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Phonological Development of Children With Speech Delay

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Abstract-A case research is a valuable means of providing information about the outcomes of speech and language intervention. The present research aims at documenting phonological development of three subjects who were enrolled in a therapy. This descriptive, cross-sectional research aimed to document the phonological development of speech delayed children whose ages are between 2-4 years. The focus is also to determine the causes and treatment of children with speech delay. The results showed significant changes in two of the subjects' speech production-the two-year-old H displayed an ability to produce imitative sounds and non-imitative ones; meanwhile, the four-year-old AK also performed perfect imitative sounds, yet she cannot produce nasalized coda. The three-year-old AR, however, could not produce meaningful speech. Evaluation revealed development of the three subjects were affected by the exposure to language at home. A younger age child performed better during the therapy sessions compare to the one in older age whose delay might be caused by early neglect. Speech therapy emphasized on the importance of imitation through a modeling activity in the session, so that the children could imitate the sound first while providing context through pictures.

Keywords: Language intervention; phonological development; speech delay

I. INTRODUCTION

One of the most important stages of language development in early childhood is the ability to speak. In this case, babies and toddlers develop their speech from a baby talk language into a more complex speech in the form of sentences which grow rapidly day by day in a numerous ways. First language acquisition is an indispendable part of language development phenomenon as it is related to the process experienced by children since the very early period of their lives. Language development is crucial to all aspects of children's lives and one of the best predictors of educational achievement (Rafferty, 2014).

Children acquire language quickly, easily and without effort or formal teaching. It happens automatically, whether their parents try to teach them or not. However, parents have an important role by talking to their children, though they or other caretakers do not teach them. Children who are never spoken to will not acquire language. And the language must be used for interaction with the child; for example, a child who regularly hears language on the TV or radio but nowhere else will not learn to talk (Pecchi, 1994).

Children acquire language through interaction-not only with their parents and other adults, but also with other children. This is in line with Birner (2012) statement that all normal children who grow up in normal households, surrounded by conversation, will acquire the language that is being used around them. And it is just as easy for a child to acquire two or more languages at the same time, as long as they are regularly interacting with speakers of those languages (Birner, 2012).

All parents want to have their children normally grow as expected, including having normal language development. Children can be said to have normal language development if they perform or show more complex language capabilities along with their age maturity. Speech and language development in children is a dynamic process. Speech refers to the mechanics of oral communication or the motor act of communicating by articulating verbal expressions (Shetty, 2012). Meanwhile, language encompasses the understanding, processing, and production of communication.

Despite that expectation, there might be obstacles which make children cannot perform well in language or speech. The number of children experiencing speech delay is increasing day by day. Research has demonstrated that children language development is affected by several factors, such as bilingualism (Meisel, 2007), limited input (Windsor, Glaze, & Koga, 2007), age (Conti-Ramsden & Durkin, 2012; Mayberry, 2007), maternal language and cognitive development (Song, Spier, & Tamis-Lemoda, 2014), home literacy environment (Li & Tan, 2016), and parent interaction (Majorajo, Rainiei, & Corsano, 2013). Particularly in parent-child interaction, substantial variability exists in the children language development.

Speech delay is one of the language phenomena which might happen to any children. In general, a child is considered to have a speech delay if the child's speech is significantly below the norm for children of the same age. A child with speech delay has speech development that is typical of normally developing child of a younger chronologic age, the delayed child's skills are acquired in a normal sequence, but at a rate slower than normal (Shetty, 2012).

Several studies have shown that children with speech and language problems at two and a half to five years of age have increased difficulty reading in the elementary school years. While children in whom speech and language impairments persist past five and a half years of age have an increased incidence of attention and social difficulties (McLaughlin, 2011). Therefore, problems with speech and language should be overcome as early as possible.

In relation with this, HFCC (House of Fatima Child Center) emerges as a clinical therapy institution founded to help parents assisting their children who have problems in their language development. HFCC is an interdisciplinary integrated growth and development clinic that monitors and handles the problems of growth and development of children from birth to age the age of 18 holistically, and helps the child's disability and increases the potential of the child (http:// fatimachildcenter.com/).

