

Creating new forms from the existing ones: An investigation of morphological processes in selected WhatsApp group chats

DOI: <https://doi.org/10.60787/jolan.vol5no1.421>

Kolawole Mathew Ogundipe

Department of English, University of Lagos, Akoka, Lagos State

kolawolemathew53@gmail.com

Abstract

This study examines the morphological processes employed on the WhatsApp platform, with a focus on identifying the most commonly used word-formation strategies among its users. A descriptive research design was adopted, combining both qualitative and quantitative methods for data analysis. Two WhatsApp groups were selected, and thirty (30) texts were taken from each, making a total of sixty (60) texts. The texts were analyzed to identify and discuss the morphological strategies users adopt in creating new words for interaction. Findings revealed that minor morphological processes - particularly clipping and initialism, both forms of shortening - are the most frequently used. In the first group, clipping occurred in 22 texts (73.3%), while initialism appeared in 8 texts (26.7%). In the second group, clipping was found in 13 texts (43.3%), initialism in 11 texts (36.7%), blending in 5 texts (16.7%), and aphetic forms in 1 text (3.3%). The study concludes that WhatsApp users rarely employ major morphological processes such as affixation, compounding, and conversion in the creation of new words for communication on the platform.

Keywords: New forms, morphological processes, WhatsApp chats, social media communication

Introduction

There have been drastic changes in the modes of communication in this twenty-first century. The development of modern technologies brought in social media communication (under which WhatsApp communication is classified), which in turn has significant influence on the use of language nowadays. The language of social media is unique because

of its use of informal tone, slangs, brevity, with many words and phrases being shortened or abbreviated. Short form of language is idiosyncratic to social media communication. Hence using social media has had significant influence on everyday language. Attributed to this change is that the rules in social media communication are frequently neglected because there are no boundaries for communicating on social media. Social media platforms have sprung new forms of communication different from the traditional modes of communication. Character limits or restrictions relating to time have led to the development of new linguistic strategies. These strategies are manifested through the use of abbreviations, acronyms, clipping or shorthand expressions in social media communication.^{1 2 3}

According to the authors cited above, these new linguistic forms are communicating strategies employed by users for communication on social media such as twitter (now called X), Facebook, WhatsApp and so on. WhatsApp platform is one of the means and fastest ways through which multitude of people communicate in this day and age. It reduces the stress of writing letters all the time, and phone call costs in communicating to someone physically distant to us. This is because various WhatsApp features viz emoji, voice notes and text messages are adopted for easy, fast and effective communication.

Several research studies have been carried out on WhatsApp platform as a kind of social media communication; for example Blabst and Diefenbach (n.d.), Ali and Kootbodien (2017), Samah, Rhaman and Ashari (2021), Usman and Bukar (2022), Amadi and Mbah (2023), Shubhra and Krisna (2024) and Ogundeji (2024). However, the researchers of the above mentioned studies were mainly concerned with the classificatory and functional peculiarities of WhatsApp platform. A few of them that explore language use in WhatsApp communication focus on only the applied aspect of language study. Thus, this research paper examines the morphological processes used in the selected WhatsApp group chats, with the analyses done within the domain of morphology. The study will immensely contribute to the existing knowledge as it takes a stab at identifying and explicating the word-formation processes adopted by users of WhatsApp platform, comparing those identified processes to the types of word-formation processes in English language. Through the morphological analysis of data, it will assist readers and other researchers discern various realisations of the English language word-formation process types that are used by

¹Br. Gulton Monika & Rahmadini Nikky. (2020, pp. 1-3).

²Jasim Jammal. (2023, pp. 4-8).

³What is Social Media Language? <https://www.socialmedia.com>

WhatsApp users. In sum, the researcher, in this study, attempts to provide answers to the questions below.

- i. What are the morphological processes used in the selected WhatsApp group chats?
- ii. Is there any similitude in the morphological processes identified in the two selected WhatsApp group chats?
- iii. Do the identified morphological processes in the selected WhatsApp group chats correspond with the ones in English language?

