



IMPROVING STUDENTS' PERFORMANCE IN ENGLISH LANGUAGE USING ARTIFICIAL INTELLIGENT

Oyedapo, Aderemi David; Oyedapo, Bridget Ncheta

Federal College Of Education, Eha-Amufu

Corresponding Author: adoyedapo@gmail.com

Abstract

The persistent poor performance of students in English Language has remained a major concern among educators, parents, and policymakers. Several behavioral factors, including inadequate reading habits, lack of effective personalize learning system and so on have been identified as contributors to students' poor achievement in the subject. Recent advancements in Artificial Intelligence (AI) have created opportunities for using intelligent learning systems capable of providing personalized instruction, continuous assessment, and adaptive learning experiences. This study examined students' perceptions of behavioral factors responsible for poor performance in English Language and explored the potential of AI-driven learning systems to improve their performance. Data collected from students revealed that poor study habits, insufficient reading time, low confidence in spoken English, and preference for entertainment activities over educational engagements significantly contribute to poor performance in English Language. The findings further showed strong acceptance of AI-based learning features such as personalized tutoring, automated essay correction, grammar and spelling feedback, adaptive timetabling, and learning analytics. Respondents expressed a high level of agreement that such features could help them to improve their English Language proficiency. The study concludes that integrating AI-powered educational technologies into English Language learning can enhance students' engagement, and academic achievement. It therefore recommends the adoption of intelligent English Language learning support systems in schools.

Keyword: Students' Performance, English Language, Artificial Intelligent, Intelligent Tutoring System and Personalized Learning

Introduction

English Language occupies a central position in the educational system of Nigeria and many other countries where it serves as a medium of instruction and communication. Success in English Language significantly influences students' performance in other school subjects because it is the language through which knowledge is delivered and assessed. Consequently, poor performance in English Language often results in poor academic achievement across

various disciplines. Rodgers (2014), believes that effective mastery of English Language enables learners to communicate confidently and access educational opportunities. Despite the importance of English Language in the Nigerian educational system, students' achievement in the subject has remained a source of concern. Reviews of WAEC examination performance and Chief Examiners' Reports indicate recurring weaknesses in grammar, vocabulary development, comprehension, and written expression among candidates, suggesting persistent challenges in English Language learning (Abubakar, 2024; WAEC, 2023).

Several studies have attributed poor performance in English Language to behavioral, environmental, and motivational factors. For instance, Aremu and Soka (2003) found that students' academic performance is significantly influenced by study habits, motivation, and school environmental factors. Similarly, Olatunji (2013) reported that students' attitudes toward English Language and their level of motivation significantly affect achievement in the subject. In another study, Fakeye (2010) established that a conducive learning environment and positive learner attitudes enhance students' performance in English Language, while unfavorable school conditions contribute to poor achievement. Furthermore, Adeyemi (2014) observed that behavioral factors such as poor study habits, absenteeism, and lack of commitment to academic activities negatively affect students' performance in English Language examinations. Adeyemi (2018), opines that inadequate study time negatively affects students' academic achievement. Students who devote insufficient time to reading, engage excessively in leisure activities, and fail to practice language skills regularly often perform poorly in English Language examinations (Oyetunde and Muodumogu, 2016). Similarly, fear of making grammatical mistakes, lack of confidence in spoken English, and inadequate exposure to quality learning resources can hinder language acquisition and development.

The emergence of Artificial Intelligence (AI) in education offers promising opportunities for addressing these challenges. AI refers to the simulation of human intelligence by machines capable of learning, reasoning, and adapting to new situations (Russell & Norvig, 2021). It refers to computer systems capable of performing tasks that normally require human intelligence, including learning, reasoning, problem-solving, and decision-making. In educational settings, AI-application can provide personalized instruction, monitor learner progress, identify weaknesses, recommend learning activities, and offer immediate feedback. According to Holmes et al. (2019), AI technologies can improve learning outcomes by providing immediate feedback, identifying knowledge gaps, and supporting self-directed learning. Research by Luckin et al. (2016) and Siemens & Long, (2011) also indicate that intelligent tutoring systems can enhance language learning by offering personalized guidance and real-time feedback. AI-based learning systems have gained popularity due to their ability to adapt learning experiences to individual students' needs. Such systems can motivate

learners through personalized support, intelligent tutoring, automated assessment, and continuous performance tracking. In language learning specifically, AI technologies can assist students in practicing spoken English, correcting grammar and spelling errors, evaluating essays, and recommending suitable learning materials.