This research concerns on the efforts in answering the following questions: (1) How is the phonological development performed by speech delayed children in HFCC? (2) What are the causes of the children's speech delay?, (3) What is therapeutic method conducted with regard to this language impairment?

Studies concerning children language development have come to several results. Language development in children is affected by bilingualism that is where the children employ more than one language other than their native tongue (Meisel, 2007). Having limited input is stated by (Windsor et al., 2007) as one of the factors to language delay in children. In line with this, (Mayberry, 2007) and (Conti-Ramsden & Durkin, 2012) state that age contributes a lot in determining children's language development in speech. Another research conducted by (Song et al., 2014) mention that maternal language and cognitive development influenced the children language development. Next, home literacy environment is also mentioned as the contributing factors supporting children's language development (Li & Tan, 2016). Parent-child interaction is one of substantial variables exists in the children language development (Majorajo et al., 2013).

In Indonesian context, a research by Suparmiati (2013) confirms that there is a significant finding between working mothers to the causes of late talking children (Suparmiati, Ismail, & Sitaresmi, 2013). The condition of working mother affects their children language development as there is an absence of certain language exposure for mother absence input language. Another research from Wilson et.al (2013) investigates factors associated with language delay in a cohort of 30-month-old children and determine if identification of language delay requires active contact with families. The finding shows that factors affecting language delay for the late taking children may vary and this needs clinical survey and there should be a cooperation between children parents or families and the therapeutic center in finding out the intervention way of solving the problem (Wilson, McQuaige, Thompson, &

McConachie, 2013).

As the most common developmental delay in children, language delay has many causes, both environmental and physical. About 60 percent of language delays in children under age three resolve spontaneously. Early intervention often helps other children to catch up to their age group.

Common circumstances that can result in language delay include: concentration on developing skills other than language, siblings who are very close in age or older siblings who interpret for the younger child, inadequate language stimulation and one-on-one attention, bilingualism, in which a child's combined comprehension of two languages usually is equivalent to other children's comprehension of one language, psychosocial deprivation (Komisaruk, 2017).

II. METHODS

This descriptive, cross-sectional research is aimed to document the phonological development of speech delayed children in House of Fatima Child Center (HFCC) Malang whose ages are between 2-4 years. The focus is also to determine the causes and treatment of children with speech delay. To determine if a child has a speech delay, the physician must have a basic knowledge of speech milestones. Normal speech progresses through stages of cooing, babbling, echolalia, jargon, words and word combinations, and sentence formation.

Research Subjects

The participants of this research were children who had been diagnosed with speech delay by the speech pathologist in HFCC. The inclusion criteria are the following: (a) between 2-4 years of age, (b) having delays and deficits in language and communicative development; and less attentive behaviors, (c) the children are all living at home with their families and are attending special day school programs at HFCC. Other subjects are the children's parents and the therapists. Therefore, purposive sampling was the one employed in this research. And the research was concluded when it meets data saturation.

Data Collection

The data were collected from the documents of therapeutic notes written by the speech therapist, as well as voice recording of the children's therapy sessions. The documents reveal the language development that the children have undergone during the therapeutic session at HFCC. Other data are elicited from the interview with the speech therapist and the parents of the children.

Practically, the techniques used in collecting data are direct verbal interaction, voice recording and note taking. All were carried out under the subjects' consent. The recorded data will then be transcribed phonetically and orthographically. The data in the form of orthography are directly used as the written data.

The data is gathered for the same subject repeatedly for some specific times until it meets its saturation point. This is in line with the nature of cross-sectional research which is a type of observational research that analyzes data from a population, or a representative subset, at a specific point in time (Germain, n.d.).

Data Analysis

In analyzing the data, there were some steps taken as the following: (1) determining how the development of the subjects' speech/ language since the first time they join HFCC to the present time in which they have been treated, whether the improvement is significant; (2) identifying the causes of the participants' delay in speech development, which will be retrieved from both the parents and the therapists; (3) discussing the methods used in the children's therapy processes. This is also taken from the therapists as well as the documents available to access.

