

Chapter 9

Consonant substitution in child language (Ikwere)

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The Ikwere language is spoken in four out of the twenty-three Local Government Areas (LGAs) of Rivers State of Nigeria, namely, Port Harcourt, Obio/Akpor, Emohua and Ikwerre LGAs. Like Kana, Kalabari and Ekpeye, it is one of the major languages of Rivers State of Nigeria used in broadcasting in the electronic media. The Ikwere language is classified as an Igboid language of the West Benue-Congo family of the Niger-Congo phylum of languages (Williamson 1988: 67, 71, Williamson & Blench 2000: 31). This paper treats consonant substitution in the speech of the Ikwere child. It demonstrates that children use of a language can contribute to the divergent nature of that language as they always strive for simplification of the target language. Using simple descriptive method of data analysis, the paper identifies the various substitutions of consonant sounds, which characterize the Ikwere children's utterances. It stresses that the substitutions are regular and rule governed and hence implies the operation of some phonological processes. Some of the processes are strengthening and weakening of consonants, loss of suction of labial implosives causing them to become labial plosives, devoicing of voiced consonants, etc. While some of these processes are identical with the adult language, others are peculiar to children, demonstrating the relationships between the phonological processes in both forms of speech. It is worthy of note that highlighting the relationships and differences will make for effective communication between children and adults.

1 Introduction

The Ikwere language is spoken in four out of the twenty-three Local Government Areas (LGAs) of Rivers State of Nigeria, namely, Port Harcourt, Obio/Akpor, Emohua and Ikwerre LGAs. Like Kana, Kalabari and Ekpeye, it is one of the major languages of Rivers State used in broadcasting in the electronic media (Alerechi 2007a: 1). Williamson (1988: 67, 71) classifies Ikwere as one of the Igboid group of languages as well as Igbo, Ekpeye, ogba, Echie, to mention but a few. Williamson & Blench (2000: 31) locate Igboid under the node of West Benue-Congo family of Niger-Congo phylum of languages. The



Ikwere language comprises twenty-four divergent dialects, which are mutually intelligible. It is yet to develop a standard dialect. However, there are published works such as Donwa-Ifode & Ekwulo's (1987) *Ikwere Orthography*, *Tesitament Iikne* (a translated New Testament Bible), and some recent scholarly works in the language.

Some of the works like Williamson (1980), Donwa-Ifode & Faraclas (2001), among others, observe different realization of some phonological segments in Ikwere. In fact, Alerechi (2007a) specifically identified some phonological processes responsible for the different realizations of segments, which may have contributed to the divergent nature of the Ikwere language. Some of such processes are loss of suction of labial implosives causing them to become labial plosives, the spirantization (weakening) of labial and alveolar plosives to labial and alveolar fricatives, respectively, the voicing of alveolar fricatives, etc.

It is interesting to note that these studies are focused on the adult use of the Ikwere language to the neglect of the area concerning child language. This serves as a motivation for this paper. Given that the general trend for children is to change the sounds of the language in an attempt to use them, this paper is aimed at identifying such changes and consequently the phonological processes characteristic of Ikwere children aged 3 to 4 years. Following the assertion of Fromkin et al. (2003a: 358) that early phonological rules generally reflect natural phonological processes that occur in the adult (target) language, this paper further investigates if the phonological processes in child language are identical with those of the adult (target language).

This paper focuses on Qdeegnu (Odgn), Emowha (Emwh), Akpo, Aluu and Omuanwa (Omnw) dialects of Ikwere, an Igbooid language spoken in Rivers State of Nigeria. Even though the sound substitution in child language involves both consonants and vowels, this paper specifically focuses on the substitution of consonants of the target language for those characteristic of the child's language.

1.1 Literature review

This section gives a brief review of literature in child language acquisition. It specifically treats the phonological development, phonological processes and outlining the target sounds.

1.2 Phonological development

Communication is a natural phenomenon to every human being. Thus, to enable children to communicate with others in their environment, they need to acquire the language. O'Grady et al. (2011: 361) state that the ability of children to produce speech sounds begins to emerge at around six months with the onset of babbling. Babbling enables the children to experiment with and begin to gain control over their vocal apparatus. It increases in frequency until the age of about twelve months, when the children begin to produce their first understandable words.

Scholars have investigated the order of acquisition of sounds by the children and some observed that among the earlier sounds are the back velar sounds [k] and [g], and front

vowels like [a], [i] and [e]. Others recognize the bilabials [m], [p] and the alveolar sounds [n] and [d] demonstrated in such sequences as ma, pa, di (Bolinger 1975: 283; Labarba 1981: 344; Ojukwu & Alerechi 2011: 69). There is a contrary view that children acquire velar consonants before the bilabials and alveolars (Anthony et al. 1971: 45). In line with this view, Alerechi & Awala (2012: 257) observe that Ekpeye children below age three replace the velar plosives [k] or [g] with the alveolar plosives [t] or [d], respectively. This implies that despite the similarity observed in the order in which children acquire speech sounds, individual differences still abound. In fact, each child develops his own systematic way of producing adult forms within his limited scope of sound sequences (Menn 1992: 813).

In spite of a good deal of variation observed from one child to the other in terms of the order of mastering sounds in production and perception, the general tendencies as outlined by O'Grady et al. (2011: 362) seem to exist. Based on the manner of articulation (stricture), stops tend to be acquired before other consonants. In terms of place of articulation, labials are often acquired first followed (with some variation) by alveolars, velars, alveopalatals.

Realizing that sounds do not exist in isolation but in sequences to form morphemes or words, such sequences comprise vowel and consonant. Thus, vowel and consonant occur in a sequence to make up syllable structure and children tend to simplify the syllable or word structure of the target language. Children structures are mainly CV, CVCV (Akpan 2004: 25). This implies that in the acquisition of the adult speech by the children certain phonological processes are in operation.

1.3 Phonological processes

Phonological processes are those changes which segments undergo that result in the various phonetic realizations of the underlying phonological segments (Yul-Ifode 1999: 144). Children adopt certain phonological processes to attain to the adult sounds. According to Akpan (2004: 26), phonological processes in children are short-cut processes that operate on the child's speech in his attempt to attain the adult target. As the child's chronological age increases, the phonological processes decrease to conform to the phonological system of the language. Akpan (2004: 27) further notes three major classifications of the phonological processes: substitution, assimilatory and syllable structure processes. In addition to these major classifications, Yul-Ifode (2003: 2) recognizes dissimilation (intervocalic consonant devoicing) as a fourth major process. Of the four major phonological processes identified in the literature, the present paper focuses on consonant substitution in children speech.

