PERCEIVED DYNAMICS OF ARTIFICIAL INTELLIGENCE IN THE GENERATION OF CALQUING IN LANGUAGE PEDAGOGY: A STUDY OF SELECTED LANGUAGE EDUCATORS IN FEDERAL UNIVERSITY OF EDUCATION, ZARIA

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The advent of Artificial Intelligence (AI) has fascinated transformation in various disciplines, linguistics inclusive. This study investigates the perceived dynamics of AI in generating calquing in language pedagogy. In this regard, this paper attempts to examine the significance of AI in language teaching and learning putting its challenges and prospects into consideration. The author gathered the relevant data through both primary (questionnaire) and secondary (books) sources. The findings of the research reveal that the adoption of AI technology in morphological processes has immensely paved way for facilitation, manipulation, creativity, 'connectivism', convenience, 'complementalization', comprehensiveness, linguistic assimilations and prejudices in the advancement of language teaching and learning. Through a detailed analysis of AI-driven linguistic tools and their impact on language evolution, this article demonstrates that AI is not just a tool for linguistic analysis but a catalyst for innovation in language formation. The implications of these findings are discussed in relation to the fast spreading waves of morphological theory and AI's future in linguistic evolution. In spite of its dynamic roles, the orientation about the usefulness of AI has not gained sufficient attention in the Nigerian educational system as obtainable in advanced nations. Ergo, the conclusion reflects that the adoption of AI in language teaching and learning in Nigeria will facilitate creativity, consistence, comprehensiveness among others for both teachers and the concerned learners in their quest for broader and deeper perspectives in generating morphological calques.

Introduction

In many nations worldwide, education is ranked as the most profitable heritage for citizens. Nigeria has persistently pursued the realisation of this global goal from the pre-colonial era to the present with varying degrees of integrity, tenacity, and sincerity (Olorunmade, 2023). However, the reality portrays that Nigeria's educational system is still battling in order to find relevance in the international strategic plan for education and the pursuit of the digitalised and revolutionised pattern that characterizes the method through which knowledge is impacted across the globe. Hence, the use of technology to generate words using existing morphological parameters cannot be trivialised. According to Mofereh (2019), cited in Olorunmade, 2023, learners have already considered the traditional methods of teaching language archaic. He added that findings showed that 60% to 80% of learners were grossly discontented with the traditional methods of learning language, while 75% to 95% of the learners were familiar with language learning through technology, and they achieved better than those who were in the traditional language learning classrooms.

There are several ways to use technological gadgets to teach languages or conduct online classes. Some of the popular applications and tools are social platforms such as WhatsApp, Facebook, Instagram, and Telegram; open learning management

systems such as Google Sites, Google Classroom, Moodle MS Team Classroom and Canvas and Virtual meeting platforms such as Google Meet, WeChat, Zoom, and Goto Meeting (Alsaleem, 2020; Huang et al., 2019 & 2020; Mofareh, 2019; Shyammlee, 2012; Simonson et al., 2011). Language method tools and applications are used for teaching communication and writing skills, carrying out research studies, and teaching content that requires less face-to-face interaction (Shyamlee, 2012). Learners explore the aforementioned technological platforms to optimise English language instructions and equip every teacher with methods to communicate with their learners efficiently, effectively, and amicably. Using modern technological appliances as part of teaching the English language is not only bound to be used as modern gadgets and devices but also targeted at procuring the introduction of innovative systems and methods that enable the fostering and facilitation of learning processes so that it can be easier and more comprehensive (Mofareh, 2019 cited in Olorunmade, 2023). Thus, teachers of languages, who use technology while teaching learners, can further consolidate the innovative tendencies that are embedded in engaging AI for quantitative generation, collection, and analysis of calqued words. To this end, the integration of Artificial Intelligence (AI) into language pedagogy has fascinated some cardinal transformations at every level of linguistic descriptions, specifically morphology, which studies the formation and internal structures of words. Thus, AI provides more elucidating versions of morphological processes in language teaching and learning which has exposed both teachers and learners to diverse research and discoveries which enhance the understanding of every concept taught in the grammar of words (morphology) (Olorunmade, 2023). In line with this, he further claims that the different scholarly contributions to the relevance of incorporating and leveraging ICT in every

aspect of language have paved the way for brighter, transformative, and enduring comprehension in classroom activities.

