

A proposal for Zaar orthography and spelling reform

DOI: <https://doi.org/10.60787/jolan.vol5no1.420>

Christopher John
Department of Linguistics and Nigerian Languages
University of Jos
johnchristopher463@gmail.com

Abstract

Orthography marks a significant milestone in the development of language as a tool for cultural and socio-political advancement in modern societies. Every natural language is expected to have a writing system that facilitates literacy, cultural preservation, and language documentation. For the Zaar language, a West Chadic language spoken by approximately 150,000 people in southern Bauchi State, orthographic inconsistencies have hindered its effective use in writing. This paper describes earlier attempts at developing Zaar orthography, identifies gaps in those descriptions, and proposes a clearer, more learner-friendly system. Zaar is a cluster of dialects, including Moss, Walgi, Wami, Gambar Lere, Num, Sigidi, and Kal. The proposed orthography focuses primarily on Moss, the central dialect of Zaar, with some consideration given to the Wami and Num varieties. Data for the study were sourced from posts and comments in Zaar shared on Facebook and WhatsApp platforms. The analysis draws on Banda's eight principles of orthographic description as well as Agbo's phonetic and phonemic theories. The study establishes 55 orthographic symbols/patterns to represent 56 sounds in Zaar.

Keywords: Zaar language, orthography development, dialect variation, phonetics and phonemics, language documentation.

Introduction

Despite considerable attempts from the early 21st century by Caron (2005, 2011, 2013), Zaar Language Project team 2013, among others to a proffer solution to Zaar orthography, writing in the Zaar language has witnessed considerable input in an effort represent speech by reconciling sounds with familiar and precise alphabet symbols. In the works of Caron and the Zaar Language Project Team, sounds such as /g/ and /N/ are not represented in the orthographic description. Moreover, Caron outlines *zl* and *sl* as sequence in Zaar orthography. These sequences are not present in the description suggested by the Zaar language Project team. These controversial systems of representation however, has created confusion for not only Zaar language learners but also a majority of the Zaar literate population including language professionals who have resorted to using phonetic symbols as the most convenient representation. This challenge is not unconnected with the influence of the traditional orthographic systems that are common to Latin, English and Hausa. However, since writing is the representation of speech sound in graphic form, it is possible that the spelling patterns of one language may be similar or different from that of another either based on linguistic evidence or conventional decisions.

The focus of this paper is to establish a pattern of spelling which reflects the principle of universality, explicitness and simplicity. In terms of universality, the idea is to establish a system of symbolic representation of speech sounds that reconciles linguistic peculiarities and universals in order to achieve a consistent system that cuts across languages without misrepresenting communication in the target language – Zaar. In terms of explicit but simple graphic forms, the concern is to use familiar, or, at least, less complex but significantly reliable orthographic symbols that do not pose confusion to the Zaar language community, the learner and the researcher.

Literature review

Orthography and orthography development

Language is both a complex system and a basic means by which individuals or communities express thoughts, intentions, desires or culture through oral or written symbols. The oral channel involves production, transmission and perception of speech. Linell (1982, p. 5) considers speech as an elastic, ephemeral behavior distributed in time; its proceeds are subject to engagement between or among participants in a communicative exercise. O’Grady, Archibald & Aronoff (1988, as cited in Mensah, Ukaegbu & Nyong, 2021, p. 177) see writing as the symbolic representation of language in a storable graphic

form. Scholars have described the primacy of speech over writing (e.g. Linell, 1982), partly because natural language is principally oral medium of communication, and partly because languages which do not have orthographic representations are still used for communicative purposes among its users. However, given the present stage of civilization in which language development and documentation is a vital process to the maintenance of culture against language endangerment and extinction, writing assumes a significant role in language maintenance and culture transmission.

The process of language development involves a tripartite procedure of graphization, the standardization of a writing system and the development of orthographic conventions. These concepts are clarified by Cooke (2021) who notes that orthography is in some cases used conversely with ‘writing system’ while spelling is used to make reference to ‘alphabet’ and ‘script’, and that the distinction surrounding graphization, writing and orthography however does not create controversies in linguistic description (p. 2). These processes define the status and corpus planning of a language and help to improve its capacity to promote literacy. Orthography, therefore, plays important roles in the preservation of human history and in everyday life of its users. The concern of this work is to examine and propose orthographic conventions for Zaar.