Substitution is the systematic replacement of one linguistic feature for another or one phoneme for another that the child finds easier to articulate (Fromkin et al. 2003b: 357; Akmajian et al. 2008: 491; O'Grady et al. 2011: 365). O'Grady et al. (2011: 365) identified common substitution processes to include stopping, the replacement of a fricative by a corresponding stop; fronting, the moving forward of a place of articulation; gliding, the replacement of a liquid by a glide; and denasalization, the replacement of a nasal stop by a

non-nasal counterpart. Scholars like Akmajian et al. (2008), Akpan (2008), David (2009), Akpan (2010), Alerechi & Ojukwu (2010) and Ojukwu & Alerechi (2011) have equally identified various forms of sound substitution in child language in different languages. The present paper treats the consonant substitution in Ikwere.

1.4 The target sounds

There are nine phonetic oral vowels [i ɪ e ε a o ɔ ʊ ʊ], and eight phonetic nasalized vowels [ĩ ĩ ē ã õ õ ã] in Ikwere (Donwa-Ifode & Ekwulo 1987: 42–43; Alerechi 2007a). They are summarized in the vowel charts on Figure 1 and Figure 2 respectively.

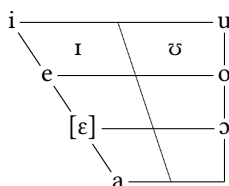


Figure 1: The Ikwere phonetic oral vowels.

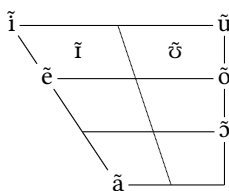


Figure 2: The Ikwere phonetic nasalized vowel.

Contrary to Donwa-Ifode & Ekwulo (1987: 42–43), which see [e] and [ε] as the allophonic variants of the phoneme /e/ in Ikwere, Alerechi (2007a: 65) observed that the vowel [ε] contrasts with other vowels in some dialects and is an allophonic variant of /e/ in some other dialects. It is also noted that beside the distinctive nasal vowels recorded in the language, vowels in the environment of nasal consonant may or may not be nasalized.

On the other hand, Ikwere records thirty-one phonetic consonants as shown in Table 1. There is no long consonant in the language.

Of the thirty-one consonants recorded in the language twenty-eight of them are phonemic. Following Alerechi (2007a: 98), the number of the phonemic consonants in each of the dialects, however, varies. It ranges from twenty-six to twenty-eight.

All the sounds in parentheses in Table 2 occur in Qgkr. Whereas one or more of these sounds are allophone(s) in some dialects, and do not exist in others. Alerechi (2007a: 99)

Table 1: The phonetic consonants of Ikwere (adapted from Donwa-Ifode & Ek-wulo 1987).

Manner of articulation	Place of articulation										
	Labial		Alveolar		Palatal	Velar		Labialized velar	Labial-velar	Glottal	
Nasal	m		n		ɲ	ŋ		ŋ ^w			
Plosives	p	b	t	d		k	g	k ^w	g ^w	ʔ	
Implosives	ɓ	ɗ									
Affricatives					tʃ	dʒ					
Fricatives	f	v	s	z	ʃ	ʒ	ɰ	h ^w		h	
Tap					r						
Central approximants					j					w	
Lateral approximant					l						

Table 2: The phonemic consonants of Ikwere.

Manner of articulation	Place of articulation									
	Labial		Alveolar		Palatal	Velar		Labialized velar	Labial-velar	Glottal
Nasal	m		n		ɲ	ŋ		ŋ ^w		
Plosives	(p)	(b)	t	d		k	g	k ^w	ɡ ^w	
Implosives	ɓ	ɗ								
Affricatives					tʃ	dʒ				
Fricatives	(f)	(v)	s	z			ɰ	h ^w	h	
Tap			ɾ							
Central approximants					j					w
Lateral approximant			l							

gives clear picture of the occurrence of [p b f v] in the dialects of Ikwere as shown in Table 3 - Table 7.

Table 3 shows that /p b f v/ are phonemic in Ọgkr.

Table 3: Ọgkr.

p	b
f	v

Table 4 records /p b v/ as phonemes in the above dialects.

Table 4: Ozha, Ọmnw, Ubma, Akpb, Egbd, Elle, Omdg, Ubm̄n Om̄l and Apni.

p	b
-	v

Table 5 illustrates that /b f v/ are phonemic in Ẹmwh.

Table 5: Ẹmwh.

-	b
f	v

The dialects in Table 6 record only /p b/ as phonemes.

Table 6: Akpọ, Obio, Aluu, Igwr Om̄gw, Iskp, Ipo and Omdm.

p	b
-	-

Table 7 is the reverse of Table 6 as only /f v/ are phonemic in the four dialects.

Table 7: Rmkp, Rnd̄l, Ọdgn and Ib/Ob.

-	-
f	v

The foregoing Table 3 - Table 7 demonstrate the occurrence the consonants /p b f v/ in the various dialects of Ikwere. The present study, therefore, intends to find out among other things, if children from the dialects without any of these sounds would manifest such in course of acquiring the language.

1.5 Methodology

The wordlist used in collecting data from the subjects was drawn from the wordlist collected by Alerechi (2007b) for treating labial variation in Ikwere. It contains seventy-two words of everyday life obtainable in the environment of the subjects. The words contain different sounds of the language and are made up of monosyllabic, disyllabic and polysyllabic structures, giving such structures as V, CV, VCV, VCVCV, etc. The data were collected from each of the subjects by imitation and object pointing methods at their residence. The visit to each subject's residence during the period of data collection was about two to three times in order to elicit the accurate forms of the subject's speech. The subjects' speech forms were recorded manually and finally transcribed for analysis. The study adopts a descriptive approach in analyzing the data. It focuses on identifying and analyzing the substitution patterns and processes of consonants in the speech of the Ikwere children. The data was also analyzed using SPSS. Descriptive statistics was carried out to describe the performance of the subjects. The different occurrence of the consonants produced by the adult and subject in each dialect, were converted to quantitative data which was presented as percentages using Bar Charts.

1.6 The subjects

The subjects consulted during the period of data collection are seven; however, five of them were selected for the analysis because a comparison of the speech forms of two subjects from the same dialect area showed a replication of the other. The five subjects comprise three female and two male and fall within the age range of 3 to 4 years (3, 3, 3 ½, 3 ½, 4). They were selected from Odeegnu, Emowha, Akpo, Aluu and Omuanwa so as to investigate if in the course of sound change, a child from a particular area would manifest forms typical of those of other area(s) or not. Table 8 summarizes details of the subjects.

