of a speech therapist and elementary school teachers;
- at the third stage - the final stage - systematization, understanding and generalization of the research results were carried out; clarified theoretical conclusions; processing and execution of the obtained research results were carried out.

Results

3.1. Structure and content of the work

The developed approaches in the practical activities of the future specialists include the object-oriented (goals, objectives, aimed at preventing speech disorders by children with bilingualism); methodological (approaches, principles); content-related (appropriate conditions for prevention of speech disorders by children with bilingualism); organizational and procedural (organizational and pedagogical conditions, scientific and methodological support) and effective (performance indicators) components.

3.2. Stages of implementation

The implementation of this technology involved the following stages of experimental work:

1. Timely identification of high-risk groups.
2. Early examination of speech disorders by children with bilingualism.
3. Development of the functional basis of writing.
4. Fitting of methods of writing teaching, being clinically and psychologically adequate in terms of the individual language deficiencies of a child, as well as the individual cognitive style.
5. Early work on the elimination and prevention of speech difficulties

The psychological and pedagogical concept of overcoming speech disorders of children with bilingualism handles the following tasks:

1. Development of writing and reading skills as a value-semantic significance of life support of an individual at the present historical stage.
2. Activation of mental activity of students by means of including educational exercises aimed at the perception of speech in the development of mental functions.
3. Interaction of the correctional system of overcoming of speech defects with the didactic system of education in a secondary school.

- Development and implementation of scientific and methodological support of practical bases. At this stage, an experimental verification of the project implementation on support of children with bilingualism was carried out.

3.2.1. Ascertaining stage

At the ascertaining stage of the experiment, the diagnostics was carried out. Studying a long-term experience in speech development of junior schoolchildren from 2010 to 2017 in the city Naberezhnye Chelny, it can be stated that there has been a significant increase in speech disorders over the last years. True to form, the number of complex disorders, one of which is a disorder of written speech, is increasing. For example, in 2010 junior schoolchildren with bilingualism were examined (six schools, first forms) - 1310 people, among which 238 (18 %) had speech disorders, and 13 people had writing and reading disorders. As long ago as 2015, having examined the same schools, we found out that the number of primary schoolchildren with speech disorders increased significantly –1420 people, 647 (45 %) people among which had speech disorders, and at an initial observation there were educed 34 junior schoolchildren with writing disorders. The dynamics of the development of speech disorders by junior schoolchildren is shown in the Table 1.

Table 1. The state of speech disorders of junior schoolchildren arranged by the years

Years	2010	2011	2012	2013	2014	2015	2016	2017	Total number
Number of schoolchildren with bilingualism being examined	1310	1201	1439	1240	1493	1292	1180	1420	10575

Number of schoolchildren with speech disorders	238	189	263	318	281	352	518	647	2806
Number of schoolchildren with writing disorders	13	17	12	8	21	28	42	42	183

It is important to note that these general educational institutions conduct comprehensive and elective work on the development of speech. The level of professional training of employees of secondary schools is not questioned. Alongside with that, in the setting of all the indisputable theoretical and practical contribution of teachers, it is necessary to develop new approaches in the organization of work to overcome speech disorders by junior schoolchildren. Nevertheless, the modern pedagogical science is at such a level when there is a need to create such integrative interactions in general pedagogical activity which would allow creating conditions for an effective and high-quality educational process.

The achievements of a modern junior schoolchild are considerably determined by the quality of eliminating and preventing of those difficulties that do not let a person to prevent a possible problem at a certain stage. One of such problems, which face junior schoolchildren with bilingualism, is overcoming the writing and reading disorders. Therefore the problem of comprehending the significance of the speech development structural components has determined the content of the theoretical part of our study. The psychological and pedagogical concept is predetermined by the goal of creation of such a system of teaching prevention and overcoming speech disorders by junior schoolchildren, which would help to eliminate the prevailing stereotypes of defective speech and would contribute in purposeful mental and speech development of a junior schoolchild. Consequently, the psychological and pedagogical concept meets the following challenges:

1. Speech development as an axiological significance of a full development of human personality.
2. Activation of mental activity of a junior schoolchild by means of involving of specific material on general speech development at the lessons of Russian language and literature.
3. Creation of technologies for the work of a primary school teacher on elimination of speech pathologies (choosing the optimal pace of training, organizing individual selection of speech material, permanently recording of the results of speech material perception).
4. Tracking the dynamics of speech disorders in order to prevent secondary defections.