Literature review

Empirical studies

Many researchers have carried out studies on the use of WhatsApp platform as a means of communication. For example, Samah, Rhaman and Ashari (2021) carry out a study on WhatsApp application in developing university students' skills. It was discovered from the findings obtained that there is a high level of WhatsApp usage among UTM students. Also, there is a high level of communication skills by exploiting this application for academic purposes. Ali and Kootbodien (2017) explore how emoji, voice notes and text messages could replace face-to-face communication. They find out that WhatsApp application only complement face-to-face communication, rather than replacing it. Furthermore, Blabst and Diefenbach (n.d.) investigate the usage of WhatsApp instant messenger and the psychological wellbeing of users on specific WhatsApp features like 'Last Seen' and 'Read Receipts'. Usman and Bukar (2022) inquire into the extent of students' usage of WhatsApp instant messenger as a supporting tool for learning in Kaduna State, Nigeria. Their finding is that students are already acquainted with and are using various WhatsApp features for various purposes.^{4 5 6 7}

Shubhra and Krisna (2024) probe the intriguing of language dynamics within WhatsApp platform. It concerns with the language attrition– a subtle transformation in the way language are used in this digital age. The study makes use of eclectic methods of both qualitative and quantitative analysis of whatsapp conversations with the digital

⁴Samah Norazrena, Rhaman Khairul & Ashari Zakiah. (2021, pp. 57-71).

⁵Ali Muhamad & Kootbodien Ammarah. (2017, pp. 11-19).

⁶Blabst Nicole & Diefenbach Sarah. (n.d.).

⁷Usman Yunusa & Bukar Aishatu. (2022, pp. 147-158).

questionnaire survey. Ogundeji (2024) examines speech acts analysis on whatsapp chats of non-teaching staff of the University of Uyo with the use of qualitative and quantitative analysis of data. The findings show that non-teaching staff of the university use speech acts of directives, assertives, expressives, commissives and declaratives in their communication. Furthermore, Amadi and Mbah (2023) attempt a sociolinguistic analysis of whatsapp conversation between students and lecturers by examining whether language politeness principles are violated or not. The findings show that the social factors such as age, social class, gender etc. affect language politeness between the lecturers and students. Finally, Ezenwamadu (n.d) carries out a textual analysis of language in short message service (SMS) and whatsapp text messages, using qualitative method of analysis. The study focuses on the (mis)spelling usage, contextual usage and semantic usage. The findings indicate that words are misspelt and this results in unintelligibility in whatsapp communication.^{8 9 10 11}

Morphology as an Aspect of Linguistics, and Morphological Processes

The aspect of morphology which serves as a footing for this study is morphological process. Morphology is defined as the scientific study of word form and structure of a particular language. There are tons to unpack about language and there is a need to start from the smallest unit. Starting from the smallest unit is the role of morphology because morpheme or word is described as the basic building-block of any language.^{12 13 14}

So, morphology is an aspect of theoretical linguistics that is concerned with the study of the smallest units of language, by elucidating how different parts of words termed ‘morphemes’ are concatenated to form newly derived words. In morphological analysis, the way morphemes can be combined or separated to make different words with different meanings is identified.^{15 16}

⁸Shubhra Shubra & Krisna Davina. (2024, par. 1).

⁹Ogundeji Awoniyi. (2024, p.1).

¹⁰Amadi Chineye & Mbah Charity. (2023).

¹¹Ezenwamadu Nkechi. (n.d., pp. 23-31).

¹²Carstairs-McCarthy Andrew. (2002, p.4).

¹³Bauer Laurie. (2003. p. 48).

¹⁴Lieber Rochele. (2009, p. 49).

¹⁵Matt Ellis. (2022).

¹⁶Study Smarter. Morphology (2024).

