

# Measures to Develop Vocabulary for Children 3-4 Years Old with Autism Spectrum Disorders in Inclusive Kindergarten School

Do Thi Thao<sup>1,\*</sup>, Bui Thi Lam<sup>2</sup>

Faculty of Special Education, Hanoi National University of Education, Hanoi, Vietnam

\*Corresponding author: [thaodt@hnue.edu.vn](mailto:thaodt@hnue.edu.vn)

Received February 28, 2018; Revised April 12, 2018; Accepted April 15, 2018

**Abstract** The research was accomplished with 40 teachers, who are teaching in inclusive kindergarten school in Hanoi in order to evaluate the reality of the degree of utilization and the effectiveness of vocabulary development of children 3 – 4 years old with autism spectrum disorders, which was conducted by teachers then propose some possible measures based on that. The result indicates that the teachers lack of flexibility in the use of the measures, particularly the coordination of measures; the measures have not focused on the vocabulary development but more about perception. From the reality, the research proposes seven measures of vocabulary development of children 3 – 4 years old with autism spectrum disorders focusing on games, providing meaningful situations, enhancing communication through the pictures, encouraging the interaction of children with their friends... Experimental result has shown that children make progress of vocabulary development in all the aspects (1) the ability to understand the meaning of words (2) the ability to apply the correct words into situations (3) the number of words which children can understand and speak. This demonstrates that the proposed measures have had a positive impact on the children.

**Keywords:** children, measures, inclusive kindergarten school, vocabulary, autism spectrum disorder

**Cite This Article:** Do Thi Thao, and Bui Thi Lam, “Measures to Develop Vocabulary for Children 3-4 Years Old with Autism Spectrum Disorders in Inclusive Kindergarten School.” *American Journal of Educational Research*, vol. 6, no. 5 (2018): 424-430. doi: 10.12691/education-6-5-9.

## 1. Introduction

Children’s vocabulary development is increasing the number of words, help children to understand the meaning of the words and use them in the communicational situations [1]. The period from 3 - 4 years old is the time which the children absorb and express the language through powerful words, they are curious in this period, they start to make questions about the world around them, they basically have enough the range of words but mostly are the nouns and verbs, which are used as personal characteristics, Nguyen Anh Tuyet (2013) [2]. For children with autism spectrum disorders (ASD), this is the important milestone to see whether they have autism spectrum disorders or not, the level of development and in particular is about the children’s vocabulary. This is also the important time for educators conducting development of early communication skills for children, because the older the children are, the more difficult in learning and communication they have [3]. Some children with autism spectrum disorders (ASD) barely use the sentences with complex structures, while the others express the complex articulation in appropriate level [4,5]. Some children can be able to develop language well and have fairly wide range of vocabulary, even quite normal but it just appears

only in those children who are diagnosed not so serious or high function [6].

Many studies have demonstrated the positive impact of early intervention would help develop language for most of children with autism spectrum disorders (Dawson & Osterling, 1997 [7]; Koegel & Koegel, 1988 [8]; Lovaas, 1987 [9]; Rogers & VISMARA, 2008 [10]. The children’s language will be developed positively by the early and proper treatment method because of the appearance of the spoken language is one of the most important variables for us to predict the outcome of children’s language in childhood and adulthood (Gillberg & Steffenburg, 1987 [11], Howlin et al, 2004 [12]; Venter A, Lord C, Schopler E, 1992 [13]. Social perception skills, such as understanding the mind and emotions of others, affect children’s communication abilities in real-life situations. In addition to autism spectrum disorder (ASD), there is increasing knowledge that children with specific language impairment (SLI) also demonstrate difficulties in their social perception abilities [14]; Research of Taylor LJ, Maybery MT, Grayndler L, Whitehouse AJ, The results indicate that children with ALI and children with SLI share emotion recognition deficits, which are likely to be driven by the poor language abilities of these two groups [15].

In fact, the vocabulary development for children with ASD in Vietnam has not yet paid attention in the

integrated environment. Due to the number of children, teachers cannot pay attention to each child, the measures to be used to develop vocabulary is applied to the entire class, children with ASD have less opportunities to take the proper measures which fit to the characteristics and abilities of themselves so it limits the abilities to gain vocabulary. In this article, we report the results of experimental research and apply the solutions into vocabulary development for children 3 – 4 years old with ASD in inclusive kindergarten school.

