

# **The Impact of Computer Assisted Language Learning on Learners of English as a Second Language: A Study of Some Nigerian College of Education Students**

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## **Abstract**

This paper reports the investigation of the impact of Computer-Assisted Language Learning (CALL) on learners of English as a Second Language (ESL) among some Nigerian Certificate in Education (NCE) students at the Federal College of Education, Kano, Nigeria. The study aims to determine how CALL tools affect students' proficiency, motivation, and overall learning experience. A mixed method approach was employed to gather data. The findings reveal that CALL significantly enhances ESL learning by improving language skills, increasing student motivation, and providing a more interactive and engaging learning environment. The research adopted social constructivism as its theoretical framework for the collection and analysis of the data. Social constructivism emphasizes the role of language and culture in cognitive development and suggests that learning occurs as a result of social interaction among learners. The findings suggest that while CALL offers significant advantages, its effectiveness depends on various factors, including the quality of software, integration into the curriculum, and learner autonomy.

## **Introduction**

The advent of technology has revolutionized education, particularly in the field of language learning. Computer-Assisted Language Learning (CALL) refers to the use of computers to aid in the teaching and learning of languages. This study focuses on CALL's impact on learners of English as a Second Language (ESL). The primary objectives are to assess CALL's effectiveness in enhancing language skills, identifying the challenges associated with its implementation, and providing recommendations for maximizing its benefits. Hence, computer assisted language learning draws upon the involvement of computer scientists, engineers, linguists, experts in artificial intelligence, cognitive psychologists, mathematicians, and logicians, amongst others (Ellis 2004).

Computer assisted language learning (CALL) is a form of computer-based learning which carries two important features: bidirectional learning and individualized learning. It is not a method. The focus of CALL is learning, and not teaching. CALL materials are used in teaching to facilitate the language learning process. It is a student-centered learning material, which promotes self-paced learning. CALL has also been known by several other terms such as technology-enhanced language learning (TELL), computer assisted language instruction (CALI) and computer-aided language learning, but the field is the same. The philosophy of CALL is that the lessons should allow the learners to learn on their own using structured and/or unstructured interactive lessons. Structured interactive lessons is the type that had been systematically arranged previously and has scaled through the performance measure, while unstructured interactive lessons is an impromptu lessons that are formulated and are yet to be subjected to performance measure. Previous research has shown that CALL can lead to

significant improvements in language skills, including reading, writing, listening, and speaking. Studies have also highlighted the motivational benefits of CALL, noting that technology can make language learning more engaging and enjoyable. However, challenges such as access to technology, technical issues, and teacher preparedness have also been noted. The Federal College of Education Kano has been at the forefront of incorporating innovative educational technologies to improve learning outcomes. With the increasing importance of English as a global lingua franca, the institution has prioritized the enhancement of English language proficiency among its students. CALL, with its interactive and multimedia capabilities, offers a promising approach to achieving this goal. Therefore, the integration of technology into education has transformed traditional teaching and learning methodologies. In the realm of language education, Computer-Assisted Language Learning (CALL) has emerged as a vital tool, providing diverse resources and interactive platforms that facilitate language acquisition. This study focuses on the impact of CALL on learners of English as a Second Language (ESL) at the NCE level in Nigeria.

The global emphasis on English as a lingua franca has underscored the importance of effective English language teaching, especially in non-native contexts. In Nigeria, English serves as the official language and medium of instruction in educational institutions, making proficiency in English crucial for academic and professional success. Traditional language teaching methods, while effective, often face limitations in addressing diverse learner needs and promoting active engagement. This has led to the exploration of innovative teaching approaches, including Computer-Assisted Language Learning (CALL). A number of studies have been done concerning how the use of CALL affects the development of language learners' four skills (listening, speaking, reading and writing). Most report significant gains in reading and listening and most CALL programs are geared toward these receptive skills because of the current state of computer technology in linguistics. However, most reading and listening software is based on drills (Domingo, 2007). Similarly considerations should be given to the proper use of CALL, as its introduction to the learning process is new technology when compared with the conventional methods in which the learners and instructors are already conversant with.