Morphological processes (e.g. compounding, affixation, shortenings etc.) are the linguistic processes that generate word forms by the application of morphological rules. They are also the linguistic devices which are used to generate new words from the existing ones. The major types of morphological processes, according to language scholars, are affixation (i.e. inflections & derivations), compounding and conversion. Inflections are the systematic modifications of a root by means of prefixes and suffixes to express grammatical distinctions like tense, plurality and so on e.g. dance + -d forms the past tense ‘danced’; girl+ -s forms the plural ‘girls’. The word class of the base or root remains the same after adding inflections, but derivations are instances of affixation which sometimes change the word class of the base or add a substantial meaning to the base e.g. educate (verb) + -ion forms the word ‘education’ (noun); orphan (N) + -age (N) forms ‘orphanage’ (N)’. Compounding is the process in word formation whereby two free bases or morphemes are combined to form a new word e.g. girl (N) + friend (N) forms ‘girlfriend’; pick (V) + Pocket (N) generates the new word ‘pick-pocket’. Conversion occurs when a word belonging to one word class is moved to another word class without any corresponding change of form either phonologically or graphically e.g. table (N), to table (V); water (N), to water (V) and so on. Minor morphological processes are blending; that is, a new word is derived from parts of two existing words e.g. breakfast + lunch forms ‘brunch’, shortenings (i. e. clipping, back formation, initialism and aphetic forms). Clipping is a process through which a new word is created by extracting the part of the existing word to stand for the word. This part extracted, according to Jackson and Etienne, could be initial-word clipping e.g. ‘Prof.’ for ‘professor’; middle-word clipping e.g. ‘flu’ for ‘influenza’; or final-word clipping e.g. ‘plane’ for ‘aero plane’. Back formation denotes word-formation process whereby a new word is derived from the old/existing one which is mistakenly considered to be its derivative. For instance, the words ‘peddle’ and ‘burgle’ are mistakenly assumed to be newly derived words from ‘peddler’ and ‘burglary’ respectively. Initialism is a process by which new words are formed by extracting the first letters of every word that makes up a phrase or clause, which could be pronounced as letters of alphabet e.g. ‘FCE’ for ‘Federal College of Education’ or pronounced as a word e.g. ‘WAEC’ for ‘West African Examination Council’. Those new words that can be pronounced as letters of alphabet are known as ‘abbreviations or alphabetisms’. On the contrary, those new words that can be pronounced as words are termed ‘acronyms’. To conclude with, aphetic form is a morphological process of deriving a new word from the existing one through the extraction of the stressed syllable of the existing word e.g. ‘cause/cos/cus’ for ‘because’; ‘scuse me’ for ‘excuse me’.^{17 18 19}

¹⁷Prospero English. Morphological Processes (2020).

Research methodology

The purpose of this study is to probe the morphological processes in selected WhatsApp group chats. Two WhatsApp groups are selected for the study and thirty texts are chosen on each group, making up sixty texts in all. The researcher adopts a purposive sampling technique for the selection of the chats from the two WhatsApp groups. The researcher does this by extracting the chats that contain morphological processes. The sixty texts chosen from the chats on the two selected groups are subject to analysis within the field of morphology. Specifically, the morphological processes like clipping, blending, aphetic form, abbreviation and so forth are identified from the chats. The study also adopts qualitative and quantitative research methods in the analysis of data. The word-formation processes in the chosen chats are identified and analysed, in terms of the distinctive types of each identified processes. Finally, the researcher presents the frequency distribution and percentage of occurrence of the word-formation processes found in the chosen texts.

Data presentation

i. Mighty OCHS' 07 Session WhatsApp Group Chats

From the chosen texts 1- 30: ur, dey, u, dey, u, MC, aiiit, dat, dis, pls, ok, ok, p, PDF, pls, pls, pls, pls, ok, ok, bro, u, llnp, HBD, n, u, congrats, bro, ur, Hbd, congrats, hbd, u, admin, Rip, yea, u, bro, RIP, pple, dey, no, u, yme, ytheynii, u, dey, y, nw, bo9fide

ii. Class of 2022, M.A. UNILAG Whatsapp Group Chats

From the chosen texts 1-30: Lol, M.A., SPGS, DM, wullnp, MHR, UNILAG, UTME, US, PhD, Kesh, Nikky perrie, Nike, M. A, SPGS, Dami, ma'am, SPGS, PG School, Unilag, Toks, u, cus, LASU, congrats, Dammy, Lol, Prof, Tosinkesh, matric, Gov, Prof, Rep, tanks, d, pls.

Analysis, results and discussion

Analysis and Discussion of Mighty OCHS' 07 Session WhatsApp Group Chats

i. Clipping

¹⁸Morphological Processes (2020).

¹⁹Jackson Howard & Etienne Ze Amvela. (n.d., pp.10-13).

