PHONOLOGY IN TEACHER EDUCATION IN NIGERIA:
THE IGBO LANGUAGE EXAMPLE

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Abstract

The goals of education cannot be achieved without language. Language is actively involved in the production of qualified teachers who will teach at various levels of the educational system. Furthermore, linguistics is the area of study that is concerned with objective and empirical study of language, and phonology undoubtedly is a crucial aspect of this set up. This paper addresses the issues of phonological facilitation and interference in both teacher training and general education in sub-Saharan Africa. These phonological phenomena are critically examined as they feature in Igbo, one of the major African languages, spoken predominantly in South-Eastern Nigeria. The sound system of Igbo influences that of the English of the native Igbo speakers. Therefore, this paper recommends that the language instructor should focus on the variations in the English of the native Igbo speakers in order to achieve a near Standard English by the Igbo speakers of English.

Phonology in Teacher Education in Nigeria: The Igbo Language Example

INTRODUCTION

Education cannot take place without language. Language is a formalized code used by a group of people to communicate with one another. All languages consist of a set of abstract symbols – sounds, letters, numbers, elements of sign language – and a system for rules combining those symbols into larger units (Hulit & Howard, 2006; Owens, 2008, Heward, 2009). According to Heward (2009), the symbols and rules governing language are essentially arbitrary no matter what language is spoken. The arbitrariness of language means there is usually no logical, natural, or required relationship between a set of sounds and the object, concept, or action it represents. Languages are not static; they grow and develop as tools for communication as the cultures and communities of which they are part of change (Pence & Justice, 2008). Nearly 7,000 living languages are spoken in the world (Gordon, 2005). It is estimated that 60%-75% of the world's population speak more than one language (Baker, 2000).

Linguistics is the scientific study of language. Phonology is an aspect of linguistics that studies the sound level of language. This paper, therefore, sets out to investigate the relevance of phonology in the instruction and learning of English by native Igbo speakers in Nigeria. Our emphasis here is on the sound level of English as used by native Igbo speakers. Speakers' sound level is of great importance to the language instructor because it is the first aspect of language to be presented to the learner and to be acquired by the individual. It provides the teacher with an inventory of sounds (phonemes to be precise) and also with a detailed description of their productions (Roach, 1991:39).

Following Williamson and Blench's (2000) classification, Igbo belongs to the West Benue-Congo sub family of the Proto Benue-Congo language family. The Igbo people occupy what is politically known as the South-Eastern part of Nigeria. The Igbo language is spoken in the core Igbo states – Abia, Anambra, Ebonyi, Enugu and Imo – as well as in some parts of Bayelsa, Delta and Rivers states all in the Southern region of Nigeria. Going by the 2006 Nigerian population census, there are about fifteen million native speakers of Igbo.   The author identified certain phonemes of the various members of Igbo dialect clusters, with an assumption that the different dialect speakers have their peculiar characteristics in spoken English. The greatest influence on the pronunciation of English by native Igbo speakers is from the sound systems. On this note, Bamgbos e (1971) asserts that most of the phonetic characteristics in the English of Nigerians can be traced to the transfer of features from their local languages. Idowu (n.d) also asserts that Igbo speakers of English tend to transfer the vowel system of their language into English. Instances are taken from the pronunciations of the following words:

Igbo Realization		English	Gloss
[folo]	instead of	/fɒləʊ/	'follow'
[problem]	instead of	/prɒbləm/	'problem'

In affirmation to the above notion, Igboanusi (2002) observes that the differences which lie with the vowels, consonants and supra-segmental elements of English and Igbo often interfere in the pronunciation of English sounds. Similarly, Ubahakwe (1979) claims that a great deal of similarity has been observed not only in the English accents of all the Southern Nigerian ethnic groups like Edo, Efik, Tiv, Igbo and Yoruba, but all along the West coast of Africa.

In this regard, it is pertinent to note that several attempts have been made to ascertain the influence of Igbo on the instruction and learning of English using the standard variety of Igbo. This study sets out to examine the different Igbo dialect clusters according to Ikekeonwu's (1987) classification in order to determine the exact situation of phonological facilitation and interference. The results of this study will be of interest to Igbo language instructors and learners.