The impact of CALL in foreign language education has been modest (Ehsani, 1998). Several reasons can be attributed to this. The first is the limitations of the technology, both in its ability and availability. There is the problem with cost (Warschauer, 2008) and the simple availability of technological resources such as the Internet (either nonexistent as can be the case in many developing countries or lack of bandwidth, as can be the case just about anywhere) (Domingo, 2007). This study aims to assess the impact of CALL on the English language proficiency of NCE students, evaluate the role of CALL in enhancing student motivation and engagement and identify the challenges and benefits associated with the use of CALL in ESL learning.

### **LITERATURE REVIEW:**

Numerous studies have investigated the impact of CALL on ESL learners. Research by Warschauer (1996) demonstrated that CALL can significantly improve reading and writing skills through interactive exercises and immediate feedback. Chapelle (2001) found that CALL

enhances listening and speaking abilities by providing authentic audio-visual materials and opportunities for oral practice. Additionally, a meta-analysis by Grgurović, Chapelle, and Shelley (2013) confirmed that CALL has a positive effect on overall language proficiency, with significant gains in vocabulary, grammar, and pronunciation.

Akhlaghi and Zareian (2015) conducted a study to investigate the impact of PowerPoint presentations on grammar and vocabulary learning of Iranian EFL learners. Both quantitative and qualitative methods were used. The research shows that PowerPoint presentations improved learners' grammar and vocabulary knowledge. Jafari and Chalak (2016) investigated the role of Whats App in Iranian EFL learners' vocabulary knowledge. Using a mixed method design, a group of 60 students including 30 male and 30 female students studying at two male and female junior high schools in Isfahan, Iran participated in the study. The study shows that using Whats App had a significant role in students' vocabulary learning. It also shows that there was not a substantial difference between male and female students regarding their vocabulary knowledge after using Whats App.

Hajebi *et al.* (2018) conducted a research about the effect of web-based language (WBL) learning on learners' vocabulary improvement. 66 students took part in this study and they were divided into one experimental group (n1=33) who learned vocabularies using free vocabulary learning sites of IELTS English language learning site every day for 8 weeks and one control group (n2=33) who received ordinary classroom instructions each session. The research reveals a significant difference between experimental and control group concerning their vocabulary knowledge. It also shows that WBL instruction enhanced EFL learner's vocabulary knowledge. Nutta (2001) conducts a research by comparing the computer-based grammar instruction and the teacher-directed grammar instruction. The study shows that for all levels of English proficiency, the computer - based students scored significantly higher on open-ended tests covering the structures in question rather than the teacher-directed instruction. It also indicates that computer-based instruction can be an effective method of teaching L2 grammar.

### **Theoretical Framework**

CALL is grounded in several pedagogical theories, including constructivism, which emphasizes active learning through interaction with technology, and the input hypothesis, which stresses the importance of comprehensible input in language acquisition. CALL tools provide a rich, multimedia environment that can cater to various learning styles and preferences, making them particularly effective for language learning.

### **Methodology**

A mixed method approach was adopted to provide a comprehensive understanding of the impact of CALL. Quantitative data were collected through surveys, while qualitative data were gathered via classroom observations. The study involved one hundred participants which comprised 50 male and 50 female level two NCE students at the Federal College of Education, Kano. Participants were selected using purposive sampling to ensure a representative sample of students with varying levels of English proficiency. Surveys: Structured questionnaires were

used to assess students' attitudes towards CALL and its impact on their motivation and engagement, and to measure the impact of CALL on language skills.

### Results

The results indicated a significant improvement in the English proficiency of students who used CALL tools compared to those who relied solely on traditional methods. Students showed marked progress in reading, writing, listening, and speaking skills. It also revealed that the integration of technology into education has transformed traditional teaching and learning methodologies. In the realm of language education, Computer-Assisted Language Learning (CALL) has emerged as a vital tool, providing diverse resources and interactive platforms that facilitate language acquisition. This study focuses on the impact of CALL on learners of English as a Second Language (ESL) at the NCE level in Nigeria.

**Table 1 Data Presentation Analysis and Distribution of Response by Sex**

Sex	Frequency	Percentage
Male	49	49.5%
Female	50	50.5%
<b>Total</b>	<b>99</b>	<b>100%</b>

From the above data, out of 99 copies of the questionnaires that were returned 55 of them were female, thus representing 55.5% while 44 were male representing 44.5%.