Table 1

Text	Newly derived words				Existing words
	F	I +F	D to A	I+ M+ F	
1	ur,u		dey		your, you, they
3		Pls		Ait	please, alright
4			dat, dis		that, this
5		Pls			please
6		Pls			please

Table 2

Text	Newly derived words			Existing words
	I	F	I+ F	
7	Ok			Okay
9			Pls, pls, pls	Please
10	Ok			okay, please
11	Ok, bro			okay, brother
12		u		You

Table 3

Text	Newly derived words				Existing words
	M	F	I+ F	I	
15	N				and
16		u			you
17			congrats		congratulations
18				Bro	brother
19		ur			your

Table 4

Text	Newly derived words					Existing words
	I +F	I	M	F	D to A	
21	congrats					congratulations
23		admin				administrative
25	yea, bro					yeah, brother
27	Wil		No	ppl	Dey	will, know, people, they
28				ythey, yme, u		why they, you, why me

Table 5

Text	Newly derived words			Existing words
	F	I+F	Fig-ins	
29	Y	Nw		why, now
30			bo9fide	bonafide

Tables 1 to 5 analyse instances of clipping in the mighty OCHS'07 Session Whatsapp Group chats. In those tables, there are cases where some words are formed from the existing ones by changing the consonant sound of the initial part, and combining it with the final part to stand for the existing word e.g. the dental consonant /ð/ is changed to the alveolar consonant sound /d/ in 'they, that and this'. The newly derived words used in the two group chats are 'dey, dat, and dis' in their order. In this paper, this type of clipping is termed 'dental-change-to-alveolar-sound clipping (D to A)'. Another unusual clipping type is in the word 'bo9fide' in text 30 where figure 9 is inserted to represent the syllable 'na' while 'bo' and 'fide' are retained hence 'bo9fide' is the new word derived from the existing 'bonafide'. Here, it is called 'figure-insertion clipping (f-ins)'. There are instances of clipping by extracting more than one part in the analysis of clipping; for example, some new words are derived by extracting both initial, middle and final parts and then combine them to form new words e.g. 'ait' for 'alright'. This is called Initial+ middle +final-word clipping (I+M+F). There are also instances where some new words are realised in the group chats by a combination of the initial and final-word parts, for example 'pls', congrats and nw' for 'please, congratulations and now' respectively. The normal clipping types identified from the analysis are 'initial-word clipping (I) e.g. 'ok, bro' for 'okay and

brother’; middle-word clipping (M) e.g. ‘no’ for ‘know’; final-word clipping (F) e.g. ‘u, ur and y’ for ‘you, your and why’.

ii. Initialism

Table 6

Text	New words		Existing phrases
	Acr.	Abbr.	
2		MC	master of ceremony
8		P, PDF	problem, portable document format
13		ll...p	long life...prosperity
14		HBD	happy birthday
20		Hbd	happy birthday

Table 7

Text	New words		Existing phrases
	Acr.	Abbr.	
22		Hbd	happy birthday
24	Rip		Rest in peace
26	Rip		Rest in peace

Tables 6 and 7 show the use of initialism in the Mighty OCHS’ 07 Session Group chats. Both acronyms and abbreviations or alphabetisms are used. For instance, abbreviations like MC, P, PDF etc. are used to represent ‘master of ceremony’, ‘problem’ and ‘portable document format’. Acronym used in the chats is ‘Rip’ for ‘rest in peace’.

Table 8: Morphological Processes Used on Mighty OCHS' 07 Session WhatsApp Platform, Frequency of Occurrence and Percentage

S/N	Morphological Process	Frequency of Occurrence	Percentage
1	Clipping	22	73.3%
2	Initialism	8	26.7%
	Total	30	100%

Table 8 indicates the frequency of occurrence of morphological processes used in the Mighty OCHS '07 Session Group chats and the percentage. As can be seen in the table, clippings occur in 22 texts with 73.3% and initialism occurs in the remaining 8 texts with 26.7%.

Analysis and Discussion of Class of 2022, M.A. English, UNILAG WhatsApp Chats

i. Clipping

Table 9

Text	Newly derived words		Existing words
	I	I+F	
8	Kesh		Keshington
12	Dami		Damilola
13		Ma'am	Madam
16		Pls	Please

Table 10

Text	Newly derived words				Existing words
	I+s-add.	F	I+ F	I	
18	Toks				Tokunbo
19		u			you
22			congrats		congratulations
24				prof	professor
26				matric	matriculation

Table 11

Text	Newly derived words			Existing words
	I	D to A	I+ F	
27	gov			governor
28	Prof, rep			professor, representative
29		tanks		thanks
30			pls	Please