Lukpe (2011, p. 312) uses the terms *graphization* and *orthography development* interchangeably, which he argues is a complex task that requires a careful assessment of issues going beyond purely linguistic decisions to consideration of historical, religious, cultural, identity-related and practical factors in addition to linguistic ones. For KaJanolintji and Letsoalo (2023, p. 3), orthography is a standardized system of spelling conventions that focuses on the central variety. Standardization is used in this context to mean an official decision made by language regulatory bodies about how to write language. However, Williamson (1984, p.3) simply defines orthography as ‘the correct spelling of words’ and suggest that one symbol of representation should conveniently represent a single sound. In some cases, however, such discrete tendency is hardly possible. Mensah, Ukaegbu & Nyong (2021) consider the term orthography as a system of rules or conventions that characterize language in a standardize form of writing. They note that the process of orthography involves developing signs or symbols which significantly correspond to the sounds of a language. This is because language may not be perfectly captured in writing, and a writing system is only an established norm that reduces human communication to some form of physical representation. This paper adopts the term *orthography* based on its description in Karshima (2012, pp. 10-11) as follows:

1. with regards to study of correct spelling: the study of established correct spelling,
2. with regards to study of how letters are arranged: the study of letters of an alphabet and how they occur sequentially in words,
3. with regards to relationship between sounds and letters: the way letters and diacritic symbols represent the sounds of a language in spelling.

These descriptions provide a holistic guide for Zair orthography due to its diagraph patterns.

Principle of orthographic choice

Different scholars have proposed explicit principles for developing new or modifying existing orthographies across languages. For instance, Williamson (1984) and Barnwell (2008, as cited in Mensah et al, 2021, p. 193) proposed five criteria as principles of orthographic choices which are accuracy, consistency, harmonization, convenience and familiarity. Similarly, Smalley (1963) as cited in Trench, n. d, outlined five principles for developing an optimal writing system which include maximum motivation for the learner, maximum representation of speech, maximum ease of learning, maximum transfer and maximum ease of reproduction. In addition to these, other principles include; easy acquisition, easy learning of other language, spelling and alternate spelling, simplicity, social acceptability, minimal ambiguity and tone economy (Agbo, 2013). Banda's principles of orthography development which addresses challenges posed by missionary-and-colonial (traditional) inspired orthographies and serve in designing cross-border orthographies. These principles are outlined below.

- 50- One distinct sound should be represented by one phonetic/alphabet symbol.
- 51- Where principle (a) is not practical or where one sound is to be represented by two or more graphemes, then there is need to justify the use of the different graphemes to represent the same sound.
- 52- Ensure economy and preciseness
- 53- Words and sounds should be written as native speakers of a particular dialect or language pronounce them.
- 54- The aim should be a reader-friendly orthography meant to ease reading and writing, and hence, easy promotion of literacy for socio-economic development.
- 55- Avoid combination of letters where possible.
- 56- Avoid diacritics and phonetic symbols.
- 57- Harmonize alphabet and orthographic conventions within and across clusters.

The proposed orthographic convention for the Zaar language combines the phonetic theory (which provides an ‘approximate’ representation of speech in writing) and the phonemic theory (which accounts for a ‘one to one’ form of representing speech sound and graphic form).

Zaar speech sounds and orthographic convention

Speech sounds across human languages are produced using certain air mechanism(s). Crystal (2008, p. 18) observes that airstream mechanism is a phonetic concept used to describe a physiological process which provides energy source that is capable of being used in speech sound production. This process involves inward or outward movement of the air to produce ingressive or egressive airflow. Egressive is a term used to refer to all sounds produced using an outward moving airstream mechanism (p. 164). The opposite category is ingressive (an inward moving airstream mechanism), which is an uncommon mode for speech production. Two types of ingressive sounds which are used as part of the phonemic systems of some languages include implosive consonants and velaric consonants (p. 245). The primary initiator of air movement is the lungs and such pattern is described as ‘pulmonic airstream’ which underlies the majority of human speech sounds. Other mechanisms of speech production include glottalic and velaric mechanism.

Agbo (2013) identifies two types of orthography. The first is traditional orthography which has considerable inconsistencies as evident in the orthographies of Arabic, English, French, German and other languages that have long tradition of writing system. In English for instance, *isle* is pronounced as /ail/. Phonetic orthography development targets accurate production of speech in writing while phonemic theory deals with one-to-one correspondence between symbols and sounds. This means a sound is presented the same way in sound and in writing. The second type is phonetic and phonemic orthographies. Phonetic orthography gives accurate representation of spoken language in graphic form while the phonemic orthography is the representation of a symbol as the sound. The author notes that for Igbo, phonetic and phonemic orthographies describe speech and writing more accurately than traditional orthography. Agbo highlights theories of orthography which include easy acquisition; easy learning of other languages; simplified and alternate spelling; simplicity; social acceptability; minimal ambiguity; tone economy; punctuation, and etymology demand theories. One theory (traditional, phonetic or phonemic) may absorb at least two or more principles in an attempt to design an orthographic script for a given language.