Organization of constant updating of the work content to overcome speech disorders by junior schoolchildren with bilingualism.

3.2.2. Forming stage

At the forming stage of the experiment, the scientific and methodological support of the project was developed and introduced, which is presented by scientific and theoretical (basic ideas and general provisions of modern technologies use in the practice of a speech therapist), content (selection and structuring of the content of logopedic correction) and methodical (methodical recommendations) levels.

Technological solutions between the directions of logopedic influence were carried out by us against the following parameters:

1. Selection of optimum rate and direction of general and preventive scope of speech therapy work was limited to the program material and constituted 40 lessons of direct correctional effect.
2. Organization of an individual selection of material conceivable for the children in accordance with their capabilities, level of speech development, in other words, in accordance with the available means.

3. Organization of a person-oriented approach in the pedagogical process on individual lessons in accordance with the options of the educational directions: materials asserting more difficult tasks for the children with mild level of writing and reading disorders, materials asserting simpler tasks for the children with moderate level of disorders.
4. Active mainstreaming of methods aimed at designing the dynamics of writing disorders, and structuring the educational process on speech development into activity of speech therapist in order to optimize digestion of the educational material.
5. Mainstreaming of innovative technologies to overcome speech disorders (selection of methods and work techniques).
6. The traditional technological directions of speech activity development by children focus on external didactic conditions (content of educational material, forms, methods of teaching) without knowledges and regard to the internal conditions (needs, interests, addictions, abilities) and are based primarily on brainwork activation.

Diagnostic examination of junior schoolchildren with bilingualism, directly involved in logopedic work to overcome writing and reading disorders, is the second experiment with a view to determining the degree of speech disorders. In this experiment, the origins of specific mistakes were determined. A group of junior schoolchildren with different forms of disorders was identified. About 29%, which is 10 junior schoolchildren from the total number of children with writing and reading disorders, had a slight degree of steady mistakes onset. About 71%, which is 24 schoolchildren had a moderate degree of disorders onset, there were no schoolchildren with bad writing and reading disorders (since schoolchildren with heavy speech disorders onset attend specialized schools of type V affiliated with speech school). The degree of speech disorders of junior schoolchildren is presented in the diagram:

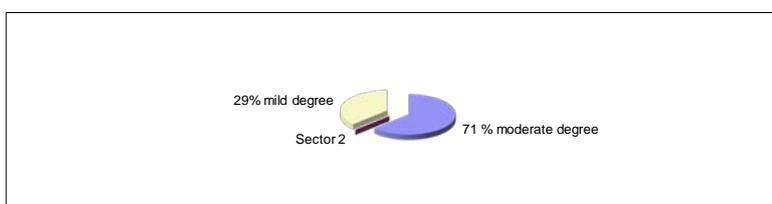


Diagram 1. Diagram depicting the degree of speech disorders by junior schoolchildren with bilingualism

At the determining stage (second experiment), schoolchildren with different forms of writing and reading disorders were singled out, and there were identified three groups from the total number of junior schoolchildren with bilingualism. About 12 young schoolchildren suffer from the unformed voluntary regulation of actions (function of planning and control), which constitutes 35 % from the total amount of schoolchildren with writing and reading disorders. Such children have problems with holding of active attention, orientation on task, impulsiveness of decisions and inactivity, difficulties with switching from one task to another. Simplification of the processes of writing is also evident as impossibility of arranging attention between the technical part of writing and spelling rules - children do not follow the rules of unstressed vowels writing. At the same time, there are no mistakes in phonemic recognition.

Another group of junior schoolchildren having difficulties with sustentation of working capacity of active cortical tone constitutes 9 schoolchildren, 27 %. These children are indicated to have increased fatigability, rises and falls of working capacity, which can vary during an academic term, a week, a day, a lesson. Mostly, these children are not immediately involved in the task, starting to carry it out, they get tired before long, after a while the working capacity returns, at a reduced level though. Against the backdrop of fatigue, children make a variety of glaring mistakes - particularly, children having difficulties with programming and control. Children write slowly, writing skills are automated with great difficulty, there are mistakes in phonetic spelling. The sizes of letters, weight, slope of lettering range depending on fatigue. Phonetic

mistakes are also in evidence. The last group of junior schoolchildren being selected (according to the classification of T.V. Akhutina, 2001) are schoolchildren having space mistakes by writing - these are 13 schoolchildren, constituting 38 %. That is expressed in difficulties with orientation on the notebook sheet, sticking to the lines, constant fluctuation of slope and height, mirroring of lettering. The method of the second and third experiments of the fixing stage and the experiment of the control stage correspond to the content with a small difference in the time interval and the use of the previous experience with the primary diagnosis of speech development of a junior schoolchild.