Methodology

The research design employed in this study was a general descriptive approach. Random sampling was used to select ten teachers and five hundred students in some public secondary schools in the Igbo-speaking states of Nigeria (Abia, Anambra, Ebonyi, Enugu and Imo). This selection is based on the dialect clusters of Ikekeonwu's (1987) classification of Igbo dialects. Structured interviews were employed to elicit information from the participants or informants, using a Sony cassette recorder. The informants were unaware of the tape-recording, though they were given prior notice that their speeches may be recorded. That notwithstanding, they did not know when the actual recording began. This resulted in the collection of their original speech forms.

The tone-marking convention employed in this paper is the one which leaves high tones unmarked, uses the grave accent (ˋ) for low tones and the raised macron (ˉ) for the step tone. The set of symbols used is that of the International Phonetic Association's Alphabet (the letters IPA are used to refer to the Association and also to its alphabet) revised to 2005.

The English Language Instruction and Learning in Igboland

The British colonial administration left English as a heritage in Nigeria, including the Igbo. To this effect, English is now the general language of education, government, internal and external communication, of literature, the media, business and commerce in Nigeria. The country has a total number of 527 languages (514= living languages; 2= second languages without mother tongue speakers; 11= no known speakers) (Lewis, 2009). The speakers of these indigenous languages pass their speech peculiarities to English which result in varieties of Nigerian English. A concerned Igbo writer on *kwenu*.com, Chinedum Maduabum argued that there is no doubt about English being a great medium of communication, but worried about the fast disappearing Igbo language among the Igbo. The Igbo language is widely spoken in almost all the countries of this world by the Igbo Diaspora; and the sound system influences the pronunciation of English, and this often results in non-standard pronunciation features (see Igboanusi, 2002 for similar argument).

Segmentals in Language Instruction and Learning

The English and Igbo phonemic inventories are discussed here.

English Phonemic Inventory

The phonemic inventory of a language involves a selection of significant speech sounds from an infinite range of speech sounds which the human speech organs can produce. The English

language has twenty-four consonantal sounds and twenty vocalic sounds. The vocalic sounds are further divided into twelve monophthongs and eight diphthongs.

The English phonemic inventory /p b t d k **g** tʃ dʒ m n ŋ f v θ ð s z ʃ ʒ h l r j w I i e æ ɑ ɒ ɔ ʊ u ʌ ə ɜ eI aI aʊ ɔI Iə əʊ ɛə ʊə/

Standard Igbo Phonemic Inventory
Standard Igbo phonemic inventory has thirty-six phonemes. These comprise twenty-eight consonants and eight vowels. The inventory /p b t d k g tʃ dʒ m n ŋ ŋw ɲ f v s z ʃ ɦ l r j w kp gb kw gw ɣ i ɪ e a ɔ o ʊ u/

Phonemic Inventories of Igbo dialect clusters
Igbo is a language that has many dialects. Ikekeonwu (1987) presents a classification of the Igbo dialects into clusters using both phonological and grammatical criteria. On the basis of these criteria, she grouped Igbo dialects into five clusters namely:
1.   The Niger Igbo
2.   Inland West Igbo
3.   Inland East Igbo
4.   Waawa Igbo / Northern Igbo
5.   Riverain Igbo

The Niger Igbo (NI)
The Niger Igbo cluster, notes Ikekeonwu (1987), is found in areas on the West of River Niger in what is currently known as Delta State. Niger Igbo has two Main Dialects (MDs) namely Ika Igbo and Aniocha Igbo. Ika Igbo has Agbor, Ukwali etc. as satellite dialects. Aniocha has Asaba, Ibusa etc. as satellite dialects. Most dialects of this cluster have twenty-eight consonants just like the Standard Igbo except Asaba and Ika. Asaba has twenty-six consonants while Ika has twenty-seven consonants.