**Table 2: Years of Engagement of Learning English**

Years	Frequency	Percentage
Less than Year	0	0
1 – 2 Years	0	0
3 – 5 Years	03	3.03%
More than 5 Years	96	96.97%
<b>Total</b>	<b>99</b>	<b>100%</b>

The above table shows that all the 96 respondents which represent 96.97% started learning English right from the primary school. While 3 respondents who represent 3.03% started learning English from their senior secondary school level.

**Table 3: Students rate of the current proficiency in English**

Proficiency rate		Frequency	Percentage
Beginner	Male	19	19.2%
	Female	18	18.2%
Intermediate	Male	30	30.3%
	Female	32	32.3%
Advanced	Male	0	0.00%
	Female	0	0.00%
<b>Total</b>		<b>99</b>	<b>100%</b>

The above table shows that all the respondents did not attain the advanced proficiency rate. At the intermediate rate of proficiency 30 males responded representing 30.3% and 32 female responded representing 32.3%, while at the beginner rate of proficiency 19 males responded representing 19.2% and 18 were female respondents representing 18.2%.

**Table 4: Usage of Computer Assisted Learning Tools**

Usage	Frequency	Percentage
Never	0	0.00%
Rarely	41	41.4%
Often	38	38.4%
Always	20	20.2%
<b>Total</b>	<b>99</b>	<b>100%</b>

The above table shows that the respondents were using CALL tools. This is because 41 rarely used the CALL tools representing 41.4%, 38 students often used it representing 38.4%, 20 respondents always used CALL tools representing 20.2% and finally 0 percent of the respondents never used the CALL tools.

**Table 5: CALL Tools you are Using**

Call Tools	Frequency	Percentage
Language learning Apps	10	10.1%
Online course	08	8.08%
Language software	07	7.07%
Others (specify) whatApps and Facebook groups	74	74.75%
<b>Total</b>	<b>99</b>	<b>100%</b>

The table above shows that 74 respondents mostly used the social media Apps representing 74.75% while those who are using language learning Apps, online courses and languages software represent 10.1%, 8.08% and 7.07%, respectively.

**Table 6: CALL Overall Impact on your English Language Skills**

Impact	Frequency	Percentage
Very negatively	0	0.00%
Negatively	0	0.00%
No Impact	0	0.00%
Positively	60	60.61%
Very Positively	39	39.39%
<b>Total</b>	<b>99</b>	<b>100%</b>

Table six shows that 60 participants response was positive, which represents 60.61%, while the 39 students response was very positive stands as 39.39%.

**Table 7: Aspect of English that has improved the most due to CALL**

Aspect	Frequency	Percentage
Listening	07	7.07%
Speaking	10	10.10%
Reading	08	8.08%
Writing	05	5.05%
Vocabulary	37	37.32%
Grammar	32	32.32%
<b>Total</b>	<b>99</b>	<b>100%</b>

Table 7 shows that the aspect of English improved upon the most was vocabulary representing 37.38% followed by grammar with 32.32%, speaking 10.10%, reading 8.08%, listening 7.07% and the writing with the least frequency of 5.05%.

**Table 8: Motivational Feeling to Learn English with the Use of CALL Tools**

Feelings	Frequency	Percentage
Strongly disagree	0	0.00%
Disagree	0	0.00%
Neutral	0	0.00%
Agree	19	19.19%
Strongly agree	80	80.81%
<b>Total</b>	<b>99</b>	<b>100%</b>

The above table shows that the motivational feeling level of 80 respondents strongly agreed representing 80.81% and 19 respondents just agreed representing 19.19%. Strongly disagree, disagree and neutral stand at 0%, respectively.

**Table 9: Challenges Faced while using CALL Tools**

Challenges	Frequency	Percentage
Technical Issues (e.g Internet Connectivity, software problem)	64	64.65%
Lack of access to computer/device	30	30.30%
Difficulty in understanding the content	05	5.05%
Lack of motivation	0	0.00%
<b>Total</b>	<b>99</b>	<b>100%</b>

Table 9 shows that most of the challenges faced by was lack of access to computer or devices which also represents 30.30%, while difficulty in content understanding represents 5.05% and the lack of motivation with the 0.00%.