The criteria for diagnostic examination were determined by the traditional provisions. The examination was not reduced to the detection of speech pathology. Part of the diagnostic material was used as a speech material in logopedic practice. In structural terms, logopedic examination includes traditionally a number of sub-stages: analysis of primary information, drafting of conclusions, object definition, preparation for diagnostic activities, own diagnostic procedure, analysis of the diagnostic procedure results and diagnosis. In order to determine the degree of writing and reading disorders, there have been used the techniques of T.V. Akhutina, A.N. Sadovnikova, L.N. Efimenkova. On the basis of well-known evaluation criteria, a speech record of a written speech examination of junior schoolchildren was drawn up. The processing of the material was centred on the following: each sample of written speech was analysed and entered in speech records.

3.3. Content of work

In the course of working on the project, the following tasks were implemented:

1. Need to get into specifics of methods and techniques for all types of examination, the relationship between each examination component.
2. Creation of an integrated and unified system for overcoming the writing and reading disorders.
3. Creation of manuals, advanced technologies in order to increase the effectiveness of special remedial.
4. Determination of ways of preventive actions.
5. Development of clear criteria for determination of adequate forms for overcoming writing and reading disorders.
6. Development of directions regarding to continuity of work on speech development by schoolchildren with difficulties in capture of reading and writing of the Health Care system and Education system.
7. Creation of a database on modern literature novelties available for teachers of primary classes.
8. The first stage assumes an adaptive interaction between a logopath and a speech therapist, which is carried out during the presentation of the introductory material and constitutes about 10 lessons. The stage is highly important for establishing the logopedic interaction between the members. Depending on the severity of disorder and the motivation, this stage may be reduced or increased in respect of the time scale. In our opinion, further logopedic work depends on this stage. The second stage forms the base volume of the provided special remedial impact, and constitutes 40 lessons. It is realized at the direct contact of each subject of logopedic interaction. Experience has proven that the effectiveness of work at this stage depends not only on the right direction chosen, but also on the level of professionalism of a speech therapist, on the motivational need to overcome the disorders of written speech. The third final stage consisting of 20 lessons assumes confirmation, evaluation of the whole speech therapy work and the degree of realization of the program for overcoming the speech disorders. The program to overcome the writing and reading disorders includes the activities of information and training plan to review common factors and basic stages of speech development.

Depending on the stages of speech therapy, the individual features of a junior schoolchild, and other aspects, the following directions are set out to overcome the writing disorders:

1. Development of language knowledges as a system component
2. Development of communicative speech function.
3. Development of operational thinking, increasing the system of knowledge about the surrounding world.
4. Development and refinement of spatio-temporal understanding.
5. Development and formation of graph-motor skills.
6. Formation of analysis and synthesis skills.
7. Development of lexical-grammatical speech system, syllabic word structure.
8. Special remedial work at the phonetic level.
9. Special remedial work at the lexical level.
10. Special remedial work at the syntactic level.
11. Development of graph-motor skills.
12. Work on the development of fine and gross motor skills. Development of reaction of switching from one action to another.
13. Development of operational thinking, increasing the system of knowledge about the surrounding world.
14. Development of active attention, memory, intellectual operations: comparison and analysis (as a part of a lesson).
15. Work on the development of verbal-motor and auditory analysers (as a part of a lesson).

Under conditions of special remedial work in a logopedic room, the significance of individual interaction of each group increases in the process of maximum interaction. This interaction works when observing the following terms:

1. Well-timed coherent specialized adapted information awareness of each group of the speech therapy progress.
2. Full "direction" of forces aimed at overcoming the speech disorders.
3. Attending logopedic classes, surveys, psychological and pedagogical counselling of participants of speech therapy process (as and when necessary).
4. Creative strategies in overcoming the defects.
5. Personalized and differentiated approach.
6. Constant proficiency enhancement of speech therapy process participants.
7. Willingness to "grapple" with disorders.
8. Elimination of the concomitant disorders and their negative influences on speech development of children (for example: psychological discomfort, somatic weakness).
9. Social benefits of this interaction.