NI phonemic inventory /p b t d k g kp gb kw gw m n ɲ ŋ ŋw f v s z ʃ ɣ ɦ tʃ dʒ r l j w i ɪ e ɛ a ɔ o ʊ u ə/.

The Inland West Igbo (IWI)
This group is found in areas situated to the east of the River Niger. Ikekeonwu (1987) points out that the title 'West' may then seem contradictory. These dialects, however, lie to the west of the group spoken further inland in Owerri, Umuahia, etc. and this is the basis for their classification as inland West.

IWI has three MDs namely Onitsha, Awka and Aguata. Onitsha satellite dialects include Enu-Onitsha dialect, General Onitsha dialects (Nkpor, Obosi, Umuoji, etc.) and Otu-Onitsha dialects. Awka has Enugwu-Ukwu and Amawbia as satellite dialects. Aguata's satellite dialects include Amaiyi and Orumba dialects.

IWI phonemic inventory / p b t d k g kʷ gʷ kp gb tʷ dʷ m n ɲ ŋ ŋw s z ʃ ɣ ɦ ts tʃ dʒ j w l β f v kwʰ r ṽ · z̃ h̃ lʷ pʰ tʰ dʰ kʰ gʰ fʷ dʒʰ i ɪ e ɛ o ʊ u a ɔ ə/.

The phonemes of this group range from twenty-six consonants to forty-five consonants and between eight to ten vowel phonemes. Awka and Enugwu-Ukwu dialects have twenty-eight consonants and nine vowel phonemes. They have the voiced bilabial fricative / β /. Amaiyi has thirty-nine consonants and eight vowels while Orumba has thirty-six consonants and nine vowels. Onitsha has twenty-six consonants and eight vowels.

The voiceless labiodental fricative /f/ and the velar nasal / ŋ / do not exist. /f/ is replaced with /v/ while / ŋ / is replaced with / ŋʷ/.

The Inland East Igbo (IEI)
This group includes those dialects spoken to the east and south-east of the IWI dialects. It comprises five main dialects namely Central IEI, Orlu, Owerri, Ngwa and Aro. The Central IEI satellite dialects include Umuahia, Ubakala, Etiti, Ohafia, Ehugbo, Okigwe, Oriagu and Nsu. Orlu satellite dialects include Awomama, Oguta, Aba Nkwerre, Isu Nkwerre, Dikenafia etc. The satellite dialects of Owerri are Uratta, Emekuku, Ikeduru, Mbaise, Aboh, Mbieri, Ogwa etc. The satellite dialects of Ngwa include Isiala, Osisioma, Obioma, Enyimba central. Arochukwu, Ajali, Arondizuogu etc. are satellite dialects of Aro (Ikekeonwu, 1987).

Dialects of this group have between forty and fifty-seven consonants and eight vowels. IEI phonemic inventory / p b t d k g ʔ pʰ bʰ tʰ dʰ kʰ gʰ pʲ bʲ tʲ dʲ kʲ gʲ˜p˜b˜t˜d˜k˜g kʷ gʷ ɗ kp gb˜kp f (v) s z ʃ ɦ˜s˜z˜ɦ ɦʲ tʃ ʤ tʃʰ ʤʰ˜tʃ˜ʤ m n ɲ ŋ ŋʷ r ˜r rʲ l w i ɪ e ɛ u ʊ ɔ o a/.

