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PSYCHOLOGICAL FEATURES OF USING THE TECHNIQUE OF N.V. SEREBRYAKOVA, L.S. SOLOMOKHOVA IN DETERMINING THE LEXICAL AND SEMANTIC SIDE OF THE SPEECH OF CHILDREN WITH AUTISM

Abstract

Understanding the meaning of words makes it possible to understand the picture of the world. Language is a person's ability to communicate facts, objects and actions through words. Linking the same concept with the corresponding word, i.e., determining the meaning of the word, is possible thanks to semantic processing. An important issue in cognitive science is the study of how the meanings of words are represented and classified in the human cognitive system. And the most important sign of children with autism in society is a speech disorder. The vast majority of them have varying degrees of language impairment. The lexical and semantic aspects of speech are particularly important. Semantics is the study of the content of a word that comes to consciousness and is pronounced. The lexical and semantic side of the speech of children with autism depends on the severity of the autism and the cognitive abilities of the child. For this reason, it is important to diagnose the lexico-semantics of a child with autism in the work of correction and integration into the environment. One of such diagnostic methods is the method of N.V. Serebryakov, L.S. Solomokhov, which determines the volume and quality of passive and active vocabulary. And the article describes an attempt to analyze the effectiveness of this technique using the experience of scientific research.

Keywords: autism spectrum disorder, speech disorder, lexico-semantic, diagnostics

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АУТИЗМІ БАР БАЛАЛАРДЫҢ СӨЙЛЕУІНІҢ ЛЕКСИКО-СЕМАНТИКАЛЫҚ ЖАҒЫН АНЫҚТАУДА Н.В. СЕРЕБРЯКОВА, Л.С. СОЛОМОХОВАНЫҢ ӘДІСТЕМЕСІН ҚОЛДАНУДЫҢ ПСИХОЛОГИЯЛЫҚ ЕРЕКШЕЛІКТЕРІ

Аңдатпа

Сөздердің мағынасын түсіну арқылы әлемнің бейнесін ұғыну мүмкіндігі туады. Сөйлесу - бұл адамның фактілерді, объектілерді және іс-әрекеттерді сөз арқылы жетгізу қабілеті. Сол тұжырымдаманы тиісті сөзбен байланыстыру, яғни сөздің мағынасын анықтау семантикалық өңдеудің арқасында мүмкін болады. Когнитивтік ғылымдағы маңызды мәселе сөздердің мағыналарын адамның танымдық жүйесінде қалай ұсынылатындығы және жіктелуін зерттеу.Ал қоғамдағы аутизмі бар балалардың ең басты белгісі – сөйлеу тілінің бұзылысы. Олардың басым көпшілігінде сөйлеу бұзылысының әртүрлі деңгейінде көрінеді. Әсіресе, сөйлеу тілінің қалыптасуында лексико-семантика жағы маңызды болып табылады. Өйткені, семантика – санаға келген және айтылған сөздің мазмұнын зерттейді. Аутизмі бар балалардың сөйлеу тілінің лексико-семанттика жағы аутизмнің ауырлығына және баланың танымдық қабілетіне байланысты. Осы себепті, түзету және ортаға кіріктіру жұмысында аутизмі бар баланың лексико-семантикасын диагностикалау маңызды. Сондай диагностикалау әдістемелерінің бірі - Н.В. Серебрякова, Л.С. Соломохованың пассивті және белсенді сөздік қордың көлемі мен сапасын анықтау әдісі. Бұл әдістеменің тиімділігін ғылыми зерттеу тәжірбиесі арқылы талдау жасау әрекеті жасалынды.

Түйін сөздер: аутзим спектрінің бұзылысы, сөйлеудің бұзылысы, лексико-семантика, диагностика

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ПСИХОЛОГИЧЕСКИЕ ОСОБЕННОСТИ ИСПОЛЬЗОВАНИЯ МЕТОДИКИ Н. В. СЕРЕБРЯКОВОЙ, Л. С. СОЛОМОХОВОЙ В ОПРЕДЕЛЕНИИ ЛЕКСИКО-СЕМАНТИЧЕСКОЙ СТОРОНЫ РЕЧИ ДЕТЕЙ С АУТИЗМОМ

