

PHONOLOGICAL ACQUISITION (CASE STUDY ON INDONESIAN CHILD)

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Abstract

This study aims to describe the acquisition of phonology including the acquisition of vowels, consonants, and diphthongs obtained by an Indonesian child. The research design used uses a qualitative method with a longitudinal case study approach by following child's language development from 0 months to 4 years old, named KS. The findings of this study were that KS had obtained a complete vocal phoneme at 2;0 years old. Diphthong sound is mastered entering at 3;0 years. Consonant starts to be mastered at 2;0 years, however fricative sound [f], the sound of vibration [r] has not been mastered until the age of 4 years. Uniquely, if the consonant sounds located at the end of the word, KS replace it with a [n]. This happens because speech motor KS is incomplete or not yet fully developed. Thus, at the age of 4 years old, KS has been able to recite and obtain most of the phonemes in Indonesian.

Keywords: acquisition, phonology, vocal, diphthong, and consonant.

Introduction

Everyone experiences the process of acquiring language differently. Language acquisition is the process of mastering the language that is done by children naturally when he learns his native language. Language acquisition is distinguished by language learning. A person's first language is the mother tongue that the child gets from his environment. Whereas, language learning is related to the processes that occur when a child learns a second language after he obtains his first language. Parents must understand language development in children and understand the character of social influence is very important for education. Thus, language acquisition is related to the first language, while language learning is related to the second language (Chaer, 2003; Djarwodidjojo, 2000; Tarigan, 2009; Fatmawati, 2015; Molai, 2016).

In acquiring language, someone will go through several stages. This is as stated by Maksan (1993) who divides the process of language acquisition into six stages: babbling (0; 0-1; 0), holophrase (1; 0-2; 0), two-word (2; 0-2; 6), beginning of grammar (2; 6-3; 0), approaching adult language (3; 0-4; 0), and full skills (4; 0-5; 0).

Child language acquisition begins with phonology acquisition. Phonological studies aim to find phonemes including discussing the role of phonemes in forming syllabic structures. (Subroto, 2007, p. 52; Amril, 2007, p. 28) Therefore, phonology acquisition related to the preparation process comprising vowel, consonants and double vowels (diphthongs). Increasing age will widen the oral cavity. This growth provides a greater space for children to produce language sounds. (Fatmawati, 2015)

Vowel Classification

The criteria for forming vowel sounds are (1) the height of the tongue, (2) the position of the tongue, (3) the tension of the tongue, and (4) the shape of the lips. (Dardjowidjojo, 2010, p. 38; Chaer, 2007, p. 113, Faizah, 2010, p.18-19) The position of the tongue can be horizontal or vertical. Vertically high vowels are distinguished, for example, the sounds of [i] and [u]; the middle vowel, for example [e] and [ə] sounds; low vowel, for example [a] sound. Horizontally there are front vowels, for example [i] and [e]; a central vowel, for example, sound [ə]; and back vowels, for example [u] and [o] sounds.

According to the shape of the mouth, there is a difference between round and non-round vowels. Based on the position of the tongue and the shape of the mouth of the vowel as distinguished as follows [i] is the frontal high not rounded v, [e] is the middle not rounded front vowel, [ə] is the unbalanced center vowel, [o] is the round centered middle vowel, [a] is a non-circular low center vowel. (Chaer, 2007, p. 114). Vowels are simple sounds that are produced by position of the tongue and lips. Consonants, however, are more complicated to produce. (Lehr, 2000, p.3) And the first vowel sound coming out is usually a vowel [a]. (Indah, 2017, p. 29).

Diphthongs or Double Vowel

Diphthongs or double vowels are sounds when positioning the tongue when producing this sound at the beginning and the end is different. The inequality concerns the height of the tongue, the moving part of the tongue and the stricture. But what is produced is not two sounds, but only a sound because it is in one syllable. Examples of diphthongs in Indonesian are [au] as found in the words *kerbau* and *harimau*. Another example, [ai] sounds as found in excise and sloping words. If two vowels are sequential, the first one is in a different syllable from the second, there is no diphthong. So vowel [au] and [ai] in words *bau* and *lain* in Indonesia, not a diphthongs. (Chaer, 2007, p. 115)

Consonant Classification

Chaer (2007) says the consonant sounds are usually distinguished by three criteria, namely the position of the vocal cords, the place of articulation, and the way of articulation. Based on the place of articulation there is consonants: (1) bilabial, namely sound [p], [m], and [b] (2) labiodental, namely sounds [f] and [v] (3) laminoalveolar, namely sounds [t] and [d], and (4) dorsovelar, which is the sound of [k] and [g].