Waawa / Northern Igbo

Waawa Igbo is spoken in the northern part of Igboland. The region is bound to the north by Idoma and Tiv speakers, while the southern fringes are occupied by the Inland West Igbo speakers, and the Inland East Igbo speakers to the east. West of the Waawa Igbos we have the Igalas. Waawa Igbo has six MDs – Achi, Enugu, Nsukka, Awgu, Udi, Abakaliki (Ikekeonwu, 1987:194). The satellite dialects of Achi include Isikwe and Elugu-agu. Enugu's satellite dialects include Nara and Awkunanaw. Obukpa, Aku and Enugwu-Ezike are satellite dialects of Nsukka. The satellite dialects of Awgu include Mgbowo and Maku. Udi's satellite dialects are Ezeagu, Umuaga, Umuabi, Oghe. Izii and Ezza are satellite dialects of Abakaliki.
Most dialects here have nine vowel sounds of which the schwa /ə/ is one of them. Others have ten vowels when /ə/ and /ɛ/ are added to the Standard Igbo /SI/ vowels. Nsukka has no less than thirty-three consonant phonemes. Enugu-Ezike has twenty-seven consonants. It is fascinating to note that Ezeagu has two phonemes which are rarely associated with the Igbo language and its dialects. These phonemes are the voiced and voiceless dental fricatives /ð/ and /θ/. These two phonemes bring Ezeagu's consonant phonemes to a total of forty-one.

Waawa Igbo phonemic inventory /p b t d k g kʷ gʷ kp gb m n ɲ ŋw θ ð f v s z ʃ h sʷ ʃʷ hʷ bv pf bʲ tf dv ts dz tʃ ʤ tʃʷ l lʷ r rʷ j w i ɪ u ʊ e ɛ ə o ɔ a/.

Riverain Igbo (RI)

This group, according to Ikekeonwu (1987), includes the varieties of Igbo spoken in Riverain areas like Rivers and Cross-River States. RI has two MDs namely Ikwerre and Cross-River. Diobu and Ahoada are statellite dialects of Ikwerre while Itu-Mbauzo is the satellite dialect of Cross-River. This group has as many as forty-two consonants and eight vowels. RI phonemic inventory /p b t d k g̃ p̃ b̃ t̃ d̃ kp gb f v s z ʃ ʒ ɣ h hw f̃ ṽ s̃ z̃ ʃ̃ ʒ̃ h̃ tʃ dʒ t̃ʃ d̃ʒ m n ɲ ŋ ŋʷ l r r̃ j w i ɪ e (ɛ) a ɔ u o ʊ/.

A good look at the phonemic inventories presented above shows that Igbo lacks some speech sounds which exist in English. It also demonstrates that there are some speech sounds in Igbo dialects which English does not have. Our emphasis is on the English speech sounds that are lacking in Igbo since this study focuses on the Igbo learners of English and not vice-versa.

It is noteworthy that these similarities between English and Igbo phonemic inventories will make the learning of English easy, and they give rise to the term 'facilitation'. Conversely, the differences in the phonemic inventories give rise to the term 'interference'. This paper, therefore, presents the ways Igbo learners realize the English phonemes which are lacking in Igbo.

Consonants:

The dental fricatives / θ / and / ð /

These fricatives are the most problematic consonants for Igbo learners of English.

They are realized as [t] and [d] respectively. So, Igbo learners will not make any contrast between / θ / and / ð /, and /t/ and /d/. For instance:

'thin'   /θɪn / and 'tin'   /tɪn/ will be realized as   [tɪn]

'thought' /θɔt/ and 'taught' /tɔt/   will be realized as   [tɔt]

'through' /θru/ and 'true' /tru/   will be realized as   [tru]

'then'   /ðɛn/ and 'den'   /dɛn/   will be realized as   [dɛn]

'with' /wɪð/   and 'wit' /wɪt/   will be realized as   [wit]

'they' /ðeɪ/   and 'day' /deɪ/   will be realized as   [de:]

However, since / θ / and / ð / are found in the Ezeagu dialect, it will be deemed necessary to get a language teacher from this area who will teach other dialect speakers the correct articulation of these phonemes.

The voiced palatal fricative /ʒ/

This sound also creates problems. It is realized as either its voiceless counterpart [ʃ] or voiced palatal affricate [dʒ].Thus, Igbo learners will have the following:

[mɛdʒɔ] or [mɛʃɔ] instead of [mɛʒə] 'measure'

[lidʒɔ] or [liʃɔ]   instead of [liʒə]   'leisure'

However, a language teacher from Riverain Igbo may be needed to teach the pronunciation of

/ʒ/ to other Igbo dialect speakers.