## 2. Content

### 2.1. The Actual Using Measures of Vocabulary Development for Children 3 – 4 Years Old with ASD

The study was performed on 40 teachers who are teaching in inclusive kindergarten school in Hanoi in order to assess the real frequency of using and level of effectiveness about the measures of vocabulary development for children 3 - 4 years old with ASD which teachers conducted, from which propose a number of measures to develop children's vocabulary more effectively. The survey results are evaluated both quantitative and qualitative: (1) about the quantitative: the result was calculated and processed by mathematical statistics. Principal survey data is evaluated according to the average points, percentage, hierarchy, deviation and presented in the form of aggregate tables and charts; (2) about the qualitative: focus on analysis in order to clarify the measures which are used by the teachers. The implementation process uses methods such as: interview, communication, direct observation.

The extent of using the measures which develop vocabulary of teachers: the frequency of using measures is different. Particularly, these measures are used more (ranked 1 to 4) are: conversation with questions associates with using visual gadget ( $M = 2.6$ ); frequently reading books, poetry, telling story according to the pictures in order to create the chance for children to use and develop their vocabulary ( $M = 2.57$ ); always using toys to communicate with children ( $M = 2.52$ ); using games to create excitement for children to learn new words ( $M = 2.50$ ), using varied forms of learning in order to enhance the ability to interpret and use the words ( $M=2.45$ ). Through exchanging the opinions of the teachers, they also said these were the measures they regularly used in learning times and playtimes. The combination of these learning forms such as the whole class and groups often made the classes become more lively and excited and children will have the opportunity to support each other more [16].

Some measures are used less: "increasing communication with children in daily lives" ( $M= 2.42$ ); "combining observation and description about things and phenomenon" ( $M= 2.37$ ); "creating the problem situations when playing or learning in order to stimulate the children to communicate" ( $M=1.80$ ).

The survey result also shows that the frequency of using the measures of teachers is not different much and no measures which is not used. However, in fact, through the investigation and interview teachers shows that, in the process of using measures above, teachers pay attention to

provide the range of vocabulary but not yet pay attention to the understanding and using words correctly of children. Teachers have not yet provided a clear system of questions concentrated on vocabulary development of children which limits the children's vocabulary development. Instead, teachers should make questions which children have to use words to explain, in order to stimulate the positive building up vocabulary of children.

The level of effectiveness of the measures of vocabulary development for children 3 - 4 years old with ASD: result shows that, in general, most of the measures have relatively high scores showed the effectiveness in the process of applying. The measures are highly praised for effective use is: increasing communication with children in daily lives is ranked number 1 ( $M=2.60$ ), shows clearly that this is the measure which teachers consider as the most effective. Ranked number 2 is conversation with questions associates with using visual gadget ( $M=2.47$ ). Ranked number 3 is using games to create excitement for children to learn new words ( $M=2.37$ ). Ranked number 4 is creating the problem situations when playing or learning in order to stimulate the children to communicate ( $M=2.32$ ).

The measures, which are evaluated less effective are: using varied forms of learning in order to enhance the ability to interpret and use the words ( $M=2.30$ ); always using toys to communicate with children ( $M=2.05$ ); frequently reading books, poems, storytelling according to the pictures in order to create the chance for children to use and develop their vocabulary ( $M=1.95$ ); combining observation and description about things and phenomenon's ( $M=0.75$ ).

The measures, which are used by the teachers, have certain effect in developing vocabulary for children 3 – 4 years old with ASD. There are the differences between the extent of use and the level of effectiveness of these measures, in details: in the measure number 2: "*always using toys to communicate with children*", the extent of use ranked number 3 but the level of effectiveness only ranked number 6; in the measure number 6 "*frequently reading books, poems, storytelling according to the pictures in order to create the chance for children to use and develop their vocabulary*", the extent of use ranked number 2 but the level of effectiveness only ranked number 7; the measure number 7 "*increasing communication with children in daily lives*" is highly evaluated about the level of effectiveness (ranked number 1) and the extent of use ranked number 1.