Table 8: Data on the subjects.

Subject	1. VN	2. MA	3. EE	4. IN	5. GW
Gender	Female	Male	Female	Female	Male
Age	3 years	3 years	3 ½ years	3 ½ years	4 years
Village	Rumuodogo	Elibarada	Rumuolumini	Omuokiri	Ubordu
Dialect	Odeegnu	Emowha	Akpo	Aluu	Omuanwa

1.7 Consonant substitution

There are twenty-eight phonemic consonants /m n ɲ ŋ p b t d k g k^w g^w ɸ ɓ ɗ ɟ f v s z ɥ h^w h r j w l/ in Ikwere. Some of these consonants are replaced with some others in child language. The pattern of substitution reflects those involving different states of the glottis, places of articulation and manners of articulation. The pattern reflecting different states of the glottis sometimes overlap with those of places of articulation. I, therefore, present the various substitutions based on manner of articulation.

1.7.1 Substitution according to manners of articulation

The different manners of articulation observed in the data involve the plosives, fricatives, affricates, implosives, approximants, etc.

1.7.2 Substitution of plosive with plosive

The substitutions here reflect those involving states of the glottis or places of articulation. Hyman (1975: 16) observed that the general tendencies in child language include the learning of voiceless stops before voiced stops. This phenomenon is identified in this paper in the utterances of children above the age of 3 to 4. Thus, where the target language records the voiced stops [b] or [d], the tendency is for the children above age 3 to 4 to replace them with their voiceless counterparts [p] or [t], respectively. Table 9 is, therefore, strong evidence that Ikwere children are not left out in first acquiring voiceless consonants and subsequently revert to the target forms. The table shows the Odgn subject replacing the voiceless velar plosive [k] with the voiceless alveolar plosive [t] of the target.

Table 9: d → t: b → p, k → t.

Odeegnu		Emowha		Akpo		Aluu		Omuanwa		Gloss
Target	VN 3yrs	Target	MA 3½yrs	Target	EE 3½yrs	Target	IN 3½yrs	Target	GW 4yrs	
m̥p̥oró áká	m̥p̥otó átà	m̥p̥oró áká	m̥p̥èrè-áká	m̥p̥èrè-áká		isíní áká	ip̥èní á'ká	m̥p̥èrè áká	ip̥èlé á'ká	'elbow'
ábà	ábà	ábà	ábà	ábà	ábà	ábà	ábà	ábà	ápà	'jaw'
zɪ	ɗɪ	zɪ	zɪ	zɪ		zɪ	zɪ	ɗɪ	tè	'is'
ákítì	átítì	ákɪɗɪ	ákɪɗɪ	ákɪɗɪ		ákísì	ákítì	ákɪɗɪ	ák'á	Beans (brown)

There is also the tendency of the Ikwere subjects replacing complex articulated (labialized) sounds with those of simple articulation (single segments). This phenomenon is predominant in the speech form of the Odgn child, even though children from other dialect areas manifest traces of this phenomenon. Consider the data in Table 10. Note that the data include the simplifying of labialized fricative and nasal.

1.7.3 Substitution of plosive with fricative

The pattern of substitution treated in this section reflects those involving [v] with [b], and vice versa, and that of [s] with [t]. While children from Emwh and Akpo show preference for [b] instead of [v] of the target language, they, conversely, replace [v] with

Table 10: kw → k; kw → t; gw → g; hw → w, ηw → m.

Odeegnu		Emowha		Akpo		Aluu		Omuanwa		Gloss
Target	VN 3yrs	Target	MA 3½yrs	Target	EE 3½yrs	Target	IN 3½yrs	Target	GW 4yrs	
vékʷũ	vétũ	békʷũ	békʷũ	békʷũ	békʷũ	békʷũ	békʷũ	békʷũ	békũ	Greet
ékʷá	etá	ékʷá	ánkʷá	ákʷá	áká	ákʷá	ɲ'ká	ákʷá	ákʷá	Cry
ékʷá	átá	ékʷá	ékʷá	ákʷá	áká	ákʷá	á'kʷá	ákʷá	ákʷá	Egg
enʷus	emus	enʷus	emus	ànʷus	ànʷus	ànʷus	ànʷus	ànʷus	áwus	Death
ékʷá	átá	ékʷá	ákʷá	ákʷá	ákʷá	ákʷá	ákʷá	ákʷá	ákʷá	Bush fowl
ɛ'ɲʷá	ámà	ɔ'ɲʷá	enʷá	ɔ'ɲʷá	ɔ'má	ɔ'ɲʷá	ɔ'ɲʷá	ɔ'ɲʷá	ɔ'ɲʷá	Moon
ehĩ	eji	ehĩ	àji	ehĩ	àhĩ	àhʷus	àwus	àhʷus	àwus	Body
ɖɪ	ɖɪ	ɖɪ-	ɖɪ	ɖɪ	ɖɪ	gʷus	gɔ	gʷus	gʷus	Given (name)
ɔʃɪ	ɔʃɪ	ɔʃɪ	ɔʃɪ	ɔʃɪ	ɔʃɪ	ɔkʷus	ɔkũ	ɔkʷus	ɔkʷus	Leg

[b] as demonstrated in Table 11. The data further show the children in the choice of [t] for [s] of Aluu. The substitution in this section agrees with the observation of Crystal (1997: 242) that the replacement of fricatives with stops is one of the possible trends for children in language acquisition. It is worthy of note that this substitution seem peculiar to children that are above age 3 to 4.

Table 11: s → t; v → b; b → v.

