

PHONEMIC TREATMENT OF THE TIV VOWELS /ɒ/, /o:/, /ɔ/ and /ɔ:/

Terfa Aor

Department of Linguistics and Nigerian Languages,
National Institute for Nigerian Languages (NINLAN), Aba-Abia State of Nigeria
E-mail: aorterfa80@gmail.com

ABSTRACT

Tiv phonology acknowledges the presence of /ɒ/, /ɔ/, /o:/ and /ɔ:/ as distinctive vowels. However, the written Tiv has in most cases treated /ɔ/ and /ɒ/ or /ɔ:/ and /o:/ as if they are similar phonemes. This study, therefore, examines the phonetic features of /ɒ/, /o:/, /ɔ/ and /ɔ:/ vowels; states the phonotactic constraints of /ɒ/, /o:/, /ɔ/ and /ɔ:/; contrasts /ɒ/ and /o:/; /ɔ/ and /ɔ:/; /ɒ/ and /ɔ/; /o:/ and /ɔ:/ using Tiv words and investigates the implications of studying /ɒ/, /o:/, /ɔ/ and /ɔ:/ vowels. This study adopted Chomsky and Halle's (1968) 'Phonetic Features' Model (PFM) for the description of the select vowels. PFM uses plus and minus values [+ and - values] for identifying the above vowels. Methodologically, this study uses participant-observation tool for obtaining data for this study. The data for this study were sourced using primary and secondary sources. Primary source was obtained through observation whereas documentary sources were got from literary texts, journal articles, textbooks and dictionaries. It has been discovered that lack of differentiating 'o' /ɒ/ and 'ô' /ɔ/ or 'oo' /o:/ and 'ôô' /ɔ:/ leads to phonemic substitutions and ambiguities. It has also been learned that /ɒ/, /o:/, /ɔ/ and /ɔ:/ are phonemes not allophones of the same phonemes. These phonemes perform the functions of minimal pairs, reduplications and rhymes. This study can be of tremendous use to phonologists and phoneticians who may want to carry out phonemic analysis of any given language.

Keywords: Circumflexion, closed 'ô', open 'o', phoneme, Tiv vowels and phonotactic constraint

1. INTRODUCTION

Tiv, a language spoken in Benue, Nassarawa, Taraba, Plateau states of Nigeria and Southern Cameroon, has both open 'o' and closed 'ô' as letters of its alphabet. When a closed 'ô' is uncapped or uncircumflexed, it results in homonyms and lexical ambiguities. Lack of differentiating between an open 'o' and a closed 'ô' stems from the fact that the 'Dutch Reformed Church Mission introduced English letters into Tiv language' (Dzurgba, 2011, p.95) without including a closed vowel 'ô'. It is noted that Tiv letters of alphabet were modelled after the English letters of alphabet – twenty-six letters. Among the twenty-six

letters of alphabet, only consonant letters 'q' and 'x' were left out. Dzurgba (2011) affirms that most textbooks on Tiv literatures recorded that Tiv orthography has only twenty-four letters as:

A B C D E F G H I J K L M
N O P R S T U V W Y Z

Aor (2020, p. 42) maintains that 'the early Tiv scholars did not include circumflexed 'ô' as one of the letters of the Tiv alphabet.' Tiv language therefore has twenty-five letters of alphabet that comprise six vowels and nineteen consonants. Table 1 shows the places of open 'o' and closed 'ô' in the Tiv letters of alphabet.

Table 1: Aor's (2020, p. 42) places of open 'o' and closed 'ô' in Tiv Letters of Alphabet

S/No	Upper Case	Lower Case	Transcription	S/No	Upper Case	Lower Case	Transcription
1	A	a	/a:/	14	N	n	/na/
2	B	b	/ba:/	15	O	o	/ɒ/
3	C	c	/tʃa:/	16	Ô	ô	/ɔ/
4	D	d	/dæ/	17	p	p	/pæ/
5	E	e	/e/	18	R	r	/ræ/
6	F	f	/fæ/	19	S	s	/sæ/
7	G	g	/gæ/	20	T	t	/tæ/
8	H	h	/hæ/	21	U	u	/ʊ/
9	I	i	/i/	22	V	v	/væ/
10	J	j	/dʒæ/	23	W	w	/wʊæ/
11	K	k	/kæ/	24	Y	y	/jæ/
12	L	l	/læ/	25	Z	z	/zæ/
13	M	m	/mæ/				

The above table proves that Tiv orthography has ‘o’ and ‘ô’ as distinctive letters of her alphabet. Letter ‘o’ is the fifteenth letter of the Tiv alphabet while letter ‘ô’ is the sixteenth letter. Letter ‘o’ is phonemically transcribed as /ɒ/ whereas its counterpart ‘ô’ is transcribed as /ɔ/. These two vowels are not allophones but they are distinctive sounds in Tiv. They have their long counterparts when ‘o’ and ‘ô’ are cloned or doubled, thus resulting in ‘oo’ and ‘ôô’ vowels – /o:/ and /ɔ:/, respectively. It is obvious that letter ‘o’ is an equivalent of /ɒ/; ‘ô’ gives /ɔ/; ‘oo’ results in /o:/ and ‘ôô’ corresponds with /ɔ:/ in Tiv. As distinctive as /ɒ/, /o:/, /ɔ/ and /ɔ:/ are, writers are often confused when to use a circumflexed ‘ô’ or an open ‘o’. This study, therefore, examines the phonetic features of /ɒ/, /o:/, /ɔ/ and /ɔ:/ vowels; states the phonotactic constraints of /ɒ/, /o:/, /ɔ/ and /ɔ:/; contrasts /ɒ/ and /o:/; /ɔ/ and /ɔ:/; /ɒ/ and /ɔ/; /o:/ and /ɔ:/ using Tiv words and investigates the implications of studying /ɒ/, /o:/, /ɔ/ and /ɔ:/ vowels.