We have only diagnosed children having some degree of difficulty in digestion of the material, increased fatigue etc., at the will of the parents, as well as in the cases when the desired results did not give the positive dynamics that one would have desired to observe. As a result, the demand for neuropsychological examination constituted 23 junior schoolchildren from the total number constituting 34 children. Further logopedic work depends on the properly structured examination stage. The evidence from practice shows

that the effectiveness of work at this stage will depend not only on the proper direction, but also on the skill level of a speech therapist, on the motivational necessity of all members of the speech therapy process. Further, a forming experiment was conducted within the framework of the program for overcoming writing and reading disorders. The second stage is the major unit of implementation, the volume of provided corrective impact constitutes 40 lessons. It is implemented by the direct contact of each subject of logopedic interaction. A group of children attending our logopedic classes was selected with due regard to the complexity and degree of disorder. Children were, accepted for classes only upon the voluntary compliance by parents and children. Significantly that the participants (speech therapists, specialists) of the logopedic process should have known the structure of didactic model of speech therapy work and the basics of the program to overcome writing and reading disorders.

3.4. Experimental check of the suggested project scope effectiveness

The incidence of reading and writing disorders among young children of school age is quite high. According to R. Becker (1998), reading disorders are observed in 3% of primary school children in mainstream schools; and in schools for children with severe speech, disorders the number of children with reading disorders reaches 22%. According to R.I. Lalayeva, in the first classes of the secondary school the reading disturbance is, noted by 62% of pupils. According to A.N. Kornev, reading disorder is, observed in 54 % of cases among 7-8 year-aged pupils. In schools for children with severe speech disorders, speech disorders have been detected in 20-50% of cases. The disorders among boys occur in 4.5 times more often than the disorders among girls (Kornev, 2015).

While conducting a preliminary survey of 743 children of primary school age affiliated with a general education school during the two-year period, we determined that there is currently an increase in the number of speech disorders among schoolchildren. Having analysed the results obtained and the results of the survey of scientists, we have come, to the conclusion that the difficulty of digestion of the program material, especially for junior schoolchildren, may be caused by various factors. Among them, the reading and writing disorders take the centre stage, due to the incompleteness of language perceptions. From our perspective, these types of disorders are formed as a result of the following factors:

1. Insufficient work of parents with children on general development of communicative skills. More specifically, poor communication with the replacement of live communication by computer and TV; short of listening to fairy tales, folklore material.
2. Inattention in respect of apparent difficulties; undue and improper elimination of disorders without special training; imitation of child speech.
3. Lack of motivation for learning activity on the part of parents.
4. Late start of speech affecting.
5. Difficult speech environment (hereditary factor, imitation of peers or cult figures with speech impediment).
6. Bilingualism.
7. Increasing scope of information, which leads to a decrease in its perception, especially in the first forms of school.
8. Increased requirement level, especially in gymnasium forms of school.
9. "Wrong" teaching of writing and reading skills. Unreasonably early reading and writing teaching (up to 5 y.o.) can sometimes cause the emergence of dyslexia and dysgraphia in cases when a child has no psychological readiness for learning yet (Kornev, 2003).
10. Individual inability of schoolchildren with disorders to "select" speech norms.

11. The number of schoolchildren, especially in school forms with a regular program, is more than 30 people.

In the process of studying of a special literature on the research problem, it should be noted that contemporary ideas about the dynamics of speech and other neuropsychiatric disorders of junior schoolchildren have significantly changed. T.V. Akhutina (2016) distinguished three variants of the dynamics of speech disorders development:

1. Unformed spontaneous regulation of actions (planning and control function), i.e. problems with holding active attention, orientation to the task, impulsiveness of solutions and inertia, difficulty of switching from one task to another. For this variant, indicatives are the following traits: perseveration (inert repetition) of letters, syllabics, words; omissions of letters and syllabics, anticipation (forestalling) of letters and blending (agglomeration) of words. Simplification of the processes of writing is also evident as the impossibility of distributing attention between the technical side of writing and the spelling rules - children do not follow the rules of writing of capital letters, unstressed vowels. At the same time, there are no mistakes in phonemic recognition.