Odeegnu		Emowha		Akpo		Aluu		Omuanwa		Gloss
Target	VN 3yrs	Target	MA 3½yrs	Target	EE 3½yrs	Target	IN 3½yrs	Target	GW 4yrs	
tó-	tɔ-	tòrũ	tòrũ	só	ʃó	só	só	tò	tòrũ	'follow'
óvirízi	óvilidɪ	óbírízi	óbíjiz	óbírízi	óbílízi	óbírízi	óbírízi	óbúrúzu	óbúlúsu	'sympathy'
évulù	ávulù	évulù	évunù	évulù	ébùlù	ébùlù	ébùrù	mfùlù	évulù	'ram'
divjà	-	dibjà	divjà	dibjà	-	dibjà	dibjà	dibjà	dibjà	'doctor'
tó	ɖɔ	tó	tó	só	-	só	só	tó	tó	'grow'
mɔvɔ	mɔvɔ	mɔvɔ	mɔbù	mɔbɔ	mɔbɔ	mɔ'bvɔ	mɔ'bvɔ	mɔ'vɔ	mɔ'fɔ	'comb (in)'
ɔvɔʃɪ	ɔvɔʃɪ	ɔvɔʃɪ	ɔbɔʃɪ	ɔbɔʃɪ	ɔbɔʃɪ	ɔbɔʃɪ	ɔbɔʃɪ	ɔbɔʃɪ	ɔbɔʃɪ	'day'
òvèdɖɛ	òvèdɖɛ	òbèdɖɛ	èvèdɖɛ	òbòdɖò	òbòjò	òbèdɖɛ	òbòdɖɛ	òbèdɖɛ	òbòdɖò	'mudskipper'
àkítì	àtítì	àkɪɾɪ	àkɪɾɪ	àkídi	-	àkísi	àkítì	àkɪɾɪ	àkwà	Beans (brown)

1.7.4 Substitution of fricative with fricative

In addition to substituting voiced stops with their voiceless counterparts, Table 12 further proves that the replacement of voiced consonants with their voiceless counterparts extends to the fricatives. The substitution is, however, predominant in the speech of an Omnw child of 4years old than those of Odgn of 3years and Akpo of 3½ yrs as the data demonstrate. Thus, the children replace [v] and [z] of the target language with [f] and [v], respectively. Our data show that the changes occur both word-initially and word-medially indicating that there is no conditioning factor for the change. The data further demonstrate the tendency of the child from Omnw replacing some of the vowels in initial position with a syllabic nasal. This additional peculiarity observed in the speech of the Omnw child, further strengthens the claim of the presence of a slight speech problem

in this child's language. This, however, requires further investigation in other to confirm our claim.

Table 12: $v \rightarrow f$, $z \rightarrow s$.

Odeegnu		Emowha		Akpo		Aluu		Omuanwa		Gloss
Target	VN 3yrs	Target	MA 3½yrs	Target	EE 3½yrs	Target	IN 3½yrs	Target	GW 4yrs	
sá	sá	sá	sá	zá	-	zá	zá	zá	sá	'imitate'
ú' sù	úḑù	ú' sù	ú' sù	í' zù	ɪfu	í' zù	í' ḑù	ú' zù	ú' sù	'corpse'
sù	ʃù	sù	sù	Zù	zù	zù	ḑù	zù	sù	'steal'
asò	ɔʃɔ	asò	àsò	àzò	àzò	àzò	àḑù	àzò	àsò	'back'
ɔ' sò	ɔʃɔ	asù	asù	ázò	áfɔ	ázò	áḑɔ	ázò	àsò	'fish'
zɔ	ḑɔ	zɔ	zɔ	zɔ	sɔ	zɔ	ḑɔ	zɔ	sɔ	'buy'
zɔ	ḑɔ	zɔ	zɔ	zɔ	ḑɔ	zɔ	zɔ	zɔ	sɔ	'step on'
ézè	-	ézè	ézè	ézè	ézè	ézè	éḑè	ézè	ésè	'king'
-	-	rvù	rvù	rvù	rvù	ibù	í' bù	ivù	mfù	'load'
ɔpi	rvù	rvù	rvù	rvù	rvù	ibù	ibù	rvù	mfù	'fat'
èvùlù	àvùlù	èvùlù	èvùlù	èvùlù	èbùlù	èbùlù	èbùrù	mfùlù	èvùlù	'ram'
ɔzà	áḑzà	ɔzuzà	ázuzà	ɔzuzà	ɔsisà	ɔzizà	ɔḑizà	ɔzizà	ɔsisà	'broom'
và	fà	và	và	bà-	bà	bà	bà	bà	bà	'enter'

1.7.5 Substitution of fricative with affricate

There is also the substitution of the alveolar fricatives [s] and [z] of the adult utterance with the palato-alveolar affricates [ʃ] and [ḑ], respectively, in children pronunciation. Thus, where Odgn, Akpo and Aluu adult articulate [s] or [z], the choice for the children is [ʃ] or [ḑ], respectively, indicating the affrication of these fricatives. Occasionally, the children substitute [s] for [ḑ] or [z] for [ʃ] as demonstrated in Table 13. The substitution

Table 13: Fricative versus affricate: $s \rightarrow ʃ$; $z \rightarrow ʃ$, $z \rightarrow ḑ$.

Odeegnu		Emowha		Akpo		Aluu		Omuanwa		Gloss
Target	VN 3yrs	Target	MA 3½yrs	Target	EE 3½yrs	Target	IN 3½yrs	Target	GW 4yrs	
ú' sù	úḑù	ú' sù	ú' sù	í' zù	ɪfu	í' zù	í' ḑù	ú' zù	ú' sù	'corpse'
sù	ʃù	sù	sù	Zù	zù	zù	ḑù	zù	sù	'steal'
asò	ɔʃɔ	asò	àsò	àzò	àzò	àzò	àḑù	àzò	àsò	'back'
ɔ' sò	ɔʃɔ	asù	asù	ázò	áfɔ	ázò	áḑɔ	ázò	àsò	'fish'
zɔ	ḑɔ	zɔ	zɔ	zɔ	sɔ	zɔ	ḑɔ	zɔ	sɔ	'buy'
zɔ	ḑɔ	zɔ	zɔ	zɔ	ḑɔ	zɔ	zɔ	zɔ	sɔ	'step on'
ó' sù	óʃù	ó' sù	ósù	ó' sù	ó' sù	é' sù	é' ʃù	é' sù	ú' sù	'millipede'
sɔ	ʃɔ	sɔ	sɔ	sɔ	ʃɔ	sɔ	ʃɔ	sɔ	sù	'pound (yam)'
só	ʃó	só	só	só	ʃó	sù	sù	só	só	'wash'
ɔsɔ	ɔʃɔ	ɔsɔ	ɔsò	ɔsɔ	ɔʃɔ	ɔsɔ	ɔsɔ	ɔsɔ	ɔsɔ	'bat'
sɔ	ʃɔ	sɔ	sɔ	sɔ	ʃɔ	sɔ	sɔ	sɔ	sɔ	Forbid or respect
tó-	tɔ	tó	tò-	só	ʃó	só	só	sò	tò-	Follow
zɪ	ḑɪ	zɪ	zɪ	zɪ	-	zɪ	zɪ	dɪ	tè	'is'
nɪ	nḑɪ	nɪ	nɪ	nɪ	nɪ	nɪ	nḑɪ	nɪ	idɪ	'husband'
óvirizí	óvilidḑɪ	óbirizí	óbijiz	óbirizí	óbilizí	óbirizí	óvirizí	óbúrú	óbúlúsù	'sympathy'

of alveolar fricatives with palato-alveolar affricates is restricted to the child of 3 years, whereas the replacement of the voiced alveolar fricative with the voiceless counterpart seems peculiar to the child of 4. This phenomenon, though, geographically determined is observed in the adult speech, the impression of this paper is that it may be a case of speech impediment in the utterance of this 4 year old child.