III.RESULT AND DISCUSSION

The Phonological Development Performed by Speech Delayed Children in HFCC

Subject 1: H's Phonological Progress (a 2-year-old speech delayed child)

H is a two-year-old child diagnosed with speech delay. When usually young children learn new words rapidly and effortlessly, H seems to show slower rate of progress regarding language development. For example, at the age of two when children of his age have already been able to produce sets of meaningful words after being exposed to various linguistic environment, H could not reach the milestone. In addition, young children with normal language development can accurately recognize and, in some cases, produce novel words following only limited exposure.

H has been joining 5 months of therapeutic programs. At the beginning of him joining the clinic, he has not been able to

produce any single meaningful word. Yet, after having language intervention, he could produce both meaningful imitative and spontaneous speech.

The ability to produce meaningful imitative speech

H's imitative productions of words were identified by imitation/ repetition of words of the speech therapist. For example, in the following conversation, the word '*bola*' is pronounced as /buwa/ instead of /bɔ:la/. H tried to imitate the therapist's pronunciation of '*bola*' /bɔ:la/ but not yet succeeded.

Excerpt 1:

T: (00.48) *Pinteer, bola* */pintər, bɔ:la/*
(Good, a ball)
H: (00.50) *Buwa* */buwa/*

/buwa/in the H's utterance was not a spontaneous production because it appeared in the adult's utterance preceding the child's utterance. However, it can still be considered as a progress as H was able to imitate his therapist, although the pronunciation was not exactly like expected, the representation of word was still meaningful as there was a correlation between what was pronounced and the object presented. When H tried to imitate the same word for the second time right after he produced the first imitation, he just produced the last syllable of the whole word.

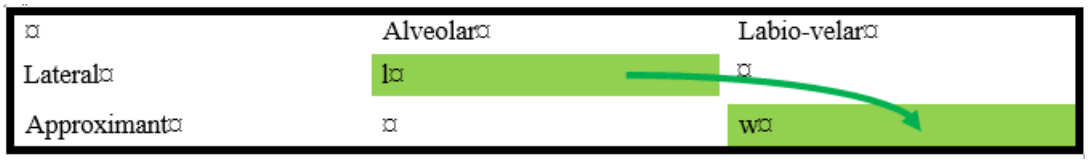

Image 1
Instead of pronouncing /l/ sound, H produced /w/ in pronouncing the word 'bola'

There was a shift from the (+) alveolar lateral into (+) labio-velar approximant. In different occasion**,** H tried to imitate the therapist's pronunciation of 'bola' again, but what H pronounced was completely different. He replaced /bɔ:la/ with /dada/. In this sense, the imitation is considered inconsistent.

In minute 11.50, Hasan imitates the word 'mau' /mau/ correctly. The stimulation given by the therapist successfully made him pronounced the word 'mau' properly.

Excerpt 2:

T: (11.37) *Sinii hooree mau? Mau? Hasan mau? Kenapa? Ngantuk ya?*

/sɪni: hore: maʊ maʊ hasan maʊ kənapa ŋantuk ya/

H: (11.50) *Mau daaa*
/maʊ da:/

Excerpt 3:

T: (16.39) Jaatuh */d͡ʒa:tuh/*

H: (16.39) tuh */tuh/*

It is shown in excerpt 3 that H imitated the word '*jatuh*' /d͡ʒa:tuh/ by only mentioning the last syllable. This is in line with the concept that children may have ways of simplification in their language acquisition, one of them is deletion of the unstressed syllable.

The ability to produce meaningful spontaneous speech

Besides producing speech due to stimulation, H's speech progress can also be seen from his ability in producing spontaneous speech, as reflected in the following excerpt.

Excerpt 4:

H: (03.07) Baba /baba/

T: (03.09) Baba? /baba/

H: (03.10) Papa /papa/
(father)

H: (03.11) Bapaaak /bapa:ʔ/
(father)

H started to say 'baba' and when the therapist tried to make him pronounce 'baba' again, H produced the word /bapa:ʔ/. Before saying the word 'bapak' correctly, a stimulation was given by showing H a picture of a family, then H spontaneously said/bapa:ʔ/.