Orthographic conventions

A number of orthographic conventions for the Zaar language have been suggested. The most authoritative is by Caron (2005, 2011, 2013). Caron (2005, pp. 2-3) established 44 alphabetic letters for writing the Zaar language. These are; *a, a:, b, b, c, d, dz, d, e, e:, ə, ə:, f, g, gh, h, i, i:, j, k, l, m, mb, n, nd, ndz, ng, nj, ny, η, p, r, t, s, sh, sl, t, ts, v, w, y, z, zh, zl*.

In spite of the excellent linguistic background of Caron's proposal, it has the following shortcomings: i) it fails to capture the difference in representing *η* and *n* orthographic forms; ii) explicit explanation regarding variants of orthographic specification for *g* and *g*, where applicable, is not given or at least distinguished in terms of orthographic shapes; iii) diagraph patterns such as *zl* and *sl* are not attested in typical Zaar words, not even as variants of a form at initial, medial or final positions of words.

The Zaar Language Project (ZLP) has also established a Zaar spelling convention which recognizes 35 letters comprising six vowels: *a, e, ə, i, o* and *u*, twenty-two consonants: *b, b, c, d, d, f, g, h, j, k, l, m, n, η, p, r, t, s, v, w, y, z* and seven digraphs: *dl, dz, gh, sh, tl, ts*, and *zh*. The shortcoming of this proposal despite its simplified design is as follows: i) it does not have convenient spelling that distinguishes between the words for 'child' and 'fetch' in Zaar; ii) it equally use the symbol *η* in place of the diagraph *ng* in the Zaar spelling system. There is a more recent orthographic description of Zaar in the book 'History of the Zaar people of Nigeria' which merged the spelling conventions of Caron and ZLP with a slight modification in terms of the qualities of variants of sounds in a single spelling representation such as /b/ for [b] and [b], /d/ for [d] and [d], /ng/ for [η] and [N] and so on. This suggest that the Zaar language uses four airstream mechanisms, namely egressive e.g. *p*, as in *polum* [pɔ.lúm] 'happiness', ingressive *b*, as in *bes* [bes] 'urine', glottalich, as in *humbur* [hú.mbũr] 'pigeon' and velaric *η*, as in *ngala* [ŋa.la] 'crab'.

Furthermore, in describing the orthography of a language, Williamson (1984, as cited in Mensah et al. 2023, p. 179) notes that some use the alphabetic-based script while others prefer the phonetic-based script. However, regardless of the particular approach adopted, consistency and harmonization are the core principles of general orthographic development.

Methodology

Zaar is a cluster of dialects, namely Moss, Walgi, Wami, GambarLere, Num, Sigidi and Kal. The paper draws its corpus from three dialects of Zaar: Moss, Wami and Num without restricting phonological variations across these varieties. This is in order to achieve what

Mensah et al (2023, p. 179) describe as ‘faithfulness to the linguistic reality’ of the Zaar language where a sound correspondingly reflects a single symbol or diagraph, or at least variants in all its ramifications. The corpus used for this study is a combined wordlist consisting of 108 items extracted from West African Linguistic Society Questionnaire for the Data Sheet Project, the Ibadan Wordlist additional items designed by the researcher.

This section details the proposed phonetic and phonemic spelling system for the Zaar language in order to achieve a fairly consistent relationship between sounds and symbols. Where a phonetic criterion fails to achieve differentiation between two sounds in terms of the spelling symbol or pattern, an arbitrary representation is used to achieve a definite differentiation. The aim is to set out at least a pattern of binary spelling system that does not confuse the Zaar native speaker or second language learner. The goal was to establish uniformity in representing the Zaar language in writing, popularize and teach users of the orthography. Excerpt of the proposal was verified by the Zaar Language Development Forum that constitutes language professionals, Zaar language development enthusiasts and Zaar native speakers spread across different dialects of Zaar.

The consonants

An ideal natural language consists of vowels and consonants which are part of its alphabet system. In some cases, two or more languages may have common alphabets with at least, slight variation. The variation is what distinguishes one language from another. This difference influences the sound and alphabet system of languages. The study notes some discrepancies and shortcomings of previous orthographic convention proposed for Zaar and propose thus:

I. ‘B’ and ‘D’

Since this proposal aims to offer convenient means by which the Zaar language can be represented in writing, the proposed symbols that require diacritic notation are avoided in order to achieve a less complex spelling pattern that is easily accessible in the conventional computer keyboard, except for very peculiar situations where available options are very limited. It is noted that despite the overt phonological and orthographical status of the voiced bilabial implosive /ɓ/ and voiced alveolar plosive /d/, they are treated as variants of [b] and [d], respectively. Their realization, however, is dependent on context. The use of ‘variants’ in this context does not refer to the ‘phonological concept of *free variation* where the difference in pronunciation does not bring about difference in meaning. The term *variants* as used in this study refers to a type of sound, say /ɓ/ or /d/ that is at least slightly different from a norm, say *b* and *d* respectively. This is to say the /ɓ/ is contextualized in [b]

same as /d/ is in [d]. This context dependant realization of /b/ and /d/ in *b* and *d* is described below:

Spelling description involving ‘b’

‘b’ preceding:

[a] and one of [k, r, s, t] is realized as ‘b’

[a] and one of [ts, zh] is realized as ‘b’

[a] and one of [l, m, n, ng, tl] can be realized either as ‘b’ or ‘b’

[e] and one of [n, t] is realized as ‘b’

[e] and one of [d, s] is realized as ‘b’

[ə] and one of [ch, n, r, s, t] is realized as ‘b’

[ə] and one of [d, l, m, dl] is realized as ‘b’

[o] and one of [k, m, s] is realized as ‘b’

[o] and one of [g, p, tl, ts] is realized as ‘b’

[u] and one of [b, l, k, r, s, t, ng, sh] is realized as ‘b’

[u] and one of [d, g, p, tl] is realized as ‘b’

‘bw’ preceding [a] and [ə] can be realized either as ‘b’ or ‘b’

‘by’ preceding [a] and [ə] can be realized as ‘b’

Spelling description involving ‘d’

‘d’ preceding:

[a] and one of [l, m, k, p, t] is realized as ‘d’

[a] and one of [d, g, n, ng, r] is realized as ‘d’

[aa] and [n] is realized as ‘d’

[a] and one of [l, m] is realized as ‘d’

[a] and one of [l, m] in a word of more than one syllable is realized as ‘d’

[e] without a following consonant is realized as ‘d’

[e] and [b] is realized as ‘d’

[ə] and [n] is realized as ‘d’

[əə] and one of [l, r] is realized as ‘d’

[ə] and one of [l, r] is realized as ‘d’

[ē] and [g] is realized as ‘d’

[é] and [g] is realized as ‘d’

[ii] and one of [ə, l, p] (where ə stands for empty segment) is realized as ‘d’

[i] and one of [b, l, n, p] is realized as ‘d’

[uu] and one of [l, m, p] is realized as ‘d’

[u] and one of [r, s, t] is realized as ‘d’
 [u] and one of [ʁ, n, p] is realized as ‘d’
 [o] and [ch] is realized as ‘d’
 [o] and [ng] is realized as ‘d’
 ‘dw’ preceding [a] and [n] is realized as ‘d’
 ‘dy’ preceding [a] and [ʁ] is realized as ‘d’

Based on spelling description involving *b* and *d* above, there are two possibilities of representing *b* and *d* i.e. either as discrete symbols or variants of *b* and *d* respectively. This study proposes the use *b* and *d* as discrete symbols in Zaar orthography. However, a piece of writing where diacritic features are limited, their realization as variants of *b* and *d* has been described above. The solution provided above was to define the context in which variant sounds of the same alphabet can occur.

II. ‘ch’

The symbol ‘ch’ represents the voiceless palato-alveolar affricate /tʃ/ in many languages. In Zaar, there is a suggestion for letter ‘c’ to serve for /tʃ/ sound. However, it is a fact that ‘ch’ is more frequently used across languages for /tʃ/ than ‘c’. Again, most Zaar names which contain the /tʃ/ sounds are spelled with ‘ch’. Examples include *Chongda* ‘there is God’, *Chongmel* ‘God is close’, *Chasumi* ‘he/she loves us’. Based on this, the paper adopts ‘ch’ as the orthographic representation for the voiceless palato-alveolar affricate /tʃ/ in Zaar.

III. ‘g’

The letter ‘g’ as used in Zaar is realized in two ways, namely as voiced velar stop [g] and as voiced uvula stop [ɣ] depending on the context it appears. For instance, when the letter appears in word-initial position in a word, it is realized as voiced velar stop as in *gamba* [gàmbà] ‘local sesame seed’; *gamvər* [gəmvər] ‘wind storm’. On the contrary, when the letter appears in medial position in a word, it is realized as voiced uvula stop as in *magəndi* [maɣəndi] ‘coming’; *dəgər* [dəɣər] ‘to frighten’. Since this study aims to provide a discrete description for Zaar orthography (except otherwise where possible options are limited), the digraph *gh* is proposed as the symbol that should substitute *g* in medial position of words. Based on this proposal, *magəndi* [maɣəndi] is represented as *maghəndi* while *dəgər* [dəɣər] as *dəghər* [dəɣər]. This means that when *gh* appears in word-initial position, its realization would vary. Consider the explanation in ‘d’ below.