Tables 9 to 11 pinpoint the clipping types used in Class of 2022, M. A. English, Unilag Group chats. There is a case where the initial part extracted with the addition of 's' to the end of the extracted part e.g. 'Toks' for 'Tokunbo'. It is called 'initial-word and s-addition clipping (I+s-add.)'. There are also initial and final-word clipping e.g. 'pls and congrats' for 'please and congratulations'; dental –to-alveolar clipping e.g. 'tanks' for 'thanks'. The usual types of clipping in the group chats are initial-word clipping e.g. 'Kesh', Dami and Prof' for 'Keshington' Damilola and professor' respectively; and final-word clipping e.g. 'u, Nike' for 'you and Adenike'.

ii. Initialism

Table 12

Text	New words		Existing phrases
	Acr.	Abbr.	
1	Lol	M. A.	laugh out loud, master (of) art
2		SPGS	School (of) Postgraduate Studies
3		DM	direct message
4		w...ll...p	Wish...long life... prosperity
5		MHR	many happy returns

Table 13

Text	New words		Existing phrases
	Acr.	Abbr.	
7		US, PhD	United State, Doctorate (in) Philosophy
10		M. A.	Master (of) Art
11		SPGS	School (of) Postgraduate Studies
14		SPGS	School (of) Postgraduate Studies
15		PG	Postgraduate
23	Lol		Laugh out loud

Tables 12 and 13 contain instances of initialism used in the Class of 2022, M. A. English, Unilag WhatsApp Group chats. An acronym used in the chats is ‘Lol’ for ‘laugh out loud’ while the second type of initialism (Abbreviations) occur most e.g. M.A., MHR PG and so on. These abbreviations represent ‘master of art’, ‘many happy returns’ and ‘postgraduate’ respectively.

Blending

Table 14

Text	Newly derived words	Existing phrases
6	UNILAG	University (of) Lagos
9	Nikkyperie	Nike Periperi
17	Unilag	University (of) Lagos
21	LASU	Lagos State University
25	Tosinkesh	Oluwatosin Keshington

Blends are used in texts 6, 9, 17, 21 and 25 as can be seen in table 14 above.

Aphetic Form

Table 15

Text	Newly derived word	Existing word
20	Cus	Because

An aphetic form is used in text 20.

Table 16: Morphological Processes Used on Class of 2022, M.A. English, UNILAG WhatsApp Platform, Frequency of Occurrence and Percentage

S/N	Morphological Process	Frequency of Occurrence	Percentage
1	Clipping	13	43.3%
2	Initialism	11	36.7%
3	Blending	5	16.7%
4	Aphetic form	1	3.3%
	Total	30	100%

Table 16 shows the morphological processes used in Class of 2022, M.A. English, UNILAG WhatsApp Platform, frequency of occurrence and percentage. Clippings are used in 13 texts with 43.3%; initialism in 11 texts with 36.7%; blending in 5 texts with 16.7% while aphetic form occurs in 1 text with 3.3%.

Findings

From the analysis of the two selected WhatsApp group chats, the findings are as follows:

The morphological processes mostly used in the chosen texts from the selected WhatsApp groups are clipping and initialism while blending and aphetic form are not used often.

Only clipping and initialism are used in the Mighty OCHS'07 Session WhatsApp Group chats. On the contrary, clipping, initialism, blending and aphetic form are used in the second selected WhatsApp group chats, that is 'Class of 2022, M.A. English, UNILAG WhatsApp Group chats'. The only area of similarity is that clipping and initialism occur most in the two selected WhatsApp group chats. This finding corroborates Br. Gulton and Rahmadini's (2020), and Jassim's (2023) assertion that social media communication (WhatsApp platform as a kind of social media communication) is distinct for its use of short form of language such as clipping or shorthand expressions, abbreviations, acronyms and so on.

Finally, there is disparity in the clipping types used in the two selected WhatsApp group chats, when placing them beside the types of clipping that Jackson and Etienne identify viz initial-word clipping, middle-word clipping and final-word clipping. Though this types of clipping also appear in the analysis, there are some other types of clipping observed from the analysis. This could be called initial, middle and final-word clipping, initial and final-word, figure-insertion, dental-to-alveolar consonant, initial-word and s-insertion and so forth. Another point of divergence between the types of clipping used in the selected WhatsApp group chats and the normal clipping types in English language is that users of the selected WhatsApp chats often extract a letter of alphabet from the existing words, either at the beginning, middle or final part, and use the letter for the existing word. Examples in the group chats are 'u, y' for 'you and why'; whereas, it is a group of letters that is culled from the existing word as a newly derived word e.g. 'gov, prof, ur' for 'governor, professor and your' respectively.

