

## THE ARTICULATION OF TWELVE PURE VOWELS IN THE ENGLISH LANGUAGE OF NIGERIAN UNDERGRADUATES: A CASE STUDY OF THE DEPARTMENT OF ENGLISH AKWA IBOM STATE UNIVERSITY

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### ABSTRACT

*This research investigated the articulation of the twelve pure vowels of English by Nigerian undergraduates. The aim was to examine how the performance of the subjects was close to or distant from the L<sub>1</sub> standard and how an elevated form could be achieved. Applied Linguistics and Descriptive Linguistics formed the theoretical base for the work. Ten informants coded A-J were selected through purposive sampling method from the four levels (year 1 – 4) in the Department of English, Akwa Ibom State University to form the experimental group. A list of 12 sentences each of which had a word that contained one of the 12 pure vowels was given to the informants to read audibly. The reading was recorded using Infinix HOT10 T android phone. The reading was carried out unobtrusively. The recording was played back several times and scored. It was found out that the long front vowel /ɪ:/, the long back vowel /ɔ:/, the front short vowel /æ/ the central vowel /ʌ/ and the short back vowel /ʊ/ gave the informants difficulty of realization. Suggested reasons for the poor performance included vowel length, following consonant, position of occurrence, nature of the word in which the vowel was tested and absence of a vowel in the L<sub>1</sub> of the informants. The result of mispronunciation is distortion of information with adverse implication for international communication. Informants' interest in the English Language and in international English or "amalgam" was advocated.*

**Keywords:** Articulation, twelve pure vowels, undergraduates, proficiency, audibility, phonology performance, amalgam.

### Introduction

English language is an important medium of communication in Nigeria. It functions as official language, national language, the language of international diplomacy, education, sports, mass media, commerce, administration and the judiciary as stated by Okono (2019). Above all, English Language is the medium of instruction from the primary school up to the university level. The realities of this experience stems from the history of European incursion in African societies and the experience of colonial imposition (Udoiwang and Tsaiior 2023). A pass in English at credit level in the Senior Secondary Certificate Examination (SSCE) or the General Certificate in Education (GCE) Ordinary Level is compulsory for admission into Nigerian universities according to Eka (2000). The source further avers that proficiency in English is itself a high status symbol for students generally. In view of the uses to which English is put in Nigeria, there is need for the development of competence in the language particularly the second language speakers. The twelve pure vowels conventionally numbered 1 to 12 constitute an important element of the phonology of English. A good performance in the twelve vowels will undoubtedly translate into fluency in spoken English by the Nigerian

undergraduates. The focus in this research concerns both national and international communication, Okono ( 2019, p.60) .

Vowels are those sounds which are usually produced with no audible obstruction in the speech organs, (Eka, 1996, p. 10). The following table contains the twelve pure vowels:

**Table 1 Showing the Twelve Pure Vowels of English**

Conventional Numbers	Representative Symbols	Illustrations in Words
1	/ɪ:/	these, feel, beam
2	/ɪ/	fit, lip, tip
3	/e/	Said, get, ten
4	/æ/	Pad, cat, fan
5	/ɑ:/	Dance, palm, cart
6	/ɒ/ɔ/	Jot, top, pot
7	/ɔ:/	Course, ward, all
8	/ʊ/	Put, good, took
9	/U:/	Food, pool, boom
10	/ʌ/	One, but, blood
11	/ɜ:/	Learn, bird, heard
12	/ə/	Above, doctor, apparent

The vowels can also be classified according to some inherent characteristics or features as shown hereunder:

**Table 2 Showing Characteristics of English Vowels**

Conventional Numbers	Vowels	Characteristics
1	/ɪ:/	Long, high, front
2	/ɪ/	Short, high, front
3	/e/	Short, high, front
4	/æ/	Short, low, front
5	/ɑ:/	Long, low, back
6	/ɒ/ɔ/	Short, low, back
7	/ɔ:/	Long, low, back
8	/ʊ/	Long, low, back
9	/U:/	Long, high, back
10	/ʌ/	Short, high, central
11	/ɜ/	Long, High, central
12	/ə/	Short, high, central

In phonetic terms some criteria can be used in the description of English pure vowels:

- i. the position of the tongue in relation to the roof of the mouth (open or close);
- ii. whether the tongue moves front or goes back; and
- iii. the shape of the lips; whether they are rounded, spread or neutral.