Through researching about the difficulties of teachers when using the measures in order to develop vocabulary for children with ASD, it is indicated that: the number of children in one crowded class is the common difficulty of every teachers in kindergarten schools and in inclusive kindergarten schools ( $M=1.85$ ); Lack of coordination among the supporting forces ( $M=1.45$ ). According to the teachers, in order to make progress in developing vocabulary for children 3 - 4 years old with ASD, in addition to studying in the class, the support, cooperation from the families, especially the unity of methods, measures, specific plans in developing vocabulary; Other difficulties are: material facilities are not yet conducive, the lack of books and materials. However, the teachers said that these difficulties they could totally overcome them and they are not the main difficulty [16].

## 2.2. Measures of Vocabulary Development for Children 3 – 4 YEARS OLD with ASD in Inclusive Kindergarten School in Hanoi

Measures of vocabulary development for children with ASD are the specific ways to resolve the remaining difficult issues in the process of speech development for children with ASD in order to improve the current range of children's vocabulary [16].

**Measure 1: Enhancing the use of games in order to create learning excitement for children:** Games are used to create excitement, stimulate children learn new words. Using games will create happier atmosphere of activities, reduce stresses and encourage children learn new words, which help build up children's vocabulary. The games must ensure the diversity of goals and the levels which are reached by children in playing, take advantage of the strengths and capabilities of children with ASD, in order to help children successful and safe. In playing time, teachers need to create the comfortable atmosphere and excitement for children. The games, which are used and suitable with children in this stage, include: vocabulary development games, language development games, pronunciation practicing games, role play games, learning games... such as: playing, naming, make quiz and answer quiz, distinguishing signs through their characteristics. In kindergarten schools, learning activities are always associated with playing activities, children can learn while play and on the contrary, therefore the games are used as useful tools. When organize games, teachers must determine: required target, content of games in order to develop children's vocabulary then help children correct the mistakes. In addition, teachers will also help children develop senses when developing vocabulary, such as: naming, pointing out the characteristics of things and phenomena. When using this measure, teachers need to be flexible, creative in creating more various and attractive games.

**Measure 2: Providing new words for children in meaningful situations**

"Meaningful situations for children with ASD are the situations which associate with realities and through them, children can learn the new words". Using meaningful situations help children learn many new words, expand range of vocabulary, build up children's vocabulary in positive way. The situations must ensure that they are meaningful to children, stimulate them using words, widen the range of words. Providing new words for children through meaningful situations occurred everyday, around them. Taking advantage of things which children care about to create of meaningful situations for children and starting to teach them new words, for example, teach them to say "no" when they do not want something or when they put the toys aside then say "no" in order to let children understand what "no" means or when they feel thirsty and say "water", teachers should add more words by saying "drink water". Widening the range of vocabulary help children have ability to combine words and learn how to speak better. However, do not provide many words for children so they can not absorb them, therefore they feel bored and can not understand.

**Measure 3: Conversation with questions associates with using visual gadget in order to increase opportunities for children to learn new words**

Create opportunities for children to learn new words, pronunciation and build up their vocabulary in positive way. Paying attention to making appropriate questions with the age of children, awareness of each individual, topic of lessons. In order to have productivity conversation, teachers must have good observations. When using system of questions, these questions must be brief, easy to understand and these questions must be derived from the observed object and the purpose of observation. The visual gadgets are divided into two kinds: Real object and picture. Using visual gadgets requires maximum involvement of the senses. Visual gadgets need to have the proper sizes in order to observe easily. Using visual gadgets such as real object, picture... to introduce words, explain the definitions of words and applying words into observation to answer the questions. Teachers need:

i) Introducing words: teachers use visual gadgets to introduce children about words which need to be taught and ask them to repeat words;

ii) Explaining the definitions of words: explain the meanings and definitions of words in details, do not concentrate on explaining every words but only difficult words. Difficult words for children with ASD are those abstract. When explain words, teachers need to use words combine with visual gadgets (children can observe things and phenomena through real objects, pictures or models, which can help children understand words easily);

iii) Practicing using words: children apply words into answering questions or express ideas when making conversation. Pay attention in helping children choose correct words when using.