In connection with the above, it is true that the world, its people, their knowledge, and their languages are not static; hence, the quest for more advanced research is unquenchable. To consolidate this assertion, AI is a technological tool that has been invented and educationally engaged to minimise the existing intra- and inter-morphological barriers that constitute conspicuous misunderstandings of how languages evolved and adapted. The detribalised functions of AI in language teaching and learning do not exclude calquing, a morphological process that involves the direct translation of foreign words and structures to a target language. This shows the dynamics of language and its responsiveness to cultural and technological changes (Baker 2018). With the significant role of AI in language processing, the mechanisms of this morphological process can be comprehended and utilised by teachers, learners, and others who are interested in the astute application of morphological knowledge to solve linguistic problems without prejudice.

Statement of Research Problem

Numerous studies have been conducted on the significant roles of AI in the teaching and learning of language. For instance, Bakei (2018) examines morphological changes: a cognitive approach; Katan (2020) examines new words in the age of social media: the role of AI in neologism formation language; Barni (2019) works on language transformation through machine translation; Bayero (2021) analyzes technology-driven curricula in teaching English in primary schools; Olorunmade (2023) considers leveraging information and communication technology in English teaching and learning: a study of selected tertiary institutions in Zaria; Alkahlifa (2021) discusses the impact of AI on language translation: a review of calquing in context among others. Despite

these scholars' efforts, more attention needs to be given to AI technology in language teaching and learning. Therefore, this study aimed to address this gap.

Aim and Objectives

The principal aim of this study is to examine the perceived dynamics of AI in the generation of calqued words in language pedagogy. Specifically, the study was 'platformed" with the following objectives. i. To identify the role of AI in generating calqued words. ii. To examine the manner in which AI manipulates linguistic resources to form calqued words in language teaching and learning. iii. To unveil the prospective implications of AI-generated calqued words in relation to morphological theories of language teaching and learning. iv. To analyse the sociocultural impact of AI on language evolution through calquing in language teaching and learning.

Research Questions

The research was guided by the following questions. What are the roles of AI in generating calqued words in contemporary language teaching and learning? ii. How does AI manipulate linguistic resources to form calqued words in language teaching and learning? iii. What are the implications of AI-generated calqued words in relation to morphological theories for language teaching and learning? iv. What are the sociocultural impacts of AI on language evolution through calquing in language teaching and learning?

Methodology

The data for this study were sourced from hundred (100) respondents (language educators) from divergent linguistic backgrounds. The participants were from the Department of English and General Studies in Education, Federal University of Education, Zaria. The respondents were randomly selected and had a series of experiences in teaching and learning different courses in language. The research instrument was comprised of a structured questionnaire.

One hundred (100) copies of the questions were administered to randomly selected subjects to ascertain the dynamics of AI technology in the generation of calqued words in language pedagogy. The questions in the questionnaire were strictly guided by research questions.

Data Presentation and Analysis

Table 1. Do you agree that the use of AI facilitates the generation of calqued words in language teaching and learning?

Response	Frequency	Percentage (%)
Yes	75	75
No	15	15
None	10	10
Total	100	100

The above data shows that out of the hundred respondents, seventy-five constituting seventy-five percent (75%) affirmed that the use of AI facilitates the generation of calqued words in language teaching and learning; fifteen (15%) were on the negative side while ten (10%) were neutral. This implies that AI facilitates the generation of calqued words for language teaching and learning.

Table 2: Does AI provide a significant guide for language teachers and learners in the process of generating calqued words?

Response	Frequency	Percentage (%)
Yes	71	71
No	19	19
None	10	10
Total	100	100

From the above table, it can be seen that of the 100 (100%) respondents, 71 (71%) stated that the use of AI provides a significant guide for both language teachers and learners in the process of generating calqued words; 19 (19%) remained negative, while 10 (10%) were neutral. This indicates that AI provides a significant guide for both teachers and learners in the process of generating calm words.