1.7.6 Substitution of fricative with approximant/null

The majority of the children have not acquired the glottal fricative [h]. The data in Table 14 demonstrate that they either delete it wherever it occurs in the target form or replace it with [j]. See Table 14.

Table 14: $h \rightarrow j$, $h \rightarrow \emptyset$.

Odeegnu		Emowha		Akpo		Aluu		Omuanwa		Gloss
Target	VN 3yrs	Target	MA 3½yrs	Target	EE 3½yrs	Target	IN 3½yrs	Target	GW 4yrs	
há	á	-	-	þé	pé	-	-	þé	pé	Peel (orange)
úhjé	újeá	úhjé	újé	ihjé	ijé	ihjé	ijé	úhjí	újé	Red
ehí	ɛji	ehí	àji	ehí	àhi	àhʷɔ	àwɔ	àhʷɔ	àwɔ	Body

1.7.7 Substitution of tap with lateral or nasal

The tendency is also recorded of Ikwere children to use the alveolar lateral approximant instead of tap or nasal. Thus, where the adult use the alveolar[r], the children show preference for the alveolar lateral [l] or the alveolar nasal [n]. This substitution is characteristic of children that cut across ages 3 to 4 as shown in Table 15.

Table 15: $r \rightarrow l$, $l \rightarrow r$.

Odeegnu		Emowha		Akpo		Aluu		Omuanwa		Gloss
Target	VN 3yrs	Target	MA 3½yrs	Target	EE 3½yrs	Target	IN 3½yrs	Target	GW 4yrs	
ɛpárá	ɔpálá	ɔpárá	ɔpálá	ɔpárá	ɔpára	ɔpárá	ɔpána	ɔpárá	ɔpálá	'first son'
óvirizi	óvilid̥i	óbirizi	óbijiz	óbirizi	óbilizi	óbirizi	óvirizi	óbúrúzu	óbúlúsú	'sympathy'
m̥pòró ákà	mpótó átà	m̥pòró ákà	m̥pèrè-ákà	m̥pèrè-ákà	-	isíní ákà	ipèní á'ká	m̥pèrè ákà	ipèlè á'ká	'elbow'
ùrì	ùlì	ùrì	ùlì	l̥rì	ilì	irì	ùlì	ùrì	ùlì	'indigo'
rì	-	rì	rì	rì	-	rì	lì	rì	lì	'eat'
ɲʷɔ	-	ɲʷɔ	ɲʷó	ɲʷɔ	-	rì	wɔ	rì	lì/lìlì	'drink'
ɔ'ló	ɔrɔ	ó'ló	ó'ró	ó'ló	ɔ'rɔ	é'ló	á'rɔ	é'ló	é'ló	'antelope'

1.7.8 Substitution of implosive with plosive

The replacement of the labial implosive [ɓ] of the target language with the labial plosive [p] serves as another trend in the speech of Ikwere children. Thus, where the choice in the target language is [ɓ], the children use [p] as demonstrated in Table 16. The data show that the substitution of [ɓ] with [p] cuts across ages 3 to 4. A similar trend is observed

with the voiced counterparts [ɓ] and [b]. This implies that the acquisition of [ɓ] and [b] is a later development in the language of children.

Table 16: ɓ → p, ɓ → b.

Odeegnu		Emowha		Akpo		Aluu		Omuanwa		Gloss
Target	VN 3yrs	Target	MA 3½yrs	Target	EE 3½yrs	Target	IN 3½yrs	Target	GW 4yrs	
ɛpárá	ɔpálá	ɔpárá	ɔpálá	ɔpárá	ɔpára	ɔpárá	ɔpáná	ɔpárá	ɔpálá	First son
m̥póró áká	m̥pótó áká	m̥póró áká	m̥pèrè-áká	m̥pèrè-áká		isíní áká	ipèní á·ká	m̥pèrè áká	ipèlè á·ká	Elbow
ɓó	-	ɓó	pé	ɓó		ɓó	pé	ɓó	pé	Scrape
ɓó	-	ɓó	pó	ɓó	Pó	ɓó	pó	ɓó	pó	Pack waste
há	á	-	-	pè	pè	-	-	pé	pè	Peel (orange)
-	-	vó	vú	ɓó	Pó	bó	bó	bó	bó	Accuse
àbà	àbà	àbà	àbà	àbà	àbà	àbà	àbà	àbà	àpà	Jaw

The data in this paper demonstrate that sound substitution in child language also involves the vowels. From the data, however, the replacement of sounds involving vowel are not as recurrent as those of the consonants. This agrees with previous studies that vowels are acquired earlier by children than consonants. By the age of 3 years most vowels sounds would have been established hence, no need for much substitution. Tonal substitution in the language is not significant in children speech as shown in most of the data.

1.8 Substitution processes

The various substitution patterns observed in this paper give additional evidence of the simplification of adult (target) language by children. It is observed that as children develop, the substituted sounds are dropped to conform to the adult forms when they have gained greater articulatory control. Recalling that the substitutions are not haphazard but rule governed, an interesting question would be what rules do children impose to simplify the adult language? In other words, what are the phonological processes operating to relate the child utterances with the target forms? Considering the divergent nature of the Ikwere language, Alerechi (2007a) identified a number of phonological processes relating one form of speech of a particular geographical location with the form of the others, one of which is the reflex of the proto-form, while others are likely innovations. Thus this section does not only identify the phonological processes in operation, but also draws attention to the processes that are identical with those of the adults as in the speech of different geographical areas and those that are typical of child language. The following subsections discuss the phonological processes observed in this paper.

1.9 Strengthening and spirantization (weakening)

Bearing in mind the replacement of plosives with fricatives and vice versa, I observed the processes of strengthening and spirantization (weakening), respectively, in Table 11. Alerechi (2007a: 262) earlier observed the spirantization (weakening) of [b] of some di-

affects to [v] in some other dialects but not the strengthening of [v] to [b]. In child language, however, there is an addition of the phonological process of strengthening of [v] of the adult form to [b] showing that the process reflecting the change of [v] to [b] is typical of children in Ikwere, whereas that involving the change of [b] to [v] is identical with the adult speech.