Suprasegmentals in Language Instruction and Learning
Suprasegmentals refer to those features as length and pitch in utterances. Agbedo (2000:57) observes that "such features which may extend beyond the limits of the sound segment and embrace much higher units of utterance are referred to as prosodic features or suprasegments". He goes on to say that pitch is the acoustic result of the speed of the vibration of the vocal folds. Pitch becomes higher when the vocal folds vibrate faster. Functions of pitch variation differ from language to language.

Pitch variation has been categorized into two namely tone and intonation. Pitch differences could be applied to words in order to distinguish two or more words whose composition in terms of consonants and vowels is the same. Pitch differences used in this way are called tones and the languages which make use of tones are called tone/tonal languages. A vast majority of African languages are tonal.

Conversely, in many Indo-European languages like English, German, French, regular sequences of different pitches characterize stretches of speech between pauses, and are known as intonation.

Tone
Tone is a phenomenon of pitch which has received much attention. Tone, according to Ladefoged (1993), is the distinctive pitch level of a syllable. A tone language, as defined by Pike (1948:43), is "a language having lexically significant, contrastive but relative pitch on each syllable". In tone languages, tone is an integral part of a word itself.

Igbo is a tone language because it manipulates tone contrastively. Two level tones are observed in Igbo namely high which is unmarked and low. The downstep tone is a high tone which is reduced in pitch. Tone performs semantic and grammatical functions in Igbo. The application of different tones to certain lexical items yields different meanings.
For instance:

isi		**akwa**		**oke**	
isi	'head'	akwa	'cry'	oke	'male'
isì	'smell'	akwà	'cloth'	okè	'boundary'
ìsì	'blindness'	àkwà	'bed or bridge'	òkè	'share'
isí	'to cook'	àkwa	'egg'	òke	'rat'

Tone distinguishes an affirmative sentence from a question. For example:

1a.	Ọ gàrà ahịa.	"S/he went to the market."
b.	Ọ̀ gàrà ahịa.	"Did s/he go to the market?"
2a.	Ha zàrà ụlọ.	"They swept the house."
b.	Hà zàrà ụlọ	"Did they sweep the house?"
3a.	O sìrì nri.	"S/he cooked."
b.	Ò sìrì nri.	"Did s/he cook?"
4a.	Ọ nà-èke isí.	"S/he plaits hair."
b.	Ọ̀ nà-èke isí.	"Does s/he plait hair?"

Intonation

Pitch of the voice rises and falls at intervals in order to avoid monotony of pitch in utterances. This rise and fall in utterances is referred to as intonation. Intonation, according to Strang (1970:89), is "patterning of the pitch variable in speech, a variable depending on the relative tension of the vibrating vocal folds in voiced speech". Intonation performs semantic and grammatical functions. In English, for instance, intonation is also used to convey meaning. This is enormously illustrated in Roach (1991) as follows:

Fall	ˎyes ˎno	- Gives an impression on finality.
Rise	ˏyes ˏno	- Conveys an impression that something more is to follow.
Fall-Rise	yes no	- Shows 'limited agreement' or 'response with reservations'
Rise-Fall	˄yes ˄no	- Used to convey rather strong feelings of approval, disapproval or surprise.
Level	-yes -no	- Used in a rather restricted context. It almost always conveys (on single-syllable utterances) a feeling of saying something routine, uninteresting or boring.

Interaction of tone and intonation in language instruction

Word pitch is called tone while sentence pitch is referred to as intonation. The Igbo language is basically a tone language, and Igbo learners of English find it difficult to employ intonation in English sentences. This is as a result of the influence of tone. In this regard, while teaching English to an Igbo learner, attention needs to be given to the pronunciation of words that make up a sentence.

Interestingly, Uguru (2009) points out that whereas other Igbo dialects manifest tone only, Ika dialect of Igbo manifests intonation in addition to tone. Although Ikekeonwu (1987) reports the existence of an upstep tone in Abakaliki, this, argues Uguru (2009), is not intonation as there is no attitudinal meaning attached to it. In Ika, intonation gives out attitudinal meaning. Ika manifests both tone and intonation, so, pitch plays both tonal and intonational roles in this dialect.