Another spontaneous speech event is shown in the following excerpt:

Excerpt 5:

H: Da Uda th eh dada /ɖa uda t' əh dada/

T: Iya kuda itu dada /ija kuda itu dada/

Dhdh /d'd'/

Kuuda, ini, sekarang ini /ku:da ni səkaraŋ ini/

H: Ndaaa /nda:/

H said 'ndaaa' to refer to the word 'kuda' (horse). H could not say 'kuda'

properly, yet his understanding of the concept of this animal is clear. H's production of /nda:/ was spontaneous after he was shown a picture of horse, so it was not an imitation. However, when the therapist showed another picture of cow, H still said /nda:/. This might be taken as an overgeneralization in which H called all four -legged animal having similar characteristics as 'kuda'.

Another phonological event of H's speech was devoicing. Excerpt 5 displayed H's understanding on a 'duck' after he searched the picture of a duck and showed it to his therapist. He pronounced 'bebek' (duck) as pekpeeh / pɛʔpɛh/.

Excerpt 6:

T: Iya, bebek tunggu /ija bɛbɛʔ tuŋgu/

Image 2

Instead of producing /b/ sound, H produced /p/ sound when pronouncing the word 'bebek'

H: Pekpeeh /pɛʔpɛh/

T: bebek /bɛbɛʔ/

This indicates that there was a devoicing (making a voiced consonant voiceless) of bilabial plosive consonant.

Subject 2: AR's Phonological Progress (a 3-year-old speech delayed child)

Different from H, AR is still unable to produce meaningful speech during 6 months of therapy in HFCC. At the age of three, AR still developed his speech on the level of speech sounds. During the therapeutic session until this research met data saturation, he only produced very few numbers of meaningful speech such as the following:

Excerpt 7:

T: (10.23) Tunjuk pipi, piii pi, piii pi /tʊndʒʊk pɪpɪ pi: pɪ pi: pɪ/

Ar: (10.32) E:ehe hehe /eʔ həʔ həʔ həʔ/

T: (10.35) piiip piii /pi:p pi:/

Ar: (10.36) Papapa papapa /papapa papapa/

T: (10.39) Pipi pipi /pɪpɪ/

Ar: (10.40) A:k, ehek, e:eh, ah, a:a:aha, ahak /aʔ əhəʔ əʔ əœʔ ah a:ah haʔ/

The datum in excerpt 6 is the only 'good' response given by AR during his therapy. The pronunciation of the word '*pipi*' was adapted into AR's pronunciation /papapa/ in minute 10.36. It showed that he was listening to the therapist though the speech produced is unexpected. Instead of producing /pɪpɪ/, he produced /papapa/. In this context, the '*papapa*' was not clear whether it referred to his intention of saying 'papa' referring to 'daddy' or not. Based on the interview session with his mom, he rarely mentioned '*papa*' as he lives far away from his father. A father figure is not that strong as he is lack of exposure to his dad's existence.

Another finding related with AR's speech was found on minute 14.17 when he showed a clear response through his speech.

Excerpt 8:

T: (14.02) Dimana ada gambar bebek?

Ar: (14.03) Wiye:e: /wije:/

T: (14.05) Itu liat di tembok, ada itu, monyet, itu liat monyetnya

Ar: (14.17) Adok nantok /adɔʔ nantɔʔ/

Even though AR seemed to produce glottal stop (/ʔ/) in minute 14.17, the result was inconclusive. This is because he mentioned it only once and it was a spontaneous speech. AR did not produce other clearly formed speech other than this.

Subject 3: AK's Phonological Progress (a 4-year-old speech delayed child)

AK's condition is different from the other two participants. She is in confusion of Bahasa Indonesia as her mother tongue language and English as a language she had high exposure to. AK has undergone speech therapy in HFCC for nearly a year, and she has shown great development although she still understands English better than *bahasa Indonesia*.

Perfect imitative sounds

From the findings, it was found that AK was able to imitate some of the therapist's words properly, and she perfectly imitated 14 words:

Payung /pajuŋ/ (02.42);

mata /mata/ (03.15); lampu

	/lampu/	(03.34);
jatuh	/d͡ʒatuh/	(04.16);
sendok	/sendɔʔ/	(05.50);
ikan	/ɪkan/	(06.13);
naik	/naɪk/	(08.01);
biru	/bɪru/	(09.07)
hijau	/hɪd͡ʒau/	(13.11);
adek	/adɛʔ/	(16.57);
helo	/helo/	(18.43);
babai	/babai/	(19.01);
jus	/d͡ʒus/	(20.57);
cuci	/t͡ʃut͡ʃi/	(21.04).