Though these criteria are used in determining the nature of cardinal vowels, they can equally apply to the description of pure vowels because of phonetic similarities.

Following Eka (1996) the twelve monophthongs can be grouped as follows:

/i:, a:, ɔ:, u:, ɜ:/- long vowels

/ɪ, e, æ, ɒ, ʊ, ʌ, ə/ - short vowels

The grouping can otherwise be demonstrated as:

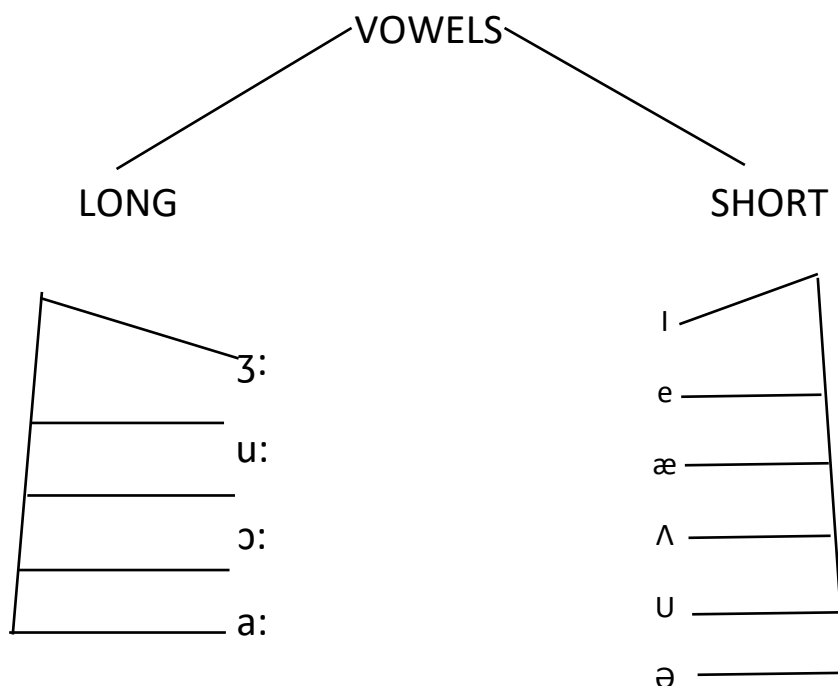


Figure 1: Grouping of English pure vowels (monophthongs): relatively long/relatively short. Source: Eka (1996).

There are some inherent difficulties for the foreign learners such as the experimental group for this research in an attempt to master the pronunciation of English vowel phonemes. Cruttenden (2014) gives some observations of these difficulties and concludes that:

... the English system is one of the less common and more complex types. It is therefore completely predictable that most foreign learners will have trouble attaining the vowel system of any variety including RP. Difficulty is most predictable in those areas where vowels are closest within the vowel space (Cruttenden, 2014, p. 104).

The source hints that confusions are very likely within any of the following groups: /ɪ:,ɪ/, /e,æ,ʌ/, /ɒ,a:,ɔ:/, /u:ʊ/. As a result of these difficulties with the RP vowel system, Cruttenden advises the foreign learner to set the more attainable target of Amalgam English or International English. Amalgam English is a mixture of RP with local features while International English is exemplified by those speakers of International English who use it as a lingua franca on a more international basis and need a minimum standard for occasional communication according to Cruttenden (2014:317). The discourse by Cruttenden is a euphemism for mother tongue interference. Of course Ibibio language, the L1 of most of the informants in this study has 10 vowels as against English 12. In spite of the closeness in terms

of the number of the phonemes there are wide differences in phonetic, acoustic and articulatory peculiarities of the vowel systems of Ibibio and English languages.