Six tune patterns exist in Ika. They are as follows:

High Fall tune pattern	HF (ˋ)
Low Fall tune pattern	LF (ˎ)
High Rise tune pattern	HR (')
Low Rise tune pattern	LR (ˏ)
Fall Rise tune pattern	LR (v)
Rise Fall tune pattern	RF (∧)

Examples of intonation in Ika

1. Low Rise
   ˏWe – 'They' (emphasis)
     H

2. High Rise
   ' We? – 'They?'
     H

3. Fall Rise
   We? – 'You mean them?'
     H

4. High Rise
   lˊ si? 'Pardon/come again'
     + +

                                                                     L L

5.   Kə wụ ˈtaani? "(Did you say?)   What day is today?"

6.   Rise Fall
          O bụ ọ^ nyị? (Does it cause dysentery? (Disbelief)'
                    (Adapted from Uguru, 2009)

The effects of tone on intonation, notes Uguru (2009), make Ika tune patterns to sound slightly different from those of English.

Igbo, being a syllable-timed language, usually affects English, a stress-timed language. Timing in English depends on the stressed words. That is, much time is going to be spent on the stressed words. But in Igbo every syllable is given its own time. Many a time, Igbo learners of English employ syllable-time to English words rather than stress-time. This is the influence of tone in Igbo.

For instance, an Igbo learner of English may employ syllable-time in the pronunciation of the word "tribalism" as "*trìbalís'm". It is then the duty of the language instructor to correct such a learner by providing the stress-timed version of the word thus "'tribalism" and ensure that the learner pronounces it correctly.

An Ika instructor of English will be very useful in teaching intonation to Igbo learners of English. Similarly, Ika learners of English will not find intonation practices difficult in anyway. The Rise Fall tune in Ika is reported to be slightly different from the type found in English. Also, the High Rise in Ika often sounds a little lower than that of English when it occurs with a low tone. We should expect this influence of tone on intonation since Ika manifests both. But the intonation inherent in Ika native speakers will go a long way in facilitating the learning of intonation patterns in English.

Phonological Processes in Language Instruction and Learning
The form of a segment may change when that segment combines with other segments during the formation of words or utterances. The changes which sound segments undergo are referred to as phonological processes. In the course of this research study, the author examined deletion, insertion, vowel lengthening and syllable as instances of phonological processes and their involvement in language instruction and learning.

<u>Deletion</u>
In phonology, this suggests the dropping of speech sounds. This is mostly evident in the speeches of Igbo learners of English. For example, the deletion of the palatal approximant /j/ as in the following words:

Received Pronunciation	Igbo Representation	English Gloss
[nju]	[nû] nuù	new
[njuz]	[nûzù] nuùzù	news
[fju]	[fû] fuù	few
[fjuəl]	[fuɛlʊ] fuelù·	fuel
[stju]	[sìtû] sìtuù	stew

The language instructor will give a great attention to this area pointed out in the above data so as to correct the anomaly.

Insertion

This is the addition of sound segments into certain positions of a word. A consonant may be inserted to break up vowel clusters while a vowel may be inserted to break up consonant clusters. The Igbo language does not permit consonant clustering. So, vowels are inserted anywhere consonant clustering occurs in order to break up the clustering.

Therefore, an Igbo learner of English may pronounce the words below as:

English	Igbo Realization
bread	bùreèdì
stew	sìtuù
school	sùkulù
christmas	kirisímasì
cupboard	kọpụbọ́dù
break	bùreèkì

It is the duty of the language instructor to help the learners to get rid of these inserted vowels.

Vowel Lengthening

Vowel lengthening is the doubling of vowels. This is not distinctive in Igbo. There is no contrast between long vowels and their short counterparts. For instance, there may be two versions of the human female "nwanyi" and "nwaanyi" but they will not result in a semantic change.