2. PHONEME

2.1 Conceptualisation of Phoneme

Etymologically, the word *phoneme* according to McArthur (1992, p. 770), was coined in 1890s from French *phonème*, Greek *phonéma* which means ‘a sound.’ Clark, Yallop and Fletcher (2007) state that the term phoneme is usually ascribed to Bauduin de Courtenay (1845-1929), a Polish linguist who taught in Russian universities from 1870. McArthur (1992), Trask (1996), Clark, Yallop and Fletcher (2007), Crystal (2008), Carr (2008) and Ogden (2009) define phoneme as a smallest, minimal, contrastive, distinctive, functional unit of a particular language. The functional point of view of phoneme describes a phoneme as ‘contrastive sound within a language’, according to Roach (1992, p. 80) and Clark, Yallop and Fletcher (2007, p. 92). These phonemes are bifurcated into vowels and consonants and they constitute syllables of words. Vowel phoneme (nucleus) is obligatory element of the syllable structure whereas consonant phonemes (onsets and codas) are optional. Phonemes are those sounds which differentiate words. Hence the importance attached to pairs of words differing in only one phoneme such as Tiv *kɔ* /kɒ/ species of fish and *kô* /kɔ/ unripe, and *kor* /ko:/ sasswood and *kôr* /kɔ:/ hold or catch. The above pairs provide solid evidence of phonemic contrasts in /ɒ/, /ɔ/, /o:/ and /ɔ:/ and it is of interest not just to

the phonological analysts but also in such fields as language teaching and language testing. Functionally, the native speakers of Tiv intuitively know that phonemes show a segmental difference in pronunciation of two or more words. A variation in the pronunciation of minimal units signals difference in meanings of two or more words. Collins and Mees (2003, p. 8) maintain that these ‘contrastive units of sound’ can ‘change meaning’ of words. This study attests that /ɒ/, /ɔ/, /o:/ and /ɔ:/ are distinct sounds in Tiv, not allophone of the same phonemes as seen from previous researches and literary texts.

2.2 Empirical Review

Tiv phonology has segmental and suprasegmental levels. Segmental phonology is made up of consonants and vowels while suprasegmental deals with prosodic features such as tones, syllables and rhythm. The empirical review centres on Tiv vowels and gives prominence to /ɒ/, /ɔ/, /o:/ and /ɔ:/. Pulleybank (1988, p. 300) asserts that Tiv vowel system comprises ‘six oral vowels’ and presents them thus: *a*, *e*, *a*, *ɔ*, *o* and *u*. His discussion is based on the vowel letters and not the vowel sounds. He represents vowel letter *ô* as *ɔ* as if it were a speech sound. Orkar (2006), Mzoo U Tiv (2012) and Orkar (2013) aver that there are nineteen vowels in Tiv which comprise 12 pure vowels and seven diphthongs. The twelve Tiv monophthongs comprise 6 short vowels such as /a/, /e/, /ɪ/, /ʊ/, /ɒ/, /ɔ/; 6 long vowels are /a:/, /e:/, /ɪ:/, /u:/, /o:/, /ɔ:/ and 7 diphthongs include /ɪa/, /ɪə/, /ɪo/, /ɪɔ/, /ʊa/ and /ʊə/. Orkar (2006, p. 14), Mzoo U Tiv (2012, p. 3) and Orkar (2013, p. 10) acknowledge both open ‘o’ and closed ‘ô’ and represents them as: /o/ ‘o’, /ɔ:/ ‘oo’, /D/ or /d/ ‘ô’ and /D:/ or /dd/ ‘ôô’. The examples they give for long /ɔ:/ vowel are misleading and they include *oo-oo* soft anthill, *oo* sun rays, *doo* good, *Gbooko*, *woo* kills, *poo* plenty. Again, the short closed ‘ô’ is wrongly transcribed as /D/ which should be written as /ɔ/. The examples that Orkar lists for /D/ are *lôhô* invite, *zôhô* quarrel, *kô* unripe, *hôm* blossom, *hôn* set trap, *hôngor* mess up are correct. Furthermore, a closed long ‘ôô’ is wrongly transcribed as /D:/ instead of /o:/ and examples such as ‘ôô wash, *hôô* rot, *lôô* plant, *ndôôl* spread, *sôô* bite and *sôôsô*’ to insert belong to /ɔ:/ (Orkar, 2006, p. 6 and Mzoo U Tiv, 2012, p. 4) (The use of Tiv glosses is my emphasis). According to Shoja (2010, p. 34) and Orkar (2013, p. 1), Tiv phonology has six single short vowel

letters such as ‘a, e, o, ô i and u’ and six long vowels as in ‘aa, ee, oo, ôô, ii and uu.’ Shoja (2010) classifies Tiv vowels into 12 pure vowels and 9 impure vowels. He sub-categorises pure vowels into two front vowels such as: a, aa, six central vowels – e, ee, o, oo, ô, ôô and four back vowels – i, ii, u and uu. Shoja treats vowel phonemes as if they were vowel letters and his inclusion of i and ii as back vowels is misleading. /ɪ/ and /i:/ are front vowels not back vowels as he claims. He uses reduplicated vowels to indicate length or duration. Shoja also identifies nine diphthongs in Tiv without placing them in bars or slashes – ae, ai, ia, ie, ea, ue, ou, ua and ôu. His classification has been modified and transcribed thus: four front vowels /ɪ/, /i:/, /e/, /a/; one central vowel /e:/ and seven back vowels like /a:/, /ɒ/, /o:/, /ɔ/, /ɔ:/, /ʊ/ and /u:/ and nine diphthongs such as /æ/, /aɪ/, /ɪa/, /iə/, /ʊə/, /oʊ/, /ʊa/ and /ɔʊ/. It should be noted that Mzoo U Tiv (2012) has approved /ɪə/ and /ʊə/ in the Tiv phonology.

Karshima (2014, p. 14) asserts that Tiv phonology has ‘18 vowel sounds’ and lists them as: ‘/ɑ/ [a], /a:/ [aa], /æ/ [ã], /æ:/ [ãã], /e/ [e], /e:/ [ee], /ɛ/ [ẽ], /ɛ:/ [ẽẽ], /ɪ/ [i], /i:/ [ii], /o/ [o], /o:/ [oo], /oe/ [o] /oe:/ [o:], /ɔ/ [ô], /ɔ:/ [ôô], /u/ [u], /u:/ [uu].’ Most of Karshima’s vowels are allophones of /a/, /e/ and /o:/ vowels. He used a tilde [~] to differentiate short and long nasalised vowels and this gives rise to many monophthongs in the Tiv vowel system. Karshima also maintains that there are 12 diphthongs in Tiv which include /ie/, /ia/, /io/, /ei/, /ou/, /ea/, /iu/, /io/, /ie/, /ua/, /uã/ and /ue/. Karshima excludes diphthong as Tiv vowels that is why he only considers monophthongs as vowels. Karshima gives a total of thirty vowel phonemes which comprises 18 monophthongs and 12 diphthongs.

In summary, Ikpa (1985) provided 65 phonemes, Orkar (2006) has 99 speech sounds, Shoja (2010) identified 72 speech units, Mzoo U Tiv (2012) mentioned 92 phonemes, National Language Centre has 69 speech sounds, Aper Aku’s committee listed 64 sounds, Committee set by NKST identified got 60 phonemes, Orkar (2013) produced 91 sounds, Karshima (2014) provided 94 speech sounds. The above review has indicated that the range of Tiv phonemes is between 60 and 99. This study has adopted Mzoo U Tiv’s (2012) assertions on the Tiv phonemic structure. This study adopts of Mzoo U Tiv’s (2012) manual because it was written and upgraded by the group of experienced Tiv scholars drawn from all walks of life. The important thing

about the above cited authorities and various committees is that they have established that Tiv phonology has /ɒ/, /ɔ/, /o:/ and /ɔ:/ phonemes but it has been noticed that these phonemes are not often used correctly.