IV. ‘h’ and ‘gh’

Zaar does not have the voiceless glottal fricative /h/ in its phonetic inventory except in borrowed words from languages such as Hausa that has the sound, example; *hakuri* ‘patience’. Instead, the language has the voiced glottal fricative /ɦ/ in words such as *hummbur* [ɦúmmbur/ ‘pigeon’; *hokde* [ɦókde] ‘an exclamation’. At word-initial position, the digraph ‘gh’ and its corresponding phonetic value is a delicate situation in terms of suggesting a description with precision. Caron (2013, p. 5) outlines Zaar segment inventory which describes /ɣ/ as a voiced obstruent in the language. However, there is a perceivable possibility that rather than the voiced velar fricative /ɣ/, the Zaar language has a voiced velar approximant/ɰ/ instead. Until this speculation has been tangibly examined and established, this study acknowledges the status of /ɣ/ that has the orthographic representation of ‘gh’.

V. ‘NG’ and ‘NGH’

Making a distinction between the Zaar orthographic representations of /ŋ/ (velar nasal) and /ɴ/ (uvula nasal) sounds is one that is purely based on the arbitrary system of language use which according to Yule (p. 2010) affects sounds and graphic representation. The sound /ŋ/ and its corresponding orthographic digraph ‘ng’ has a near universal acceptability in many languages. However, the trigraph ‘ngh’ is found in fewer languages such as Tiv (Karshima, 2012). Words in Zaar which have the trigraph include *ngha*[Na:] ‘child’; *nghargat* [Narɣat] ‘scratch’; *nghal*[Na:l] ‘find’; *nghaang* [Na:ŋ] ‘tongs’ (a blacksmithing tool). This study therefore proposes the trigraph *nghas* symbol for the uvular nasal and holds to the convention of *ng* for the velar nasal /ŋ/.

Based on the discussion above, this study identifies the following consonants in Zaar which are presented in the table below.

Table 1: Zaar consonant chart

Manner of articulation	Place of articulation							Glottal
	Bilabial	Labio-dental	Alveolar	Post-alveolar	Palatal	Velar	Uvular	
Plosive	p b		t d			k g	(q) ɢ	
Nasal	m	(ɱ)	n		ɲ	ŋ	ɴ	
Trill			r					
Fricative		f v	s z	ʃ ʒ				ħ
Affricate			ts dz		tʃ dʒ			
Lateral fricative			ɬ ɮ					
Approximant	w				j	ɰ		
Lateral			l					
Implosive	ɓ		ɗ					
Prenasalised plosive	^m b		ⁿ d					
Prenasalised fricative			ⁿ dz					
Prenasalised affricate			ⁿ dʒ					

Table 1 above contains the consonant segments identified in Zaar. They are 38 in number. However, the sounds enclosed in bracket, i.e. voiced labio-dental nasal *ɱ* and voiceless uvular nasal *q* are achieved not as independent segments but as variants of voiced alveolar nasal *n* and voiceless velar plosive *k* respectively. This means that there are thirty-six (36) consonant phonemes and two (2) allophones (they are not distinctive) in Zaar.

The pure vowels

The Zaar vowels identified in this study are derived from the five primary vowels that are attested in most Nigerian languages like Yoruba, Igbo and Hausa. The Zaar vowels are in pairs of short and long segments. Additionally, schwa vowel is attested in Zaar and is represented as an independent vowel which can either be short or long like other vowels in the language in a given phonological environment depending on the context within which it

appears. This study therefore, proposes twelve pure vowels for Zaar which are represented in the table below:

Table 2: Zaar Pure Vowels

	front	central	Back
close	i:		u:
half close	ɪ		ʊ
	e	ə	o
half open	e:	ə:	ɔ
open	a		a:

Table 2 above shows the vowel sounds attested in Zaar. While the orthographic symbols of the rest are discrete and pose no complication, the orthographic status of schwa is often a delicate situation in African languages. Rambok and Hooley (2011) note that [ə] is a prominent feature of Buang phonology. It is always unstressed and could be omitted from the orthography. Nevertheless, to prevent the occasional appearance in text of long sequences of consonants, and possible confusion with digraphs, it has been written. It also gives text a more ‘normal’ appearance. Based on these conditions, Buang uses *e*, since in some songs the schwa is sung as that vowel. However, to prevent possible confusion if *e* occurs more than once in a word, the stressed *e* is marked *é* as in *ggévek* ‘crawl’.