Conversely, long vowels contrast with short vowels in Ibibio, a Lower Cross language of the New Benue-Congo language family according to Williamson's (1989) classification. Vowel lengthening in Ibibio is illustrated below:

nèm	'be delicious'
nèèm	'crack (e.g. nuts)'
bàk	'be early'
bààk	'be afraid of'
bɔ́k	'cook soup'
bɔ́ɔ́k	'nurture'
dép	'buy'
déép	'scratch'

(Curled from Urua, 2000)

Many a time, Igbo speakers lengthen vowels of English words. The reason being for ease of pronunciation. For instance:

English	Igbo Realization
bread	bùreèdì
break	bùreèkì
stew	sìtuù
loss	lọọsù
note	noòtù

The task of the language instructor here is the elimination of these lengthened vowels.

Syllable

This is another area of concentration for the language instructor. The syllable is seen as a unit of connected speech. Although several attempts have been made towards defining the syllable, there has not been a strict definition of a syllable. Matthews (1991:366) claims that the syllable is, "a phonological unit consisting of a vowel or other unit that can be produced in isolation, either alone or accompanied by one or more less sonorous units."

Crystal (1997:164) views a syllable as, "an element of speech that acts as a unit of rhythm, consisting of a vowel, syllabic, or vowel/consonant combination." Let us examine some Igbo words and their English equivalents.

Igbo	*English*
Àdaèzè	name of a person
ewu	goat
□gwèrè	lizard
gà	go
re	sell
ọnwụ	death
unù	you (pl)
gị	you (sing)
ha	them
niílé	all
ike	strength
wàa	split
ghe	fry

A cursory look at the data above will suffice to say that:
1.   There is no coda in the Igbo language except in a few cases like
          dum   'all'
          ọdụm   'lion'
There is coda in English
2.   Igbo has an open syllable while English has both open and closed syllables.
3.   Igbo has no consonant clusters while English has.
4.   The basic Igbo syllable is C V (consonant + vowel) as in
          si   'cook'
          zụ   'buy'
          kụ   'hit'
while the basic English syllable is VC (vowel + consonant) as in is, on, am, at, if etc.

Summary of Findings

The findings in this study are challenges to English language instructors in Igbo speaking areas of Nigeria. They are challenged to instruct the learners on the correct articulation of their speech organs. They should make the learners have the tip of the tongue make contact with the upper front teeth for the production of /θ/ and /ð/ instead of the front part of the tongue coming into contact with the alveolar ridge which results in the production of /t/ and /d/. The instructor may not have to teach the positions of the vocal folds since the learners can distinguish between

voiced and voiceless sounds. A language instructor from Ezeagu speech area will be needed because these sounds occur in Ezeagu's phonemic inventory.

For the production of /ʒ/, the instructor will instruct the learners how the blade of the tongue makes contact with the hard palate. An instructional aid is needed here. The language instructor will demonstrate the articulation of speech organs using a human being.

Igbo has /a/ but lacks /æ/ and /ɑ/. Igbo learners replace English /æ/ and /ɑ/ with Igbo /a/. So, there is usually no distinction in words such as:

English				*Igbo Realization*
pat	/pæt/	part	/pɑt/	[pat]
cat	/kæt/	cart	/kɑt/	[kat]
mat	/mæt/	mart	/mɑt/	[mat]
chat	/tʃæt/	chart	/tʃɑt/	[tʃat]
fat	/fæt/	fart	/fɑt/	[fat]

The English vowel /ʌ/ is realized as /ɔ/ in Igbo. For instance.

	English	Igbo Realization
cup	/kʌp/	[kɔpʊ]
come	/kʌm/	[kɔmʊ]
mother	/mʌðər/	[mɔda]
love	/lʌv/	[lɔvʊ]

These English vowels / ə / and / ɜ / do not occur in Standard Igbo. /ə/ occurs in some dialects of Igbo namely Niger Igbo, Inland West Igbo and Waawa Igbo. So, these dialect speakers that have /ə/ in their phonemic inventories will not find difficulty in producing /ə/ whenever it occurs in English words. But other dialect speakers will have problems producing it. /ə/ occurs in English unstressed syllables and can be regarded as end product of 'stress-timing' which is a result of vowel reduction. This is not the case with NI, IWI and Waawa Igbo dialects clusters of Igbo where /ə/ is a full-fletched phoneme.