As distinctive as /ɒ/, /ɔ/, /o:/ and /ɔ:/ are, authors often substitute them while writing. Bergsma (1970, p. 152) wrongly replaces translates ‘*ijua nor*’ as ‘penis hippo’ instead of *ijua nôr* which mean ‘penis erected’ because of the absence of a circumflexed ‘ô’ in this incantation: ‘*Kwase ikom senen mnger mta ibalegh a kar asen, ijua **nor** senen mnger mtsue m kuve.*’ He translates the entire sentences thus: ‘A barren woman flowing away with the water, I look and swerve away from. This **penis hippo** floating with the water, I look and embrace it.’ It is only a native speaker of Tiv that can understand the meaning of the above sentence through the use of context. Hagher (2003, p. 65) states that Bergsma’s translation ‘missed the poetic element of the chant’ which he translates as ‘let barrenness be expelled from the land, and let fertility abound.’ Hagher (2003, p.65) maintains that Bergsma ‘falls victim to a pair of homophones’ – *nor* and *nôr*. What Bergsma seemed to hear was *nor* ‘hippopotamus or elephant’ not *nôr* which means ‘erect.’ Thus, *ijua nôr* symbolises fecundity or fruitfulness.

Gundu (2004) observes that ‘the author of Tiv poems writes the open and ordinary ‘o’ in the same way without using a diacritic to show the difference.’ This lack of phonemic differentiation poses a problem of identifying open ‘o’ and closed ‘ô’ in reading Buun’s (1977) *Tiv Poems*. Tange (2000) writes words that have closed ‘ô’ as open ‘o’, thus creating ambiguities. These examples add credence to the author’s claim: Nyingo – Nyingô and Yainjo – Yainjô (10), Aondo – Aôndo God (14), ingor – ingyôr sister (32), Ishom – Ishôm (33), Mbalom – Mbalôm (58), Barazov – Barazôv (69), Suwadough – Suwadôugh (81), Zomon – Zômon (91), Zoho – Zôhô, Kerasongo – Kerasôngo (156) and Ngomo – Ngômo! My mother! (198). Non-italicised and non-glossed words are names of characters in *The Legitimate Candidate*. The circumflexed ‘ô’ is not indicated. Furthermore, Gar (2009) did not use circumflexed ‘ô’ in the following words: Aondo God (69), ingyôr sister, Kontien (78), Bebaiondu (82) and Agon Jov (83) and mom one (174). In a similar vein, Norya (2014, p. 15) writes ‘ayoosu’ instead of ayôôsu noise, thus substituting /ɔ:/ with /o:/. Kwaghchimin (2010) did not use closed vowel ‘ô’ in these words:

kwaghaondo religion (13), *nyorun* entering, *nyor* enter (23), *ingyor* sister (36), *Uno?* Who? (36) and *Oon* Yes (46). Akua (2021) does not differentiate between ‘o’ and ‘ô’ in these words – *tondo zwa* (promise) (75), *ngou* your mother (78). The underlined words should have been written with ‘ô’ or ‘ôô’, not ‘o’ or ‘oo’.

Conversely, some authors used ‘ô’ instead of ‘o’. These examples are found in the *Icighan Bibilo* (Holy Bible), Chia’s *Adan-Wade Kohol Ga* and Nyoon’s (2017) *Abumeior Hembangeen*. Aor (2020, p. 57) asserts that in Genesis 2:24, instead of writing ‘*iyol i môm*’ which means ‘one body’ or ‘one flesh’, the authors of the *Icighan Bibilo* wrote ‘*iyôgh i môm*’ meaning ‘one metal’ or ‘one iron.’ The spellings of the two words are not the same: *iyol* /ijól/ and *iyôgh* /ijôɣ/ or /ijô:ɣ/. Aor (2020, p. 57) refers to this error as a ‘translational deviation.’ To add credence to the above claim, Genesis 2:24 has been captured below: ‘*Ka sha ci nahan man or ka nan undu ter u nan kua ngô u nan, nan var ken kwase u nan, ve hingir iyôgh i môm ye*’ (*Icighan Bibilo*: My Italics and boldface). This is translated as: ‘Therefore shall a man leave his father and his mother, and shall cleave unto his wife: and they shall be **one flesh**’ (King James Version: Genesis 2:24).

Similarly, Nyoon (2017) incorrectly spells *iyol* meaning body as *iyôl*. It means that the *iyol* is a confusing word which can be spelt as *iyôgh* and *iyôl*. Nyoon’s character says, ‘*Dadioo, Dadioo, momi taver iyôl yô ga, momi ka a wua iyô!*’ (Nyoon, 2017, p. 39). The loose translation is that: ‘Daddy oo, Daddy oo, Mummy has a strong **body** that she had killed a snake!’ A character in Chia (2015) replaces ‘ô’ in the place of ‘o’ in the word *yôngo* instead of writing it as *yongo*. *Yôngo* means sheep whereas *yongo* refers to cup, chalice, feud and trouble. Chia intends to use the word *yongo* meaning cup but he wrongly renders it as *yôngo*. This is captured thus: ‘*Henen sha sharen i kwase na man myohom ma kuuv [sic] yô, sar un u vendan u za ngohol yôngo shon*’ (Chia, 2015, p. 2)’ This sentence is translated as: ‘Thinking about his wife and the burden of death, he did not want to accept that **cup** [of poisoned sasswood]’ (Boldface and brackets are my emphases).

The above review acknowledged the presence of /ɒ/, /ɔ/, /o:/ and /ɔ:/ in the Tiv phonology. Each vowel has a corresponding orthographic origin such as letters ‘o’ for /ɒ/, ‘oo’ and ‘or’ for /o:/, ‘ô’ for /ɔ/ and ‘ôô’ and ‘ôr’ for /ɔ:/. The length or duration of

a vowel in Tiv depends on the doubling of the same vowel or when a vowel precedes letter *r* whereas short vowels are not doubled. This presupposes that /ɒ/ and /ɔ/ are short vowels while /o:/ and /ɔ:/ are long vowels in Tiv. However, the major challenge is that words that have short and long open ‘o’ /ɒ/ and ‘oo’ /o:/ and closed ‘ô’ /ɔ/ and ‘ôô’ /ɔ:/ are mostly written and pronounced as /ɒ/ and /o:/ as if they are allophones of the same phonemes in Tiv. This lack of distinction between /ɒ/ and /ɔ/ or /o:/ and /ɔ:/ causes lexical ambiguities as seen in foregoing review.

