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AmurCon 2021: International Scientific Conference**SCIENTIFIC IDEAS AND TENETS OF A.R. LURIA'S THEORY IN
PROFESSIONAL DEFECTOLOGISTS' TRAINING**

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Abstract

The topicality of the research is due to the importance of studying the ideas and tenets of the theory of Alexander Romanovich Luria (1902-1977) in the process of speech pathologists' professional training at the university. A.R. Luria is the author of many works on the brain organization of speech and aphasia, published even abroad. The study focuses on the possibilities to use theoretical and practical tenets of A.R. Luria's theory in defectological education and the justification of methodological techniques for conducting such research. The article does not consider in detail all the variety of ideas of A.R. Luria's scientific school. The emphasis is placed on the tenets on the brain organization of speech and the speech system, flexible and capable of change. The priority is the wide use of the methodological, humanistic, ideological side of his concepts, which affect the formation of students' specific competencies and the professional activities of a future specialist-defectologist. Such research methods as theoretical (literature analysis, generalization, comparison, and the like) and practical (observation, survey) were used in the given paper. The study revealed effective methods and techniques of A.R. Luria's works, full of analytical and semantic nature, focusing on the theoretical and methodological foundation of future professional activity, together with ways and methods of psychological and pedagogical correction of people with disabilities (specific health opportunities). They do not intend only to fixate on the scientific ideas and tenets of the scientist but to understand the meaning of correctional activities to restore higher mental functions.

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1. Introduction

In the changed conditions of defectologists' professional training, attention is increasingly paid to the formation of future specialists with meta-subject competencies, working for the long term. They also develop specific competencies, which will allow the teacher to combine individual and integrated approaches in the specific educational system because of the increase in the number of persons with disabilities with a complex defect structure (Denisova & Kalinichenko, 2017; Nestik, 2021).

In our opinion, it is vital to update the system of defectologists' professional training to meet new professional educational standards. Fundamental ideas in the educational process and the leading concepts of scientists from general psychology, pedagogy, defectology, neuropsychology, and aphasiology could help achieve this goal (Ardila et al., 2020; Luria, 2018b).

The name of Luria (1976) occupies a significant place among researchers. He is the author of numerous works on the brain organization of speech and aphasia. His works were published simultaneously in Russian and English, and often foreign publications were ahead of domestic ones.

The undoubted A.R. Luria's contribution to the theoretical foundations of world and domestic pedagogy and psychology of the twentieth century is generally recognized. Therefore, the use of A.R. Luria's scientific works meets modern standards of professional training and contributes to an integral system of pedagogical knowledge in special education among students (Korsakova & Prakht, 2002; Veraksa et al., 2019).

The future defectologist will become an active participant in educational relations. He will be involved in practical activities and demonstrate the mastery of specific methods and scenarios of psychological and pedagogical support for adults and children with diverse multiple developmental disabilities. He will have to prove himself as a researcher and actively develop research areas of the correctional educational process. All this is predominantly due to the methodological literacy and specialist's competence in the restoration of higher mental functions of persons with disabilities (Luria, 2020b; Tsyganok, 2019; Zhuravlev & Pochebut, 2021).

Various authors (Ardila et al., 2020; Denisova & Kalinichenko, 2017; Veraksa et al., 2019; Zhuravlev & Pochebut, 2021) highlighted these issues. Domestic scientists unanimously stand on the theoretical positions of L. S. Vygotsky's cultural and historical concept (Ardila et al., 2020; Denisova & Kalinichenko, 2017; Luria, 1947; Mikhailov et al., 2019; Veraksa et al., 2019). According to it, only the assimilation of social experience contributes to higher mental functions. In this regard, the tenets of A.R. Luria's theory about the brain organization of speech and specific contributions of various brain regions to the speech system capable of plastic change are significant to use widely in the course of professional training.

2. Problem Statement

Considering the high topicality and insufficient development of the studied issue, we identified the main problem of the study. It is to identify the possibilities of using the theoretical and practical tenets of Russian scientist Alexander Romanovich Luria's theory in the field of aphasiology while studying

specific disciplines of the Bachelor's and Master's degree programs in the field of Special (defectological) education.

3. Research Questions

The most important methodological principle in defectologists' professional training is the usage of the classics of defectological science. Despite the widespread dissemination of A.R. Luria's concepts, there is no clear opinion on which tenets to rely and how to use them functionally in the context of vocational education.

In the fundamental monographs on the brain organization of speech and aphasia, A.R. Luria analyzed two areas. They are the development and the process of disintegration of local brain damage. He stated that that "study has implemented one of my earlier goals and opened new scientific problems, such as aphasia, and early child development, which occupied a central place in my subsequent work" (Luria, 2001, p. 13).

