



Investigating Neuro Factors Of Autistic Children In Phonemic Aspects Of A Second Language

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Abstract. The present study was designed to explore the phonemic aspects of the second language of Arabic in autistic children with special needs. A qualitative approach with a case study was employed in this study. Data were gathered from autistic children who are learning a second language (Arabic). Sources of the data were obtained from documentary data to determine the characteristics of the individual conditions of children and speech in the form of language sound symbols (e.g., pronunciation) in children who are learning a second language. The data from the autistic children were collected through observation, interviews, and pronunciation tests. Findings suggest that 1) mastery of the second language (Arabic) in autistic children tended to be slow, 2) the children lacked focus and their condition was not in a good mood in learning, and 3) there were deviations in phonemic aspects due to neurological factors experienced by children. Disorders of children's nerves affect the mastery of a second language, namely Arabic.

Keywords: Mastery Of Language, Children With Special Needs Autism, Phonemic.

1 Introduction

Humans are cultured beings and as social beings. Humans as social beings need interaction with other humans to survive. In relation to cultured beings, language has a position as a product or result of human culture. The main function of language is as a means of communication in society. These functions are used in a variety of environments, levels, and interests. Language acts as a medium for conveying ideas, interacting, and communicating in the informal realm (family and social environment) and in the formal realm, for example in learning at school [4].

Language skills include receptive language, namely listening and reading, as well as productive language (speaking and writing). One of the productive (expressive) skills is speaking skills, namely the ability to pronounce articulation sounds, or words to express, say, and convey thoughts.

Few children can easily and quickly master the language, both first language, and second language. This is caused by several influencing factors, namely internal and external factors. Internal factors, such as physical, psychological, and cognitive

conditions, including disorders of brain neurodevelopment (autism). External factors as obstacles, for example, the family and social environment.

Language disorders mean obstacles, obstacles, and something that hinders someone from uttering articulation sounds, or words to express, say, and convey thoughts, ideas, and feelings. Children who normally acquire language are naturally capable of mastering and acquiring language learning. However, some other children experience difficulties due to several things in relation to acquiring language and learning a language (Hikmawati, 2018).

Language acquisition (language acquisition) and language learning (language learning) are both processes of ownership of knowledge and individual mastery of a language. These two processes are distinguished according to the way in which various linguistic and non-linguistic aspects of input are entered. If an input of language mastery is owned by an individual in a natural way and is not programmed, it is called acquisition. Meanwhile, language mastery that is carried out in a planned or programmed structure is called learning. However, both are still based on the awareness of acquiring and mastering a language [5].

Acquisition of a second language refers to the process of acquiring a language that occurs after a person acquires a primary language or first language. If a child speaks Indonesian as his mother tongue, and he learns Arabic, then Arabic is his second language. Talking about mastering a second language, there are two important things that need to be studied in this research, including, the characteristics of the individual conditions of children who experience special obstacles in mastering the language and mastery of phonemic aspects as a basis for using good and correct language, both in terms of phoneme and word pronunciation.

Based on this, this study aims to explore the neurological factors of children with special needs that affect mastery of a second language and mastery of pronunciation aspects of sounds and words in learning Arabic as a second language. This research contributes to learning Arabic, both in schools with an inclusive education system and in the families of children with special needs. The inclusion system is assimilation in special learning without discriminating between children in general and those with special needs.

2 Method

This study employed a qualitative approach with a case study design that aims to describe and expand cases of neurological factors in the mastery of the phonemic aspects of the Arabic second language in autistic children at PGRI Kedungwaru Tulungagung Special School. The study was conducted to explore and examine an aspect or special case discussion in depth in the form of descriptive pronunciation of Arabic as a second language spoken by children with special needs with autism. To obtain data on the characteristics of individual conditions and data on phonemic aspects (e.g., pronunciation) of the Arabic second language for children, observation, interviews, and documentation were done. This study was conducted at the PGRI Tulungagung Special School. Apart from that, the data collection technique also

recorded mastery of the second Arabic language in children with special needs with autism. The recording was transcribed. Finally, the data were then analyzed using data reduction, identification, verification, and conclusions.

3 Results and Discussion

Findings on the mastery of the second language in children with special needs with autism are detailed in the following sections.

First, it is difficult for children with special needs with autism to focus directly on learning. Children with special needs with autism must be given a stimulus or allowed to calm down first before entering learning. This is illustrated by the behavior of autistic children in class when studying with their teacher. The child is restless and shows a blank stare expression. Children with special needs autism cannot easily focus on learning immediately, the level of focus of children with special needs autism in learning in the classroom is only the first 10 to 15 minutes. in a condition of paying attention to learning. This shows that for children with special needs with autism in SLB PGRI Tulungagung one of its characteristics is a lack of focus when learning in class.