3. THEORETICAL FRAMEWORK

This study adopts Chomsky and Halle’s (1968) ‘Phonetic Features’ Model (PFM). These features are described mainly in articulatory terms, although Chomsky and Halle occasionally refer to acoustic and perceptual correlates. Interestingly, these features are ‘binary for linguistic description’ (Clark, Yallop and Fletcher, 2007, 443) – all sounds have [+] and [-] values. Chomsky and Halle’s (298–330) PFM has major class features (sonorant, vocalic and consonantal); cavity features (coronal, anterior, high, low, back, round, distributed, covered, glottal constriction and nasal lateral); manner of articulation features (continuant, instantaneous release, velar suction, implosive, velar pressure, ejection and tense); source features (heightened subglottal pressure, voiced, strident) and prosodic features (stress, pitch and length).

The importance of PFM in this study is that it describes the phonetic features of /ɒ/, /ɔ/, /o:/ and /ɔ:/ Tiv vowels. These descriptions will show the similarities and dissimilarities of /ɒ/, /ɔ/, /o:/ and /ɔ:/ as Tiv phonemes. This model shows that Tiv vowels /ɒ/, /ɔ/, /o:/ and /ɔ:/ are sonorants (syllabic), vocalic (voiced), back and rounded vowels. The binarism of this theory [+ and -] is very simple to be understood by average readers. For instance, [+ sonorant, vocalic, round and tense] indicate that /ɒ/, /ɔ/, /o:/ and /ɔ:/ vowels are sonorants, vocalic, round and tense whereas [- consonantal, coronal, anterior, distributed, nasal] shows that /ɒ/ and /ɔ/; /o:/ and /ɔ/ vowels are consonantal, coronal, anterior, distributed and nasal sounds.

4. RESEARCH METHODOLOGY

Methodologically, this study uses participant-observation tool for obtaining data for this study. The researcher is a native speaker of Tiv therefore intuitively obtained the data for this study. Also, the researcher observed how people of Tiv extraction

converse, write words that ordinarily would have been written with a closed ‘ô’ but were substituted with ‘o’. The data for this study were sourced using primary and secondary sources. Primary source was obtained through observation whereas documentary sources were got from literary texts, journal articles, textbooks and dictionaries. The author jotted down words that have ‘o’, ‘oo’, ‘oor’, ‘or’, ‘ô’, ‘ôô’ ‘ôôr’ and ‘ôr’ through observation and reading of literary texts. These words were then grouped into /ɒ/, /o:/, /ɔ/ and /ɔ:/, that is, ‘o’ represents /ɒ/, ‘oo’, ‘oor’ and ‘or’ stand for /o:/, ‘ô’ is a spelling for /ɔ/ and ‘ôô’, ‘ôôr’ and ‘ôr’ represent /ɔ:/, respectively.

5. DATA PRESENTATION AND ANALYSIS

The data in this study have been presented under four headings; namely:

- i. Phonetic features of /ɒ/ and /ɔ/; /o:/ and /ɔ:/ vowels,
- ii. Phonotactic constraints of /ɒ/, /o:/, /ɔ/ and /ɔ:/,

- iii. Distinctions among /ɒ/ and /o:/; /ɔ/ and /ɔ:/; /ɒ/ and /ɔ/; /o:/ and /ɔ:/, and
- iv. Implications of studying /ɒ/, /o:/, /ɔ/ and /ɔ:/ Tiv vowels

5.1 Phonetic Features of /ɒ/, /ɔ/, /o:/ and /ɔ:/ Tiv vowels

The description of Tiv vowels /ɒ/, /ɔ/, /o:/ and /ɔ:/ has been done using Chomsky and Halle’s Phonetic Features Model (PFM). This model clearly shows that /ɒ/, /ɔ/, /o:/ and /ɔ:/ are sonorant, vocalic, voiced, back, round and tense because of the presence of [+ value] whereas [- value] indicates the absence of such features. For instance, /ɒ/, /ɔ/, /o:/ and /ɔ:/ are all vowels therefore minus [-] consonantal, anterior, coronal, nasal, lateral, strident and so on are appropriate for the description of vowels. What follows is the description of /ɒ/, /ɔ/, /o:/ and /ɔ:/ according to major features, cavity features and manner of articulation features.

	/ɒ/	/ɔ/	/o:/	/ɔ:/
<i>Major Features</i>				
Sonorant	+	+	+	+
Vocalic	+	+	+	+
Consonantal	-	-	-	-
<i>Cavity features</i>				
Coronal	-	-	-	-
Anterior	-	-	-	-
High	-	-	-	-
Low	+	-	+	-
Back	+	+	+	+
Round		+	+	+
Distributed	-	-	-	-
Covered	-	-	-	-
Glottal constrictor	-	-	-	-
Nasal	-	-	-	-
Lateral	-	-	-	-
<i>Manner of articulation features</i>				
Continuant	-	-	-	-
Instantaneous release	-	-	-	-
Velar suction	-	-	-	-
Ejection	-	-	-	-
Tense	+	+	+	+
Heighten subglottal pressure	-	-	-	-
Voiced	+	+	+	+
Strident	-	-	-	-

From the above description, it is clear that /ɒ/, /o:/, /ɔ/ and /ɔ:/ are sonorants, vocalic, voiced, round vowels, back vowels and tense. They are sonorants

because they are produced with vocal tract cavity; vocalic because vocal cords allow spontaneous voicing; voiced because their production involves

the vibration of vocal cords. They are round vowels in the sense that the lip orifice narrows during their production. They are back vowels because of the retraction of the tongue body and they tense vowels because their articulation is deliberate, accurate and maximally distinct. However, /ɒ/, /o:/, /ɔ/ and /ɔ:/ greatly differ. They are distinctive sounds in Tiv that have letters 'o', 'oo', 'oor', 'or', 'ô' 'ôô', 'ôôr' and 'ôr' as their orthographic origins. Their differences are highlighted below:

Open or Low Vowels: /ɒ/ and /o:/ are open or low vowels because the body of the tongue retracts from neutral position. Examples are: *akor* horns, *ankyor* small rat, *asor* lots, *dogo* tall person, *doo* good, *ibyô* guilt, *ihyom* hatred, *ikyobo* kobo, *iniongo* feast, *ishondo* ant, *iyol* body, *iyongo* trouble, *koson* keeps, *kosom* keep for me, *kpoo* cassava chips, *kyooso* hip, *loho* message, *mon* neck, *mkom* satisfaction, *mkor* protection, *mondo* shine or water yam, *mor* puff, *msoo* liking, *ndor* fresh, *ngor* shout, *nombor* tongue, *songol* subside, *togh* ear, *tom* job, *tombo* sprout, *tso* boat, *tsoghol* difficult and *tsongor* shake. Note that words with letter 'o' are examples of /ɒ/ while those with double 'oo' and 'or' belong to /o:/.