1.10 Loss of suction and a shift to plosive

Concerning the substitution of [β] with [p], we note a loss of suction of labial implosive of the adult language and a shift to labial plosive in child language. Alerechi (2007a: 260) recognized this phonological process in Ikwere. Here children from the dialect areas with the preponderant use of [β] show preference for [p] of some other dialect areas. This change does not only reveal that the phonological process in child language is identical with the adult language, it also proves that phonological substitution characteristic of child language is rule governed.

1.11 (Successive) affrication (and (de)voicing)

For the change of fricatives with affricates, two phonological processes are in operation. One is the affrication of [s] to [tʃ] and [z] to [dʒ] depending on voicing. Another is the successive affrication and voicing or devoicing of fricatives as in [s] changing to [dʒ] and [z] changing to [tʃ]. Even though Alerechi (2007a: 261) observed affrication in adult language, this affrication is different as it reflects [s] and [tʃ] or [z] and [dʒ] and not [t], [tʃ], [ʃ] and [s] as in the adult language.

1.12 De-labialization

De-labialization is a process whereby the feature of lip rounding on the primary stricture is lost. In Table 10, it is observed that all the subjects replaced the main stricture in either one or more of these changes [k^w→ k; k^w→ t; g^w→ g; h^w→ w, ŋ^w→ m]. Even though a child may have produced any of the labialized sounds accurately, labialized sounds are among the difficult consonants for the children to acquire since all the subjects manifested de-labialization process.

1.13 Gliding

Gliding in child phonology is a process whereby any consonant is realized as a glide (Yul-Ifode 2008: 255). In addition to producing accurately [j] as in the target form, the Odeegnu and Emowha subjects produce [h] as [j] intervocalically, indicating that [j] is among the early sounds in child language acquisition.

1.14 Denasalization

Even though this paper focuses on consonants, we observed a preponderance loss of nasalization of nasalized vowels in child language in our data especially in Table 16. Thus the phonological process of denasalization of certain vowel segments of the target language is evident of child language. Though Alerechi (2007a: 249) observed denasalization in the adult language, it is not as predominant as that in child language, showing that loss of nasalization is one of the ways children actually simplify their pronunciation. In fact nasalizing a vowel segment requires extra energy or force and more natural for children to neglect it than the adults. This explains why we record a preponderance loss of nasalization in children speech forms more than those of the adults.

2 Interpretations

The foregoing substitutions of segments in the language of Ikwere children are evidence of simplification of items of the target pronunciation of the Ikwere consonants. In an attempt to articulate the sounds of the language, Ikwere children, like other children, change the sounds when trying to attain the target form thus, resulting in imperfect rendering of some of the target sounds. The imperfect representations of the adult sounds generate ambiguous forms and this contributes significantly to the communication gap existing between children and adults. While the children understand the adults, but find it difficult to communicate effectively, the adults, on the other hand, have achieved greater articulatory control of the target language, but cannot grasp fully the intentions of the children. This could create serious problems such as frustration on the part of the adults, particularly, the impatient ones and dissatisfaction, resentment and most likely, seclusion on the part of the children if the gap is not bridged as the adult may not reach their needs. However, it is the parents that understand their children better than any other person.

The various phonological processes observed in §1.5, which demonstrate that the processes in both adults and children's forms of speech are to a great extent identical with slight differences also has implication. The similarities indicate that the gap in communication existing between adults and children could be bridged particularly if the adults are conversant with the forms of the varieties spoken in other geographical locations. For the forms peculiar to children, an exposure to what should be expected could facilitate communication and reduce communication gap to the barest minimum.

2.1 Performance scores of consonants

Table 17 represents the phonetic consonants of Ikwere observed in the data. It shows the articulatory activity of each subject. The total occurrence of each consonant is obtained by counting the number of occurrences of the sound in the words elicited from both the target and the subjects. These were converted to quantitative data and presented as percentages using bar charts. The bar charts displaying the performance of the children

from Odeegnu, Emowha, Akpo, Aluu and Omuanwa are represented in Figure 3 to Figure 7. It should be noted that twenty-three (23) consonants were observed in the data collected. Due to dialectal difference all the consonants did not manifested in the target of all the dialects. Thus Odeegnu records 17; Emowha and Akpo have 19 consonants each, while Aluu and Omuanwa used 21 and 23, respectively.

2.2 Consonants in Odeegnu

Table 17 and Figure 3 show that the Odeegnu subject aged 3 years scored 100% in the production of [tʃ] and [dʒ]. It could be that the number of these sounds is limited or that the child has mastered them completely. The subject has acquired [v f t l d j] to a reasonable extent but not completely. The table and figure also show that the subject could not produce [ŋ^wg k^w β z r] and had difficulty in pronouncing [k]. The total performance of the subject in the production of the target consonants is 43.2%, which is below the average.

2.3 Consonants in Emowha

From Table 17 and Figure 4, it is observed that the Emowha male subject of 3 ½ years produced [t d k g ʃ dʒ f s z j] accurately and above the average in [k^w v ŋ^w]. He, however, scored zero percent in the production of [β ʋ h]. This subject seems to have acquired most of target sounds as against those that are yet to be included in his inventory. Table 17 puts the total performance of the Emowha subject in the production of target consonants at 75.6%.

2.4 Consonants in Akpo

From Table 17 and Figure 5, the Akpo female subject of 3 ½ years scored 100% in the production of [p b t d k g ʃ f j], above average in [dʒ v k^w] and has attained average score in [ŋ^w h l]. On the other hand, she scored zero percent in the production of [β] and less than average in [r s z]. Table 17 also shows that the subject has acquired 64.3% in the production all the target sounds.

2.5 Consonants in Aluu

Table 17 and Figure 6 show the Aluu male subject of 3 ½ years with 100% score in the production of the consonants [ŋ^w p t d k g β ʃ dʒ j], 93.8% in [b] and above the average in [s k^w]. However, the subject scored zero percent in the production of [g^w β h h^w w], and 14.3% and 25% performance scores in [r] and [l], respectively. The total percentage for the production of all the target consonants is 64.4%, indicating above average mastery of the target sounds.

Table 17: Frequency of occurrence for consonants.