Based on the findings of the characteristics of a lack of focus when studying children with special needs for autism, this is relevant to the theory put forward by [5] that children with special needs for autism are children who experience language (communication), social interaction, and behavior barriers. Likewise, what was stated by Zuraida (2015) children who have a barrier to complex development including barriers to the development of communication, social interaction, behavior, emotions, and sensory. Children with special needs are very different from normal children, they need a relatively long time and must be continuous in mastering the language.

Second, students experienced irritability. Children with special needs with autism are often out of control and irritable caused of environmental conditions, moods, or situations (the circumstances around them). The character of irritability in children with special needs with autism in SLB PGRI Tulungagung is shown through their very sensitive behavior. The child is easily angry if the environment is not conducive. This autistic child in expressing his anger hurts himself (biting fingers, hands, and pulling hair). If the child is angry with peers (people around him), throws things at others, screams, or destroys things around him.

Third, students do not like eye contact. In a state of anger or not, children with special needs with autism do not like eye contact with the other person. Children with special needs with autism at SLB PGRI Tulungagung do not like to make eye contact with the other person (speech partner). The character of children with special needs for autism who do not like eye contact with their interlocutors corresponds to the previous work by [5] that children with special needs for autism are children who experience behavioral development disorders.

Fourth, students do not respond when called. These autistic special needs child needs stimulation to focus on the sound of the call. A child with special needs with autism is not unable to hear, but the child is processing and analyzing the information heard in

his mind about whose voice is calling him. Autistic children will respond well if those who call are their parents or family, or people they are familiar with.

There are several factors why autistic children with disabilities do not respond when called upon. This can be caused by brain nerve disorders, and experiencing hearing loss syndrome. From the description above, the characteristics of children with special needs at SLB PGRI Kedungwaru Tulungagung are not responding when called, it does not mean they don't hear, but children with special needs with autism need time to process the sounds of the calls they hear.

Fifth, students experienced weak communication. These students often experience problems in their pronunciation, information processing, and understanding of words, what is said cannot be understood immediately. Children experience weak communication because these children have language disorders, and they often have difficulty communicating their desires, both verbally and nonverbally. Most autistic children can speak using short sentences with simple vocabulary but limited vocabulary, causing many words they say they don't understand, those who can speak enjoy imitating other people's words, then some of them also often show confusion over pronouns.

3.1 Phonemic Studies in Second Language Mastery (Arabic) in Autistic Children

The characteristics of the individual conditions in children with special needs for autism affect second language mastery. In the process of mastering language, children with special needs with autism need a long time to be able to master the language. It is unique in itself. The results showed mastery of the second language and several types of mistakes that were often made by the students.

3.1.1 *Sound distortion type I'lal.*

دَرَجَةٌ the sound produced دَرَجَةٌ

I'lal (vowel modification) uttered by children with special needs for autism at SLB PGRI Kedungwaru Tulungagung illustrates that the modification of the letters *illa* is in three or more root consonant sounds which are also called affixes but in children with special needs autism in the pronunciation of the word دَرَجَةٌ there is one letter missing that is *ا* so the denotative meaning is not appropriate. دَرَجَةٌ / pancal bicycle / دَرَجَةٌ / level.

جَوْلَةٌ the sound produced جَوْلَةٌ

I'lal (vowel modification) uttered by autistic ABK illustrates that the modification of the vowel modification of the letter *illah* is with three or more root consonants. that is an affix, but in children with special needs autism in the pronunciation of the word جَوْلَةٌ there is one letter missing that is *ا* so the denotative meaning is not appropriate. جَوْلَةٌ / motorcycle / جَوْلَةٌ / exploration.

اربة the sound produced اربة

I'lal (vowel modification) uttered by autistic children with special needs uses vowel modifications from the letter *illah* to be with three or more root consonants, which is an affix. however, in children with special needs autism in the pronunciation of words *عراية* there is one letter that changes its sound, namely letters *ع* in pronunciation changed to *ا* so the denotative meaning is not appropriate. *عراية* / *اربة* / internal organ. *I'lal* phonemic studies (modification of vowels) in Arabic in autistic children complement the theory put forward by Busri and Badrih (2018:42). Language is sound, language is systematic, language is creative, language has meaning, language is purely human, language is symbols, language is arbitrary, and language is not instinctive.

