

ACTIVE LANGUAGE EXPOSURE IN PHONOLOGICAL ACQUISITION

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Abstract

This study observed the phonological acquisition of two children from the same family background in Yogyakarta who had different exposure in language. The observation was conducted from the children's birth day to the second year of their age. The first child (A) has an active language exposure while the second child (B) has a normal language exposure. The language exposure was given by the family toward their children where in this case, the child A family exposed language through language exposure, introducing objects, language control, and bed time story while child B family gave no language exposure but in natural way. The phonological production development of both A and B were recorded through audio, video, and script. The recording showed that in cooing period, their phonological productions have no significant difference. The difference detected in bubbling period where child A produced greater numbers of phonemes in his bubbling. The greater increase of phonological production continued in child A where he has acquired all Indonesian phonemes but [r] in his second year of age. In addition, child A has produced language in phonemic structures earlier than that of child B. At their age of two, child A has produced complex word utterance while child B was still in one word utterance. These evidences indicate that active language exposure is necessary for children phonological acquisition.

Key words: acquisition, phonology, active language exposure

1. INTRODUCTION

Language acquisition occurs from the first time a child has his first interaction to the world. The acquisition started from cooing, bubbling, one-word utterance, two-word utterance, to their complex utterance. The development of the acquisition phases is varied between children. Some researches conducted by Lewis & Wilson (1972), Hoff- Ginsberg (1991), and Evans (2004) found that children from low income family relatively has a late language development than that of the higher income family. Another research reported that children language development related to children's educational family background where the children from higher educational family background have a better language development (Daneshvar and Sadighi, 2014). Bornstein, Leach & Haynes (2004) dan Hoff-Ginsberg (1998) made a study about the role of children's birth order to language development and reported that there is a positive result where the former children have a better language development than that of the latter. Furthermore, Tulkin & Kagan (1972) reported that mothers from middle to high economical status give better verbal interaction to their children than that of the lower. A verbal interaction is the first input for children to acquire language. In producing a language, a verbal interaction is very important for children to have their phonological production. The evidences then trigger a question. Does a frequent verbal interaction give a contribution to phonological acquisition?

A brief observation was conducted to two children that were child A and child B. Both children have different family backgrounds, but they are in the same neighborhood. Despite having the same sex, child birth order, and the same neighborhood, but both children had different linguistic environmental treatment. child A's family is basically from language education who also actively engages A to his linguistic environment since he was born. In the other sides, Child B has a family who do not notice the language. B's family tends to have lack language input.

At birth, both child A and child B have the same phonological characteristics to any other baby. They produced the vowel sounds [ε], [a] and consonant fricative [h] when they

cried. At that age, they also have underdeveloped kinesic and comprehension ability. The similarity of the sound acquisition is still visible when they were in 6 months old. Until the age of 6 months, vowel phonemes which has been obtained by A and B is the vowel sounds [ɛ], [ə], [a] and [e]. Trilled phoneme production was the same in which A and B at the age of 1-6 months has been able to produce consonant [h], [ʏ], and [ŋ]. A difference of their phonological acquisition is seen when Child A and Child B has reached the bubbling phase. Child A bubble more than Child B. At this stage, from the age of 6-9 months, the production of sounds on their bubbling was increased. At Child A, consonant phoneme and vocal sounds which increased are the sounds [u], [x], [d], [m], and [t] while the sound increased in Child B are sounds [x] and [i]. At the age of 8 months, Child A has been able to point out some referents which were spoken by adults. This can be seen in the dialogue between Child A and R (Researcher)

- R : Im, ada pesawat, mana pesawatnya ya, A?
 (There is a plane, A. Could you show me where is it?)
 A : [u:] (pointed out to the plane)

He has also been able to point out the other referents like flowers, moon, lizards, birds, etc. by producing sound [u :] while pointing to the referent. At the same age, the researcher tried the same treatment to Child B to conduct a dialogue lightly.

- R : B, ada pesawat, pesawatnya dimana ya, B?
 (B, there is plane. Could you show me where is it, B?)
 B : (looked at the researcher and then looked into the other way)

Researcher also asked other objects that are in their environment but he still couldn't refer to the intended referents.

The phonological acquisition of children A and B were identified to find out the effect of active language exposure.