Аннотация

Понимая значение слов, появляется возможность осмыслить картину мира. Речь – это способность человека передавать факты, объекты и действия через слова. Связывание того же понятия с соответствующим словом, то есть определение значения слова, возможно благодаря семантической обработке. Важным вопросом в когнитивной науке является изучение того, как значения слов представлены и классифицируются в когнитивной системе человека. А самый главный признак детей с аутизмом в обществе – нарушение речи. У подавляющего большинства из них наблюдается различный уровень речевого расстройства. Особенно важным в формировании речи является лексико-семантическая сторона. Ведь семантика — это изучение содержания слова, которое приходит в сознание и произносится. Лексико-семантическая сторона речи детей с аутизмом зависит от тяжести аутизма и когнитивных способностей ребенка. По этой причине в работе по коррекции и интеграции в среду важно диагностировать лексико-семантику ребенка с аутизмом. Одним из таких методов диагностики является метод Н.В. Серебрякова, Л.С. Соломохова, определения объема и качества пассивного и активного словарного запаса. И в статье описано предпринята попытка проанализировать эффективность этой методики с помощью опыта научного исследования.

Ключевые слова: расстройство аутистического спектра, нарушение речи, лексико-семантика, диагностика

INTRODUCTION.

Semantics is a branch of linguistics that studies the meaning of words (lexical semantics) and determines the linguistic context of words and the meaning of their use by the speaker (grammatical semantics). In addition, words have different meanings depending on their use in social contexts and the speaker's intentions [1]. In order to name an object, which is an automatic process for any typically developing speaker, the speaker must be able to find the appropriate word in his or her personal dictionary. Difficulties in this process may make it difficult to name things, especially "paraphrase", where there is difficulty in understanding and determining the meaning of words. In the case of semantic paraphrases, a word is replaced by another word of the same semantic category (for example, "table" instead of "chair").

There are two ways of naming things. The first is when the word is associated with the meaning (e.g., "What is that?", "That chair"). This means that the child first grasps the meaning (the object itself, a fact or an action) and then memorizes it by associating it with a given name. In this case we say that the child "knows a new word" or we can say that a link has been made between the word and the concept. For example, if a child has an unpleasant experience with a dog (if the dog is scared or barks), the child feels fear and uses this feeling only in connection with a specific word, or pronounces the same word in general for the breed of animal. On the other hand, the word "dog" is associated with positive qualities by a child who has had a good experience with another dog (playing with a dog). In this activity, the child associates the word with semantic features that are considered from the point of view of the meaning of the word. In this way, the child creates a semantic network that is based on an empirical knowledge of the world. Second, not based on experience, that is, through general knowledge that gives children the connection between a word and its meaning (e.g., "the ocean is a huge reservoir").

How typically developing children understand the meaning of words has been explored by Espinosa et al. (2018), Fisher et al. (2014) and other researchers [2]. From a similar psycholinguistic perspective, children with autism spectrum disorders also understand the meaning of words, as formulated by Arunachalam et al. (2016), Eigsti et al. (2016), Veronica (2021) and many other researchers. [3].

At the neuropsychological level, DiStefano and colleagues (2019); Ribeiro and colleagues (2013); McCleery and colleagues (2010); Mendez and colleagues (2009) have developed neuroimages to identify differences in semantic neuronal movement in the brain between children with and without autism spectrum disorder. Depending on the task presented during the experiment, the results showed different differences: Ribeiro et al. (2013) and McCleery et al. (2010) gave different answers to questions posed to children with and without autism spectrum disorders. This is an indication that their lexical-semantic side is at a different level [4]. Mendez et al., (2009) and DiStefano et al., (2019) showed that the semantic process of children with autism is similar to that of children with normal brain formation. However, we should not forget that children with autism spectrum disorder «are characterized by a slow speed of information processing and limited integration of the thinking process». [5]

For children with autism spectrum disorder, it is relevant to examine the semantic process at the psycholinguistic level. This is done by giving the same or different responses to a given task. Eigsti et al. (2011) concluded that children with autism experience difficulties in social communication that are associated with the linguistic comprehension of the words in their surroundings. Arunachalam et al. (2018), discussing word lexical development in children with autism, stated that "information perception is related to the child's linguistic and cognitive abilities"[6].

METHODS.