Clinical experience has allowed scientists to carefully examine the symptoms of the three main types of aphasia identified in the 20-30ies of the XX century.

In the book "Traumatic aphasia," published in 1947, the author summarizes the results of these problems. This scientific work made A.R. Luria a world-famous scientist. The author examined the symptoms of aphasic disorders in a new way, which undoubtedly became an achievement of Russian scientific thought. Psychological and psychophysiological studies, which were devoted to the pathogenesis of brain activity, were included in several basic clinical concepts. The author's justification of restorative therapy techniques that played a crucial role in traumatic aphasia facilitated the significant advancement of the doctrine of aphasia and the introduction of logic into some complicated issues of aphasiology (Luria, 1947).

According to Luria (2019) himself, one of his prominent scientific heritages is the book "The Lost and Returned World," published in 1971. No less A.R. Luria's well-known work is the monograph "Higher cortical functions of a person and their disorders in local brain damage." It has been reprinted many times (1962, 1969, and 2018) and includes the results of a study of factors that underlie disorders of brain functions and higher mental processes. Several observations and diagnostic results helped A.R. Luria identify ways to compensate for higher mental processes. He wrote, "focal brain damage, as a rule, is never accompanied by a complete loss of functions, but more often leads to its disorganization, as a result of which it appears only in an altered form" (Luria, 2018a, p. 29; Panferov & Miklyaeva, 2019).

A.R. Luria systematically deepened the idea of the dynamic localization of the mental functions of the human brain, which is fundamental in the training of defectology. He stated:

The cerebral cortex does not consist of separate "depots" of sensory and motor images associated with each other by an associative link. It represents a working constellation of separate systems, each of which is a system of partial integration of separate sensory or motor processes. This principle ensures the creation of those primary syntheses, without which neither the phasic nor the semantic side of speech activity can be built. (Luria, 1947, p.64)

The term "dynamic localization of mental functions" means that the same parts of the central nervous system enter into dynamic interaction when performing mental functions, changing their position and role. This implements the principle of the biological economy of mental activity.

In addition, in his scientific work "Functional organization of the brain," the author conducted a syndrome analysis of the systemic organization of mental processes, identified three main functional blocks, the participation of which is necessary for the implementation of any mental activity (Luria, 1975; Mikhailov et al., 2019).

Another outstanding and well-known A.R. Luria's study, published in 1973, was "Fundamentals of Neuropsychology." The book was published abroad under the title "The working brain: An introduction to neuropsychology." The first edition of the book was called "Working Brain," or "Active Brain," but the author changed the title to "Fundamentals of Neuropsychology," deciding that it reflected the content of the work better. The book presented a training course, the central place of which was occupied by various neuropsychological concepts and terms accumulated by Luria (2006) during his study of this field of national science, neuropsychology.

These facts emphasize the need for defectologists' professional training and a deeper methodological study of the brain organization issues of mental activity complex forms, outlined by A.R. Luria. In our paper, we foreground the idea that the study of the scientific concepts of A.R. Luria's theory during professional education contributes to the formation of professional thinking, methodological and defectological culture of a future specialist.

4. Purpose of the Study

This study was conducted in Blagoveshchensk State Pedagogical University, Blagoveshchensk, Amur Region. Its purpose was to identify methodological techniques and means of using the theoretical and practical tenets of A.R. Luria's theory in aphasiology in defectologists' professional training.

The novelty of this work is represented by a significant volume of A.R. Luria's primary sources studied by the students. It contributed significantly to the students' knowledge in aphasiology and the justification of methodological techniques for conducting this work.

5. Research Methods

Bachelor's degree and Master's degree students of Blagoveshchensk State Pedagogical University majoring in "Special (defectological) education" made the sample of our study.

The subject of the study was to identify the possibility of using the tenets of Alexander Romanovich Luria's theory in aphasiology in defectologists' professional training.

While conducting the research, we used both theoretical (literature analysis, generalization, comparison, and the like) and practical (observation, survey) research methods.

6. Findings

Having determined the sample, we studied the syllabi of the educational disciplines of the training area "Special (defectological) education" and identified the topics of special courses. During the

experiment, it was necessary to use the theoretical and practical tenets of A.R. Luria's theory such as "The concept of aphasia," "Etiology of aphasia," "Classifications of aphasia," "Pathogenesis and symptoms of different forms of aphasia," "Restorative learning in different forms of aphasia," "Neuro-linguistic approach to the problems of speech disorders," "The teaching of A.R. Luria on the three functional blocks of the brain," "Examination of the state of higher mental functions in aphasia," and the like.