The poor performance of the Nigerian speakers of English at the level of vowel as occasioned by the differences between the English Language and the mother tongue (L<sub>1</sub>) of Nigerians has come under various titles and sub-titles such as contrastive analysis, contrastive study and mother tongue interference. Urujzian, V.G. (2012) observes that English language is a language with much problems in terms of its phonology, semantics and syntax especially to nonnative second language learners as Nigerians. Continuing, Urujzian (2018) avers that a range of variation is found in different parts of the country all traceable to mother tongue (L<sub>1</sub>)interference. Udoka (2021) observes that Nigerian English users are likely to experience some difficulties with complex consonant clusters (and vowels) which are not present in native languages. Udoka, S and Umoh, O. (2021) affirm that the differences (between English and Ibibio) are so acute that they are implicated in second language learning. The subject of mother tongue interference is exhaustively handled in Edem (2015) and Edem (2016). Enang, E. and Urujzian, V. (2013) handle a contrastive study of Anaang learner of English language while Enang, E.,Urujzian, V. and Udoka, S. (2013) dwell on the syntax of educated Nigerian English and critically examine the contact situation between Nigeria and the English language.

The aim of this research therefore is to examine the pronunciation of English pure vowels in a connected speech by Nigerian undergraduates particularly those studying English and find ways by which they could do better.

### **Methodology**

A reading test containing twelve sentences was read by ten students selected from the Department of English, Akwa Ibom state University, using purposive sampling technique. The 10 students were coded A to J. Four of them were in year 2; two in year three; three were in year 4 and one in year 1. Subject E is an Igbo, subject J speaks Yoruba, subjects A and F speak Anaang language of Akwa Ibom State and subject H speaksHausa. Subjects B and C speak Oron while subjects D, G and I speak Ibibio. Each informant read the sentences carefully and unobtrusively. The reading was recorded with android phone (infinix Hot 10T) and was played back for scoring several times and scored. Cambridge advanced learner’ dictionary (third edition) was used as a pronunciation guide. Each sentence contained a word that had the particular vowel phoneme. For example, sentence 1 was used for vowel No 1 /ɪ:/ and sentence 12 was used for vowel No 12 /ə/. The scores were calculated in percentages.

**Table 3 Showing Sentences, Words and Sounds**

<b>Serial Number</b>	<b>Sentences</b>	<b>Words</b>	<b>Sound</b>
1	These students have come to see you	these	/ɪ:/
2	The philosophy of man is known to him	philosophy	/ɪ/
3	He said that he would soon arrive	said	/e/
4	The time is half past one	past	/æ/
5	Do not put the cart before the horse	cart	/a:/

6	Early in the morning, the atmosphere was foggy	foggy	/v/
7	There are ten wards in my local government area	wards	/ɔ:/
8	Have you given the necessary inputs to the computer?	inputs	/ʊ/
9	We heard the booming of the gun	booming	/u:/
10	Blood gushed out after she pierced her left foot	blood	/ʌ/
11	The girl is my niece	girl	/ɜ:/
12	It is apparent that my boss has travelled	apparent	/ə/

### Quantitative and Qualitative Limitations

Only twelve pure vowels were studied; diphthongs and triphthongs were not included. The research could not bring in acoustic properties of the vowels and the reading by the informants was not analyzed using instrument like spectrogram.

### Theoretical Framework

Two theories are used as the bases for this research. They are: Applied Linguistics and Descriptive Linguistics. It is the view of Nobert (2013) that Applied Linguistics is using what we know about (a) language (b) how it is used in order to achieve some purpose or solve some problems in the real world. Similarly, Dineen (1966) observes that a course in Descriptive Linguistics usually includes training in phonetics as well as in phonological and grammatical analysis. In his assessment, Okono (2023a) observes that the two theories highlighted are relevant to a work on phonological performance in terms of:

training of students in the pronunciation of English ...their actual performance, observation and analysis of their performance as well as testing them on the language features and research into their inappropriate patterns of language use (Okono, 2023a, p. 32).

Okono (2022) and Okono (2023b) agree on the relevance of Applied Linguistics to this research. As enunciated by Lyons (1981) Applied Linguistics as a subfield of general linguistics has as its concerns the application of the concepts and findings of linguistics to a variety of practical tasks.