2. METHOD OF THE RESEARCH

The participants of this study were two male children in Yogyakarta from the same family background that were from middle social class and multicultural family. Both children were born about three months distant and this study was conducted from the children's birth-day to the second year of their age. The first child (child A) is a child who was given an active language exposure from his family. The child A family gave language exposure to child A through language awareness, introducing objects, language control, and bed time story. On the contrary, the second child (child B) was given no language exposure from his family. Child B family has no language exposure to their child but in a normal way. An observation was held through a continual record in order to find the effect of active language exposure to phonological acquisition. The recording was taken in a type of video, audio and script where the video and audio were taken by using a recording application in Samsung Ace 3 phone.

3. DATA ANALYSIS AND DISCUSSION

Phonological acquisition of 1-20 months children

On the phonological acquisition, at their first month to the fifth month, the sounds which were produced by both Child A and Child B are only the sounds of crying consisting of glottal sound [ʔ], fricative [h], velar nasal [ŋ], and the vowel sounds [ɛ], [ə], and [a]. The same thing will happen to any newborn baby. This stage occurs at the age of 1-4.5 months. The difference of their sound comes out on their bubble since they were on 6 months old. Here is a sound obtained by Child A from 1 to 12 months.

Table 1. Child A's potential vocals

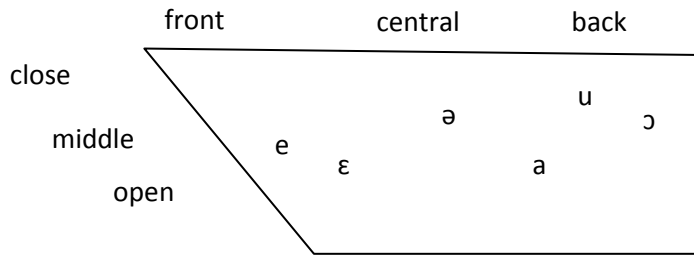


Table 2. Child A's potential consonants

	Bilabial	Alveolar	Alveopalatal	Velar	Glottal	Laringal
Plosive	b p	t* d*	j	k* g*		
Fricative			z		h	ʝ
Nasal	m	n			ŋ	
Tril						
Semivocal			y			

* not yet appeared or emerged, only in a limited basis.

The two charts above are sounds heard like vowels and consonants that were uttered by Child A. These sounds do not occur simultaneously but through certain precedence. These sounds do not seem to have the phonemic value that can be understood by the listener. However, there are two sounds that can be spoken by Child A who already have the meaning which the word [yayaya] that have meaning *ayah/father* and said [jəzt] which is the name stands for his last name, Aziez.

While Child B, he did not develop on the vocal group until the beginning of January 2015 when Child B was 7 months old. Only later when he was 8 months old, there is a vowel that appears in the form of close front vowel [i]. Vowel sounds and then reappeared at the end of January 2015, with a sound that shows up is the vowel sounds being open front vowel [ε]. Those sounds persist until Child B was in the age of 12 months or one year. Some sounds appeared with more intensity than other sounds. In Child B's case, middle vocal sound [ə] and open central sound [a] appeared more often than the other vowel sounds in his bubbling. These sounds appeared in combination sounds such as [əʝə], [əa], etc.

Table 3. Child B potential vocal sounds

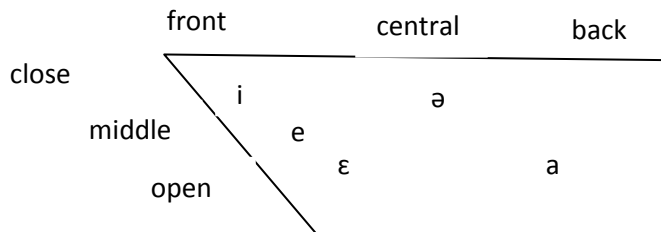


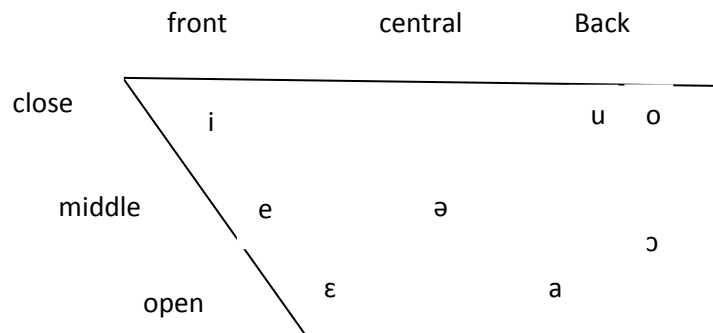
Table 4. Child B potential consonant sounds

	Bilabial	Alveolar	Alveopalatal	Velar	Glottal	Laringal
Plosive					ʔ	
Fricative				x	h	ʝ
Nasal						
Tril						
Semivocal						

The two charts above are sounds heard like vowels and consonants ever uttered by Child B. These sounds do not occur simultaneously but through certain precedence. From the sounds that have been produced, even though the sound had joined or followed by other sounds, but these sounds do not seem to have the phonemic value that can be understood by the listener.