Zaar language is faced with a similar situation but the strategy proposed to solve the puzzle differs from that of Buang. In John (2024, pp. 4-5), a major orthographic decision proposed for Zaar writing is the use of the schwato replace the previous practice of using the letter *h* for the weak vowel. The previous practice conjugates a bizarre clustering of consonants (e.g. *mbhtlhng* ‘two’) thereby making words where the schwa sound is represented very difficult to pronounce. Since the schwa is not physically represented as a character on the computer keyboard (except as a software symbol), different attempts have been made especially by Zaar Language Development Forum (ZLDF) to avoid the use of the schwa vowel as part of orthographic system of the Zaar. Part of these attempts involves the consideration of different vowels including /i/, /e/ and /u/ as substitutes for the schwa vowel in different contexts. Such all improvised strategy means *Dərbi* should be written as ‘Dirbi’; *Marsəngas* ‘Marsing’ and *Mənzhalangas* ‘Munzhalang’. Other examples include **busum* for *bəsəm* ‘comb’ or *baangding* for *baangdəng* ‘since’. Although this strategy seems convenient, its application is very limited. It can also lead to a confusion of pairs of words such as *gur* ‘seed’ for *gər* ‘graze’ *gən* ‘mine’, for *gin* ‘this’, *gəm* ‘release’ to *gim* ‘broken piece of clay pot’ if other vowels are substituted for /ə/. This will result to

miscommunication because such substitution obscures the fact that the vowels are distinctive. Another consequence would be ‘accelerated factor’ for language change. These would create more confusion than a solution.

Banda (n.d. p. 41) has suggested that “phonetic symbols should not be used unless absolutely necessary, while diacritics should be avoided altogether”. This study proposes the avoidance of diacritic notations but deems it absolutely necessary to use a phonetic symbol as an orthographic symbol in Zaar. It is in line with this that John (2024, p. 5) suggests that “since we are constrained by available options ..., we are left with one last choice, that is, incorporate the schwa symbol into the orthographic system of the Zaar language.” This is done in order to avoid miscommunication in the Zaar language and to control the infiltration of unintended meanings and words into the vocabulary of Zaar.

The diphthongs

Sounds which are phonetically described as single segments but consist of tongue glide from the first segment to the second segment are known as diphthongs. The study also identified diphthongs in Zaar as presented in the table below:

Table 3: Zaar diphthongs

	Front	central	back
close	ɪə		ui
half close	eu	əi	
half open	eɪ		ɔi
open			ai

Table 3 above shows that Zaar diphthongs combine central or back vowels with the /i/, /ə/ or /u/ to form diphthong(s). Sounds which may be considered diphthongs in Zaar pose a degree of complication between phonological effect, and ‘true’ diphthongs. This is because most of what obtains as Zaar diphthong segments may be a result of glide formation, vocalization etc. For instance, the word ‘pick’ – *bwa* [b^wa] or *bua* [bua]; ‘tree’ – *gwas* [g^was] or *guas* [guas]; ‘mushroom’ – *dambuyi* [dambuⁱi] or *dambui* [dambui] ‘three’ – *mayi* [maⁱi] or *mai* [mai] pose complications. If the word ‘pick’ is spelled *bwa* and transcribed as [bua], a phonological process of vocalization has occurred where [w] becomes [u]. Similarly, if reverse is the case where ‘pick’ is spelled *bua* and transcribed as [b^wa] is phonological process of glide formation is achieved. Therefore, the discussion of Zaar diphthongs in this paper is a mere speculation of what could be true diphthongs or

phonotactic patterns that mutate with respect to phonological exclusivity. Based on the discussions above, the study proposes orthography for Zaar in table four below.

Table 4: The proposed orthography

S/N	Symbol	Sound	Description	Example	transcription	Gloss
1	a	a	lax low back unrounded	n <u>a</u> t	/nat/	tie
2	aa	a:	tense low back unrounded	g <u>a</u> al	/ga:l/	cow
3	ai	aɪ	low back high front unrounded	mai	/mai/	three
4	b	b	voiced bilabial plosive	b <u>u</u> ti	/bù.tì/	okra
5	ɸ	ɸ	voiced bilabial implosive	ɸ <u>a</u> li	/ɸá.li/	lizard
6	ch	tʃ	voiceless palatal affricate	nyí <u>ch</u> í	/njí.tʃí/	snake
7	d	d	voiced alveolar plosive	ɗ <u>w</u> ân	/ɗwân/	blind
8	ɗ	ɗ	voiced alveolar implosive	ɗ <u>u</u> u	/ɗù:/	beer
9	dl	ɮ	voiced alveolar lateral fricative	ɗ <u>l</u> yaad	/ɮja:d/	write
10	dz	dz	voiced alveolar affricate	ɗ <u>z</u> ang	/dzan/	day/sun
11	e	e	lax mid front unrounded	g <u>e</u> mtli	/gem.li/	feather
12	ee	e:	tense mid front unrounded	ee	/e:/	yes
13	ə	ə	lax mid central unrounded	ɗat <u>ə</u> p̄m̄	/da.təp̄. n̄/	road
14	əə	ə:	tense mid central unrounded	k <u>ə</u> əm	/kə:m/	ear
15	ei	eɪ	lax mid front unrounded	d <u>ei</u>	/ʒei/	middle
16	ew	eu	lax mid front high back rounded	ng <u>hew</u>	/Neu/	minute
17	f	f	voiceless labiodental fricative	ɸ <u>y</u> ali	/ɸjá.li/	white
18	g	g	voiced velar plosive	g <u>a</u> am	/ga:m/	head
19	gh	ɣ	voiced uvula plosive	m <u>ə</u> rg <u>ə</u> kitn	/mər.ɣǎ kít̄n̄/	farmer
20		ɣ(u)	voiced velar fricative (approximant)	g <u>h</u> əɣɣən	/ɣ(u)ə:ɣə n̄/	yawning
21	h	ɦ	voiced glottal fricative	ɸ <u>u</u> mbur	/ɦú.mbũr/	pigeon
22	hyi	əɪ	lax mid central high front unrounded	tl <u>ə</u> rng <u>h</u> yi	/ʔər.Nəi/	that rope
23	i	ɪ	lax high front unrounded	k <u>i</u> tn	/kít̄. n̄/	farm
24	ii	i:	tense high front unrounded	ɗ <u>i</u> ib	/ɗí:/	buy
25	ya	iə	lax front high mid central	ɸ <u>y</u> ali	/ɸiəli/	white