The present study was motivated by the need to investigate students' perceptions of the factors contributing to poor performance in English Language and to determine whether AI-driven educational systems could serve as effective learning tools for improving learning outcomes. Understanding students' experiences and expectations is essential for designing educational technologies that address their specific learning needs and challenges.

Statement of the Problem

English Language is the official language of instruction in Nigerian schools and serves as a fundamental medium for teaching, learning, communication, and assessment across all subjects. Consequently, students' proficiency in English Language significantly influences their overall academic achievement. Despite its importance, reports from the West African Examinations Council (WAEC) have consistently highlighted students' poor performance in English Language, citing persistent weaknesses in grammar, comprehension, vocabulary, essay writing, and oral expression (West African Examinations Council [WAEC], 2023). These recurring deficiencies have continued to attract the attention of educators, parents, researchers, and policymakers.

Several factors have been identified as contributing to students' poor performance in English Language. These include inadequate reading habits, insufficient time devoted to personal study, excessive involvement in entertainment activities, lack of motivation, fear of speaking English because of making grammatical mistakes, and poor study routines. Although schools continue to employ conventional teaching methods to improve students' performance, these approaches often fail to provide individualized learning experiences, immediate feedback, and continuous motivation needed to address students' diverse learning needs.

The emergence of Artificial Intelligence (AI) in education presents new opportunities for enhancing language learning through intelligent tutoring systems, automated writing assistance, adaptive learning platforms, personalized feedback, and continuous learner assessment. These AI-powered technologies have demonstrated considerable potential in improving students' engagement, motivation, confidence, and academic achievement in various learning contexts. However, despite the growing adoption of AI in education globally, limited empirical evidence exists regarding students' perceptions of how AI can specifically be utilized to improve English Language learning in Nigerian secondary schools. It is against this background that this study seeks to investigate the behavioural factors responsible for poor performance in English Language, examine students' learning behaviours and attitudes

toward the subject, and determine the extent to which Artificial Intelligence-based learning systems can motivate students to improve their performance in English Language.

Purpose of the Study

The main purpose of this study is to investigate how Artificial Intelligence can be utilized to improve students' performance in English Language. Specifically, the study seeks to:

- identify the behavioural factors that contribute to poor performance in English Language among secondary school students;
- examine the learning behaviours and attitudes of students toward English Language;
- determine students' perceptions of Artificial Intelligence-based learning features that can motivate them to improve their performance in English Language.

The findings of this study are expected to provide useful information for teachers, school administrators, educational technology developers, curriculum planners, policymakers, and researchers on how Artificial Intelligence can be effectively integrated into English Language instruction to improve students' motivation, engagement, and academic performance.

Research Questions

The following research questions were asked to remain focus on the purpose of the study:

- a. What are likely behavioral factors that contribute to poor performance in English Language in Isi-Uzo Local Government Area
- b. What are the common negative attitudes of students toward learning English Language
- c. How can Artificial Intelligence as a learning tool improve students' performance in English Language

Methodology

Research Design

The study adopted a descriptive survey research design. The survey design was considered appropriate because it enabled the researcher to collect information from a large number of respondents regarding their behaviors, attitudes, and perceptions concerning the use of Artificial Intelligence (AI) for improving performance in English Language. The design also provided an opportunity to obtain firsthand information from students on factors contributing to poor performance in English Language and the extent to which AI-based learning systems can motivate them to improve their academic performance.

Area of the Study

The study was conducted among secondary school students in Isi-Uzo Local Government Area of Enugu State. The area was chosen because of its proximity to the researcher and the concern for students' poor performance in English Language in schools within the area.

Furthermore, students in the area have varying levels of exposure to digital technologies, making it suitable for investigating the potential application of Artificial Intelligence in English Language learning.

Population of the Study

The population of the study comprised all senior secondary school students in Isi-Uzo Local Government Area of Enugu State. These students were considered suitable for the study because they are actively involved in English Language learning and are expected to possess sufficient knowledge and experience to provide relevant information concerning factors affecting their performance and their perceptions of AI-assisted learning.

Sample and Sampling Technique

A sample of 230 students was selected for the study using a simple random sampling technique. The technique ensured that every student in the population had an equal opportunity of being selected, thereby reducing sampling bias and increasing the representativeness of the sample.

