

## LINGUISTICS AND VIETNAMESE LINGUISTICS

**VOCABULARY CHARACTERISTICS  
OF AUTISTIC CHILDREN AGED 4 TO 5 YEARS****NGUYEN THI GIANG\* - PHAM HIEN\*\***

**ABSTRACT:** Autism spectrum disorder is becoming pressing issue with its increase in the number of autistic children as well as its impacts. Therefore, studies on autism spectrum disorder in general and language of autistic children in particular are really necessary. In this writing, we surveys vocabulary characteristics of autistic children aged 4 to 5 years in comparison to normal children. Through results of this writing, we want to propose suitable language therapy methods for autistic children.

**KEY WORDS:** Autistic children; child language; vocabulary; speech therapy.

**RECEIVED:** SEPTEMBER, 7<sup>th</sup>, 2022.

**EDITED:** NOVEMBER, 8<sup>th</sup>, 2022.

**1. Rationale**

It is generally perceived that nowadays, the number of children with autism has increased rapidly in all countries. In the U.S, according to the Center for Disease Control and Prevention, the percentage of children who are diagnosed with autism spectrum disorder has grown over time. On average, there are 1 out of 68 children that are affected by autism spectrum disorder (Scientific seminar yearbook of the education program of social skills for preschool children affected by autism spectrum disorder – lessons in Vietnam and the world, 2017); In UK, in 2010, the government made it known to the public that the number of autistic children was 1/86, this number increased to 1/58 children in 2013 (Nguyễn Hoàng Yến, 2013, p.12); In Vietnam, official data regarding the number of autistic children has yet to be released, however, according to National Children's Hospital, the amount of children who are diagnosed with autism has grown over recent years: the number was respectively 450 in 2008; 963 in 2009; and 1792 in 2010 (Bio J, 2010, p. 1-21).

It is also noticed that language and communication are one of the biggest shortcomings of autistic children due to their substantial impact on their perception as well as social adaptability. Children with autism spectrum disorders (ASD) range from having no verbal language ability to conversing with others to varying degrees of competence. However, regardless of their speech and language abilities, they are unable to use their knowledge effectively in the context of relationships. Despite having a better vocabulary and grammar knowledge than their peers, they struggle with reciprocal conversation (Bedford et al., 2013). Numerous studies have found that children with ASD have higher expressive language ability than receptive language ability when compared to typically developing children. Typical children's receptive language advances their expressive language (Kover, McDuffie, Hagerman, & Abbeduto, 2013). People can generally understand more than they can speak.

With all the above reasons, we had conducted a survey on vocabulary characteristics of autistic children who are 4-5 years old. Based on the survey results, we would present some analyses on vocabulary features of autistic children in comparison with that of ordinary children in order to get an overview of autistic children's language skills at this stage of age.

**2. Sample characteristics**

The group of samples in this essay include 5 autistic children (4-5 years old) who are being intervened by Language Training and Therapy Center (Institute of Linguistics) and An Binh Applied

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Psychology Research and Education Center. These 5 autistic children (encoded by T01, T02, T03, T04, and T05 respectively) involve 4 children born in 2014 and 1 child born in 2015. There are 3 boys and 2 girls, among them, T01 and T05 are diagnosed with severe autism, T02 and T04 have medium autism while T03 is affected by mild autism.

### 3. Survey results

#### 3.1. The magnitude of vocabulary obtained by 4 to 5 year-old autistic children

After surveying 5 autistic children (4-5 years old), results of their number of words learnt by each month of age are as follows:

*Table 1. Number of words learned by autistic children (4-5 years old) over months of age*

| Month of age | Number of words |     |     |     |     |
|--------------|-----------------|-----|-----|-----|-----|
|              | T01             | T02 | T03 | T04 | T05 |
| 37           | 4               | 15  | 203 | 12  | 3   |
| 38           | 6               | 16  | 259 | 17  | 4   |
| 39           | 9               | 17  | 300 | 23  | 5   |
| 40           | 12              | 20  | 335 | 28  | 6   |
| 41           | 15              | 21  | 385 | 38  | 8   |
| 42           | 18              | 22  | 412 | 44  | 9   |
| 43           | 21              | 23  | 443 | 51  | 11  |
| 44           | 25              | 28  | 446 | 56  | 12  |
| 45           | 28              | 40  | 538 | 68  | 13  |
| 46           | 31              | 54  | 562 | 74  | 14  |
| 47           | 35              | 69  | 598 | 83  | 15  |
| 48           | 38              | 88  | 628 | 99  | 17  |
| 49           | 40              | 93  | 634 | 118 | 24  |
| 50           | 43              | 103 | 644 | 136 | 36  |
| 51           | 56              | 112 | 648 | 147 | 48  |
| 52           | 67              | 136 | 658 | 180 | 55  |
| 53           | 75              | 154 | 674 | 200 | 65  |
| 54           | 84              | 174 | 680 | 228 | 71  |
| 55           | 97              | 199 | 684 | 248 | 78  |
| 56           | 110             | 219 | 689 | 265 | 92  |
| 57           | 123             | 231 | 693 | 275 | 99  |
| 58           | 135             |     | 699 | 295 | 109 |
| 59           | 150             |     | 724 | 317 | 113 |
| 60           | 158             | 248 | 746 | 373 | 121 |

Based on this result, it is remarked that:

In the first month after 3-year-old birthday (37 months), all 5 children already obtained spoken language. However, there existed a large gap between T03 and other children. At this time, T05 only possessed 3 words, while 4 words, 12 words, 15 words and 203 words for T01, T04, T02 and T03, respectively. Until they reached 4 years old (48 months), their average amount of words all increased. T01 grew his vocabulary to 34 words, T02 to 73 words, T03 to 425 words, T04 to 87 words, and T05 to 14 words. Similar to the 3-year-old stage, the unbalance regarding vocabulary magnitude between T03 and other children was significant and T03 was also the children with the largest vocabulary after almost 1 year old (11 months). At this stage, T03's vocabulary inventory was 628 words while T01, as well as T05, knew a few words (50 words); T02 and T04 obtained a limited vocabulary (below 100 words).

However, at the later stage (from 48 to 60 months), the gain in the vocabulary of all 5 children was not much different. Specifically:

At this stage, T04's vocabulary increased the most after 1 year to 274 words. Other children had a pretty similar gain (T01 increased by 120 words, T02 by 160, T03 by 118, and T05 by 104). Therefore, the total amount of words learned after 1 year of the intervention varied little among all children. At the age of 5 (60 months), T01 had a total of 158 words, T02 248 words, T03 746 words, T04 373 words, and T05 121 words.

Although T03 obtained the highest number of words upon 4-year-old stage, but after 1 year of intervention, T03's number of words increased a little because the teacher focused on teaching him to arrange words into coherent and long sentences in proper context rather than to teach new words; the vocabulary development was not essential for the child at this stage.

T02 and T04's vocabulary equaled at 4-year-old stage (T02 had 88 words, T04 99 words); however, after 1-year intervention, T04's vocabulary grew over that of T02 (over by 114 words). This is because during the last 3.5 months (from 57-59 months), T02 did not go to the intervention center (due to Covid-19 pandemic), his vocabulary increased by only 29 words while his average gain in vocabulary over the past few months was 20 words per month.