The lexico-semantic side of the language of children with autism can be assessed by means of tests of the child's expressive and receptive vocabulary. In order to determine the receptive vocabulary, the child hears the word and finds the picture that corresponds to it. For the expressive vocabulary test, the child is shown a picture and has to name the word whose meaning is the same as the picture. These two methods - picture matching and picture naming - are the most commonly used methods for the assessment of lexical semantics.

Research on lexical and semantic language skills in children with autism is conflicting. For example, Begeer et al., 2013; Bowler et al., 2009; Cantiani et al., 2016; Dunn et al., 1999; Ellawadi et al., 2017; Fiebelkorn et al., 2013; Groen et al., 2010; Kamio et al., 2007; Knaus et al., 2008; Speirs et al., 2011; Walenski et al., 2008 and some researchers say that the lexical-semantic side of children with autism is intact, while Alqhazo et al, 2018; Battaglia, 2012; Boser et al., 2002; Hartley & Allen, 2013, 2014; Henderson et al., 2011; Lo et al., 2013; McCleery et al., 2010; Naigles et al., 2013; Norbury et al., 2010; Ropar & Peebles, 2007; Singh & Harrow, 2014; Whitehouse et al., 2007 and others have found changes compared to typical children [7].

To understand the inconsistencies of these reviews and to understand the lexical and semantic abilities of children with autism, we used the method of determining the volume and quality of passive and active vocabulary by N.V. Serebryakova, L.S. Solomokhova (Figure 1).
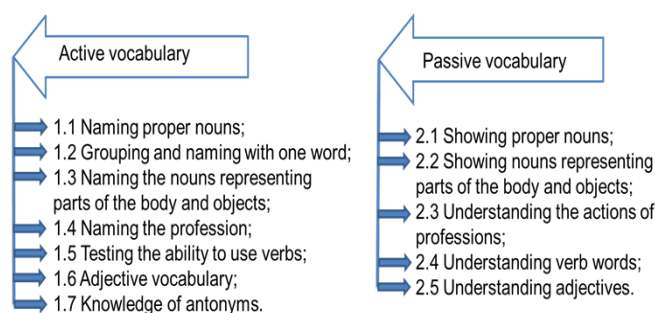

Figure 1 Sections of the Methodologies for Determining the Volume and Quality of Passive and Active Vocabulary of N.V. Serebryakova, L.S. Solomokhova

For each section a child was given 2 points if he/she answered satisfactorily; 1 point if he/she answered with the help of the teacher or if he/she is delayed for a long time; 0 points if he/she did not answer at all.

Each participant may score a maximum of 160 points. The high level is 160 - 108 points, the medium level is 108-54 points and the low level is 54-0 points.

In terms of active vocabulary:

1.1 Can score a maximum of 30 points for "naming proper nouns". Must name 15 things;

1.2 Can score a maximum of 18 points for "grouping and naming with one word". Must name a group of things with one word. Nine words in total;

1.3 Can score a maximum of 8 points for "naming the nouns representing parts of the body and objects". Must name parts of four objects;

1.4 Can score a maximum of 6 points for "naming the profession". Must name three professions;

1.5 Can score a maximum of 8 points for "testing the ability to use verbs". Must answer four questions using verbs;

1.6 Can score a maximum of 18 points for the "adjective vocabulary". Must name nine different colors and shapes;

1.7 Can score a maximum of 10 points for the "knowledge of antonyms". Must name five pairs of antonyms.

In terms of passive vocabulary:

2.1 Can score a maximum of 30 points for "showing proper nouns". Must show 15 things. Must be asked questions as "Where is a doll, bear, table, etc.?";

2.2 Can score a maximum of 8 points for "showing nouns representing parts of the body and objects". Must show parts of 4 objects;

2.3 Can score a maximum of 6 points for "understanding the actions of professions". Must show 3 different professions;

2.4 Can score a maximum of 10 points for "understanding verb words". Must understand and show 5 verbs. Must be asked questions as "Who moved?" Who hit? Who ran? and so on.";

2.5 Can score a maximum of 8 points for "understanding adjectives". Must show 4 different adjectives [8]

The autistic center "Asyl Miras" became the base of research experimental work. The number of participants is 30 children with autism spectrum disorders, including 30 boys and 5 girls. The age ranges from 4 years 1 month to 6 years 11 months (Table 1).