### Data Analysis

**Table 4 Showing Performance of Informants on the Pure Vowels of English**

Serial Number	Subjects	Score	Percentage	Appropriately Articulated Phonemes
1	A	7	58	/ɪ, e, v, ʊ, u:, ɜ:, ə/
2	B	8	67	/ɪ, e, a:, v, u:, ʌ, ɜ:, ə/
3	C	7	58	/ɪ, e, a:, v, u:, ɜ:, ə/
4	D	6	50	/ɪ, e, a: v, ɜ:, ə/
5	E	8	67	/ɪ, e, a:, v, ɔ:, u:, ɜ:, ə/
6	F	9	75	/ɪ, ɪ, e, v, ɔ:, u:, ʌ, ɜ:, ə/

7	G	8	67	/ɪ, e, a: ɒ, ɔ:, u:, ɜ:/
8	H	7	58	/ɪ, e, ɒ, ʊ, u:, ɜ:/
9	I	7	58	/ɪ, e, a:, ɒ, u:, ɜ:/
10	J	8	67	/ɪ, e, a: ɒ, ʊ, u:, ɜ:/

Table 5 Showing Frequency of Successful Rendering of Vowels

Serial Number	Vowels	Frequency	Percentage
1	/ɪ:/	1	8
2	/ɪ/	10	100
3	/e/	10	100
4	/æ/	0	0
5	/a:/	7	58
6	/ɒ/ɔ/	10	100
7	/ɔ:/	3	25
8	/ʊ/	3	25
9	/U:/	8	67
10	/ʌ/	2	17
11	/ɜ:/	10	100
12	/ə/	10	100

Table three shows that informant F, a native speaker of Annang language in Akwalbom State scored the highest in vowels. Her only difficulty was in the realization of /æ/ in “past”, /a:/ in “cart” and /ʌ/ in “blood” She substituted these vowels with contiguous variants. She scored 75%. Four subjects: B, E, G and J scored 67% each. This is translated from 8 appropriate articulations out of 12. None of them succeeded in vowel no. 1: /ɪ:/ in “these”. Similarly, the four informants could not articulate the short front vowel /æ/ “past”. This particular sound was substituted with a local variant or contiguous L1 variant such as /a/. Subject J rendered “input” appropriately but failed to realize /ɔ:/ in “ward” where he substituted it with /ɜ:/ as in word. Subject B could not articulate /u:/ in “booming” while subjects E, G and J failed to produce /ʌ/ in “blood”. Subjects A, C, H and I scored right in 7 out of 12 translating into 58%. These informants could not articulate /ɪ:/ “these”, /æ/ in “past”, /ɔ:/ in “ward” and /ʌ/ in “blood”. As usual these vowels were substituted with variants. In the same vein, subjects A and H could not articulate /a:/ in “cart” while subjects B, C, D, E, F, G and I failed to pronounce /ʊ/ in “input”. As it has been found out, these sounds were substituted with either local variants or contiguous English variants. Only subjects A, H and J rendered the vowel appropriately. Subject D, a year two student, had the lowest score of 6 out of 12 meaning 50%. She failed in the production of /ɪ:/ in “these”, /æ/ in “past”, /ɔ:/ in “ward”, /ʊ/ in “input”, /u:/ “booming” and /ʌ/ in “blood” These phonemes were replaced with variants. Surprisingly all the 12 informants articulated appropriately /ɪ/ in “philosophy”, /ɒ/ in “foggy”, /ɜ:/ in “girl” and /ə/ “apparent”.

## Discussion

The performance of the informants on vowels /ɪ/, /e/, /ɜ/ and /ə/ reflects, on my assumption, two things: familiarity with the phonemes and the simplicity of the words in which the sounds were tested. For example, philosophy is a course that all the informants offered in General Studies in year one; and there is a department of philosophy in the university.

Consequently, the students are acquainted with the articulation of the word in its entirety. The second aspect of the appropriate rendering of the tested sound is that the sound in itself is simple and also present in the L<sub>1</sub> of the informants. The appropriate articulation of /ɒ/ in “foggy” may be as a result of being a short phoneme in addition to being close to the local variants.