			unrounded			
26	j	dʒ	voiced palatal affricate	<u>j</u> ì	/dʒi:/	black
27	k	k	voiceless velar plosive	<u>k</u> ákdi	/kák.di/	hoe
28	l	l	voiced alveolar lateral	<u>l</u> onga	/loŋ.ga/	rabbit
29	m	m	voiced nasal plosive	<u>m</u> okshi	/mók.ʃi/	courtship
30	mb	mb	voiced prenasalised bilabial	<u>m</u> balwa	/mbalwa/	maize
31	mw	mw	voiced prenasalised bilabial	<u>m</u> wali	/mwali/	keep quite
32	n	n	voiced alveolar nasal	<u>n</u> àmbóng	/nàm.bóŋ/	one
33	nd	nd	voiced prenasalised alveolar plosive	<u>n</u> dara	/ndara/	beauty
34	ndz	ndz	voiced prenasalised alveolar	<u>n</u> dzuun	/ndzu:n/	shame
35	ng	ŋ	voiced velar nasal	<u>n</u> gaa	/ŋa:/	fetch
36	nj	ndʒ	voiced prenasalized palatal affricate	njirmi	/ndʒir.mi/	rust
37	ny	ɲ	voiceless palatal nasal	<u>ny</u> ítsəng	/ɲí.tsəŋ/	nose
38	ngh	N	voiced uvula nasal	<u>n</u> ghaa	/Na:/	child
39	o	ɔ	lax low-mid back rounded	d <u>l</u> op	/tʒɔp/	pierce
40	oi	ɔi	mid back rounded high front lax	mboi	/mbɔi/	escape door
41	p	p	voiceless bilabial plosive	<u>p</u> uus	/pu:s/	stone
42	r	r	voiced alveolar trill	mə <u>r</u>	/mər:r/	thief
43	s	s	voiceless alveolar fricative	rí <u>s</u> əng	/rí:.səŋ/	tongue
44	sh	ʃ	voiceless post-alveolar affricate	<u>sh</u> ogar	/ʃɔ.ɔ̃ar/	whistle
45	t	t	voiceless alveolar plosive	fo <u>t</u>	/fot/	blow
46	tl	ɬ	voiceless alveolar lateral fricative	gem <u>tl</u> i	/gem.li/	feather
47	ts	ts	voiceless alveolar affricate	nyá <u>ts</u> a	/ɲjá:.tsa/	sand
48	u	u	lax high back rounded	ku <u>u</u> ng	/ku.suŋ/	hunger
49	uu	u:	tense high back rounded	<u>pu</u> us	/pu:s/	stone
50	ui	ui	high back rounded lax high front	dambui	/dambui/	mushroom
51	v	v	voiced labiodental fricative	<u>v</u> ərəm	/və.rəm/	give me
52	w	w	voiced bilabial approximant	waa	/wa:/	corn
53	y	j	voiced palatal approximant	<u>y</u> er	/jer/	neck
54	ya	ia	lax high front low back unrounded	kyang	/kiaŋ/	orphan

55	z	z	voiceless alveolar fricative	<u>z</u> aam	/za:m/	beans
56	zh	3	voiced post-alveolar affricate	<u>zh</u> odi	/ʒo.ði/	mosquito

Table 4 above contains the proposed Zaar orthography which is the aim of this study. It outlines fifty-five (55) symbols for fifty-six (56) sounds. In spite of the attempt to provide discrete description so that one symbol matches only one sound, certain factors constrained the possibility for such discrete description. One major factor was the deliberate attempt to consider conventional symbols that are represented on the computer keyboard as priority (which might be less complex and learner-friendly), except in the case of the schwa where available options were limited. Nonetheless, a clear-cut description of these symbols i.e. *b*, *d*, and *gh* and how their variants are defined by context have been explained.