Mid Vowels: /ɔ/ and /ɔ:/ are mid vowels in Tiv because in their articulation, the tongue is placed between a closed vowel and an open vowel. In the production of /ɔ/ and /ɔ:/, the tongue is below the neutral position. Examples include: *sôn* request, *iyôgh* metal, *iyôngo* sheep, *kôhól* incise, *kôrogh* congeal, *môm* one, *môndo* anthill, *nômbo* stiffness, *tôgh* sceptre, *tôm* covet, *akôôr* snails, *ankyôr* small occiput, *asôôr* suitors, *dôông* strongly or stoutly, *ibyôr* napkin, Igbôôr name of a settlement in Mbagwaza council ward of Ushongo Local

Government Area, Benue State of Nigeria, *kôô* snore, *môôr* to plant, *msôô* stinging of, *ndôôr* spread and *shiôôr* suitor. Words with 'ô' are examples of /ɔ/ whereas those with 'ôô', 'oor' and 'ôr' are examples of long /ɔ/.

Duration: These vowels have long and short counterparts. /o:/ and /ɔ:/ are said to be long vowels because their articulation is longer. Their letters are doubled as in 'oo' and 'ôô' or letter comes after 'or' and 'ôr'. Phonemically, a length mark [:] used to indicate duration whereas short and /ɒ/ and /ɔ/ are not stylistically marked. Lack of markedness shows they are short vowels. For instance, *akô* and *akôr* (battery and horns), *mô* and *môr* (I and swell), *kô* and *kôr* (a kind of fish and rope); *kô* and *kôô* (unripe and snore), *mô* and *môôr* (anyone and to plant),

Circumflexion and Non-circumflexion: Orthographically, what differentiates 'o' and 'ô' is the presence and absence of a circumflexed diacritic. A capped letter 'ô' is known as a closed 'ô' while the uncapped letter 'o' is called an open 'o'. Ambiguity sets in when 'ô' /ɔ/ or 'ôô' /ɔ:/ are not circumflexed. As a mark of differentiation, closed 'ô' must always be marked or indicated so as to avoid mispronunciation, phonetic substitutions and ambiguities.

It is the above distinctions – open, mid, duration and circumflexion – that this study is vitally important. These differences have been analysed using Chomsky and Halle's (1968) Phonetic Features' Model (PFM). Features such as plus and minus [+ and -] open, mid, duration (long and short) and circumflexion have been examined as indicated below:

	/ɒ/	/ɔ/	/o:/	/ɔ:/
Open	+	-	+	-
Mid	-	+	-	+
Long	-	-	+	+
Short	+	+	-	-
Circumflexion	-	+	-	+

The above description presupposes that /ɒ/ and /o:/ are open vowels; /ɔ/ and /ɔ:/ are mid vowels; /o:/ and /ɔ:/ are long vowels; /ɒ/ and /ɔ/ are short vowels and /ɔ/ and /ɔ:/ are circumflexed vowels that are written with a capped diacritic known as a circumflex [^]. Minus value [-] indicates that /ɔ/ and /ɔ:/ are not open vowels; /ɒ/ and /o:/ are not mid vowels; /ɒ/ and /ɔ/ are not long vowels; /o:/ and /ɔ:/ not short vowels and /ɒ/ and /o:/ are not

circumflexed vowels. Lastly, /ɒ/ is open and short vowel; ɔ/ is a mid, short and circumflexed vowel; /o:/ is an open and long vowel and /ɔ:/ is a mid, long and circumflexed vowel.

5.2 Phonotactic Constraints of /ɒ/, /o:/, /ɔ/ and /ɔ:/

Tiv vowels /ɒ/, /ɔ/, /o:/ and /ɔ:/ can come at the beginning, middle and end of words. They can be

monosyllabic, disyllabic and polysyllabic. They may have monosyllabic open syllables as in *bo* stinginess, *do* gambling, *to* mascara lead, *mo* I, *too* pour, *doo* good, *soo* like, *kô* unripe, *mô* anyone, *tyô* kinsmen, *sôô* sting, *tôô* take, *kôô* snore, *hôô* rot. These monosyllables may have closed syllables as in *tom* job, *kon* tree, *bon* stare, *goom* divert, *tôm*

covet, *hôm* blossom and *kôôm* correct. Disyllables and polysyllables also have open and closed syllables in Tiv. For clear understanding of the phonotactic constraints of /ɒ/, /o:/, /ɔ/ and /ɔ:/, Table 2 shows the positions of the Tiv vowels /ɒ/, /o:/, /ɔ/ and /ɔ:/.

Table 2: The positions of the Tiv vowels /ɒ/, /o:/, /ɔ/ and /ɔ:/

Vowels/Positions	Beginning	Middle	End
/ɒ/	<i>oso</i> crisp, <i>ombo</i> amass, <i>ongo</i> scoop, <i>osogh</i> slip	<i>kon</i> do close, <i>tom</i> job, <i>ishon</i> do ant, <i>mon</i> neck	<i>Mo</i> I, <i>tso</i> boat, <i>iby</i> o guilt, <i>imo</i> voice, <i>igbo</i> bullet
/o:/	<i>oo</i> sun rays, <i>or</i> person, <i>or-kpen</i> dead person	<i>goom</i> divert, <i>ikyoo</i> so hip, <i>doon</i> good, <i>ishoon</i> love	<i>soo</i> live, <i>too</i> pour, <i>nor</i> elephant, <i>mzoo</i> conference
/ɔ/	<i>onov</i> children, <i>osô</i> sit, <i>ov</i> weed, <i>onov-kasev</i> daughters	<i>ahom</i> fats, <i>iyongo</i> sheep, <i>tom</i> covet, <i>tsongo</i> circumcise	<i>ishô</i> innocence, <i>alulô</i> skewer, <i>injô</i> debt, <i>atô</i> buttocks
/ɔ:/	<i>ôô</i> wash, <i>ôr</i> say, <i>ôô-ôô</i> stork, <i>ôôn</i> breathing or yes	<i>mkôôm</i> correction, <i>iôôn</i> breath, <i>nôôn</i> raining, <i>sôôn</i> near	<i>kôô</i> snore, <i>lôô</i> plant, <i>gugôô</i> raven <i>hôr</i> knead

Tiv vowels /ɒ/, /o:/, /ɔ/ and /ɔ:/ mostly appear in the middle and end of words. For the sake of clarity and avoidance of boredom, only few words have been included as examples.