Conclusion

The conclusions below could be drawn from the findings of the study: Clipping, initialism and other kinds of short form of language are mostly used by users of WhatsApp in communication with one another on WhatsApp platform.

The choice of use of shorthand expressions and other morphological processes varies from one WhatsApp group platform to another. For example, there is frequent use of clipping in the first selected and analysed WhatsApp group chats while the second one tries to balance the frequency of occurrence of clipping and initialism. Also, blends are used in 5 texts and aphetic form in 1 text of the second selected WhatsApp group chats.

To conclude with, clipping types used on WhatsApp platform differ from the general clipping types in English language. Also, users of WhatsApp platform can clip a letter of alphabet, either at the middle or final part, and use to stand for an existing word.

References

- Ali, M.S.; & Kootbodien, A. 2017. The Effectiveness of WhatsApp as an Interpersonal Communication Medium among Abu Dhabi University Students. *International Journal of Media, Journalism and Mass Communications*. Vol. 3(1): 11-19.
- Amadi, C. E. & Mbah, C. 2023. *A Study of Language Politeness in Students' and Lecturers' Whatsapp Conversation: A Sociolinguistic Approach*. Retrieved January 19, 2025, from Wikipedia: <https://wiki.net.org>
- Bauer, L. 2003. *Introducing Linguistic Morphology (2nd Edition)*. Edinburgh: Edinburgh University Press.
- Blabst, N.; & Diefenbach, S. n.d.. *Whatsapp and Wellbeing : A study on WhatsApp usage and Communication quality and stress*. Retrieved June 30, 2024, from <https://dx.doi.org/10.14236/ewic/HC12017.85>
- Br Gulton, M.A.; & Rahmadini, N. F. 2020. The Relation of the Use of Language in Social Media to Politeness among Students. *Journal of Faculty of Sciences Campus B*

Dalam Surabaya , 1-13.

Carstairs-McCarthy, A. 2002. *An Introduction to English Morphology: Words and their Structure*. Edinburge: Edinburg University Press.

Ezenwamadu, N. n.d.. An Analysis of Language Usages in Short Messages Service (SMC) and Whatsapp . *ANSU Journal of Language and Literary Studies* , 3 (1), 23-31.

Jackson, H.; & Ettienne, Z. n.d..*Words, Meaning and Vocabulary: An Introduction to English Lexicology*. Continuum Publisher.

Jassim, H. J. 2023. The Impact of Social media on Language and Communication. *Dogo Rangsang Research Journal* .

Lieber, R. 2009. *Introducing Morphology*. Cambridge: Cambridge University Press.

Matt, E. 2022. *MORPHOLOGY*. Retrieved June 29, 2024, from Grammarly: <https://www.grammarly.com/blog/morphology/>

Morphological Processes. (2024, May 29). Retrieved June 29, 2024, from gabormelli.com: https://www.gabormelli.com/RKB/morphological_processes

Morphology. 2024. Retrieved June 29, 2024, from Study Smarter: <https://www.studysmarter.com.uk/explanations/english/morphology/>

Ogundeji, A. 2024. *A Study of Speech Acts in Whatsapp Conversations on Non-teaching Staff of University of Uyo*. Retrieved January 19, 2025, from Wikipedia: <https://wiki.com>

Prospero English.. 2020. Retrieved June 29, 2024, from Morphological Processes: Inflections, Derivations, Compounding: https://prosperoenglish.com/posts/grammar/morphological_processes-inflections-derivations-compounding/

Samah, N.A.; Rahman, K. A.; & Ashari, Z. M. 2021. WhatsApp and its Potential to Develop Communication Skills among University Students. *International Journal of Interactive Mobile Technologies*. Vol. 15(23). 57-71.

Shubhra, S.; & S, Krisna, D. 2024. *An Analysis of Whatsapp Interactions Among Youth: A*

- Case of Language Attrition*. Retrieved January 19, 2025 from <https://resaerchgate>
- Usman, Y. D.;& Bukar, A. 2022. Students' Usage of WhatsApp as a Supporting Tool for Learning in Kaduna State, Nigeria. *International Journal of Education and Development Using Information and Communication Technology*. 147-158.
- What is social media language?* (n.d.). Retrieved June 29, 2024, from google.com: <https://www.google.com/search?q=language+social+media+communication&client=ms-opera-mini-android&channel=new>