### 3.2. Comparison of vocabulary growth in 5 autistic children (4-5 years old)

Based on survey statistics summarized in Table 1, it is possible to draw out a comparative chart regarding the number of words obtained by 5 autistic children (compared between 4-year-old and 5-year-old stages):

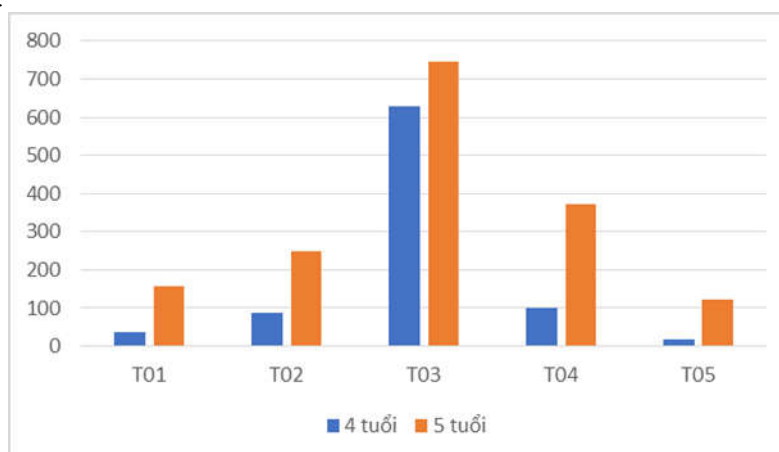


Chart 1: Comparison of the number of words obtained by 5 autistic children (4-year-old and 5-year-old stage)

It is observed from the chart that:

T03's vocabulary is the largest (even at 4-year-old- and 5-year-old stages). Upon the 4-year-old stage, T03's vocabulary is higher by 37 times in comparison with T05; by 16.5 times compared with T01; by 7.1 times compared with T02 and by 6.3 times compared with T04. However, after 1 year of intervention, the gap regarding the number of words obtained by T03 and other children reduces. At this stage, T03's vocabulary is higher by 6.1 times compared with that of T05; by 4.7 times to T01; by 3 times to T02 and only by 2 times to T04.

Thus, it is feasible to conclude that although autistic children's vocabulary is still limited (except for T03), their number of words has increased substantially after 1 year of intervention. This is a significant foundation for them to develop their perception, communication skills as well as other aspects in the later stages of life.

The chart also illustrates that after 1 year of intervention, T04's vocabulary widens the most (with 274 words), followed by T02 (160 words) and T01 (120 words). T03's vocabulary grows slower than prior stages (increased to 425 words in the prior stages; increased by 118 words at the latter stages) while T05's vocabulary grew slowest with 104 words.

T01 and T05 are diagnosed with severe autism. Data shows that they only started making sounds at 3 years old. At that time, two children could make inaudible and nonsensical sounds (mum mum, ba ba, xi xi, ta ta). From 3-year-old to 4-year-old stages, although these children had been actively intervened, their vocabulary gained at a slow pace (T05 gained 15 words, T02 gained 36 words). However, they are considered to already obtain speaking skills and likely to gradually adapt to the community, which is much better than some children who are diagnosed with severe autism to the point that they could not possess spoken language. This is the difficulty posed to both the child and their family.

In short, the intervention and therapy on autistic children is a tedious process that calls for the participation of the whole community, family, and schools in order to help them improve over time.

### **3.3. Comparison of number of words of autistic children (4-5 years old) with that of ordinary children (1.5-5 years old)**

On the ground of the table regarding the number of words of autistic children (4-5 years old) over months (Table 1) and data on the number of words of ordinary children (Luu Thị Lan, 1996, p. 54-55), it is possible to conduct a comparison between the number of words of autistic children (4-5 years old) and that of ordinary children (1.5-5 years old) over certain months of age:

**Table 2.** Comparison of the number of words obtained by ordinary children and autistic children at certain months of age