Based on the position of the vocal cords, voiced consonants and silent voices. Based on how the articulation, the pitch can be consonant: (1) inhibitory, i.e. sound [p, b, t, d, k, g] (2) shift, m is the sound of [f, s, and z] (3) complaint, namely [c] and [j] sounds (4) nasal, is the sound of [m], [n], and [ŋ] (5) vibrate or trill, the example is consonant [r] (6) lateral, for example, consonant [l] (7) approximants or semi vocals, for consonant instances [w] and [y] (Chaer, 2007, p. 117-118, Faizah, 2010, p. 23-24)

Research on the acquisition of children's phonology is quite a lot done by other researchers. The results of this study at age of 2-2.5 years. The first vowels they control are vowels [a], [i], and [u]. (Yanti, 2016; Budhinono, 2011). Research on a 2-year-old child also found their phonetic repertoire lost some fricative and all affricates, and /r/. Consistently using error patterns identified including cluster reduction, final consonant deletion, stop, fronting, weak syllables, deletion, glide, and deaffrication. (Mcintosh& Barbara J. Dodd, 2008).

Based on that, research on the phonological acquisition of aIndonesian child needs to be done because of the person concerned about Malay descent but gets a mother tongue, Indonesian. Therefore, the research aim of presenting phonological acquisition includes an acquisition of vowels, consonants acquisition, and diphthongs in children 4 years old.

Method

The method used in this study is a qualitative method with a case study approach. Through this qualitative method will be described the acquisition and development of phonology in aIndonesian child. The research design used is longitudinal by following the child's language development from the age of 0 months to 4 years.

The subjects in this study isKhairunnisaSalsabila, (she further abbreviated KS) who was born on May 15, 2014. She is the main informant in this research. And a supporting informant is Rice Elvira Fitriani, mother of KS. In data collection research, also in use instrument, a notebook, recording device, and a camera.

Results and Discussion

Vowel and Consonant Acquisition

Based on the stages proposed by Maksan (1993), following the acquisition of vowels and consonants in KS.

Stage of Babbling (0; 0—1; 0)

Babbling rounds occur when children are 0 months to 1 year old. Based on excerpts from conversations taken at the age of 1 and 7 months, according to the theory presented by Maksan, there is this stage, KS emits sounds (babbling) most of the meaning and a small portion resembles words or meaningful words, even though it is just a coincidence. Babies start discriminating phonemes during the first few months of life, and they produce them soon after. (Toppelberg and Theodore Shapiro, 2008, p.2).At this stage, vowel, consonant and diphthong classification in KS cannot be identified.

Stage Holophrase (1; 0-2; 0)

At the holophrase stage, children aged 1 to 2 years. Based on the data that has been processed, KS has been able to say a few words. The following is presented the KS phonology acquisition table at this stage.

Table 1 Phonological acquisition at the holophrase stage.

Word	Spoken word	Phoneme fading	Phoneme changes
abang	[abaŋ]	-	-
cicak	[caʔ]	/c and /i/	-

At the age of 1 year 3 months, KS starts to imitate the sound of language in the form of KV syllables like *ba* or *na*. At the age of 1 year 10 months, KS has been able to sing pieces of *Cicak di dinding* songs. For some words, KS has been well versed in pronouncing it even though not much. Like *abang* and *dinding*.

In the word *cicak*, KS only mentions the last syllable, [caʔ]. This can happen because usually Indonesian children tend to choose the last tribe and this is a universal background, that children everywhere tend to pay attention to the end of a form (Arsanti, 2014).

So, vowel acquisition by KS at this stage is the vowel /a/ and /i/. The earliest sounds children produce are those that are the simplest for them to articulate, given the anatomy of their vocal tract. (Cairns on Lehr, 2000, p. 3). And the consonant acquisition /b/, /c/, /n/, and /ŋ/. At this stage, KS is also not seen to have obtained diphthong.

Two Words (2; 0-2; 6)

The two-word greeting stage occurs when the child enters the age of 2 years to 2 years and 6 months. This third stage was also passed by KS by obtaining more phonology. The following is the KS phonology acquisition table in the two-word greeting stage.