Sound	Odeegnu			Emowha			Akpo			Aluu			Omuwanwa		
	T	1	%	T	2	%	T	3	%	T	4	%	T	5	%
ŋ ^w	3	0	0	3	2	66.7	2	1	50	2	2	100	2	1	50
p	-	-	-	-	-	-	1	1	100	3	3	100	2	2	100
b	-	-	-	4	2	50	9	9	100	16	15	93.8	12	11	91.7
t	4	3	75	4	4	100	2	2	100	2	2	100	2	2	100
d	3	2	66.7	4	4	100	2	2	100	3	3	100	6	4	66.7
k	3	1	33.3	4	4	100	1	1	100	3	3	100	4	3	75
g	1	0	0	2	2	100	1	1	100	3	3	100	2	2	100
k ^w	4	0	0	4	3	75	5	3	60	5	3	60	7	6	85.7
g ^w	-	-	-	-	-	-	-	-	-	1	0	0	1	1	100
β	2	0	0	5	0	0	3	0	0	4	0	0	5	1	20
b̄	-	-	-	2	0	0	-	-	-	1	1	100	1	0	0
ɸ	2	2	100	4	4	100	4	4	100	1	1	100	1	1	100
dʒ	4	4	100	4	4	100	4	3	75	2	2	100	2	2	100
f	5	4	80	4	4	100	1	1	100	-	-	-	2	2	100
v	10	9	90	10	7	70	4	3	75	-	-	-	4	0	0
s	11	2	18.2	11	11	100	7	2	28.6	9	6	66.7	8	6	75
z	6	0	0	8	8	100	10	4	40	13	5	38.5	11	0	0
h	3	0	0	2	0	0	2	1	50	1	0	0	1	0	0
h ^w	-	-	-	-	-	-	-	-	-	1	0	0	1	0	0
r	6	0	0	7	3	42.9	4	1	25	7	1	14.3	8	0	0
j	3	2	66.7	4	4	100	4	4	100	5	5	100	5	5	100
w	-	-	-	-	-	-	-	-	-	1	0	0	1	0	0
l	4	3	75	4	2	50	4	2	50	4	1	25	4	3	75
Total	74	32	43.2	90	68	75.6	70	45	64.3	87	56	64.4	92	52	56.5

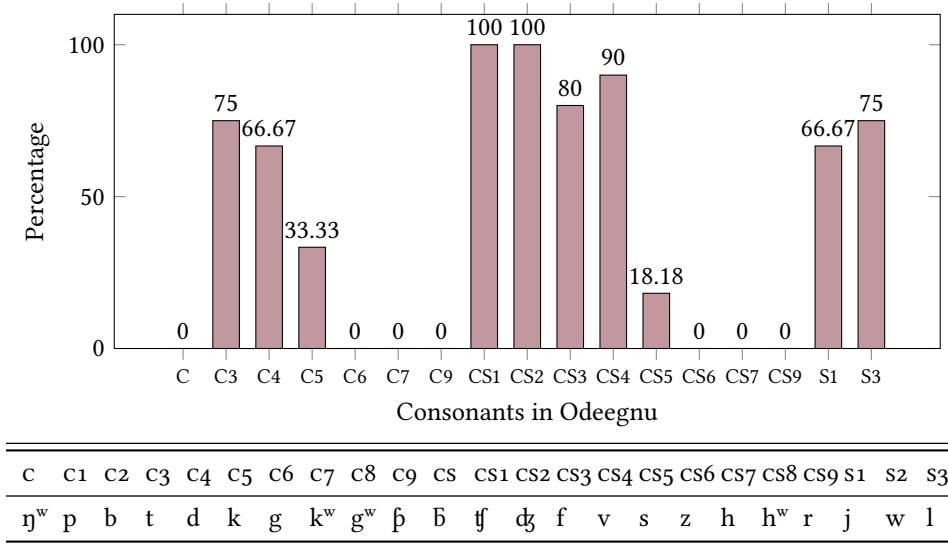


Figure 3: The Odeegnu subject performance in consonants.

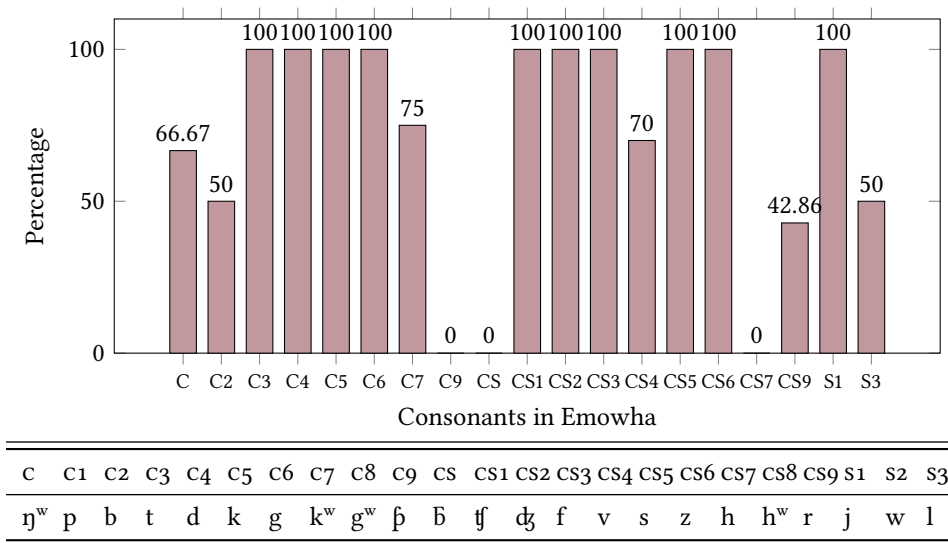


Figure 4: The Emowha subject performance in consonants.

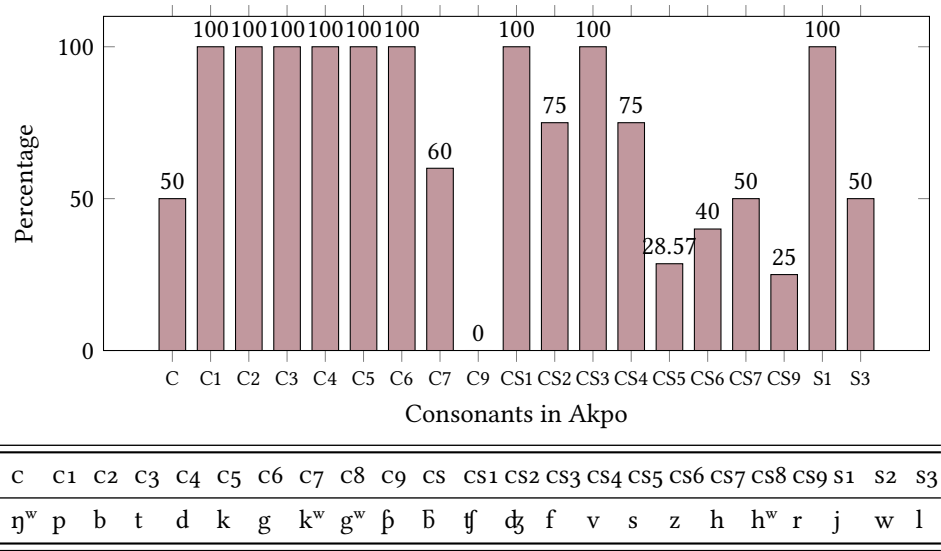


Figure 5: The Akpo subject performance in consonants.