**Measure 4: Creating problem situations when playing/learning aims to stimulate children to communicate**

This measure creates natural opportunities which help children use language. While children play, teachers can create the situations that force children have to use language to learn how to play, how to get toys, how to interact with friends and teachers or when learning to stimulate children to make questions. This measure help children more active in using words which were learned, understanding the meaning of the words and using correct words, also providing new words for children. When using this measure, teachers need to pay attention in the characteristics of each child and the number of children in the groups in order to encourage children communicates and is more confident in communication. Teachers are not only encouraging children to communicate but also care about widening the range of vocabulary, correcting the pronunciation mistakes and the orders of words and grammars in sentences. Teachers also need to create more opportunities, interesting situations for children so they can learn how to listen and learn the new words through making questions. In addition, after children get acquainted with a new word, teachers always have to make different situations for children to use new word which they have just had the chance to get access.

**Measure 5: Frequently reading books, poems, storytelling according to the pictures in order to create the chance for children to use and develop their vocabulary**

Reading books, poems, stories for children to listen are activities not only in order to expand the language and communication for children but also increase the range of

children's words. In these activities, children will have the opportunity to listen, memory all details of stories and especially they will be familiar with new words and interesting stories. For children 3 – 4 years old with ASD, teachers should choose stories: i) Appropriating with children's age and their language abilities as well as appropriate words, ii) Choosing the short poems, which are easy to understand and contain simple contents about the world around children, children's daily routines; iii) Using those stories contain illustrating pictures, surprising elements to attract children's attention and excitement. Teachers should encourage children take part in telling stories, for example, let children say along those easy parts in stories, repeat them again and again in order to encourage children tell or read stories themselves. Teachers read stories, poems with children then talk with children about the features of the characters: names, characteristics, which one they like or which one they hate... from the conversations, children will learn more new words and know more about the stories. For the long stories, teachers should change the words into simple words or try to brief them so they will be short and easy to understand for children to read or talk about.

**Measure 6: Increasing communication with children in daily lives**

"Daily situations" are activities take place at homes (classes) as a part of daily routines, for example, eating, drinking, playing, learning... Talking with children about their daily routines is an efficient measure to widen their range of words or develop their languages and communications. Teachers need: i) using the situation which teachers are taking part in with children, attracting their attentions by calling their names and touching them when speaking with them, ii) talking about what children are doing by using simple phrases; iii) Using clear and simple language, repeating the important words in the particular contents, words associated with face expressions to create the excitement, giving children compliments when children make efforts; iv) Talking with children about their daily lives: playing, sleeping, learning: learning language and widening the range of words by listening people around talking or communicating about activities through daily lives is good for children. For children with ASD, even though there are limitations on the ability to understand words, children still can develop their language through listening communications. Before proceeding communication with children, teachers should consider which activity amuses children most so they can choose that as an interesting topic to communicate with children. In the process of talking, teachers can make questions, which help children widen their words as well as help them learn how to speak faster.

**Measure 7: Encouraging children with ASD to communicate, to speak with teachers and friends**

One of the difficulties of children with ASD is defect of communication that creates interferences to perceive new words from people around. So, encouraging children with ASD to communicate with teachers, especially classmates not only make them become more confident but also help children use the learned words actively. Because children with ASD are quite shy and passive in communication so teachers have to care more about them so they will feel safe and be willing to take part in activities as well as

communicating with friends. When encouraging children with ASD, teachers need to be patient. Besides, teachers also should encourage children to communicate in all activities in the class so children can use words. Using these activities, which are loved by the children to encourage them participate. Before the class starts, teachers should welcome children with happy mood so children can feel happy and excited... Then take children into situations contain problems in order to motivate children speak. In daily classes, teachers should create opportunities for children to take part in answering questions and receiving comments from their friends in order to make children become more confident in communication process. Teachers also can organize from 1 to 2 group activities so children can cooperate with each other.

## 2.3. Experiment on Proposed Measures

### 2.3.1. Overview of Experiment

*a. Experimental purpose:* To test the feasibility and effectiveness of proposed measures in order to develop the range of words for children with ASD.

*b. Experimental subject:* experimental subject that we choose is the child 3 – 4 years old with ASD learning in inclusive kindergarten school.