In most cases, / ɜ / is replaced with / ɛ / in Igbo.

As in

English	Igbo Realization
bird /bɜd/	[bɛdI]
girl /gɜl/	[gɛlʊ]

The language instructor is left with the task of teaching the articulations of the above-mentioned speech sound. Sometimes / ɜ / is replaced with / ɔ / as in

English	*Igbo Realization*
curse /kɜs/	[kɔsʊ]

Igbo has sound-to-symbol correspondence which lacks in English; therefore, Igbo learners tend to apply it to English. This results in mispronunciation of the following words:

English		Igbo Realization
sword	/sɔd/	[swɔdʊ]
tomb	/tum/	[tombu]
comb	/kəʊm/	[kombu]
quay	/ki/	[kwei]
fiend	/find/	[fiɛndi]

Igbo, being a syllable-timed language, affects English, a stress-timed language. So, lexical stress is replaced with tone. Igbo learners pronounce English words with tone. For instance:

English	Igbo Realization
floorboard /'flɔbɔd/	[fʊlɔbɔ́dʊ̀]
study /'stʌdɪ/	[sɪtɔd Ì]
umbrella /ʌm'brelə/	[ɔmbʊ̀relà]
lovely /'lʌvlɪ/	[lɔvʊ́l Ì]
chairman /'tʃeəmən/	[tʃiemánʊ̀]
information /ˌɪnfə'meɪʃn/	[infɔ̀meʃɔ̀nʊ̀]

Central vowels do not occur in Standard Igbo but /ə/ is found in NI, IWI and Waawa Igbo dialect clusters of Igbo. It is discovered that the voiced and voiceless dental fricatives occur in Ezeagu dialect only. Therefore, an Ezeagu language instructor may be needed to instruct other dialect speakers on the use of / θ / and / ð /.

Following Igboanusi (2002), this present study observes that Igbo learners use /i/ for English /i/ and /ɪ/. So, a word like 'bit' will be pronounced the same way as 'beat'. Igbo has the pair /i/ and /ɪ/ which are distinguished by pharyngealization or tenseness rather than length. Also, Igbo /ɔ/ is used for both /ɒ/ and /ɔ/ in English.

This could be seen in:

English				Igbo Realization
cot	/kɒt/	court	/kɔt/	[kɔt]
shot	/ʃɒt/	short	/ʃɔt/	[ʃɔt]

Although /ʤ/ and /ŋ/ exist in Igbo phonemic inventory, they do not occur in word final position (WFP). When /ʤ/ occurs in WFP, it must be followed by a vowel.

English		Igbo Realization
judge	/ʤʌʤ/	[ʤɔʤɪ]
hinge	/hɪnʤ/	[hɪnʤɪ]

Final /ŋ/ is either followed by a [g] or replaced with [n]. For example:

English		*Igbo Realization*
hang	/hæŋ/	[haŋgI]
lung	/lʌŋ/	[lɔŋgʊ]
meeting	/mitIŋ/	[mitin]
fainting	/feIntIŋ/	[fentin]

CONCLUSION

   This paper examined the role of phonology in language instruction and learning of English by native Igbo speakers of South-Eastern Nigeria. The phonological phenomena of interference and facilitation were critically examined and the paper discovered the areas of difficulty in the learning of English. It was also observed that some sound segments which were lacking in Standard Igbo could be found in some dialects of Igbo, for instance the voiced and voiceless dental fricatives / ð / and / θ / occur in Ezeagu dialect only. Therefore, this paper suggests that language instructors should be selected from those areas whose dialects have the difficult sound segments and incorporated in the school curriculum. Also, intonation is reported in Ika dialect of Igbo, therefore, a language instructor would be needed from this area to teach intonation to other dialect speakers.

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