Table 1 Age of children with autism who participated in the experiment

Age range	Actual age presented by year, month (number of children of the same age)	Average age presented by year, month	Total number
4-5 years old	4, 2(3); 4, 4(3); 4, 5(2); 4, 6; 4, 8 (2); 4, 10	4, 4	12
5-6 years old	5, 2(2); 5, 8(3); 5, 9; 5, 11 (2)	5, 3	8
6-7 years old	6, 3(4); 6, 4; 6, 7(2); 6, 8; 6, 10; 6, 11	6, 3	10
Total			30

In determining the lexico-semantic side of the speech of children with autism, we used the methodology of N. V. Serebryakova, L. S. Solomokhova.

RESULTS.

According to the methodology of N.V. Serebryakova, L.S. Solomokhova to identify the semantic and lexical aspect of the spoken language of preschool aged children with ASD, we have the following findings (Table 2)

Table 2: Result indicator of the N. V. Serebryakova, L. S. Solomokhova's technique on determining the semantic and lexical aspect of spoken language of preschool aged children with ASD

Levels	Scores	Total number	Number of children with ASD aged 4 to 5	Number of children with ASD aged 5 to 6	Number of children with ASD aged 6 to 7
High	Between 160 – 108	8	1	2	5
Medium	Between 107 – 54	11	2	5	4

Low	Between 53 – 0	11	9	1	1
Total		**30**	**12**	**8**	**10**

DISCUSSION.

Let's analyze the results of the methodology of N. V. Serebryakova, L. S. Solomokhova, developed to identify the lexical-semantic side of the speech of children with ASD.

Differentiation of the result of the methodology of N. V. Serebryakova, L. S. Solomokhova, developed to identify the lexical-semantic side of the speech of children with ASD at the age of 4-5 years:

At the age of 4-5 years, only 1 child with autism spectrum disorder was able to score a maximum score of 160. The diagnosis of that child is a mild degree of autism. He could understand orders and tasks. Academic skills (counting to 1-100, letters, color, figures) are suitable for their age. The vocabulary is about 300. Can group things and say in one word. Speaks, indicating the details of the object. Knowing the general properties of a substance, antonyms know words. By being interested in the environment, he understands the name and main functions of the professions. He uses verbs when composing sentences. When he behaves unpleasantly (not completing the task, getting up), he fulfills the task by saying: "now we will do this task, and then we will rest". That is meaning that his lexical-semantic side of speech is developed.

Children with ASD who have scored an average score will be able to pronounce their favorite food (apple, banana) and everyday words (car, phone, toys) from nouns to build relationships with the environment. If a child has pets (dog, cat) in his house, they will immediately recognize them and pronounce the names of the pets. However, they must be accurate. If the color and type are different, it gets stuck thinking. Can show and tell the objects that are in the house every day (chair, table). As for the clothes, they do not know the names, as their parents dress them. But the hand can point and distinguish. Although they know things individually, they cannot say them in groups. And only one of the objects and particles of the body can tell. Only the human body can say 2-3 parts when it comes. When it comes to the profession, they do not know them. And when using verb words, they use the words" drink"," sit", and often the words "nyam-nyam" (eat food), "top-top" (run), "hop-hop" (clap). Taking a phone or toy or to go to the toilet is indicated with a gesture. From adjectives, one can better distinguish and pronounce the color "blue" and "green", while from figures one can better pronounce "round" and "square". Passive vocabulary is more or less good.

There are also those who score 0 (5) at the low level. As an unpleasant behavior, he beats himself, cries. And one is in a program of the lowest level, although there is no unpleasant behavior. He has weak fine and gross motor skills in the child. He has lack of muscle tone and sensors. The adaptation to the new location is good. He explains what he needs by showing it manually.

Those at this level remain spontaneous words. In between, there are also in children with echolalia. Although they repeat the words, however they do not understand them. By crying and whimpering, they take things interesting from adults. Sometimes they go and take it away. Although they are interested in things, because they do not know the information on their use, so after a while his interest passes to another. Some use it correctly by knowing what it is, especially, a phone.

In general, the lexical-semantic side of the speech of children with autism spectrum disorders in the range of 4-5 is in the process of formation. The semantic side of words is fully formed after the name of things and the circle of use have been taught for a long time. The ability of children to use the game on the phone, to know that some objects are food, was formed thanks to long-term use and was able to distinguish the semantic side of words.