Table 3. Does AI display creativity in the process of forming calqued words in contemporary language teaching and learning?

Response	Frequency	Percentage
Yes	68	68
No	18	18
None	14	14
Total	100	100

The data above reveal that out of the 100 (100%) respondents, 65 (65%) agreed that AI displays creativity in the process of forming calqued words in contemporary language teaching and learning; 18 (18%) said no, while 14 (14%) were neutral. This implies that AI displays creativity in the process of forming calqued words in contemporary language teaching and learning.

Table 4: Can AI correctly manipulate accessible linguistic resources to form calqued words in contemporary language teaching and learning?

Response	Frequency	Percentage (%)
Yes	76	76
No	19	19
None	5	5
Total	100	100

The above data reveal that, out of the 100 respondents (100%), 76 (76%) agreed that AI can correctly manipulate accessible linguistic resources to form calqued words in contemporary language teaching and learning; 19 (19%) responded negatively, while 5 (5%) were neutral. This reveals that AI can correctly manipulate accessible linguistic resources to form calqued words during contemporary language teaching and learning.

Table 5: Does AI display consistency in the process of generating calqued words in language teaching and learning, especially when globally recognised languages are engaged?

Response	Frequency	Percentage (%)
Yes	87	87
No	2	2
None	11	11
Total	100	100

It is obvious from the above data that out of the 100 (100%) respondents, 87 (87%) affirmatively stated that the AI displays consistency in the process of generating calqued words in language teaching and learning, especially when globally recognised languages were engaged; 2 (2%) negatively responded, while 11 (11%) were neutral. This implies that AI displays consistency in the process of generating calqued words in language teaching and learning, especially when globally recognised languages are engaged.

Table 6: Does AI promote convenience among teachers and learners in the process of generating calqued words for language teaching and learning?

Response	Frequency	Percentage (%)
Yes	89	89
No	7	7
None	4	4
Total	100	100

The table above apparently shows that out of the 100 respondents, 89 (89%) agreed that connectivity in technological gadgets is a great advantage in English language teaching and learning in tertiary institutions, seven (7%) gave negative responses, and four (4%) were neutral. This reveals that connectivity with technological gadgets is a great advantage in teaching and learning English in tertiary institutions.

Table 7: Does AI comply with the existing morphological tenets governing the formation of calqued words in language teaching and learning?

Response	Frequency	Percentage
Yes	73	73
No	15	15
None	12	12
Total	100	100

The above table reveals that out of the 100 respondents, 73 (73%) agreed that AI complied with the existing morphological tenets governing the formation of calqued

words in language teaching and learning; 15 (15%) gave negative responses, whereas 12 (12%) were neutral. This proves that AI complies with existing morphological tenets governing the formation of calqued words in language teaching and learning.

Table 8: Does AI promote collaboration among teachers and language learners in the process of generating calqued words?

Response	Frequency	Percentage
Yes	75	75
No	15	15
None	10	10
Total	100	100

The above table reveals that, out of the 100 respondents, 75 (75%) agreed that AI promotes collaboration among language teachers and learners in the process of generating calqued words; 15 (15%) gave negative responses, while 10 (10%) were neutral. This confirms that AI promotes collaboration between language teachers and learners in the process of generating calqued words.

Table 9: Does AI reflect the inter-language dynamism associated with the generation of calqued words in language teaching and learning?

Response	Frequency	Percentage (%)
Yes	85	85
No	2	2
None	13	13
Total	100	100

From the above table, it is clear that out of the 100 respondents, 85 (85%) agreed that the adoption of AI in the generation of calqued words reflects the interlanguage dynamism associated with language teaching and learning; 2 (2%) reflected no in their responses, while 13 (13%) were neutral. This shows that the adoption of AI in the generation of calqued words reflects the interlanguage dynamism that is associated with language teaching and learning.

Table 10: Does AI-generated calqued words fascinate linguistic prejudice in language-teaching and learning enterprises?

Response	Frequency	Percentage (%)
Yes	75	75
No	15	15
None	10	10
Total	100	100

It is clear from the above table that, out of the 100 respondents, 75 (75%) consented to the fact that the AI-generated calqued words fascinate linguistic prejudice in language teaching and learning; 15 (15%) answers were negative, while 10 (10%) were neutral. This confirms that AI-generated calqued words fascinate linguistic prejudice in language teaching and learning.