| Month of age | Children's vocabulary (number of words) |                   |     |     |     |     |
|--------------|-----------------------------------------|-------------------|-----|-----|-----|-----|
|              | Ordinary children (T00)                 | Autistic children |     |     |     |     |
|              |                                         | T01               | T02 | T03 | T04 | T05 |
| 18           | 11                                      |                   |     |     |     |     |
| 19           | 47                                      |                   |     |     |     |     |
| 21           | 220                                     |                   |     |     |     |     |
| 24           | 234                                     |                   |     |     |     |     |
| 27           | 297                                     |                   |     |     |     |     |
| 30           | 434                                     |                   |     |     |     |     |
| 33           | 456                                     |                   |     |     |     |     |
| 36           | 486                                     |                   |     |     |     |     |
| 39           | 515                                     |                   |     |     |     |     |
| 42           | 574                                     | 18                | 22  | 412 | 44  | 9   |
| 45           | 683                                     |                   |     |     |     |     |
| 48           | 724                                     | 38                | 88  | 628 | 99  | 17  |
| 51           | 807                                     |                   |     |     |     |     |
| 54           | 864                                     | 84                | 174 | 680 | 228 | 71  |
| 57           | 888                                     |                   |     |     |     |     |
| 60           | 891                                     | 158               | 248 | 746 | 373 | 121 |

From the data, it is noticed that:

Autistic children's vocabulary is significantly limited than that of ordinary children at a similar age.

T03 has the largest vocabulary; however, in comparison with other ordinary children, T03's vocabulary is still limited (at 4 years old, the vocabulary of T03 was lower than T00 by 96 words and the gap is wider when they grow old. When the child was 5 years old, they are able to speak a number of words that is lower than ordinary children by 145 words). In this essay, we mainly compare the number of words obtained by autistic children and ordinary children and do not concern over how they use their vocabulary in communications. T03 is diagnosed with mild autism and obtains a pretty good visual and sound memory; therefore, T03 is able to speak a quite wide range of vocabulary (nearly up to that of ordinary children of the same age).

The other 4 autistic children had a significantly lower vocabulary than that of ordinary children, especially T01 and T05 with severe autism.

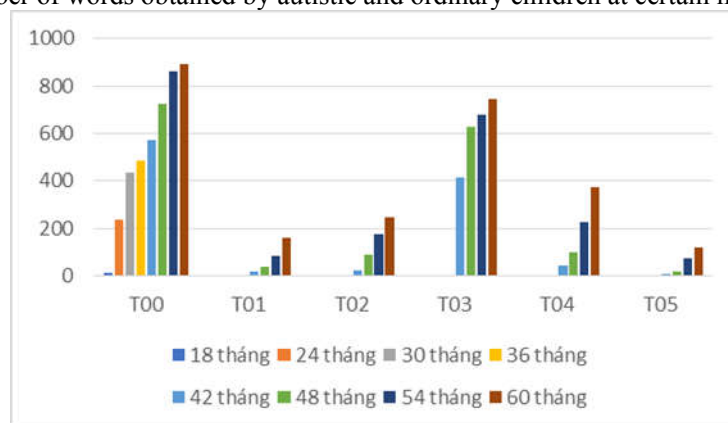
At 4 years old, ordinary children's vocabulary is higher by 46 times than that of T05; by 19 times than T01; by 8.2 times than T02 and by 7.3 times than T04. After 1 year of intervention, the gap reduces: T00 at 5-year-olds has vocabulary higher by 6.5 times than T05's vocabulary; by 5.6 times than T01; by 3.5 times than T02 and by 2.3 times than T04.

However, at 4 and 5-year-old stages, the increase per month in the number of words of autistic children does not show much difference than that of ordinary children. There are even some autistic children that have their vocabulary growing much faster than ordinary children.

Among 5 samples in this essay, T04's vocabulary grew the quickest after 1 year of intervention (from 48 to 60 months) to 274 words, while ordinary children have their vocabulary growing to 167 words within that one year. It is noticed that in comparison with the other 4 children (T01, T02, T03 and T04), ordinary children's vocabulary increases at a rather same pace with autistic children during this period.

On the whole, it is observed that if autistic children are subject to positive and immediate intervention, their language skills can improve over time and reduce their gap with ordinary children.

From the data illustrated above (Table 2), it is possible to present the following comparative chart depicting the number of words obtained by autistic and ordinary children at certain months of age:



*Chart 2: Comparison of the number of words obtained by autistic children and ordinary children at certain months of age*

From the chart, it is noted that:

At 4 years old (48 months), T01 and T05 possessed a similar amount of words compared with that of ordinary children at 19 months; at 5 years old (60 months), their vocabulary is the same as that of ordinary children at 20 months of age.