5.3 Distinctions among /ɒ/ and /o:/; /ɔ/ and /ɔ:/; /ɒ/ and /ɔ/; /o:/ and /ɔ:/

The distinctions among these vowels are because of duration, that is, long and short. This subheading pairs short and long /ɒ/ and /o:/ and /ɔ/ and /ɔ:/; short /ɒ/ and /ɔ/; and long /o:/ and /ɔ:/. These paired words are presented in the table for clarity and aesthetic appeal.

Table 3: Short /ɒ/ and Long /o:/

/ɒ/		/o:/	
Words	Meanings	Words	Glosses
<i>ato</i>	ears	<i>ator</i>	kings
<i>bo</i>	stinginess	<i>bol</i>	ball
<i>do</i>	gambling	<i>doo</i>	good
<i>go</i>	arrow	<i>gor</i>	kola
<i>ho</i>	hollow	<i>hor</i>	pointed
<i>iby</i> o	guilty	<i>imbyor</i>	fountain
<i>igbo</i>	bullet	<i>igbor</i>	bambara nut
<i>iky</i> o	battery	<i>ikyor</i>	ropes
<i>isho</i>	vomit	<i>ishor</i>	sorcery
<i>ko</i>	fish	<i>kor</i>	sasswood
<i>koko</i>	old	<i>korkor</i>	sickly
<i>mo</i>	I	<i>mor</i>	puff
<i>to</i>	mascara lead	<i>too</i>	pour
<i>tyo</i>	of head	<i>tyoor</i>	king
<i>w</i> o	mountain	<i>woo</i>	killed

The above table indicates that short /ɒ/ is realised in words that have letter 'o' whereas 'ol', 'oo' 'oor' and 'or' spellings result in long /o:/.

Table 4: Short /ɔ/ and Long /ɔ:/

/ɔ/		/ɔ:/	
Words	Meanings	Words	Glosses
<i>atô</i>	buttocks	<i>atôôr</i>	pens
<i>cô</i>	small	<i>côô côô</i>	filthy
<i>igyô</i>	caterpillar	<i>igyôô</i>	knuckle
<i>ijô</i>	languages	<i>ijôr</i>	well
<i>ikyô</i>	forest	<i>ikyôr</i>	luck
<i>kô</i>	unripe	<i>kôr</i>	catch
<i>ngô</i>	mother	<i>ngôôr</i>	tarry

The aforementioned table indicates that short /ɔ/ is realised in words that have letter ‘ô’ whereas ‘ôô’, ‘ôôr’ and ‘ôr’ spellings stand for long /ɔ:/. Interestingly, all the paired words do not have

codas, that, terminal or final consonants. It is also noted that the final ‘r’ aids in elongating the preceding vowels. Again, instances of linking *r* in Tiv are infinitesimally small.

Table 5: Short /ɔ/ and short /ɔ/

/ɔ/		/ɔ/	
Words	Meanings	Words	Glosses
<i>ako</i>	batteries/goals	<i>akô</i>	forests
<i>ato</i>	ears	<i>atô</i>	buttocks
<i>hon</i>	disapproved	<i>hôn</i>	to snare
<i>igyo</i>	pig	<i>igyô</i>	caterpillar
<i>ihyo</i>	antelope	<i>ihyô</i>	knife
<i>ikyo</i>	obey/goal	<i>ikyô</i>	forest
<i>isho</i>	vomit	<i>ishô</i>	innocence
<i>ityo</i>	palm-wine	<i>ityô</i>	patrilineal
<i>ityogh</i>	head	<i>ityôgh</i>	pillar
<i>ko</i>	kind of fish	<i>kô</i>	unripe
<i>kondo</i>	close/block	<i>kôndo</i>	ascend
<i>mo</i>	I	<i>mô</i>	whoever
<i>mogh</i>	rise	<i>môgh</i>	uproot
<i>nondo</i>	open	<i>nôndo</i>	to drip
<i>nongo</i>	line	<i>nôngo</i>	struggle
<i>oso</i>	crisp	<i>ôsô</i>	sit

The aforesaid table vividly shows that /ɔ/ and /ɔ/ are contrastive short vowels in Tiv that have ‘o’ and ‘ô’ spelling origins. The contrast is observed mostly at the end of words as seen in these pairs of words: *ako* – *akô*, *ato* – *atô*, *igyo* – *igyô*, *ihyo* – *ihyô*, *ikyo* – *ikyô*, *isho* – *ishô*, *ityo* – *ityô*, *ko* – *kô* and *mo* – *mô*.

These words *hon* – *hôn*, *ityogh* – *ityôgh* and *mogh* – *môgh* have medial contrast whereas /ɔ/ appears in the middle and end of *kondo*, *nondo* and *nongo* but /ɔ/ appears only in the middle of *kôndo*, *nôndo* and *nôngo*. Lastly, only *oso* and *ôsô* have initial and final contrasts.

Table 6: Long /o:/ and Long /ɔ:/

/o:/		/ɔ:/	
Words	Meanings	Words	Glosses
<i>akoo</i>	chaff	<i>akôô</i>	fatness
<i>kor</i>	rope	<i>kôr</i>	catch
<i>loo</i>	sweet brew	<i>lôô</i>	to plant
<i>or</i>	person	<i>ôr</i>	say
<i>soo</i>	like/love	<i>sôô</i>	sting
<i>soon</i>	likes	<i>sôôn</i>	delays
<i>too</i>	pour	<i>tôô</i>	tarry
<i>tor</i>	king	<i>tôr</i>	take
<i>nor</i>	elephant	<i>nôr</i>	erect
<i>oo</i>	rays	<i>ôô</i>	wash
<i>tyoor</i>	king	<i>ityôô</i>	pen
<i>vor</i>	seed	<i>vôr</i>	weary
<i>zor</i>	weld/bud	<i>zôr</i>	pluck

Table 6 illustrates that long /o:/ has ‘oo’, ‘oor’ and ‘or’ as their divergent spelling origins while /ɔ:/ is represented with ‘ôô’, ‘ôôr’ and ‘ôr’ letters. These spellings cause words that have them to be pronounced with a longer duration against their counterpart vowels /ɔ/ and /ɔ/, respectively.

5.4 Implications of studying /ɔ/, /o:/, /ɔ/ and /ɔ:/ Tiv vowels

The study of /ɔ/, /o:/, /ɔ/ and /ɔ:/ has morphological, phonological and semantic functions or implications. At morphological level, it has been discovered that syllables or words are cloned or doubled for forming new words. These doubled

syllables or words are known as reduplications. Thus, words with /ɒ/, /o:/, /ɔ/ and /ɔ:/ can perform reduplicative role in the formation of new words in

the Tiv morphology. Table 7 shows how /ɒ/, /o:/, /ɔ/ and /ɔ:/ can aid in forming new words.