Table 11: Does AI-generated calqued words morphologically complement existing traditional patterns in language teaching and learning?

Response	Frequency	Percentage (%)
Yes	91	91
No	1	1
None	8	8
Total	100	100

From the above table, it is clear that out of the 100 respondents, 91 (91%) overwhelmingly agreed that the AI-generated calqued words complement the existing traditional pattern morphologically in language teaching and learning; one (1%) reflected no in their responses, while eight (8%) were neutral. This reveals that AI-generated calqued words complement the existing traditional patterns morphologically in language teaching and learning.

Table 12: Does the AI-generated calqued words contain accurate intended semantic values in all languages?

Response	Frequency	Percentage
Yes	31	31
No	65	65
None	4	4
Total	100	100

The above table reveals that out of the 100 respondents, 31 (31%) agreed that the AI-generated calqued words contained accurate intended semantic values in the languages; 65 (65%) gave negative responses, while four (4%) were neutral. This proves that AI-generated calqued words do not contain the accurate intended semantic value in all languages except globalised ones, which the AI can easily access to draw its data.

Findings and Discussion

The findings of this research and its discussion are harmoniously organised in consonance with the principal research questions posed to guide the study.

➤ **AI and Calquing Manipulation**: The data analysis shows that AI's translation tools frequently facilitate, guide, and display creative tendencies while generating and manipulating morphological calques, which reflect a direct application of source language structures into target languages. This is exemplified by computing which is translated into French as an informatique en nuage, unveiling a literal translation process. However, it should be noted that as resourceful and manipulative as AI, it lacks the functional capacity to draw its data from languages that have not received sufficient attention at all levels of linguistic descriptions on the Internet. Logically, AI is independent of human intelligence in most of its technological operations. Of course, AI has the ability to generate a unique concept from data available on the Internet in line with the task that is posed to it.

➤ **Creativity**: This refers to the ability of someone to fashion out something new from junks or to transform existing objects, ideas, concepts, creeds, and credos to enhance its value. Thus, the engagement of AI technology in morphological processes paves the way for creativity in classrooms. To this end, the data analysed in this study revealed that AI can correctly and consistently manipulate accessible linguistic resources to form calqued words in contemporary language teaching and learning. This is commonly realised, especially when globally recognised languages are engaged.

➤ **Connectivity:** AI has made knowledge of word generation more accessible. Authorities in language have published discoveries in all aspects of language studies for others (including both teachers and learners) to connect to and affirm any concept taught. In fact, neither learners nor teachers need to frequently patronise libraries for academic research. Similarly, it is possible for a teacher to generate millions of linguistic resources across the globe because of AI's connectivity and collaborative tendencies. Currently, word formation is no longer limited by space because of the engagement of AI which has immensely debilitated every linguistic impediment among languages.

➤ **Convenience:** The adoption of AI in language teaching and learning has enhanced ease of use in an unquantifiable manner. Before its advent, the adoption and spread of the waves of the use of technological gadgets in classroom exercises, language teaching, and learning processes were stressful for both teachers and learners. Technology has greatly reduced the rigors and risks once experienced by teachers, learners, parents, etc., in the process of language teaching and learning. Both teachers and learners have the choice to anchor and participate in classroom activities from anywhere. Learners decide where to learn and the desired postures for their choices.

➤ **Complementing Role:** Its quite glaring from The above analysis shows that integrating AI technology in language

teaching and learning does not eliminate traditional methods. Rather, it provides inexhaustible and viable opportunities for exploring language evolution and innovation. Collaboration between AI and Natural Intelligence (NI) enriches linguistic expressions in every facet of language teaching and learning. For instance, AI has no capacity to provide the meanings and the calqued forms of these Okun words in English or any other international language: Olounghunmade (God gave me a crown), Ojuetonu (eye cannot capture the inside or heart), Arokoyo (one that has pleasure in farm or farming), Osamika (the deity knows the wicked), Iraiyenomo (people in the world own a child), Obajemito (if it allows me to last long), Arotile (a bracer of a house), among others, until linguistic data in this respect is made available on the Internet by human scholars.