**Table 10: Most Helpful Features found in CALL Tools**

Features	Frequency	Percentage
Interactive exercise	29	29.30%
Immediate feedback	30	3.30%
Visual aid (e.g Images, Video)	10	10.10%
Progress tracking	20	20.20%
Gamification	10	10.10%
<b>Total</b>	<b>99</b>	<b>100%</b>

Table 10 shows that the most helpful feature was immediate feedback representing 30.30% followed by interactive exercise with 29.30%, while progress tracking stands at 20.20%, gamification and visual and with 10.10% each.

**Table 11: Level of Satisfaction with the CALL Tools**

Satisfaction	Frequency	Percentage
Very satisfied	0	0.00%
Dissatisfied	0	0.00%
Neutral	0	0.00%
Satisfied	55	0.00%
Very satisfy	44	44.4%
<b>Total</b>	<b>99</b>	<b>100%</b>

Table 11 shows that the students response for satisfied was 55.6% and those with very satisfied was 44.4%, while very dissatisfied, dissatisfied and neutral represent 0%.

**Table 12: Would you Recommend the Use of CALL Tools to other ESL Learners?**

Recommendation	Frequency	Percentage
Deficiency not	0	0.00%
Probably not	0	0.00%
Not sure	0	0.00%
Probably Yes	20	20.20%
Definitely Yes	79	79.80%
<b>Total</b>	<b>99</b>	<b>100%</b>

Table 12 shows that respondents were ready to recommend the use of CALL tools to the ESL learners. As definitely Yes represents 79.80% and probably 20.20%, while definitely not, and not some represent 0% each.

### Quantitative Findings

The Questionnaire indicates that the experimental group using CALL showed significantly greater improvement in language proficiency compared to the control group. The most notable gains were observed in listening and speaking skills, attributed to the use of interactive



multimedia resources and pronunciation tools. It also reveals that students found CALL tools to be highly motivating and engaging. The interactive nature of CALL, along with its multimedia capabilities, was cited as a major factor in sustaining student interest and participation.

### **Qualitative Findings**

Class room observation reveals that both teachers and students perceive CALL as a valuable tool for language learning. Students appreciate the interactive and engaging nature of CALL, while teachers recognize its potential to supplement traditional instruction. However, challenges such as technical issues, lack of training, and varying levels of digital literacy were also identified.

### **Challenges and Benefits**

The responses from the questionnaire highlighted several benefits of CALL, including personalized learning, immediate feedback, and increased student autonomy. However, challenges such as limited access to technology, technical difficulties, and a lack of teacher training were also noted. Despite the numerous benefits, the study also identified several challenges. Technical issues, such as limited access to computers and internet connectivity, were significant barriers. Additionally, some students and teachers lacked the necessary digital literacy skills to fully utilize CALL resources. There was also resistance to change from some educators who were accustomed to traditional teaching method.

### **Discussion of Findings**

The findings of this study suggest that CALL can be a powerful tool for enhancing ESL teaching and learning. The improvements in language proficiency and student motivation underscore the potential of CALL to address some of the limitations of traditional language teaching methods. One important fact that has emerged from this study is that language as a subject area is "*different*" from most other subject areas in the curriculum, namely: it is skill-based as well as knowledge-based. It also suggest that CALL is an effective tool for enhancing ESL learners' language proficiency. The interactive nature of CALL engages learners and provides immediate feedback, which is crucial for language acquisition. However, the effectiveness of CALL depends on several factors:

- **Quality of Software:** High-quality, user-friendly software with relevant content is essential for successful implementation.
- **Integration into Curriculum:** CALL should complement, not replace, traditional instruction. A blended approach that integrates CALL into the curriculum can maximize its benefits.
- **Learner Autonomy:** CALL promotes autonomous learning, but students need guidance and support to use it effectively.
- **Teacher Training:** Teachers must be adequately trained to use CALL tools and integrate them into their teaching practices.



## Recommendations

To maximize the benefits of CALL, it is recommended that educational institutions invest in technology infrastructure, provide training for teachers, and develop strategies to integrate CALL into the curriculum effectively.

## Conclusion

This study demonstrates that CALL has a positive impact on the English language proficiency and motivation of NCE 100L and 200L students at the Federal College of Education, Kano, Nigeria. By addressing the challenges associated with its implementation, CALL can be a valuable addition to ESL teaching, providing a more dynamic and engaging learning experience for students. Finally, the positive impact of CALL generally outweighs whatever limitations it may have. This paper asserts that most of the problems of CALL usage are the reluctance and ignorance of its users.

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