Table 7: Reduplications as a function of /ɒ/, /o:/, /ɔ/ and /ɔ:/

Words	Meanings	Words	Meanings
<i>doo doo</i>	very good	<i>dôgh-dôgh</i>	to sag
<i>gogo</i>	ladder	<i>gôgô</i>	long
<i>koko</i>	old	<i>kôkô</i>	long
<i>korkor</i>	sickly	<i>kôrkôr</i>	unripe
<i>kpoo-kpoo</i>	arid	<i>kpôô-kpôô</i>	special
<i>ikyon-ikyon</i>	full of trees	<i>ikyôn-ikyôn</i>	blackish
<i>oo-oo</i>	soft anthill	<i>ôô-ôô</i>	stork

Another implication or function of studying /ɒ/, /o:/, /ɔ/ and /ɔ:/ is that it leads to minimal pair. A minimal pair is a pair of words that is distinguished by one feature. The contrast between the words below is just a phonemic difference, that is, all

words have similar spellings except only one phoneme. This difference is signalled by the use of /ɒ/ and /o:/ or /ɔ/ and /ɔ:/. Table 8 shows the minimal contrasts as a result of /ɒ/ and /o:/ or /ɔ/ and /ɔ:/.

Table 8: Minimal pairs as a result of /ɒ/ and /ɔ/ or /o:/ and /ɔ:/ contrasts

Words	Meanings	Words	Meanings	Contrastive Units
<i>azongo</i>	claws	<i>azôngo</i>	squat	/ɒ/ & /ɔ/
<i>gor</i>	kola	<i>gôr</i>	provoke	/o:/ & /ɔ:/
<i>homon</i>	main part	<i>hômôn</i>	blossoming	/ɒ/ & /ɔ/
<i>hoo</i>	catarrh	<i>hôô</i>	rot	/o:/ & /ɔ:/
<i>hor</i>	pointed	<i>hôr</i>	mix/abstain	/o:/ & /ɔ:/
<i>ikyon</i>	trees	<i>ikyôn</i>	spirogyra	/ɒ/ & /ɔ/
<i>ikyor</i>	rat	<i>ikyôr</i>	luck	/o:/ & /ɔ:/
<i>koso</i>	keep	<i>kôso</i>	discuss	/ɒ/ & /ɔ/
<i>mtom</i>	heads	<i>mtôm</i>	pillars	/ɒ/ & /ɔ/
<i>mzoo</i>	conference	<i>mzôô</i>	plucking of	/o:/ & /ɔ:/

The above table indicates the contrasts between /ɒ/ and /ɔ/ and /o:/ and /ɔ:/. There are 5 examples each in the above words that show contrasts between /ɔ/ and /ɔ:/ and /o:/ and /ɔ:/ vowels. The above contrasts establish that /ɒ/, /o:/, /ɔ/ and /ɔ:/ are distinctive sounds Tiv,

The third implication of studying /ɒ/, /o:/, /ɔ/ and /ɔ:/ is that the vowels under study result in

homophones or rhymes. A critical analysis of the select vowels establishes that /o:/ and /ɔ:/ are good examples of homophones or rhymes. Homophones are words that have similar pronunciation but different meanings and spellings while rhyme is when words have similar pronunciation. Table 9a has clearly shown that /o:/ words can homophonic or rhyming effects.

Table 9a: Homophonic or rhyming nature of /o:/

Words	Meanings	Transcriptions
<i>akoo/akor</i>	chaff/ horns	/ako:/
<i>Asoo/asor</i>	sb's name/ sorceries	/aso:/
<i>Atoo/ator</i>	sb's name/kings	/ato:/
<i>hoo/hor</i>	catarrh/pointed	/ho:/
<i>oo/or</i>	sun rays/ or	/o:/
<i>poo/Poor</i>	plenty/son of Tiv	/po:/
<i>too/tor</i>	pour/chief	/to:/

It is no doubt, for example, that *akoo* and *akor* are differently spelt but have similar pronunciation in Tiv. Both *akoo* and *akor* have long /o:/ which can

be effective in determining homophones in Tiv. Table 9b signals how words that have /ɔ:/ can rhyme or be homophonous.

Table 9b: Homophonic or rhyming nature /ɔ:/ vowel

Words	Meanings	Transcriptions
<i>atôôr /Atôô</i>	pens/sb's name	/atɔ:/
<i>hôô/ hôr</i>	rot/abstain	/hɔ:/
<i>ijôô/ ijôr</i>	maggot/well	/idʒɔ:/
<i>ôô/ ôr</i>	wash/say	/ɔ:/
<i>yôô/ yôr</i>	announce/prepare	/jɔ:/

The above transcription is an indication that the differently spelt words have similar pronunciations. Tables 9a and b attest that only long /o:/ and /ɔ:/ can be homophonous. This is because /o:/ and /ɔ:/ have divergent spelling origins such as 'oo', 'oor', 'or', 'ôô' 'ôôr' and 'ôr', respectively. The short /ɒ/ and /ɔ/ cannot be homophonous because they only have one letter each that represent their sounds – 'o' and 'ô', respectively.

The study of /ɒ/, /ɔ/, /o:/ and /ɔ:/ helps in identifying and resolving ambiguities, especially in written texts. Ambiguity results when a word or a sentence has multiple meanings or interpretations. A closed 'ô' that is not circumflexed can result in ambiguity. A close reading of the select literary texts has shown that 'ô' is totally omitted, thus paving way for lexical and sentential ambiguities. Nyoon (2017) does not differentiate between open 'o' and closed 'ô' in his collections of comedies. He omits 'ô' in the following words and phrases; *nyor* enter, *msorum* liquor, *iyough* money, *akongo* backyard (Nyoon, 2017, p. 1); *yoo* ordered, *oon* yes, *akondoakondo* panting, *or* person (Nyoon, 2017, p. 2 – 3); *mom* one, *mom mom* one by one, *orkwagh* say something, *vosu* marry, *tondo akpe msor* drink bottles of beer, Tyolumun, *tso* thus, Tyondu and *kor* caught (Nyoon, 2017, p. 5 – 13). The correct spellings of the aforementioned words and phrases should be written with a closed 'ô' as indicated in the succeeding examples: *nyôr*, *msôrom*, *iyôugh*, *akôngo*, *yôô*, *akôndo akôndo*, *ôr*, *môm*, *môm môm*, *ôr kwagh*, *vôso*, *tôndo akpe msôr*, Tyôlumun, *tsô*, Tyôndu and *kôr*. This lack of phonemic distinction causes *akondo akondo* to mean panting or full of clothes, *or* to be person or to say, *tso* refers to so and canoe, *iyough* to mean yam, metal and money. This study aids in identifying and resolving ambiguities that exist in the select Tiv vowels – /ɒ/, /ɔ/, /o:/ and /ɔ:/.