3.1.2 *Ibdal type (replacement)*

صَنْحُنْ the sound produced *صَهْنُنْ*

Ibdal (replacement) uttered by children with special needs for autism at SLB PGRI Kedungwaru Tulungagung illustrates that *Ibdal* (replacement) of pronunciation for children with special needs for autism is a substitution of several letters in words, as well as the data obtained for the pronunciation of the word *صَنْحُنْ* Becomes *صَهْنُنْ* thus producing a different denotative meaning. *صَنْحُنْ* / plate / *صَهْنُنْ* / zionist supporters /.

اربة the sound produced *عراية*

The *Ibdal* (replacement) uttered by autistic ABK illustrates that the *Ibdal* (replacement) of pronunciation in children with special needs for autism is a substitution of several letters in a word, as is the case with the data obtained for the pronunciation of the word *عراية* Becomes *اربة* thus producing a different denotative meaning. *عراية* / cart / *اربة* / internal organ/.

Ibdal (replacement) phonemic study of Arabic according to the theory put forward by Thoyib (2019:70) states that there are ten kinds of morphophonemic events, namely assimilation, dissimilation, insertion, deletion, haplology, metathesis, vocal harmony, vocal reduction, tone rules and morpheme sequence rules. The similarity between the sounds is based on the following two criteria; (1) the two sounds that often replace both vowels (including semi-vowels) or both consonants. There will be no replacement of vowels with consonants or vice versa because they have very different phonetic characteristics. (2) the closeness or similarity of the areas of the articulatory apparatus does not allow replacement of sounds that are not the same in articulation, such as the replacement of /b/ with /s/, because the first is a bilabial sound while the second is alveolar.

Thus, showing that *Ibdal* (replacement) of Arabic in children with special needs autism includes the process of replacing sounds in general, there are two standards that must be considered, namely sounds that replace each other equally vowels or are equally consonant and the proximity or similarity of the articulation area and influenced by character and neurological factors.

3.1.3 *Idgham (geminate/ lighten)*

مَرَزٌ Becomes مَرٌّ

Idgham (geminate/relieve) uttered by children with special needs with autism at SLB PGRI Kedungwaru Tulungagung illustrates that from the pronunciation of children with special needs autism there is gemination in several letters in words, as well as data obtained from research, the pronunciation of words مَرَزٌ transformed into مَرٌّ. From the words uttered by children with special needs with autism, gemination in Arabic occurs in one word where there are two or more consonants followed by a vowel, the vowel between the two is discarded and consonant 1 is memorized in consonant 2 so that in speaking the word becomes light. The word again مَرَزٌ transformed into مَرٌّ and thus it produces a different denotative meaning. مَرَزٌ / let through مَرٌّ / break through /.

مَدَّدٌ Becomes مَدٌّ

The idgham (gemination/relief) uttered by autistic ABK illustrates that *the idgham* (gemination) of pronunciation in children with special needs autism has gemination in several letters in words, as well as data obtained from research, word pronunciation مَدَّدٌ transformed into مَدٌّ. From the words uttered by children with special needs with autism, gemination in Arabic occurs in one word where there are two or more consonants followed by a vowel, the vowel between the two is discarded and consonant 1 is memorized in consonant 2 so that in speaking the word becomes light. The word again مَدَّدٌ transformed into مَدٌّ and thus it produces a different denotative meaning. مَدَّدٌ / that supports / مَدٌّ / lengthen /.

Idgham phonemic studies (geminate/ lighten) Arabic are relevant to Thoyib's explanation (2019:79). *damju harf sakin fi harf mutaharrik min jinsihi bi haitsu yashirani harfan wahidan musyaddadan*, that is, to merge a consonant with a consonant of the same type afterward so that the two become one consonant that has gemination, the aim of *idgham* is to make pronunciation easier with the following rules; (1) a word whose k2 and k3 consonants are the same and both are accompanied by a vowel, then the vowel between the two is removed and k2 is *Idgham* in k3. For example, مَرَرٌ /marara/ - مَرٌّ /marra/ 'past'. (2) words whose k2 and k3 are the same and between the two there are no vowels or other separators, then k2 is immediately *Idgham* to k3 without change.

Idgham (gemination) of the Arabic language spoken by children with special needs for autism is also influenced by the characteristics of children who lack focus when studying, get angry easily, do not like eye contact, do not respond when called, and have weak communication so that autistic children often lighten their speech in mastering a second language. Arabic. And this is very relevant to Zuraida statement (2015: 20) which also discusses children with special needs with autism, from a physical perspective, some of them do not have problems like normal children, some of them have disabilities. Children with special needs with autism are very different from normal children, they need more time to develop and must be sustainable in educating them.