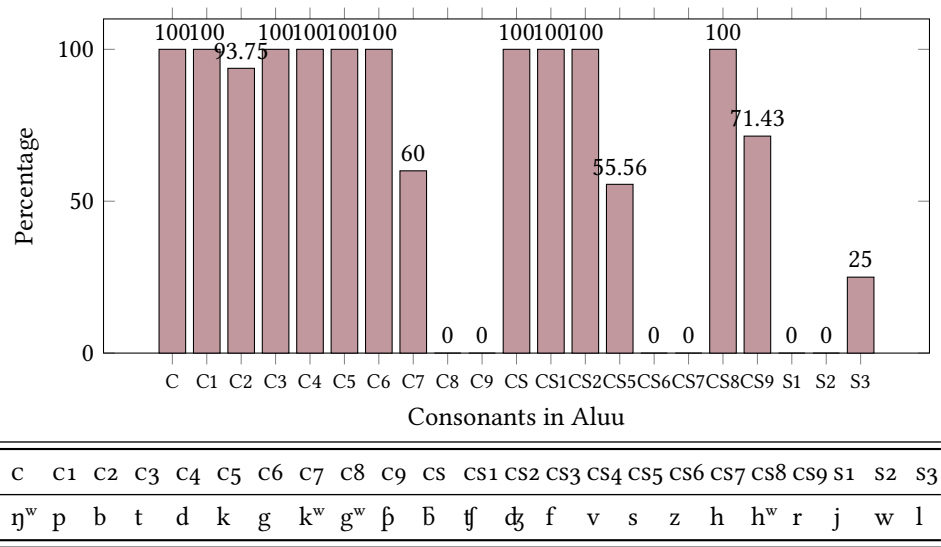


Figure 6: The Aluu subject performance in consonants.

2.6 Consonants in Omuanwa

The Omuanwa male subject of 4 years scored 100% in the production of [p t g g^w ɖ ɖ̃ f j]; 91.7% and 85.7% in [b] and [k^w], respectively, and 75% in [k s l]. For the difficult sounds, the subject obtained zero percent score for [ʋ v z h h^w r w] and 20% for [β]. The total performance of this subject in the production of all the consonants is 56.5% of the target. These are shown in Table 17 and Figure 7.

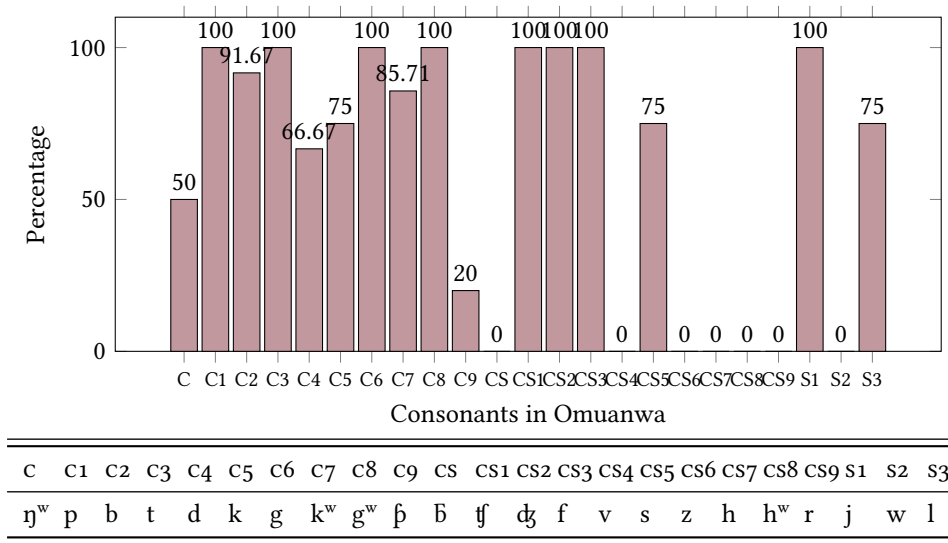


Figure 7: The Omuanwa subject performance in consonants.

3 Discussion

A close look at the performance of the subjects demonstrates that the majority of the subjects recorded 100% accuracy in the production of 9 to 10 consonants, except the Odeegnu subject that recorded only 2 consonants as shown in Table 17 and Figure 3 to Figure 7.

Comparing the total performance of target sounds by the subjects, therefore, it is observed that the Emowha subject has acquired a greater percentage of 75.6 of the adult sounds, followed by the percentage scores of 64.4 and 64.3 by the Aluu and Akpo subjects, respectively. The Omuanwa subject scored 56.5% and Odeegnu scored below average of 43.2%. While the reason for the low performance of the Odeegnu subject could be attributed to age factor (3 years) that of the Omuanwa subject may be due to delayed acquisition of the target or slight speech disorders. This, of course, requires further investigation before conclusion could be drawn.

Having noted the performance of individual subject in the target consonant, one may say that the easy sounds for Ikwere subjects generally are [p t k g d b ʈ ɖ ʃ f j] particularly if they occur in the target speech. On the other hand, [ɓ r h h^w] appear more problematic than other consonants. Some others not listed as either easy or difficult may be easy or difficult based on the unique articulatory performance of the subject. Thus, the plosives, affricates, fricatives and approximants seem not to constitute areas of difficulty, whereas the implosives, tap and glottal fricatives do.

4 Conclusions

In this paper, we have been able to identify the various changes children impose on the Ikwere (target) language as they articulate certain consonants. Some of these changes conform to the forms used by speakers of different geographical areas, while others are characteristic of child language. Adult speakers of Ikwere should be aware of the existing varieties of the language and the forms peculiar to children as this could facilitate communication between children and adults, thereby, preventing problems engendered by communication gap.

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