Pham Nhat N is a 3.5 years old boy born in Hanoi. He was diagnosed with ASD in Vietnam National Children's Hospital when he was 2,5 years old with the mild level and he had limitation in language. N has the uneven development in every skill. He can hold a bowl, hold a color pencil but not so skillful. He has difficulty in working with small objects, such as beading beads... He can move around good and he does not have abnormal behavior but his movements are still clumsy, cooperation of the whole body is not so good. The awareness, N is able to recognize and name the numbers. His ability to get to know things and phenomena around is still limit; about the language: his range of words is still less, mostly about the familiar things around him. His pronunciation is still small, unclear and he lisps "l", "n" or he calls "mĩa, mĩa" instead of "mẹ". He does not have echolalia. The social interaction: he can use language to express his joys. Sometimes he still cannot control the level of expressions such as: Hug or hold hands of the others too tight. He has not yet said thank you, apologize. The communication: he is active in verbal communication, mostly communicating by gestures, for example, when somebody asks N for borrowing his pen or carrying his stuffs for him, he can understand and do it but he does not say anything. The behavior: his ability to maintain attention is good but only in short times, he does not have hyperkinesia. He likes playing with cars; his ability to follow the class's rules is not so good and often walks around the class without asking permission.

*c. Experimental condition:* Pedagogical experiment was conducted in natural condition, in normal condition of daily lives in Cau Dien kindergarten school. The activities of the class are still held normally but have a change in the way how to hold activities of teachers. Gadgets are fully – prepared according to experimental syllabus.

*d. Empirical content:* the experiment was conducted on 01 child with ASD with some of the following measures:

(1) Enhancing the use of games in order to create learning excitement for children; (2) Providing new words for children in meaningful situations; (3) Conversation with questions associates with using visual gadget in order to increase opportunities for children to learn new words; (4) Creating problem situations when playing/learning aims to stimulate children to communicate; (5) Encouraging children with ASD to communicate, to speak with teachers and friends.

*e. Experimental method:* The experiment was held according to the plan which was made by our team and exchanged with the teachers. The experiment's topics, which were conducted, were about "family", "animal" and "traffic". The activities were done in the classes and in daily lives.

*f. Criteria and evaluation:*

*\*About evaluation's criteria:* We conducted to investigate about the extent of range of words of children according to these following criteria:

*Criteria 1:* The ability to understand the meaning of words: the ability in which children can think about the sound of a word with an object's symbol or a phenomenon that reflects the meaning of that word or respond to the meaning of that word by words, gestures.

*Criteria 2:* The ability to apply correct words into situations. Children only get the scores when they apply correct words which were learned before into situations. For example: in the activity to discover about some pets at home, children have the chance to learn about words: "chicken", "wings"... and can use those words in the sentences about chicken.

*Criteria 3:* The number of words that children can understand and speak.

*\*About the method of evaluation:* To evaluate about the result of experiment, we give the scores for doing the experiment by children:

Criteria	Score	Requirement
Criteria 1 (C1)	3	If children can understand more than 70% new words provided by teachers
	2	If children can understand around 40 - 70% new words provided by teachers
	1	If children can understand less than 40% new words provided by teachers
	0	If children cannot understand any new word provided by teachers
Criteria 2 (C2)	3	If children can use correctly more than 70% words
	2	If children can use correctly around 40 - 70% words
	1	If children can use correctly than 40% words
	0	If children cannot use correctly any new word

So the total scores, which he got was 6, we did not calculate the score for criteria 3 (C3) but only gave the number showed the number of words he got.

**2.3.2. Experimental Result**

*a. The level of development of children's vocabulary before experiment:* The level of development of children's vocabulary before experiment is evaluated according to 3 criteria which presented above. The number of words, which was provided in 3 topics, was 30 words.

*\* The results before experiment are presented in the following table:*

The results in the Table 1 shows that in criteria 1, N could understand the definitions of 40% words provided by teachers, so that is equivalent to 1 score. In criteria 2, N could use correctly 30% words provided by teachers, so that is equivalent to 1 score. In criteria 3, the number of words N could understand was 12/30 words and the number of words he could understand and speak was 17/30 words.

**Table 1. The score before experiment of N**

	Criteria 1	Criteria 2	Criteria 3	
			To understand	To speak
Amount of words	11	9	11	17
Percentage (%)	37	30		
Score	1	1		
Total scores	2			

As we can see, the total scores, which was got by N based on criteria 1 and criteria 2, was 2. This result shows that the number of words of N is still limited, especially the limitation about the ability to understand and the ability to apply correct words into situations. This can be explained that the measures, which were used by teachers, did not really have positive impact to N, the way teachers held activities were still boring and not yet motivated N to learn new words actively.