Missing nasalized coda

In minute 02.58, AK showed that she tried to imitate the word 'amplop' which is a three-consonant cluster, but she pronounced it / a:plɔp/. AK failed to produce the /m/ sound in the middle. In minute 15.33, AK tried to pronounce 'pinjam' /pind͡ʒam/, but she produced /pɪd͡ʒam/. She failed to pronounce nasal consonant /n/ before affricate sound /d͡ʒ/. From the two samples, it can be seen that AK could not produce nasals in consonant cluster.

Other than responses as imitation above, there are other responses that AK showed from the conversation with the therapist. 53 unrelated responses occurred when AK's response was not as expected because she did not pay attention to the therapist; in other words, she said anything that she wants. The responses were in the form of laughing, crying, babbling meaningless words, or even onomatopoeia sound (e.g. in min. 01.24 'Dooorr'). There are also responses as the answer of the therapist stimulation, such as agreement ('ya'), rejection ('no', 'nope', 'no wait'), demonstrative pronoun ('itu'), and address terms ('*mama', 'papa', 'bu Uti'*).

The last is the responses from AK's previous knowledge. Her previous knowledge of bahasa Indonesia consists of 16 words such as '*payung', 'apel', 'lampu', 'helm', 'macan', 'Putri', 'gelas', 'bakpao', 'kereta api', 'hijau', 'biru', 'nenek', 'papa', 'mama', 'kakek', 'motor'*. AK also acquired the knowledge of 5 English words plus the meaning in bahasa Indonesia such as 'house'(00.01), 'eyes' (03.06), 'sun' (04.22), 'fish' (06.03), and 'plane' (06.54).

Causes of Speech Delay

There are some common causes of speech delay including hearing impairment; however, those three subjects do not have any problems regarding their hearing so it is purely speech delay problem. The following are the causes of speech delay gathered from an interview with the therapist and the children's parents/guardians.

Attention disorder

The first child, H, lives with a family providing him with rich language environment; therefore, it is very surprising that he gets a problem dealing with speech or language development. In H's case, his older brother was found to be diagnosed with speech delay problem, too. H's brother also underwent a speech therapy. To date, there has not been research discussing whether or not genetic relation may contribute to speech delay problem. H's case might trigger future research as this present research does not address this issue. Concerning the causes of speech delay on H, his parents think that it might be caused by his being restless and super active, so that it might contribute to his speech delay problem. H's older brother who formerly found it difficult to speak was also super active and lacking of focus and attention. Yet, his speech now is highly developed once he reached 30 months old.

Most (but not all) toddlers can say about 20 words by 18 months and 50 or more words by the time they turn 2. By age 2, kids are starting to combine two words to make simple sentences, such as 'baby crying' or 'Daddy big.' (Komisaruk, 2017) A 2-year-old should be able to identify common objects (in person and in pictures); point to eyes, ears, or nose when asked; and follow two-step commands ('Please pick up the toy and give it to me,' for example).

At the age of 1.5, H was able to address his mother by 'sayang mama'; however, it seems that those first words were faded. At his 2+ years old now, H is at two-word stage, and he is supposed to be able to formulate simple two-word sentence like 'mama bobo', 'mau susu'. H's parents then decided to consult this case to the clinic where his older brother previously had a speech therapy. The therapeutic method given covers two phases, which are done simultaneously, namely speech therapy and behavioral therapy to make him less active and can pay attention to people. The speech therapy in HFCC usually starts with imitation and gradually improved to the child's spontaneous speech production.

Home neglect

The second child involved in this research was AR, whose speech delay is possibly caused by family neglect. A childhood neglect can lead to problems with speech and language development. During an interview with AR's mother, she said that when AR was still 1.5 years old, she got pregnant with the second child and she felt so weak back at the time. In order to make AR calm and quiet, as well as doing his self-learning, he was exposed to Youtube videos. The expectation seemed true at the beginning, but it was the opposite afterwards. AR was deeply into Youtube videos that he watched via the smartphones, and he became reluctant to speak. When AR's little sister was born, the mother realized that AR's speech and language development grew at a slower rate than other children of his age. She then started to consult with speech pathologists to solve AR's speech problems and took him to HFCC for his regular therapy sessions.