At the age of 12th month, both Child A and Child B have not been able to produce sounds that have phonemic meaning. The sounds appear sporadically. It is something very natural to happen in children as it is said by Ingram (1989 : 2) a time since the child was born until he was even one year is a period of prelinguistic development. At this time the children practice to produce phonemes found in their language. Sounds that have been produced by Child A and Child B began to grow and began to have a sense of phonemic after they were over the age of 12 months. At the age of month 12th, Child A called his father by saying [ayayaya]. However, stepping on the age of month 14th, the sound evolved toward the sound of the spoken adults. As to the statement where the phonemic meaning is father (*ayah*), at the age of less than one yea , the phonetic form was [ayayaya] and then later at the age of 13th months turned into [əyah]. On the same day, due to direct feedback then the phonetic changes to [əʔyah]. A few days later changed to [aəyah]. At the age of month 15th, the sound uttered resembled to adults utterance, [ayah]. So the development of the pronunciation of the word father / *ayah* has a phonetic development [ayayaya] → [əʔyah] → [aəyah] → [ayah]. Then, the number of phonemes which has been produced by Child A was increased.

Table 5. Child A's vocal phoneme sounds



In table 7, it can be seen that the inventory of Indonesian vowel phonemes on Child A at the age of 20 months is already completed. Until the age of 20 months Child A has been able to utter words; [tantə] - < tante/aunt > , [bətəl] - < botol/bottle > , [ʃatu] - < satu/one > , [biyu] - < biru/blue > , [məkɛz] - < Marquez > (name of MotoGP racer) , [kəpa] - < kelapa/coconut > , and [ñeñeʔ] - < nenek/ grandmother > . The Following table is the acquisition of consonants produced by Child A until the age of 20 months.

Table 6. Child A's consonant sounds at the age of 20th month

	Bilabial	Labio-Dental	Dental	Alveolar	Alveo-Palatal	Velar	Glottal	Laringal
Plosive	p b			t d	c j	k g	ʔ	
Fricative		f	θ	s z ʃ		x	h	y
Africative								
Nasal	m			N	n	ŋ		
Trill				r*				
Lateral				l*				
Semi-Vocal	w				y			

* not yet appeared or emerged only in a limited basis.

Before Child A appropriately uttered the right consonants, he often replace the sound of the other consonant sounds. These are some development sounds produced by Child A

- [am] → [aəm] → [aʔim] Aim (his Nickname)
- [to] → [ethoh] → [doŋ] → [edoŋ]→[dədəŋ]→[dedəŋ]gendong (carry)
- [pəset] → [pəset] → [pəcet] → [pəncet] pencet (push)
- [abwu]→[apu]→[pu]→[apbwu]→[apuh]→[əbu] ibu (mother)

Total lexicon that has been produced by Child A is also pretty much where it can affect Child A phonological sounds that have phonemic meaning. Child A has even been able to say more than two words. Here is an example of the dialogue when Child A has reached the age of 20 months.

Dialogue 1 Child A and Aunt (At)

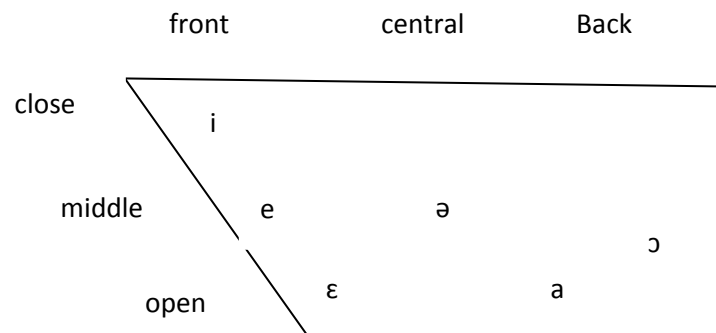
- A : [aʔim kut yaʔ] – *Aim ikut ya? / May I come with you?*
- At : *ikut kemana?/ where do you want to go?*
- A : [ʃana] – *ke sana / there!*
- At : *Jangan ah, udah dirumah aja. Ini kuenya dimakan! / No, just stay at home and eat this cake!*
- A : [ama^wu bu^wat tantə aja yaʔ] - *gak mau, buat tante saja ya?/ No way, take it for you, aunty !*

While Child B, when he was in the age of month 20th, he has mastered the vowels [i e u ə ə a]. From those vowels, not all vowels often appear when Child B is saying or bubbling, the vowel sounds that often arised is the vowel [ə], [e], and [a] while the sound that rarely showed up is [i], [u] and [ə]. Open central vowel [ə] only appeared when Child B said [əm əh]. These are vowels that have phonemic meaning uttered by Child B.