6. CONTRIBUTIONS TO KNOWLEDGE

i. This study reaffirms that /ɒ/, /o:/, /ɔ/ and /ɔ:/ are phonemes, that is, they are contrastive.

- ii. Didactically, this study will help scholars to correctly write and pronounce Tiv words that have 'o' and 'ô' articulately.
- iii. The study establishes that /ɒ/, /ɔ/, /o:/ and /ɔ:/ phonemes constitute minimal pairs in the Tiv phonology.
- iv. This study shows an interface between graphology and phonology, that is, letters and phonemes are simultaneously discussed.
- v. Theoretically, Chomsky and Halle's (1968) 'Phonetic Features' Model (PFM) can be used for analysing segmental and suprasegmental features of other languages.

7. CONCLUSION

The phonemic discussion of Tiv vowels /ɒ/, /ɔ/, /o:/ and /ɔ:/ is vitally important for spoken and written discourses. This study has discovered that speakers and writers of the Tiv language are often confused when a closed /ô/ or an open vowel 'o' is to be used. This has brought about phonemic substitutions, ambiguities, defective articulations of the vowels under study. The pervasive effect of phonemic substitutions of /ɒ/ with /ɔ/, /o:/ with /ɔ:/ and /ɔ/ with /ɒ/ in the sampled literary texts have to be corrected. It has also been learned that /ɒ/, /o:/, /ɔ/ and /ɔ:/ are phonemes not allophones of the same phonemes that some literatures have claimed. The study has revealed that these phonemes perform the functions of minimal pairs, reduplications and rhymes. It can thus be concluded that the description of /ɒ/, /ɔ/, /o:/ and /ɔ:/ will reduce lexical and sentential ambiguities, perfect articulation will be enhanced and phonemic substitution will be corrected.

8. RECOMMENDATIONS

- i. This study can be of tremendous use to phonologists and phoneticians who may want to carry out phonemic analysis of any given language.
- ii. Students, scholars and authors should always circumflex a closed 'ô' to differentiate it from its open 'o' counterpart.

- iii. Contrastive phonemic analysis tests should be given to pupils and students to enable them provide words for /ɒ/, /ɔ/, /o:/ and /ɔ:/ phonemes.
- iv. Teachers, instructors and lecturers should select Tiv passages that have /ɒ/, /ɔ/, /o:/ and /ɔ:/ vowels and should ask pupils and students to read them aloud.
- v. Tiv language studies should be made a compulsory subject at primary schools and Junior Secondary Schools levels in the Tiv-speaking Local Government Areas of Benue State of Nigeria.
- vi. Authors should write textbooks on Tiv graphology and phonology so that students can impeccably study the graphic and phonic substances.
- vii. This study is highly inexhaustible so scholars should examine other phonological aspects of /ɒ/, /ɔ/, /o:/ and /ɔ:/ that have not been discussed in this study.

REFERENCES

2. Akua, A.G. (2021). *Tar wam za hemen*. Makurdi: Baba Graphics and Publishing.
3. Aor, T. (2020). Graphological deviations in the *Ichighan Bibilo (Tiv Holy Bible)*. *The Cactus: A Multi-disciplinary Journal*, 3(1), 41 – 64.
4. Bergsma, H. M. (1970). Tiv proverbs as a means of social control. *African Journal of the International African Institute*. 40(2), 151 – 163.
5. Buun, O. P. (1977). *Tiv poems*. Lagos.
6. Carr, P. (2008). *A glossary of phonology*. Edinburgh: Edinburgh University Press.
7. Chia, S. (2015). *Adan-wade kohol ga* (Rev. Edn.). Makurdi: Satos Offset Press.
8. Chomsky, N, Halle, M. (1968). *The sound pattern of English*. New York Harper and Row.
9. Clark, J., Yallop, C. & Fletcher, J. (2007). *An introduction to phonetics and phonology* (3rd Edn.). Oxford: Blackwell Publishing.
10. Collins, B. and Mees, M. I. (2003). *The phonetics of English and Dutch*. (5th Rev. Edn.). Leiden: Brill.
11. Crystal, D. (2008). *A dictionary of linguistics and phonetics*. (6th Edn.). London: Blackwell.
12. Dzugba, A. (2011). *Tiv and their culture*. Ibadan: John Archers Publishers.
13. Gar, E. (2009). *The blood of the ram*. Makurdi: Aboki Publishers.
14. Gundu, A. G. (2004). Problems and prospects for a minority language literature in Nigeria: The case of the Tiv phone literature. Emenanjo, N. E. (Ed.). *Multilingualism, minority languages and language policy in Nigeria*. Agbor: Central Books Limited.
15. Hagher, I. (2003). *The Kwagh-hir theatre: A metaphor of resistance*. Ibadan: Caltop Publications (Nigeria) Limited.
16. Karshima, D. (2014). *Comprehensive Tiv orthography*. (Rev. Edn.). Makurdi: Doo-Ter Books Publications.
17. Kwaghchimin, M. F. (2010). *A star of hope*. Makurdi: Vast Publishers.
18. Low, E-L. (2015). *Pronunciation for English as an international language: From research to practice*. London: Routledge.
19. McArthur, T. (Ed.). (1992). *The Oxford companion to the English language*. Oxford: Oxford University Press.
20. Mzoo U Zwativ. (2012). *Ortogerafi u Tiv*. Makurdi: Akpagher Publishing and Educational Consult.
21. Norya, T. J. (2014). *The luminous flame*. Makurdi: Aboki Publishers.
22. Nyoon, A. A. (2017). *Abumeior hembageen*. Makurdi: Old Press.
23. Ogden, R. (2009). *An Introduction to English Phonetics*. Edinburgh: Edinburgh University Press.
24. Orkar, J. T. (2006). *Ortogerafi u Tiv*. Makurdi: Indyer Publishers.
25. Orkar, J. T. (2013). *Essentials of Tiv language*. Makurdi: Indyer Publications.
26. Pulleybank, D. (1988). Underspecification, the feature hierarchy and Tiv vowels. *Phonology*, 5, 299 – 326.
27. Shoja, A. (2010). *Tiv language in practice: A practical approach*. Katsina-Ala: Gold Ink Company.
28. Tange, G. (2000). *The legitimate candidate*. Makurdi: Fanen Publishers.
29. Tijah, T. (2012), *Slow men at work*. Makurdi: Aboki Publishers.
30. Trask, L. R. (1996). *A dictionary of phonetics and phonology*. London and New York: Routledge.