2. Difficulties with sustentation of working capacity, active cortical tone; these children are indicated to have increased fatigability, rises and falls of working capacity, which can vary during an academic term, a week, a day, a lesson. Mostly, these children are not immediately involved in the task, starting to carry it out, they get tired before long, after a while the working capacity returns, at a reduced level though. Against the backdrop of fatigue, children make a variety of glaring mistakes - particularly, children having difficulties with programming and control. Children write slowly, writing skills are automated with great difficulty, there are mistakes in phonetic spelling. The sizes of letters, weight, slope of lettering range depending on fatigue.

3. Spatial mistakes in writing are expressed on difficulties with orientation on the notebook sheet, sticking to the lines, constant fluctuation of slope and height, mirroring of lettering. All of these specified features can easily be rationalized by one mechanism - the difficulty of operating with spatial information and attempts to compensate it. One and the same outward evidences of a mistake can have different origins. Therefore, T. Akhutina, M. Uljarević, N. Katsos, K. Hudry & J.L. Gibson believe that not only individual mistakes but also the whole set of symptoms of writing features must be taken into account in determining the mistakes mechanism. Herewith, the important factor is the neuropsychological analysis of the higher mental functions state, which allows predicting variants of future writing and reading difficulties.

Basically, the peculiarities of the dynamics rank among the diagnostic features of the written speech disorders: non-specific or non-pathological difficulties in mastering the written speech are quickly and completely compensated, and for the elimination of writing and reading disorders, it requires to conduct a long-term special remedial work (Luria, 2004).

The partial disorder of reading and writing processes is denoted by the terms dyslexia and dysgraphia (Volkova, 2009). Though in respect of junior schoolchildren, it would be more correct to speak not about the disorders, but about the difficulties of mastering written speech (Efimenkova, 2018). Their main feature is the existence of persistent specific mistakes occurrence of which by schoolchildren of a comprehensive school is related neither to the decline of intellectual development, nor to the severe hearing and sight disorders, nor to the infrequency of school education. The difficulty of mastering written speech occurs as a rule as a single set (Tokareva, 1969). The etiological study of written speech disorders is complicated by the fact that it is always retrospective, since the factors that caused these disorders can fall by the wayside to the moment of admission of a child to school (Yastrebova, 1996). Nevertheless, the analysis of reported data allows determining a number of reasons encountered simultaneously or sequentially.

Reading and writing disorders can be caused by the delay in the formation of certain functional systems important for the development of written speech, by the harmful conditions of the various periods of child

development. In addition, speech difficulties arise in the case of organic speech disorders (Luria, 2004). Some researchers note the genetic predisposition to speech disorders, when the qualitative immaturity of individual brain structures involved in the organization of written speech is inherited. In Russian literature there is a common concept of definition of reading and writing disorders as a manifestation of systemic speech abnormalities and a reflection of the underdevelopment of verbal speech relating to all its elements (Levina, 2003).

Studies of the last decades prove that often one of the symptoms of neurological immaturity considering the possibility of the causes of reading and writing disorders is the difficulty in establishing the process. The foregoing is not without doubt, if we remember that efficiency is an important engine of the whole psychic life of a child. For mastering written speech, the formation degree of all aspects of speech is essential (Lalayeva, 1983). Disorders of sound reproduction, phonemic and lexical and grammatical development are reflected in writing and reading.

Eyes and hands are actively involved in writing process, and within this context the question of interaction of the auditory, visual, speech and motor components of writing assume prominence. Specific reading and writing disorders by children are noticed under various forms of speech underdevelopment.

Display of reading and writing disorders by children are diverse and, unlike oral speech disorders, require a different approach, both in respect of understanding the disorder structure, and therapeutic and pedagogical activities. As the writing skills develop, the psychological and psycho-physiological skills structure changes, the certain operations spin out of mind control, automatize, unite and turn into a complex activity, namely, written speech (Luria, 2004).

Obligatory participation in the course of writing-skills formation of all the described factors, as well as all the parts of writing structure and in the further implementation of this process is particularly clearly traceable in the case of its pathology. In the research works of various authors, the need to preserve these links for the normal implementation of the writing process is emphasized. So, for example, denote the necessity of preserving of the auditory analysis for writing skills as a complete intellectual action. Investigations by A.R. Luria (2004), P. Nazarova (2001) and others denote the equally important role and the necessity of preserving the articulatory kinaesthetic analysis of sounds, on the one hand, and to clarify the place of each sound in words - on the other hand. The research works of A.R. Luria (2004), and others describe the necessity of preserving the visual and mnestic processes, as well as the preservation of the perception of space.