- **Linguistic Diversity**: The data analysed indicated that AI has a significant impact on language evolution, with a majority expressing cautious optimism about AIs roles in fostering linguistic diversity. However, the findings also reveal that many language professionals maintain a prejudiced notion of the superficiality of AI-generated calques. This suggests that the current dialogue between linguists and technologists is critical for maintaining linguistic depth.
- **Cultural Impact**: The analysed data also revealed that AI-driven linguistic innovations sometimes occur. That is, it culminates in oversimplified language forms, raising questions about the depth and richness of emerging expressions. By contrast, AI involvement in morphological processes will trigger intellectual curiosity, which will enable more studies from scholars whose language cannot be promoted via AI activities in the calquing generation.

Challenges of using AI in language teaching and learning

There is no innovation (including the adoption of AI tools for language teaching and learning in tertiary institutions in Nigeria), which is void of its peculiar challenges (s). Some of the factors affecting the use of AI in classrooms include the following. Erecting substandard structures is challenging. Modern language laboratories and classrooms should be built in conducive, noise-free environments. This will enhance the effectiveness of language teaching and learning. Physiological and biological factors constitute another constraint. Thus, teachers and learners with body disabilities may not affect or learn maximally, as expected. Economically, the strength of each teacher and learner determines the type of technological gadgets (s) they will be able to buy and use to access language teaching and learning. Psychologically, some teachers and learners are unstable due to hunger, low social status, or life-threatening challenges. Therefore, they find it difficult to concentrate on language classes, culminating in poor performance in every aspect of language teaching and learning. Philosophically, the manner in which language teachers and learners view technological advancement differs in general. Some embrace it, while others are sceptical about its adoption, let alone its adoption. Politically, the government's failure to provide the necessary funds for the procurement of technological gadgets and to formulate, implement, and adjudicate policies in favour of the use of AI in language teaching and learning hampers the propagation of the use of AI in language classrooms.

Concluding Remarks

As AI continues to evolve, its dynamics in morphological processes such as calquing become increasingly apparent. This study emphasises the potential of integrating AI with traditional linguistic methodologies to

further enrich teachers' and learners' understandings of language formation, structure, and change. Future research should focus on the socio-linguistic implications of these changes as well as ethical considerations surrounding the role of AI in the evolution of language and its influence on language teaching and learning. The adoption of AI in the process of generating calqued words possesses numerous and rewarding benefits, as reflected in the convenience, creativity, collaboration, and consistency of teachers and learners. However, there have been no developments without peculiar challenges. To this end, the adoption of AI in generating calqued words has been confronted with a series of daunting limitations, as shown in physical (environmental), physiological (biological), economical, psychological, philosophical, and political in nature (Olorunmade, 2023). It should be noted that these challenges are not abnormal, because they are surmountable. Transformation begins when challenges are exposed and tackled. Therefore, all the identified hindering factors can be overcome if all the concerned stakeholders – government, management, teachers, learners, parents, and society–perform their designated roles as expected in every ramification.

Recommendations

This study recommends the following for consideration and implementation if language teaching and learning via AI are expected to be more effective, efficient, profitable, and beneficial.

i. The government should create an enabling environment for viability that enhances the promotion of AI in language teaching and learning. This can be accomplished by funding building and equipping ICT centres with computers and other gadgets.

ii. Government and non-government agencies should provide scholarships for both teachers and learners in Nigeria and abroad. This will motivate them to make more profitable efforts to use AI technologies in teaching and learning enterprises.

ii. Teachers should embrace the use of AI for classroom delivery and be ready to undergo more training and retraining in AI-compliant programs.

iii. Teachers and learners should be oriented toward and compelled to comply with the use of AI technology in teaching and learning.

iv. Parents should encourage their wards to provide the necessary motivation by providing for each learner's basic needs that will facilitate language teaching and learning of calqued words via AI.

v. Society should create a peaceful atmosphere that encourages both teachers and learners to embrace and use AI in language teaching and learning.

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