AR has undergone a six-month therapy during the data collection period of this research, and it was shown that the result of the therapy was not highly significant. This might be because the negligence was quite severe. AR mostly cried during his session in HFCC, or giggling when he was not crying. It was challenging for the therapist to get him focus to the session. A research conducted by (Spratt et al., 2012) confirms that early neglect gives severe impact on children's development in the aspect of cognition, language, and behavior. What happened to AR was actually well connected to his history of early neglect which then affects his language development. The early neglect in AR's case was not in the form of physical neglect but tend to be care and attention neglect during his childhood. Based on the interview with his parents, AR sometimes shows a spontaneous speech having meaningful content like saying 'bye'. However, this meaningful speech seems to prevail during the therapeutic session as he is still unable to be controlled and listened to the therapist carefully.

Language confusion

For the case of the third participant, AK, a case of language confusion was analyzed to have an effect on AK's language development. Her mother gave her too much exposure on Youtube videos in English language with an expectation that she can master English well faster. However, as AK lives in an Indonesian language environment, she got difficulty understanding people speaking in bahasa Indonesia. In other words, understanding words spoken by the surrounding people was a challenge for her. Consequently, she tends to stay quiet because of her language confusion and English is more familiar for her compared to bahasa Indonesia. This makes AK becomes passive.

Soon after realizing AK's condition, her mom took her to a speech therapist at HFCC hoping that she can speak meaningful bahasa Indonesia. During the therapeutic sessions, it can be seen that her persistence of using English is stronger compared to bahasa Indonesia. For instance, she had the concept of 'house', but not '*rumah*'. The home treatment suggested for AK case was for her mother to use only *bahasa Indonesia* at home to familiarize her with the mother tongue language.

Therapeutic Methods for Speech Delay

The third research problem concerns with the therapeutic method used by the speech therapists to treat patients with speech delay problems. The methods used by the speech therapists depend on the problem at hand, and differ depending on the setting. The followings are some therapeutic methods employed by therapist for the research participants.

Oral Motor Therapy

This oral motor therapy is conducted by giving routine exercise aiming at exercising and strengthening the muscles in and around the mouth, which helps focus control of speech. One of the tools used is by asking the children to use "oral toothbrush". This specific brush can help children suffering from speech delay to be able to speak well and it can also stimulate the speech organ in order to foster the growth of well-produced speech. This brush can be bought at baby shop center and the price is affordable. This brush is suggested by the therapists for both H and Ar, and the therapist asks the parents to provide oral brush to help relaxing the speech muscle. The consideration for doing so is because at the beginning of speech therapy these two children still could not produce meaningful word, then having an oral toothbrush is chosen as one of the alternatives of therapeutic method to make speech muscles elastic. However, later at times, H shows more progress than Ar which might be caused by different case of speech delay. This method is not applied to Ak (4 years old) as she has already been able to produce words but sometimes those are not clear.

Language Intervention Therapy

Language intervention therapy is a method employed to help patients develop speech abilities. This technique is used by speech therapists at HFCC with children who are exhibiting speech delays, so that they will be able to develop their language abilities. This therapy is done at the clinic where patients come to the clinic regularly to attend an hour class session intensively. During the class, the child is given some stimulus to make them imitate the speech produced by therapist. Maintaining good and continuous eye contact is very much important to do as those suffering from delayed speech usually will have lack of attention, so keeping the eye contact is crucial. During the therapy session, the therapist gives simple instruction for children to understand. For example, imitating vowel and bilabial consonants, getting children know the parts of the body and imitate it. At first, children might feel reluctant to do so. However, as time goes by, they will be accustomed to this habit of imitating, correcting and they soon will learn how to produce speech spontaneously without prior stimulation. This happens because children have already developed their basis of thought and make it into speech comprehension and manifest it into speech production. In other words, once the concept is mastered soon the children will be able to produce meaningful speech themselves. In this case, the pace of production of the speech delayed children is at a rather slower rate compared to the normal ones. In the case of H, he needs around four months of therapeutic sessions before finally come to produce his own speech spontaneously. The three research subjects all undergo this therapeutic method to enhance their speech development.