Writing skill as an independent function exists in different forms - auditory (dictation) writing, independent active written reproduction and compositions. In the case of latter two forms, writing is a little less a sensory motor act, and a little more a complex speech activity, which is a written speech, proceeding at a higher level and requiring the participation of more complex areas of brain cortex. The unformed writing skills of children (or difficulties in its forming in elementary school) are also of a systemic nature. In respect of children, the mechanism disorders are often complex and may refer to the sphere of not only elementary mental processes (motor skills, graph-motor coordination, disorders of sound analysis and synthesis, etc.), but also to the sphere of higher mental functions, namely, disorder of common behaviour, immaturity of personality, attention, abstract conceptual thinking, etc. (Paramonova, 2001).

Reading and writing mistakes are neither standing nor identical for a specific word (Luria, 2004). Such variability of disorders shows that none of the pathogenic factors is determinant, but each is of importance coupled with the other factors. It is impossible to find a universal explanation applicable to all cases of reading and writing disorders (Kornev, 2016). Such a variety of scientific interpretations reading and writing disorders origins bears evidence of the complexity of this problem. Nevertheless, the attempts to classify writing disorders proceed.

The main symptoms of writing and reading disorders are specific, mistakes unrelated to the spelling rules which have steady nature, and the occurrence of which is not associated with disorders of intellectual or sensory development of a child or infrequency of his schooling. L. F Spirova distinguishes problems with pronunciation, which is expressed only in disorders of sounds articulation without any accompanying symptoms (Spirova, 1996). These problems with pronunciation do not affect the digestion of school knowledge by children (Lalayeva, 1983). But there are problems which are accompanied by the underdevelopment of sound analysis, the insufficiently formed phonemic generalizations and representations. In these cases, children find difficulty not only in pronunciation, but also in the auditory differentiation of speech sounds, which leads to insufficiently complete and precise seizure of sound composition of a word.

Defects relating to each of the listed components may cause writing difficulties, acting fairly independently, or as a single set. Furthermore, since written speech imposes increased requirements on planning of a text, its explicate presentation, all weak components of oral speech can be most clearly evident in writing. Despite the fact that the problems pronunciation, accompanied by writing disorders, can be rather varied, the predominant problem is substitution, confusion and unstable use of sounds. A child can repeat all sounds, but in his independent speech, sounds similar in sound and articulation are either confused or pronounced like one sound. Substitutions and confusions of sounds occur usually within certain boundaries, they spill over to those sounds that differ from one another by a single sign, to the so-called "opposite" sounds.

Consequently, substitutions and confusions are observed between certain phonetic groups. Imperfection of a word syllabic structure points to the fact that children have no clear understanding of sound composition of a word. Pronunciation can be defected to different extents: from completely indistinct and distorted speech, when many sounds are pronounced incorrectly, to a rather intelligible pronunciation of single sounds, with some defects though: in some cases only general diffuseness and roughness of speech are noted. We defined integrative positions at every level of work with children with bilingualism:

1. At the level of the program on overcoming speech disorders by junior schoolchildren. The program for overcoming disorders included a general education section: knowledge about the word sound composition, morphemic composition, syntactic composition, and so on.
2. At the level of subjects having a correctional nature the material was applied at comprehensive lessons.
3. At the level of social integration. Children with speech disorders felt like full-fledged class members.

Summing up what has been said, the content of a didactic model, the principles, methods of organizing the speech therapy work, the conditions for the functioning of the didactic model can act as integration objects in the general education process. This list is unlimited, since the integration in this structural content of the didactic model is an integral part.

The next condition for the effectiveness of the didactic system of speech therapy work is the interaction of a speech therapist with a logopath, parents, specialists, school speech therapist.

4. Discussions

The distinguishing characteristic of the project resides is that as a factor determining the occurrence of writing and reading disorders, some authors grapple also with a "conflict" arising in cases of bilingualism. In some cases of bilingualism, a child speaks one language at home, and another language at school, on the street. In other cases, parents use different languages when communicating with a child. In the opinion of some authors, the fundamental factor causing writing and reading disorders in the context of bilingualism cases is often psychological conflict between the proclivity of a child for the mother tongue and the need

to speak another language. The occurrence of writing and reading disorders under family bilingualism shall be considered in the same terms. Is a psychological conflict really a pathogenic mechanism of disorders under bilingualism, or do more complex and ambiguous factors complicate reading disorders? The second variant is more sustainable.