The difficulty in the articulation of vowel No. 1 /ɪ:/ in “these” is perhaps due to a number of reasons: long sound, follows voiced interdental fricative and occurs in sentence initial position. Additionally, local equivalents are rare in the first languages of the informants. Only one informant rendered the sound appropriately. The inability by L<sub>2</sub> informants to realize English phoneme due to its position of occurrence is well handled by Okono (2023c). He posits that another factor for the inability of our informants to pronounce voiced fricatives is position of occurrence or environment (Okono 2023c, p. 27).

Similarly, No.3 vowel /e/ has equivalents in Nigerian indigenous languages notably, Hausa, Yoruba, Igbo and Ibibio, the first languages of the informants in this research. Additionally, the word “said” in which the sound was tested is a common everyday lexical item for the informants. The success recorded in the articulation of /ɜ:/ in “girl” is likely to be similar to the preceding explanation. The ease with which the informants produced the schwa /ə/ in “apparent” is due to the position of occurrence. The schwa precedes the voiceless bilabial plosive /p/ and did not present any difficulty of realization to the informants. It could have been different if the sound had come in word final position like in doctor or mother.

No informant appropriately articulated the short front vowel No. 4 in “past”. This sound does not have equivalent in Nigerian languages, the first languages of the informants. Secondly, none of the informants had the opportunity of experiencing the articulation of this sound in the native home of the language and may not be mindful when listening to the first language speaker utter the sound in Nigeria or on the radio and television. Sometimes the model (teacher) is of the same Nigerian pronunciation output. These factors combined to deny the informants the necessary competence for the pronunciation of the sound. Informants produced contiguous vowel sound /a/ in its stead.

The difficulty of producing the long back vowel /ɔ:/ in “wards” could perhaps be due to its length. Observably, Nigerian speakers of English find it more difficult to produce long English vowels than short counterparts. This is in spite of the familiar nature of the word. Majority of the informants reduced the word to its short counterpart. The difficulty of realizing the short high back vowel /ʊ/ in “inputs” is caused mainly by a wrong analogy. Most English words that have consonant plus /ʊ/ sequence are pronounced with an intrusive palatal semi-vowel /j/. Examples are: educate, compute, popular, circulate etc. Unfortunately, “inputs” does not carry the semi-vowel but vowel No. 8. This mispronunciation is assumed to be largely an analogous error. The poor performance on vowel No 10. /ʌ/ could be due to lack of familiarity with the sound. Moreover, the word in which the sound was tested could be somehow deceptive. Herein lies the major difference between orthography and pronunciation. The word in which the sound was tested “blood” carries double [o] and may be regarded as containing vowel No. 7 /ɔ:/ or No 6 /ɒ/ as is often the case with Nigerian speakers of English. This is an instance of error of wrong analogy. Okono (2023b) avers that analogous error is caused by imperfect knowledge of the language.

### **Implications for Intelligibility**

Gimson (1984), a foremost phonetician, recommends minimum general intelligibility which equates with high acceptability. He also brands this object “a careful colloquial style” This is an equivalent of “amalgam” or international English. This target sounds attainable by second language speakers of the English language. If this target is achieved by Nigerian undergraduates and by extension Nigerian speakers of English, the primary goal of language use: communication at different levels and situations will be achieved.(cf Okono,2019, p. 60). The reverse is using language habits which come so easily to us leading to loss of understanding with negative effect on communication.If Nigerian speakers of English value the enormous uses that English possesses in the communication enterprise they have to accord the teaching and learning of English the desired commitment. Interest, of course, is of essence in this regard. The teaching and learning of the language should not be approached with laissez-faire and lack luster manner that seems to portray English Language as an optional subject on the school curriculum. Utin (2016) reechoing Uzoemie (2004) observes that (English) language has the same market value as other natural resources. This position underscores the significance of English Language in solving the problem of communication in a linguistically pluralistic state like Nigeria.

### **Conclusion**

In domesticating the English Language in Nigeria, we should not lose sight of the importance of communicating meaningfully with other nationals for whom the language is their lingua franca. This position calls for the development of competence in both grammar and phonology of English in addition to the skills of speaking, listening writing and reading. Nigerians cannot stay aloft in international communication, especially in the knowledge-based economy that tends to define modern world order.

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