- | | | | | | |
|-------|------------------------|--------|--------------------|--------|------------------------|
| [kən] | <i>ikan/ fish</i> | [ayah] | <i>ayah/father</i> | [nah] | <i>sana/there</i> |
| [təh] | <i>gajah/ elephant</i> | [ənda] | <i>bunda/mom</i> | [ətan] | <i>ikan/fish</i> |
| [təh] | <i>ituh/ that</i> | [bu] | <i>sapu/broom</i> | [əməh] | <i>emoh/no way</i> |
| [nih] | <i>ini/ this</i> | [ti] | <i>roti/bread</i> | [igha] | <i>Iga/maid’s name</i> |

Thus, at this stage of language acquisition, the vowels of which has been controlled can be seen in table 7:

Table 7. Child B vocal phoneme sounds at the age of 20th month



From the table above, it can be seen that Child B, in the age of 20 months, has not been able to master all Indonesian vowel phonemes. For consonant phonemes, child B has had many new consonant but not all consonants are mastered.

Table 8. Child B consonant phoneme sounds at the age of 20th month

	Bilabial	alveolar	alveopalatal	velar	glottal	Laringal
Plosive	p b	t d		k* g*	ʔ	
Fricative				x	h	ɣ
Nasal	m	n			ŋ	
Tril						
Semivocal	w*		Y			

* not yet appeared or emerged, only in a limited basis.

However, when both Child A and Child B has been able to utter a word, the first vowel appeared was the open vowel [a]. Therefore, they embraced the theory of universal phonological acquisition of contrasting vocal triggered by Jakobson, in which the children will gain firstly an open vocal sound [a] followed by the vowel [i] and next a vowel [u]. But when both Child A and Child B can utter a word, they also contrasted the three vowels with other vowels like [aen] <main/play> and [ətə] <tante/aunt>. In consonant acquisition also matches to the theory of universal phonological acquisition in which the contrast between the bilabial and dental or alveolar obtained earlier than the velar [k] and [g]. However, when Jacobson predicted that sounds glide [y] and [w] appears at the end, it does not happen in the case of Child A and Child B where they had been able to pronounce the sound glide [y] on [yaya] <ayah/father> or when Child A says [win] <penguin/ penguin>. However, trill [r] is still obtained at the end.

By the time he began to produce words, sounds spoken sounds just the last syllable or ultima. Forms of syllables uttered unit in accordance with the explanation of Moskowitz (in Chaer, 2009: 208) that form the word unit that appears first has the form KV (consonant-vowel) followed by KVK, VK, and V. The first time you pronounce said he called his father as [yes yes] then [well] forming KV then KVK. Until the age of two years, Child A has even been able to express complex sentences like [Apih kəntut amih also], [afik bæi nafī Kunin], [father maapin aim yaʔ], etc. Obtaining the same is true of Bres, before he can say the words, words that have meaning phonemic first time was when he called guardians as [ya] with KV form but later evolved into [əya]. He was also the first time calling her father to say [ya ya ya] (KV KV KV) uttered many times.

Linguistic environmental treatment and phonological acquisition

In the case of Child A and Child B, the results indicate that Child A language skills develop faster than that of Child B. This shows that the treatment of the environment has a role in giving an input that can accelerate the process of language acquisition. Language exposures through telling a fairy tales, turn-taking speaking, watching and guiding videos, books and pictures, as well as introducing to the environment will stimulate mental in the introduction of the names and how to pronounce the names. The process of introduction and exposure to the language to their mind or cognition can accelerate the process of language acquisition. Piaget (in Chaer, 2009: 228) formulated three stages in a child's cognitive development. The three stages are sensory motor stage, the stage of preoperational, concrete operational stage, and the formal operational stage. In the first two years, the baby still entered into the sensory motor stage. At this stage, the baby is only able to think based on the relationship with the experiences and actions that is simple. Their recalling to memory was still not perfect and has not been able to anticipate things to come. Therefore, the stimulus provides reinforcement through experiences by providing continuous knowledge which is believed will accelerate in the children talk. Here is one example of snippets of conversation conducted between Child A and his mother at the time of story telling.