Table 2 Two Word Speeches (2; 0-2; 6)

Word	Spoken word	Phoneme fading	Phoneme changes
awas	[awash]	-	/s/ to /s/, /h/
main	[ain]	/m/	
bola	[ela]	/b/,	/o/ be /ə/
jauh	[awu]	/j/, /h/	/a/, /u/ be /w/
bawa	[wawaʔ]	-	/b/ be /w/
sebentar	[əntan]	/s/, /b/,	/r/ be /n/
tidur	[tidun]		/r/ be /n/
lah	[la]	/h/	-
sayang	[ayaŋ]	/s/	-

In this stage, KS has mastered many syllables. Based on table 1.2, it can be seen that the mastery of KS's words has developed. This is certainly related to the acquisition of vowels and consonants she gets. The two word utterance phase, KS has obtained the complete vowel /a/, /i/, /u/, /e/, /ə/, and /o/. Likewise with the acquisition of consonants, too quite a lot. The consonant phonemes obtained by KS at this stage are /b/, /c/, /d/, /k/, /l/, /o/, /n/, /s/, /h/, /w/, and /ŋ/.

Phonological disorders are characterized by failure to achieve developmentally appropriate phoneme production. (Toppelberg and Theodore Shapiro, 2008, p.5) Even though KS has already obtained several consonants, but to speak fluently KS is still having difficulties. Some phonemes she applied and some were changed according to her speaking ability. For phonemes /s/ which are located at the end of a word like the word [awas], it can be said even though it is added with another phoneme, /h/ so it becomes [awash]. However, if the phoneme /s/ is located at the beginning of a word such as the word [sayan], KS fills the phoneme /s/ so that it says to be [ayaŋ]. Then, in the phoneme /r/ located at the end of the word KS will be changed to phoneme /n/. For example, the word [tidur] becomes [tidun] and the word [sebentar] become [əntan].

Beginning of Grammar (2; 6-3; 0)

The Beginning Stage of Grammar occurs when a child is 2 years 6 months to 3 years old. When passing this stage, KS begins to show her ability to speak even though some phonemes have not been obtained. Following is the KS phonology acquisition table in this third stage.

Table 3 Beginning of Grammar (2; 6-3; 0)

Word	Spoken word	Phoneme fading	Phoneme changes
bisa	[bica]	-	/s/ to /c/
mana	[na]	/m/, /a/	-

Table 3 Cont

dia	[ya]	/d/	/i/ be /y/
tengok	[eŋoʔ]	/t/	-
kamar	[man]	/k/, /a/	/r/ be /n/

In the initial stages of grammar, KS can even speak like an adult, even though the pronunciation is not as adult. This stage KS has obtained all of its vocals. Based on the phoneme acquisition table that KS gets, the consonant phoneme obtained by KS at this stage is almost the same as the previous step but increases with consonant /m/ that is /b/, /c/, /d/, /k/, /l/, /m/, /o/, /n/, /s/, /h/, /w/, and /ŋ/.

Based on the table, it can be seen that KS still changes the consonant /r/ to /n/ if the word ends with /r/. For the phoneme /m/ which is located at the beginning of the word, KS fills it. This can be seen in the recitation of the word [mana], she mentions with the last syllable, /na/. But in the word [kamar] which has a consonant /m/ in the middle of the sentence, KS can even mention it.

If you pay attention again, KS has already mentioned a lot of words with consonants /k/ in the middle and at the end you like [aŋkat], [adeʔ], [boboʔ] Which she got in the previous phase. However, for consonants /k/ which are located at the beginning of the word it turns out that KS makes it like the pronunciation of [kamar] which only says [man]. It also occurs in words beginning with /t/ as the word [teŋoʔ] She pronounces by applying consonant /t/ to [eŋoʔ] But for the word [aŋkat] she has already stated correctly. For consonant /s/ cases that have been discussed in the previous stage, it turns out that at this stage it is seen that KS replaces consonant /s/ which is located in the middle of the word. Like the word [bisa] she said to be [bica].

Ahead of Adult Grammar (3; 0—4; 0)

At the approaching stage of grammar until this stage, when a child is 3 to 4 years old, KS has obtained all the consonants even though there are some that cannot be mentioned when the phoneme is in a different place. Here is the KS phonology acquisition table at this stage.

Table 4 Towards Adult Grammar (3; 0—4; 0)

Word	The word be spoken	Phoneme fading	Phoneme changes
hape	[ape]	/h/	-
sayang	[caʔaŋ]	-	/s/ to /c/
semalam	[shamalam]	-	/s/ to /s/, /h/
orang	[olaŋ]	-	/r/ be /l/
kecelakaan	[calakaan]	/k/, /e/	/e/ be /a/
sudah	[sudah]	-	-
rambut	[lambut]	-	/r/ be /l/
sayang	[saʔaŋ]	-	-
keluarkan	[keluanan]	/r/	/k/ be /n/

In the fifth stage, KS phonology acquisition has developed rapidly. The consonant obtained by KS at this stage is /b/, /c/, /d/, /g/, /h/, /j/, /k/, /l/, /m/, /n/, /p/, /q/, /s/, /t/, /v/, /w/, /x/, /y/, /z/, /ŋ/. However, in some words KS has not been able to mention it perfectly.