In the context of bilingualism, the occurrence of writing and reading disorders has an impact on psychological difficulties, difficulties in the formation of speech, and difficulties in learning. Under bilingualism writing disorders are caused by features of expressive speech, developing in the conditions of bilingualism and characterized by multiple disorders: pronunciation disorders, insufficient formation of lexical and grammatical pattern and understanding of speech rather than psychological conflict or affective disorders. In such a case, mastery of language generalizations is obstructed. Each language is characterized by its phonemic system, certain grammatical patterns. In this regard, in the process of mastering the spoken language, the linguistic patterns of one language would conflict with poorly digested patterns of another language. Moreover, each of the children with a typical combination of bilingualism and defects in writing has its own peculiarities in overcoming disorders which we came across in the course of our work. These difficulties may maladjust a child, he may simply not understand what is required of him, since many programs, methodical recommendations, basic material are not suitable for overcoming writing and reading disorders for children of other nationalities, and at the same time does not underrate the need to use previous experience.

In view of this, it is not a psychological conflict, but disorders of the oral speech formation, difficulties in mastering linguistic generalizations in bilingualism may, above all, cause the occurrence of difficulties. At the same time, psychological conflict and affective disorders can increase the manifestation of reading disorders. The variety of pathogenic factors is, joined by linguistic features of word formation and grammatical expression of an utterance.

Considering the fact that the act of reading is, carried out by the coordinated work of a number of physiological components, a number of other mechanisms of the "elementary translation" from one language to another are added. Therewith, when analysing the sound composition of a word by a child of a different nationality, phonemic difficulties may arise, which are, actually reflected when reading letters. However, it will not act as a manifestation of one form of difficulty on its own. This disorder must necessarily manifest in combination with difficulties in grammatical formulation of an utterance. For example, in the native Tatar language there is no sound - \tʃ\ - (-\ч\ -), though there is such sound in Russian, subsequently, while reading a junior schoolchild pronounces this sound taking into account norms of his language. Later on, this phonetic "accent" is transferred to the spelling of suffixes - \chk - chn\ - (-\чк - чн\ -), then the dynamics of the disorder in the sound analysis of words is discernible: a schoolchild is not able to determine the place of the sound in the word and so on. But we should take note of the fact that not all children who communicate in two languages have reading disorders. According to the research of S.S. Lyapidevsky, the writing and reading processes go beyond bilingual factors of the language skills development.

Analysing the obtained data, it is possible to make a conclusion that the strength and mobility of the irritating process for children with bilingualism, in most cases, are disordered. "Due to descent of nervous process activity, during the onset of two languages some of the incoming stimuli seem to slide over the surface of the cortical sense receptor, without leaving clear traces. Presumably, the sequential and uniform formation of new temporary connections and their consolidation occurs as a result of multiple re-teaching of the same material. Consequently, to consolidate the original language norms of another language, not only the separation of language components, but also much time to consolidate the information obtained is needed" (Lyapidevsky, 2003). Following this line of reasoning, we deem appropriate to consider speech difficulties in various aspects, taking into account possible disorders of the acoustic, optical, motor, psychophysiological and individual nature. This is confirmed by the following facts: 17 children from the

total number constituting 34 children (50% of the total number of junior schoolchildren who actually took part in the special remedial work) communicate in two languages and make persistent specific reading and writing mistakes. True to form, in this group of children the diverse nature of disorders is noted; initially, bilingualism is not the key reason of writing and reading disorders.

In the course of the experiment, all the results obtained were analysed according to several aspects. The influence of using the didactic model of logopedic work was clarified not only relating to overcoming of speech disorders, but also to the effective organization of the logopedic process. The goal of the experimental study was to determine the correctness of the construction of logopedic speech therapy work with children having bilingualism, to identify the effectiveness of the functioning of speech therapy practice, and to determine the means, ways, forms, methods of effective speech therapy influence in respect of disorders.