*b. Result of empirical effect:* After determining the level of vocabulary's development by giving points based on those criteria, we conducted to make the plan to organize activities according to 3 topics above, we used some measures to develop vocabulary which were proposed, the number of words in 3 topics was 30 words. In the process of making experiment, we observed and noted down according to 3 criteria above. The experimental results are presented in the following table:

**Table 2. The score after experiment of N**

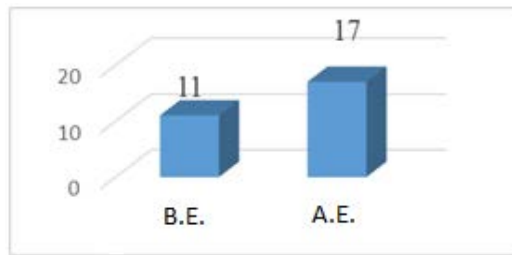
	Criteria 1	Criteria 2	Criteria 3	
			To understand	To speak
Amount of words	19	15	22	26
Percentage (%)	63.3	50		
Score	2	2		
Total scores	4			

The experimental result in C1 shows the percentage of words, which N could understand the definitions, was 63.3% and it is equivalent to 2 points. In C2, the number of words, which N could use correctly, was 50% and it is equivalent to 2 points. So the total score of criteria 1 and criteria 2 is 4. The amount of words N could understand was 22/30 words and the number of words N could speak was 26 words.

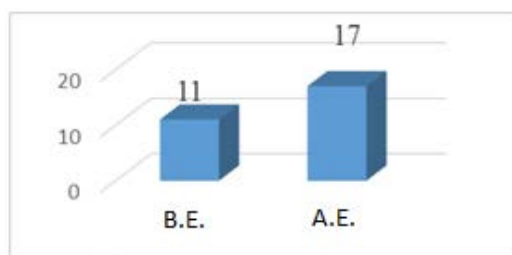
*c. Comparison of the results before experiment (B.E.) and after experiment (A.E.):*

Look at the chart 1 we can see the clear change about the ability to understand the meanings of words before and after experiment from 1 point to 2 points. So the experimental effect showed the ability to understand the

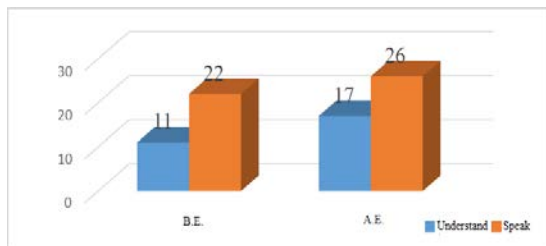
meanings of words of N has gained. This means the proposed measures, which were used in the classes, had better result than those previous measures. From that we can affirm the positive impacts of the measures for the children's vocabulary development.



**Chart 1.** Comparison of the ability to understand the meanings of words before experiment (B.E.) and after experiment (A.E.)



**Chart 2.** Comparison of the of the ability to use words correctly before experiment (B.E.) and after experiment (A.E.)



**Chart 3.** Comparison of the number of words the child could understand and speak before experiment (B.E.) and after experiment (A.E.)

The ability to apply *the correct words, which were learned before into situations* has changed. The score before experiment he got was 1, the score after experiment he got was 2. The result shows: the ability to use learned words correctly in situations after experiment has gained. This means the measures have a positive impact on the ability of children to use words correctly.

The number of words, which he could understand and speak has changed. Before experiment, the number of words that N could understand was 11 words and could speak was 17 words. After experiment, the number of words that N could understand was 22 words and could speak was 26 words. These results one more time affirm the proposed measures and conducted experiment have the efficient impact on helping children improve their vocabulary.

Through the time conducted the experiments and worked with the results associated with comparison of results before and after experiment, we basically affirm that the measures, help develop the range of vocabulary based on 01 child 3 – 4 years old with ASD, have possibility and good impact on helping children develop their vocabulary.