Differentiation of the result of the methodology of N. V. Serebryakova, L. S. Solomokhova, developed to identify the lexical-semantic side of the speech of children with ASB at the age of 5-6 years:

At the age of 5-6 years, 2 children were able to score at the top level (126, 128). 6/8 indicated the upper exponent from naming specific nouns. And the 5/8 is at a low level in general terms. This means that at the age of 5-6 years, children, although they know things in person, cannot tell them in groups. The words that can be said in groups are food names (vegetables, fruits), objects that we use in eating food (spoons, glasses), everyday objects (cars, clothes) and toys and sweets. It is able to distinguish between objects and parts of the body, understand and say that they are part of a particular object (car, chair, clothing). However, despite knowing the properties of things, they do not know antonyms. All

but two in the profession are of the same degree. Can distinguish and pronounce adjectives well. Even if the use of verb words is low, seeing a certain action (a child crying, running, tapping), the two can distinguish well.

At a low level, even if only one is 5 years and 11 months old. He repeated the words, but did not understand them, and said them indistinctly. Has vocalization, but still has poor articulation. There is no negative action in character. Teaching speech skills requires a lot of work.

The lexical-semantic side of speech can be formed by long-term work on the interpretation of words, such as 5-6 years old and 4-5 years old.

Differentiation of the result of the methodology of N. V. Serebryakova, L. S. Solomokhova, developed to identify the lexical-semantic side of the speech of children with ASB aged 6-7 years:

Children with autism between the ages of 6-7 were able to score a maximum score of 9/10 among 6-year-olds. Only one received the lowest score. This child has no syllables, no vocalizations. Only for the purpose of showing negative behavior – there is shouting.

Children with maximum scores use nouns appropriately. Short sentences can be used correctly in the construction process. Two children are cunning, sometimes playing with the teacher, and deliberately pronounce nouns, replacing them with other words.

From the "naming of generalizing concept" received a score of 0 out of 5/10. Although there are those who know nouns well in between, they do not know how to pronounce in groups. They do not know how to say. Also, do not use plural in their vocabulary. However, those who have scored an average, even if they know how to group, can only group the names of objects that they use every day (spoons, toys, etc.) and things which they see (sweets, fruits, vegetables, apples, etc.). The children with the highest scores were able to group things that they do not see in everyday life, such as clothes, televisions, telephones.

Five children can tell by pointing to objects and parts of the body. They can say "teeth" because they brush their teeth. Both of them know that the stomach is a part of the body. After all, their stomach ached and they were in the hospital. And the name of profession has low levels in terms of names. Know adjectives well. Only 3 children can make sentences using verb words.

Children of this age have relatively the same level of speech with children of another age on the lexico-semantic side.

Based on the results of the methodology carried out by Serebryakova N.V., Solomokhova L. S. to identify the lexico-semantic side of the speech of children with ASD, the following conclusions can be drawn: the lexico-semantic side of the speech of children with autism of preschool age is violated. After all, most of the participants were below their age level. A clear definition of the abilities of a child with autism through the sections of the methodology allowed. Therefore, this technique helped to give a correct, clear indicator in determining the lexical and semantic side of the speech of children with autism. However, it is obvious that there are other methods of effectiveness in determining the lexical and semantic side of speech.

CONCLUSION.

Autism spectrum disorder is a complex and severe child development disorder. The main symptoms include lack of social interaction, presence in one's own world, in some cases psychopathy, lack of verbal and nonverbal communication. In addition, we can note the ability to repeat the same thing, eat food, have a self-destructive routine, echolalia, etc. However, while these symptoms are present in some children with autism, some do not.

The most important symptom of autism is a speech disorder. Children with autism have different characteristics in their ability to speak. In the vast majority of them, it manifests itself at different levels of speech disorder. And a completely preserved, without any disorders, state of speech is found very little. Of the children with autism, about 25-30% communicate with people in a minimal verbal form, using individual words and stable phrases to communicate. Even with the early start of correctional work, there are significant disturbances in the expressive speech of children with autism.

The integration of these children into the environment and the creation of corrective work should be preceded by a comprehensive, full-blooded definition of the lexico-semantic side of speech. Because by being able to understand and use the word correctly, the child's cognitive abilities increase and correctional work becomes more effective.

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