The first experiment of the control phase was aimed at studying and analysing the speech development of junior schoolchildren after special remedial work. The second experiment was aimed at clarifying the strengths and weaknesses of the didactic model of speech therapy work with junior schoolchildren. It is important to emphasize that we often carried out assessment of schoolchildren, which corresponded to the third block of the didactic model of speech therapy practice. As, a result of the control examination, we have obtained the following results: 21 people (61%) whose speech development corresponds to the age norms, 5 people (14%) who have remaining writing and reading disorders, although there are relative improvements in speech development. This group is recommended to undergo the second course of rehabilitation. The remaining junior schoolchildren in number of 8 people (23%) had nonessential, unstable mistakes in written speech, which are characteristic of many schoolchildren with lack of academic motivation. In respect of this group of schoolchildren, it was, recommended to carry out independent work at home or, at will, to continue taking short-term special remedial actions in those areas that were still unfinished. The detailed results of the control examination are shown in the Table 2. The compiled table presents an analysis of the results of the general state of speech development of a junior schoolchild, more detailed results will be presented in the forthcoming tables.

Table 2. Summary table depicting the results of examination of schoolchildren speech

	At the recital stage of the experimental research	At the control stage of the experimental research
Having phonetic disorders	19	3
Having syllabic structure disorders	21	-
Having grammatical system disorders	8	-
Having coherent speech disorders	12	1
Having phonemic awareness disorders	14	4
Having writing disorders	34	5
Having reading disorders	29	2
Having active attention memory, control disorders	21	5
Total number of children having speech underdevelopment (alalia)	34	5

Consequently, a positive dynamics in eliminating of writing and reading disorders was discovered with reference to 85 % of junior schoolchildren.

According to the results of the control stage, it can be presumed that schoolchildren having the second form of dysgraphia (having difficulties with sustentation of working capacity of active cortical tone) experienced difficulties most of all – the disorders remained according to four parameters: phonetic disorder, coherent speech disorder, phonemic awareness disorder, and writing disorder. However, speaking about quality indicators, it can be affirmed that roughly the same indicators regarding to writing and reading disorders are found in all cases of dysgraphia: 2 children with poorly voluntary actions regulation, 1 child having difficulties with sustentation of working capacity of cortical tone, 2 children with spatial mistakes.

It is worth mentioning that even those 5 schoolchildren with residual writing and reading disorders still demonstrate positive improvements: there are no disorders of syllabic structure, and namely, mistakes in the letter-sound word analysis, omissions of letters when copying and reading the text, mistakes in the grammatical formulation of an utterance. There is also a positive fact that we have accomplished the assigned tasks of overcoming writing and reading disorders, the speech development of junior schoolchildren. However, it is necessary to take a more thorough approach to the work on elimination of dysgraphia.

In view of this statement, before proceeding to a special remedial affecting, after the diagnostic examination, it is necessary to assess the strengths and weaknesses of the speech therapy work. Further, it is possible to estimate the approximate risk of failure to detect the mistakes of logopedic affecting. The composition of the whole speech therapy for junior schoolchildren is based on the theoretical foundations of general pedagogy and speech therapy, as well as on the peculiarities of the process of teaching children with speech defects within a secondary school setting. Within this framework, not only the elimination of the defects itself, but primarily the development of speech and communication skills takes on particular importance. The process of speech development by junior schoolchildren is composed with a focus on the potentialities of a child and their implementation in educational and extracurricular activities. During the special remedial process, such personal qualities as diligence, perseverance, attentiveness, empathy, which are aimed at the development of a creative artistic personality, are formed.

The purpose of speech development by junior schoolchildren is advancement of children to the new stages of speech development, namely, the stages of cognitive, emotional and volitional powers. In the context of disclosing the goal of speech therapy, we are guided by its essential characteristics: an extensive highly motivated mental and speech activity, the ability to mobilize the mental powers, the development of will and the ability to organize spontaneously the cognitive and transformative process. When creating a didactic model of speech therapy, we identified the specific goals of therapy for children from different angles:

- Psychological and pedagogic: the goal is to change the principle of mastering of educational content, based on the inclusion of the speech therapy work stages in the general educational process.
- Social: the goal is to influence directly on the formation of the creative and intellectual potential of each child.

5. Conclusion

The high clinical efficacy of special remedial work and prevention of speech disorders regarding children with bilingualism has been proved. The research results allow improving the clinical training of psychologists and enhancing efficiency of the speech therapy process. It has been established that the use of the project makes it possible to overcome the main components of speech disorders by junior schoolchildren with bilingualism most effectively. The materials of this article can be useful for specialists and speech therapists on the practical

level. In the light of the results of this study being obtained, we can identify a number of scientific problems and strategic areas that require further consideration: deepening and extension of some provisions outlined in the article related to the formation and accumulation of psychological and pedagogical experience.

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