- A : [kə(l)apa] - coconut
- T : owh di atas pohon kelapa/ owh, on the top of a coconut tree.
- A : [pəpaya] – papaya /papaya
- T : trus di atas pohon apa?/next, in which trees?

- A : [paya] – *papaya/papaya*
 T : *terus pas dia udah bertelur, tiba-tiba datang srigala, im. nah srigalanya itu makan telornya,, burung apa tadi namanya?/ then, when it was laying eggs, the wolf came suddenly. Then, the wolf ate the eggs. The eggs of ...what is the name of the bird?*
 A : (not responding)
 T : *telurnya ada berapa ya, im?/ how many eggs is it?*
 A : [fatu] –*satu / one*

Child A has also been able to utter more than two words. It can be seen in the following dialogue.

- A : [a?im kut ya?] – *Aim ikut ya? / May I come with you?*
 T : *ikut kemana?/ where do you want to go?*
 A : [fana] – *ke sana / there!*
 T : *Jangan ah, udah dirumah aja. Ini kuenya dimakan! / No, just stay at home and eat this cake!*
 A : [ama^wu bu^wat tantə aja ya?] - *gak mau, buat tante saja ya?/ No way, take it for you, aunty !*

Nevertheless, the ability to say the word done by children is limited to how the ability to master the articulation. In the first year, both Child A and Child B cannot utter a word though Child A was given treatment in the form of exposure to the language. This is because at that age the ability of articulation Child A has not enabled it to pronounce the word.

4. CONCLUSION

From the data of phonological acquisition between children A and B, it is concluded that the production of child A's phonological acquisition is faster than that of B where A has an active language exposure. At the same age, A has been able to say < *kereta*/train> with the word that is almost perfect [kə^reta] while B still pronounce it as [theta]. At the age of 20 months, A has produced or uttered complex sentences which proves that A has exceeded a holophrastic phase. This evidence showed that an active language exposure contribute the acceleration of phonological acquisition. It is suggested that the children who have an active language exposure is proven able to increase their intelligence of recognizing things in their environment and it is also able to influence the acceleration in the production of phonological acquisition. Cognitive acquisition is dependent on the intensity of exposure or interaction in children. When the children can recognize the things in their environment and they are also exposed to its linguistic preference, and their articulator biological physiology has allowed them to be able to utter a word, then they will quickly be able to develop their phonological production.

5. BIBLIOGRAPHY

- Bornstein, M.H., Leach, D.B., & Haynes, O.M. 2004. Vocabulary Competence in First-and Second Born Siblings of the Same Chronological Age. *Journal of Child Language*, Vol. 31, 855– 873.
- Daneshvar, Arezoo, and Sadighi, Firroz. 2014. The Effects of Mothers' Age, Educational Level, Occupation and Children's Birth Order on Iranian Preschoolers' Communicative Performance. *International Journal of Educational Investigations*, Vol. 1(1), 205-219. Available Online: http://www.ijeionline.com/attachments/article/31/IJEIonline_Vol.1_No.1_pp.205-219_Daneshvar-Sadighi.pdf [accessed on September 14th, 2014]
- Evans, G.W. 2004. The Environment of Childhood Poverty. *American Psychologist*, Vol. 59(2), 77-92.

- Hoff-Ginsberg, E. 1991. Mother-Child Conversation in Different Social Classes and Communicative Settings. *Child Development*, Vol. 62, 782–796.
- _____. 1998. The Relation of Birth Order and Socioeconomic Status to Children's Language Experience and Language Development. *Applied Psycholinguistics*, Vol. 19, 603–629. .
- Ingram, David. 1989. *First Language Acquisition: Method, Description, and Explanation*. Cambridge: Cambridge University Press.
- Jacobson, Roman. 1968. *Child Language, Aphasia, and Phonological Universals*. The Hague: Mouton Publisher.
- Lewis, M., & Wilson, C. D. 1972. Infant development in lower class American families. *Human Development*, Vol. 15(2), 112-127.
- Tulkin, S. R., dan Kagan, J.. 1972. Mother-Child Interaction in the First-year of Life. *Child Development*, Vol. 43, hal. 31-41.