### 3. Conclusion

The vocabulary of children with ASD will be developed positively if it has early intervention at the right time, with the correct duration, using the right method and having the cooperation between family and school. Teachers used the measures to help children in inclusive kindergarten schools but still lacked of the flexibility of combining measures, those measures sometimes are not focused on building up vocabulary but mostly about the perception. It is necessary for us to think about measures for teachers in inclusive kindergarten school help children with ASD develop their vocabulary. Experimental results have shown that the child's vocabulary has made progress in criteria. This demonstrates that the proposed measures have had a positive impact on the child. Teachers can apply these proposed measures combine with using several measures flexible in order to develop the range of words for children with ASD in classes, activities, as long as they are suitable with the facilities of the classes, school. In the process of using measures, teachers should take advantages of every situation around children and even their daily lives, in order to create the opportunities for children to learn new words everywhere, every time.

### References

- [1] Nguyen Van Dong (2009), Developmental psychology, Political Publishing House.
- [2] Nguyen Anh Tuyet (2013), Child psychology preschool age (from 0 – 6 years old), Education University Publishing House, Hanoi.
- [3] Do Thi Thao, Bui Thi Lam, Nguyen Thi Dung (2017), Vocabulary of children with autism spectrum disorders from 3-4 years old in inclusive kindergarten schools, Journal of Science, Hanoi National University of Education, 62 (1), p. 146-153. ISSN 2354-1075.
- [4] Stone, W.L. & Caro-Martinez, L.M (1990), Naturalistic observations of spontaneous communication in autistic children. Journal of Autism and Developmental Disorders, December 1990, Volume 20, Issue 4, pp 437-453.
- [5] Wetherby, A. M., Prizant, B.M., & Hutchinson, T. (1998). Communicative, social-affective, and symbolic profiles of young children with autism and pervasive development disorder. American Journal of Speech-Language Pathology, 7, 79-91.
- [6] Do Thi Thao (2015), Measures to support intervention for children with autism, Journal of Science, Hanoi National University of Education, Number 60, 8C Trang 125-132, ISSN 2354-1075.
- [7] National Research Council. Educating children with autism. Washington, DC: National Academy Press; 2001.
- [8] Koegel R, Koegel LK (1988), Generalized responsivity and pivotal behavior. In: Horner RH, Dunlap G, Koegel RL, editors. Generalization and maintenance: Lifestyle changes in applied settings. Baltimore: Brookes; 1988. pp. 41-66.
- [9] Lovaas OI (1987), Behavioral treatment and normal educational and intellectual functioning in young autistic children. J Consult Clin Psychol. Feb; 55(1): 3-9.
- [10] Rogers SJ, Vismara LA (2008), Review Evidence-based comprehensive treatments for early autism. J Clin Child Adolesc Psychol.; 37(1): 8-38.
- [11] Gillberg C, Steffenburg S (1987): Outcome and prognostic factors in infantile autism and similar conditions: a population-based study of 46 cases followed through puberty. J Autism Dev Disord. 17(2): 273-87.
- [12] Howlin P, Goode S, Hutton J, Rutter M (2004), Adult outcome for children with autism. J Child Psychol Psychiatry. 45(2): 212-29.
- [13] Venter A, Lord C, Schopler E (1992), A follow-up study of high-functioning autistic children. J Child Psychol Psychiatry. 1992 Mar; 33(3):489-507.

- [14] Loukusa S1, Mäkinen L, Kuusikko-Gauffin S, Ebeling H, Moilanen I (2014), Theory of mind and emotion recognition skills in children with specific language impairment, autism spectrum disorder and typical development: group differences and connection to knowledge of grammatical morphology, word-finding abilities and verbal working memory. *Int J Lang Commun Disord.* 2014 Jul-Aug; 49 (4):498-507.
- [15] Taylor LJ, Maybery MT, Grayndler L, Whitehouse AJ (2015) Evidence for shared deficits in identifying emotions from faces and from voices in autism spectrum disorders and specific language impairment. *Int J Lang Commun Disord.* 2015 Jul; 50(4): 452-66. Epub 2015 Jan 14.
- [16] Do Thi Thao, Nguyen Thi Dung (2017), The status of using measures to develop vocabulary of children with autism spectrum disorders 3-4 years old in inclusive kindergarten schools, *Journal of Science, Hanoi National University of Education, Number 62 (9)*, p. 163-171. ISSN 2354-1075.