The classification of forms of aphasia contributes to basic knowledge for defectology students in aphasiology. Referring to the work "Traumatic aphasia," in which A.R. Luria gives his classification of this disorder, helps students reveal the features of the defect and methods of rehabilitation therapy. They consider the author's principles underlying various forms of aphasia, such as the analysis of topically limited brain damage and factor identification that underlie the entire complex of disorders occurring with local brain damage (Luria, 1947).

The identification of scientific approaches and rational directions of practical activity reflects the socially-oriented function of defectological education and forms the thinking skills of future specialists. Moreover, working with primary sources teaches students to acquire professional knowledge independently.

We consider it crucial to motivate students to study the content of primary sources. The book "Fundamentals of Neuropsychology" was a source for analysis of the structural and functional model of the brain as a substrate of mental processes. In addition, these materials made it possible to repeat in detail the psychological structure and brain mechanisms of individual mental processes, such as perception, attention, speech, memory, and the like (Luria, 2006).

It should be noted that in working with A.R. Luria's primary sources, we used a variety of techniques and tasks. Logical simulation, making an outline of the primary source, highlighting main problems and ideas (section, chapter), questions and answers for checking comprehension, making cards for material systematization, familiarization with the history of a primary source, and some other techniques have proved to be effective and are worth practicing and memorizing. These methods and techniques let students understand the essence of their future profession. They can also clarify the requirements for the activity, stimulate the development of communication skills, and promote independence and awareness of the space for future professional growth.

Having analyzed the experience of using these methods and techniques in defectologists' professional training, we concluded that they could be attributed to the analytical and semantic group. They do not simply fixate on scientific ideas and principal tenets. They help understand the essence of the activity, build the concept of correction and restoration of higher mental functions of people with disabilities.

Thus, the study of the cortical functions of the brain and the issues of the brain organization of complex forms of mental processes of persons with disabilities is the basis of theoretical knowledge, together with a method of determining practical activities for restorative learning.

In addition to a large amount of scientific information reflecting the work with terms, classifications, scientific approaches, A.R. Luria's works contain unique material about the scientist's clinical experience during the Great Patriotic War. So the book "The Lost and Returned World" is about the history of a person who suffered local brain damage due to a bullet wound. We are talking about a

lieutenant wounded in the left parietal region of the head. The bullet went deep into the brain but was not extracted (Luria, 2020a).

The students analyzed the clinical picture of the disorders caused by the bullet and the consequences associated with memory loss, professional skills, and learning ability. "The world of his words disintegrated, and he began to live in a world of strange, unfamiliar words that were so difficult to remember and the meaning of which was so difficult to understand" (Luria, 2019, p. 19).

The study of such examples made it possible not only to analyze neuropsychological approaches but determine the expediency and effectiveness of correctional-developmental and therapeutic-restorative work with children and adults. It also expanded the worldview and humanistically oriented the students in their future profession.

Analyzing the data obtained caused the decision to understand the students' attitude to work with primary sources, for instance, A.R. Luria's works. For this purpose, Bachelor's and Master's degree students have been surveyed annually during 2013-2020. The results are as follows. When asked about the desire to continue studying primary sources, 54% of the respondents answered positively. The effectiveness and productivity of this work were noted by 67% of students; 78% of the students stated their desire to start correctional and rehabilitation activities. Despite positive results of the survey, it should be noted that a low level of preparedness of university applicants entering defectological specialities is a nowadays big problem.

7. Conclusion

Russian neuropsychologist A.R. Luria's works are valuable for defectologists' professional education. Principle tenets formulated by A.R. Luria and his followers are basic for students of defectology when studying aphasiology. These include the doctrine of the three main functional blocks of the brain necessary for any mental activity and the study of violations of higher mental processes in local brain damage (Luria, 1975).

This study identified the most effective methods and techniques for studying A.R. Luria's works. Namely, analytical and semantic tasks focused on the knowledge of the theoretical and methodological basis of future professional activity, together with the ways and methods of psychological and pedagogical correction.

When familiarizing with complex scientific ideas, such an approach helps overcome the separation of scientific content from practical defectological realization. In any case, the text of the primary source helps students notice, analyze, supplement, and compare the educational material with clinical study experience.

The study showed that in the course of training specialists in defectology, A.R. Luria's works should be used not fragmentally but systematically to form students' professional thinking, an integral vision of the essence of correctional and pedagogical activity.

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