Conclusion

This research has explored the constraining nature of the inconsistencies in previous orthographic representation of Zaar speech. By assessing the societal/cultural, educational and linguistic impact of the previous researches, this study emphasizes the need for a more logical reform. While the reform draws symbols from the traditional Greek letters, it takes into cognizance the linguistic peculiarities of Zaar and makes modification (or contextual description) where necessary. The aim is to achieve an orthographic reform of Zaar that is linguistically relevant, learner friendly and culturally sensitive.

A properly designed orthography can play a monumental role in promoting the use of language in all spheres of life, hence, contributes to the socio-economic development of the society. Considering the advancement in arts, science and technology of modern societies, it is important that any means by which the totality of these developments can be preserved and passed on to generations is accorded due attention. This study, therefore, is based on the need to develop a functional orthography for the writing of the Zaar language. Using the principles outlined in this research, the study identified 56 sounds that are represented by 55 orthographic forms.

Since the orthographic development of any language is a collective commitment that involves the language community, language professionals, community stakeholders and relevant research agencies, the study recommends that bodies such as the Zaar Development Association as well as Nigeria Education Research Development Council should organize relevant workshops and literacy programs to ensure effective learning of Zaar. The study also recommends that computer engineers should include more features on

the computer keyboard to accommodate implosive symbols such as *b* and *d* as well as the schwa vowel *ə*. The inputs of Zaar linguists, and linguists in general, in carrying out research into other aspects of the structure and use of Zaar would also be significant in achieving the desired result.

References

- Agbo, M., S. (2013). Orthography theories and the standard Igbo orthography. *Languages in India*, 13(4) 116-127.
- Banda, F. (2008). Orthography design and harmonisation in development in Southern Africa. *Open Space*, 2(3), 39–48.
- Caron, B. (2005). *Zaar (Dictionary, grammar, texts)*. Ibadan: IFRA.
- Caron, B. (2011). Zaar-Hausa-English code mixing. CNRS- Inalco, Paris-Cité.
- Caron, B. (2013). Zaar grammatical sketch¹. CNRS- Inalco, Paris-Cité: Press Sorbonne.
- Cooke, G. (2020). Orthography. The International Encyclopedia of Linguistic Anthropology, 1-6. John Wiley & Sons, Inc.
- Crystal, D. (2008). *A dictionary of linguistics and phonetics* (6thed.). Malden, USA: Blackwell Publishing Ltd.
- John, C. (2024). Comparative study of Moss, Wami and Num varieties of Zaar. (M. A. dissertation). Department of Linguistics and Nigerian Languages; University of Jos.
- John, C. (2024). Zaar language and spelling complexities: A way forward. In H. M. John, (Ed.) *History of the Zaar people of Nigeria: A people renown, rediscovering themselves*, 43-51.
- kaJanolintji, P., & Letsoalo, N. (2023). Introducing orthography and writing systems. Open Education Resources: Unisa Open Teaching and Learning Materials. <https://uir.unisa.ac.za/handle/10500/27026>
- Karshima, D. T. (2012). *Comprehensive Tiv orthography*. Makurdi: Ter Books Publication.
- Linell, P (1982) *The Written Language Bias in Linguistics*. (SIC=Studies in Communication, 2.) Linköping: Department of Communication Studies.
- Lüpke, F. (2011). Orthography development. In P. K. Austin & J. Sallabank (eds), *The Cambridge handbook of endangered languages*, 312-336. Cambridge: Cambridge University Press.
- Mensah, E., Ukaegbu, E., & Nyong, E. (2021). Towards a working orthography of Nigerian Pidgin. In A. T. Akanade & O. Salami, *Current trends in Nigerian Pidgin*, 177-199. De Gruyter Mouton.

- Mountford, J. (2005). Language and language system. In N. E., Collinge (Ed.), *An encyclopedia of language*, 378-396. London: Routledge.
- Tench, P. (n. d). A new orthography in Tera. Centre for Language and Communication Research; Cardiff University. <https://www.paultenchdocs.co.uk/wp-content/uploads/2014/02/A-New-Orthography-in-Tera.pdf>
- Yule, G. (2010). *The study of language* (4thed). Cambridge: Cambridge University Press.
- Williamson, K. 1984. Practical orthography in Nigeria. Ibadan: Heinemann.