This stage KS has mastered the acquisition of consonants. In the previous stages, KS had difficulty mentioning consonant /s/ at the beginning of the sentence, this stage KS replaced it into consonant /c/ and a few months later KS could already mention consonant /s/ at the beginning of the word, like the word [saʔaŋ]. Based on the mother's story, KS will always replace the vowel /e/ which is adjacent to the consonant /s/ which is at the beginning of the word to be a vowel /a/. For example the word [semalam] will be [shamalam] and [sekarang] become [sakalaŋ].

For consonants /r/ until this stage, KS is not yet fluent in saying it. Whether it's at /r/ at the beginning, in the middle, or at the end of the word. KS tends to change the consonant /r/ to /l/ when it is at the beginning and in the middle of the word. As the word [rambut] becomes [lambut] and the word [oraŋ] becomes [olaŋ]. And for consonant /r/ which is at the end of the word, KS will change it to /n/ as the word [tidur] becomes [tidun].

At the age of close to 4 years, KS language acquisition shows very good progress. However, even though the choice of words she used was as an adult, KS also could not correctly pronounce words ending with the letter 'l'. KS has difficulty in saying words that use the letter r and words consisting of p and l at the beginning of the word. The following are some of the words ruled by KS and their phoneme changes.

Table 5. Consonant that has been change

Word	Be spoken	Phonon Substitution	
		Early	End
kail	[kain]	k/a/i/l	k/a/i/n
sandal	[sandan]	s/a/n/d/a/l	s/a/n/d/a/n
kantor	[kantor]	k/a/n/t/o/r	k/a/n/t/o/n
tidur	[tidun]	t/i/d/u/r	t/i/d/u/n
keluar	[keluan]	k/e/l/u/a/r	k/e/l/u/a/n
lari	[lali]	l/a/r/i	l/a/l/i
rambut	[lambut]	r/a/m/b/u/t	l/a/m/b/u/t
plastik	[peslati?]	p/l/a/s/t/i/k	p/e/s/l/a/t/i/k

Until 4 years old, KS has obtained most of the phonemes in Indonesian and is able to pronounce them, except for three phonemes, /f/, /r/, and /l/. KS is still having difficulty reciting it. For phonemes /f/ and /r/, KS is completely difficult to pronounce and tends to change the phoneme to /p/ and /l/. Uniquely, for consonants /l/, KS has obtained it for two years but until she is 4 years old, KS is still unable to deliver it perfectly; for example, if the phoneme /l/ is at the end of the sentence, KS tends to replace it with phonemes /n/.

Table 6. Consonant that has not been obtained

Phoneme	At the beginning	In the middle	at the end
f	-	-	-
r	-	-	-
l	√	√	-

This occurs because phonological disturbances can be due to age factors which result in speech or muscles being used to speak (speech motor) not yet complete or not yet fully developed; from the arrangement of the teeth, the shape of the jaw, until the tongue may still be stiff. But, keep in mind that parents should build interaction with their child to know their child's language development. Besides that, the writer suggests the right pronunciation to the children. (Hutauruk, 2015)

Diftongs Acquisition

The acquisition of diphthongs or double vowels that occur in KS is the inability to pronounce diphthongs and replace them according to the abilities that they have. Double vocal reduction becomes a single seen from the way KS replaces diphthong into one phoneme. KS replace diphthong /au/ become so /o/ and replace the diphthongs /ai/ into /e/. For example:

The word *kalau* [kalaw] becomes 'kalo' [kalo]

The word *sampai* [sampay] become 'sampe' [sampe]

KS began to proficiently mention diphthong when it was three years old.

Conclusions

Based on the results of the discussion, it was concluded that KS had obtained the complete vowels, phonemes [a], [i], [u], [e], [o], [ɔ], [ɛ], and [o] at the age of 2; 0 - 2; 6. The first vowel he mastered is vowel [a], and [i] which is at age 1, 0-2; 0. Consonant sounds start to be mastered from age 1, 0-2; 0. The initial consonant he controls is / b /, / c /, / n /, and / ŋ / Consonant [t], [s] is mastered if it is in the middle or end of the word. The diphthong's double vowel sound has been mastered when entering age 3; 0. Meanwhile, the fricative sound [f] sound vibrate [r] has not appeared and mastered it until the age of 4 years. Some consonants that have not been obtained by KS because of the influence of speech motor KS which has not been fully developed. Besides that, the pronunciation errors made by KS should be the attention of parents to help justify the wrong words, so they don't become bad habits.

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