Modelling Method

This therapeutic method is given by giving specific models on how to pronounce words, using exaggerated intonation and pitch. The therapist applies longer intonation and speech junctures to let the children understand and observe what she is doing. The modelling is repeated many times to get concept embedded on the child's memory. The following example reflects the way the therapist uses the modelling method.

T: (05.14) *hebat naah lagi tirukan beebek beebek mau?*

/hɛbat naah lagi tirukan bɛɛbɛʔ bɛɛbɛʔ mau/

The word '*bebek*' (duck) is pronounced at a slower rate, using exaggeration accompanied by high pitch to let the child internalizes the word spoken into his memory which finally he can imitate.

In addition, the 'here and now' concept is also applied in therapeutic session on learning things that is reachable providing clear and concrete manifestation. Visual aids like big books, realia and dolls are used as visual aids helping therapist implanted the concept. For instance, when the child was taught about parts of the body, the therapist used sets of realia and pictures showing family members and their roles.

Learning while playing

The speech therapist may try different things to encourage the children to talk, including playing. Sometimes, it is done by withholding a favorite toy until the child asks for it, which is relevant to motivate small children to talk. This case happens to both H and Ar, in which the speech therapist held the toys wanted by the children until they uttered the word or imitate the word initiated by the speech therapist. For example:

T: (02.50) *Mau nggak? Tirukan dulu, nii, boleh dimasukkan, tapi tirukan dulu... Tii ruu kaan lagi*

(03.10) *Bilang dulu, mauuu*

H: (03.13) *Aiiyyaayah*

In the example, the therapist kept holding the play wood puzzle for not being put into the box if the child did not imitate the initiated speech. This method encourages the children to struggle to utter the word in order to have his want fulfilled.

Behavioral Therapy Method

This therapeutic method applied for the purpose of managing the child's energy properly. Usually the speech delayed children are suffering from lack of focus or we call it as focus disorder so they cannot pay attention to what other people say in this case is the therapist.

This method works very well as four months after undergoing a speech therapy, H's focus improved. He gradually slows down from being too active and soon gains continuous eye contact with everyone. He, who was formerly very ignorant becomes attentive to what other people is saying. This was proven by his being active and cooperative in imitating the speech produced by adults and he can even produce his own speech spontaneously without being stimulated. This shows that restlessness has something to do with one's ability to stay focus

and get an input. When a child is unable to stay calm it is unlikely for him to be able to pay attention to what other people say. And on the other way around, once a child is not too active, he can easily imitate and understand what other people say.

All the methods above are communicated to the children's parents for them to do it at home since basically home therapy plays greater part for speech delayed children therapeutic process. Research has shown that parents' involvement with children at home takes greater and longer time allotment. Without parent's active involvement, the child speech progress may be far from what is expected. Parents are encouraged to give rich language environment which is full of language exposure to boost children's language progress. The children progress is evaluated every three months involving the discussion between the psychologist, the speech therapist, parents and the pediatricians. All those are done hand in hand aiming at achieving the desired goal of making the speech delayed children attain great progress concerning their language progress.

Discussion

One of the purposes of this research was to document changes over time in the phonological systems of three children diagnosed as language delayed who are undertaking treatment in HFCC Malang. Concerning the language ability of a speech delayed children in terms of phonology, it can be said that a child's competence of delivering speech is characterized by the ability of imitating and uttering word meaningfully. If the ability to imitate is granted while it is not accompanied by the ability of comprehending the spoken utterance, then this is still categorized as minor language progress, as speech comprehension is the basis of speech production.