Upon their 48-month stage, both T02 and T04 had a similar amount of words to that of 20-month ordinary children; however, after 1 year of intervention, T02's vocabulary equaled to that of 26-month ordinary children; T04 equaled to 28-month children.

When T03 reached 4 years old, his vocabulary was equivalent to that of 43-month ordinary children. Therefore, regarding vocabulary, T03 grows slower than ordinary children only by 5 months. After 1 year at the centers, his vocabulary is equivalent to that of 49-month ordinary children, which means that after 1 year, T03's progress is still slower than ordinary children by 6 months.

It is derived from survey result that each child's vocabulary grows at a different pace and the number of words obtained by each child varies by each stage. The key reason for this circumstance is:

Autistic children's language development including the growth of the number of words depends on their level of autism. Specifically, among 5 children, it is noted that:

T01 and T05 are diagnosed with severe autism so their language develops slower, which is illustrated by their number of words as well as the vocabulary increase after the 1-year intervention. Although they are 5 years old, their vocabulary is equivalent to that of 20-month-old ordinary children. After 1 year at the center, their vocabulary gain is equal to the proportion of words that ordinary children can learn within 1 month.

T02 and T04 are diagnosed with medium autism so their language skills is better than that of T01 and T05.

T03 has mild autism, thus, his vocabulary is rather large (in comparison with other autistic and ordinary children) and after 1-year intervention, his vocabulary grows significantly.

Autistic children's language development including vocabulary gain depends on the environment and the intervention duration.

Among 5 children in our survey, T03 is supported by his family and actively engaged with the center, which has brought about much positive impacts than other children.

T02's progress was disrupted by the Covid-19 pandemic (he was not intervened within 3.5 months, from his 57-month-old to almost 60-month-old). Within these 3 months, his vocabulary gained by only 12 words.

#### **4. Conclusion**

It is observed through survey of the number of words obtained by autistic children during 4-5 years old that:

Autistic children's vocabulary is much more limited than that of ordinary children at the same age. Normally, ordinary children begin to obtain spoken language when they turn 1 year old while this stage of autistic children is much later. Among 5 children in the survey, only T03 started to have spoken language rather early (about 30 months old) while the other 4 children began to possess spoken language by their 3-year-old stage. However, all 5 children already obtain spoken language and are able to increase their vocabulary per year, which proves that they have progressed in learning language.

Each autistic child's vocabulary and their increase in the number of words vary after 1-year intervention. The main reason is that the language development including the vocabulary gain depends on their autism level, environment, and intervention duration.

The intervention on autistic children in general and language therapy, in particular, is a tedious and difficult process. In order to help the child improve, it is critical that the family, school, and community should provide positive support so that they can grow to their fullest potential.

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#### **Đặc điểm về số lượng từ của trẻ tự kỉ 4-5 tuổi**

**Tóm tắt:** Rối loạn phổ tự kỉ (RLPTK) đang trở thành mối quan tâm đặc biệt của xã hội vì sự gia tăng về số lượng cũng như những ảnh hưởng do hội chứng này gây ra. Do vậy, việc nghiên cứu về trẻ RLPTK nói chung trong đó có vấn đề ngôn ngữ của trẻ tự kỉ đang là vấn đề cấp thiết. Do vậy, trong bài viết này chúng tôi thực hiện khảo sát đặc điểm về số lượng từ của trẻ tự kỉ trong giai đoạn từ 4 đến 5 tuổi trong tương quan so sánh với trẻ bình thường. Trên cơ sở kết quả nghiên cứu, chúng tôi mong muốn có thể đưa ra những liệu pháp phù hợp nhằm trị liệu ngôn ngữ cho trẻ tự kỉ.

**Từ khóa:** trẻ tự kỉ; ngôn ngữ trẻ em; vốn từ; trị liệu ngôn ngữ.