3.1.4 Mukhalafah (Dissimilation / distinction)

تَكْسِيكُ the sound produced تَكْسِيكُ

Mukhalafah (dissimilation) uttered by children with special needs for autism in SLB PGRI Kedungwaru Tulungagung illustrates that mukhalafah (dissimilation) of pronunciation in children with special needs for autism contains dissimilation in several letters in words, as well as data obtained from research, word pronunciation تَكْسِيكُ transformed into تَكْسِيكُ thus producing a different denotative meaning. تَكْسِيكُ / taxi / تَكْسِيكُ //.

مَطَّة the sound produced مَطَّة

The mukhalafah (dissimilation) uttered by ABK shows that *the mukhalafah* (dissimilation) of pronunciation in children with special needs for autism contains dissimilation in several letters in words, as well as data obtained from research, the pronunciation of the word مَطَّة transformed into مَطَّة of the words spoken by the child with special needs autism, there is a missing word. Namely, the letter ح produces a different denotative meaning. مَطَّة / taxi / مَطَّة //.

مَلْفَعَةٌ the sound produced مَلْفَعَةٌ

The mukhalafah (dissimilation) uttered by autistic children illustrates that *the mukhalafah* (dissimilation) of pronunciation in children with special needs autism contains dissimilation of several letters in words, as well as data obtained from research, word pronunciation مَلْفَعَةٌ transformed into مَلْفَعَةٌ from the word spoken by the child with special needs autism there is a desimilated pharyngeal consonant word ع so that when he pronounces the letter it disappears. The word again مَلْفَعَةٌ transformed into مَلْفَعَةٌ and that produces a different denotative meaning. مَلْفَعَةٌ / spoon / مَلْفَعَةٌ / who conveys /.

مِثْسَةٌ the sound produced مِثْسَةٌ

The mukhalafah (dissimilation) uttered by children with special needs for autism in SLB PGRI Kedungwaru Tulungagung illustrates that the mukhalafah (dissimilation) of pronunciation in children with special needs for autism contains dissimilation in several letters in words, as well as data obtained from research, word pronunciation مِثْسَةٌ transformed into مِثْسَةٌ of the words uttered by the autistic special needs child there is a dorsoveral consonant word desimilated ك so that in his utterance the letter disappears. The word that was originally مِثْسَةٌ changed to مِثْسَةٌ and thus produced a different denotative meaning. مِثْسَةٌ / broom / مِثْسَةٌ / thick wood/.

The Mukhalafah (dissimilation) Arabic phonemic study in children with special needs with autism at the PGRI Kedungwaru Tulungagung Special School is very relevant to the theory put forward by Thoyib (2019). dissimilation or differentiation is the opposite of assimilation which has been explained previously if the assimilation of two different sounds becomes the same or almost the same. So, mukhalafah is the other way around, that is, to make two sounds that are the same as to be different, the purpose of dissimilation is the same as assimilation, namely to make pronunciation easier. In

Arabic, the pronunciation of two identical sounds (gemination) is heavy, so one of them is replaced with another light sound.

The dissimilation of Arabic spoken by children with special needs for autism is also influenced by the characteristics of children who lack focus when studying, get angry easily, do not like eye contact, do not respond when called, and have weak communication that affects the utterances produced in mastering the second language Arabic. This agrees with [5] that children with special needs with autism are impaired in the development of communication, social interaction, and behavior. Based on this study, mukhalafah or dissimilation can be explained to children when in one word there are two or more consonants that are exactly the same. One of the last consonants is changed to a long vowel. Two or three of the same consonants do not have to be side by side, but can also be separated by vowels. The habit of autistic children in pronouncing Arabic vocabulary elongates the final letters in sentences, and this is a neurological factor experienced by children with special needs for autism, because children lack focus, do not understand pronunciation errors resulting in differences in meaning.

4 Conclusion

The study's findings inform that there are neurological barriers that affect the mastery of a second language. The individual conditions of ABK with autism include lack of focus when studying, irritability, dislike of eye contact, not responding when called upon, and weak understanding of communication. The five characteristic findings of autistic children are caused by moods (moods) that have disappeared since leaving home, being treated less well at home, and rarely being invited to communicate. This individual condition causes habits that are often carried out by autistic children, difficulty concentrating, daydreaming, and preferring to be in their own world. Meanwhile, the results of the phonemic study of the second language show that there are deviations in pronunciation in the form of vowel modifications, sound substitutions, gemination, and dissimilation.

Based on the results of this study, it is recommended to related parties in this study. It is recommended that language teachers at the PGRI Kedungwaru Tulungagung SLB Institute understand the individual conditions of students. Parents and families should pay attention to deficiencies and often invite communication. Children are often trained to focus (concentration). For future researchers, the results of this study can be used as a reference by complementing and developing subsequent research, especially research related to neurological factors in second language mastery.

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