Early phonetic and phonological development of the subject during observation indicated phonological development similar to what has been reported in the literature for normal children, yet at a delayed rate. A speech therapy is conducted to stimulate the child to produce speech. It emphasized on the importance of imitating through a modeling activity they have made in order to make the children imitate the sound first while accompanying their effort with the appropriate content, such as when explaining the word 'bebek' (duck), the speech therapist used realia of a duck. In the first subject H, firstly the concept of 'kuda' (a horse) was explained through a particular concept of showing a picture of a zoo with many kinds of animals in it, while the therapist continuously mentioned the word 'kuda' to stimulate the child to say so. Yet, one subject, the 3-year-old AR did not display a major progress. Some general comparisons may be made. At the time of observations, H and AK, aged 2 and 5, were in the process of accumulating their vocabularies. H showed understanding toward some words and showed willingness to produce an imitation of the therapist's words. He also indicated a progress on his own spontaneous speech production, such as the word 'papa'. This is similar with AK, who had shown a perfect imitation toward the therapist's words, yet still performed missing nasal sounds /m/ and /n/ in some words.

Meanwhile, in AR's case, probably the most obvious strategy used by this subject is avoidance of certain sounds and words. He consistently refused to imitate, label, and answer questions. Even though AR seemed to produce glottal stop (/ʔ/) in minute 14.17 when he said adok nantok' /adɔʔ nantɔʔ/, the result was inconclusive. This is because he mentioned it only once and it was a spontaneous speech. AR did not produce other clearly formed speech other than this. A three-year-old generally understand most of what they hear and able to converse. Rhyme awareness emerges at 24–30 months, and the ability to produce rhyme (such as cat-hat) emerges at 30-36 months.

Lack of attention or attention disorder is one of the causes of language delay of subject H; therefore, making him attentive is one of the ways to enhance his language learning besides giving rich exposure on language environment. Compared to a child who is neglected in terms of attention and language exposure, like AR, children with a history of speech delay but get much exposure and attention tend to show greater language development than AR. In the case of H, he can develop his language development well and quicker compared to AR. This finding can be correlated to (Spratt et al., 2012) research result that home neglect provides serious language problems as subjects experiencing home neglect demonstrated lower cognitive and language scores and more behavioral problems compared to children who were not neglected.

Meanwhile, AK's condition is probably influenced by the foreign language exposure during her younger age. Language

development in children is affected by bilingualism that is where the children employ more than one language other than their native tongue (Meisel, 2007). In the case of H, despite the fact that he is younger than AR, he could perform better progress in speech production.

These findings emphasize the importance of early stable condition which is rich of language exposure. Speech therapy is considered as a form of intervention that other person can do to boost a child's language development. Physical and emotional neglect at home setting proves to be strong in affecting one's language development.

Neglect characterized by low-stimulation environment is the most prevalent form of child maltreatment, in this case as early childhood is a vulnerable period for the acquisition and development of cognitive, language, and emotion regulation abilities, and therefore neglect in early childhood is of particular concern.

The finding shows that factors affecting language delay for the late taking children may vary and this needs clinical survey and there should be a cooperation between children parents or families and the therapeutic center in finding out the intervention way of solving the problem.

IV.CONCLUSION

This research presents the growth over time of three children with disordered phonological systems who have received direct intervention from a speech-language pathologist in House of Fatima Child Centre (HFCC) Malang. The results of this research support the notion that the phonological systems of delayed children may be typical of younger, normally developing children, even though one subject did not display a progress as expected. It is acknowledged that this research describes only three children with different condition and age and their progress during the period of treatment in HFCC varied. It is possible that the development of the three subjects were affected by the exposure to language at home.

In the case of speech delayed children, sometimes speech comprehension or thought is not considered as the basis of speech production as the children (subject) uttered a certain word due to intense stimulation or intense elicitation method that a speech therapy uses to stimulate the child to produce speech. Then, it is understandable that a speech therapy emphasizes on the importance of imitation through a modeling activity in the session, so that the children could imitate the sound first while providing context through pictures and realia.

Discussing the role of imitation in speech therapy, it is true that many people believe that language is learned by imitation. By imitation it means that children imitate the word or speech they hear from their environment. However, it should be noted that imitation may only apply to speech production. Therefore, limitation works well in the scope of speech articulation of speech sound and the sound pattern of language. Soon children acquire the speech articulation they soon will acquire its comprehension. In normal children speech production develops after speech comprehension. However, for delayed speech children case, a speech production may be firstly triggered to enhance children speech comprehension or in other words this speech production is to enhance or stimulate child's understanding of new words.

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