The sample size was considered adequate for the study because it provided sufficient data for meaningful statistical analysis and interpretation.

Instrument for Data Collection

The instrument used for data collection was a structured 19 items questionnaire. The questionnaire consisted of two sections which are Section A: Demographic Information that is used to collect respondents' personal information such as gender, age, class level, and school. Section B focus on Research Items designed to answer research question and to obtain the following information:

1. Behavioral factors contributing to poor performance in English Language.
2. Students' learning habits and attitudes toward English Language.
3. Students' perceptions of Artificial Intelligence-based features that can improve their performance in English Language.

The questionnaire items were structured on a five-point Likert scale. A criterion mean of 3.00 was used as the benchmark for decision-making. Any item with a mean score of 3.00 and above was accepted, while items with mean scores below 3.00 were rejected.

Validation of the Instrument

The instrument was subjected to face and content validation by experts in Educational Technology, Computer Science Education, and English Language Education. Their observations, corrections, and suggestions were incorporated into the final version of the questionnaire to ensure that the instrument adequately measured the variables under investigation.

Reliability of the Instrument

The reliability of the instrument was established through a pilot test involving 20 students who were not part of the main study. The responses obtained were analyzed using Cronbach's Alpha reliability technique. A reliability coefficient of 0.82 was obtained, indicating that the instrument possessed a high level of internal consistency and was therefore reliable for data collection.

Method of Data Collection

The researcher administered the questionnaire to the respondents with the assistance of teachers in three schools namely: Union Secondary, Eha-Amufu, Community Secondary School, Umuhu and Ogor Community Secondary, Ikem which were selected using simple random technique. A total of 230 copies of the questionnaire were distributed, and 229 copies were correctly completed and returned, representing a high response rate suitable for analysis.

Method of Data Analysis

The data collected were analyzed using descriptive statistics, specifically frequency counts, mean scores, and standard deviations. The mean score was used to answer the research questions, while the standard deviation was used to determine the extent of agreement or variation among respondents' responses. The decision rule adopted for the study was as follows:

3. Mean score of 3.00 and above = Accepted
4. Mean score below 3.00 = Rejected

The Statistical Package for Social Sciences (SPSS) version 25 was used to compute the statistical values and facilitate data analysis.

Results of the Survey

Research Question 1: What are likely behavioral factors that contribute to poor performance in English Language in Isi-Uzo Local Government Area

Table 1: Behavior can lead to poor performance in English Language

1	To what extent do you think the following behavior can lead to poor performance in English Language	N	MEAN	STD. DEV.	DECISION
I	Too playful both in the school and at home	216	4.02	.900	Accepted
Ii	Too busy at home without creating time for reading	222	4.68	1.109	Accepted
Iii	Given more time to music and watching movie than reading any literature	216	3.21	1.005	Accepted
Iv	Lack of motivation for personal study of the Language	229	3.33	.785	Accepted
V	Assumption that English language is simple and it may not be difficult to pass	228	3.21	.795	Accepted
Vi	Feeling ashamed to speak English for the fear speaking incorrect grammar.	217	4.38	.772	Accepted

Table 1 presents respondents' perceptions of the extent to which certain behaviors contribute to poor performance in English Language. The results indicate that all the listed behaviors were accepted as factors influencing poor academic performance in English Language, as their mean scores exceeded the acceptance benchmark. The findings suggest that poor study habits, inadequate time management, lack of confidence in speaking English, and negative attitudes toward learning the language are major behavioral factors associated with poor performance in English Language among students. The relatively low standard deviation values indicate a reasonable level of agreement among the respondents regarding these factors.

Research Question 2: What are the common negative attitudes of students toward learning English Language

Table 2: Personal attitude towards learning English Language

		N	MEAN	STD. DEV.	DECISION
2	Tick your level of agreement to the occurrence of the following behavior in your life				
I	I use to refrain myself from speaking English due to a fear of making mistakes or being teased by peers.	218	3.35	1.262	Rejected
Ii	I do not normally practice writing Essay or Letter on my own except my teacher gave it as an assignment	211	3.73	1.087	Rejected
Iii	I love reading novel only during holiday	224	3.85	1.129	Accepted
Iv	I hate studying Oral English because it used to confuse me.	222	3.10	1.423	Accepted
V	I am better in writing English Language than speaking it.	222	2.89	1.014	Accepted
Vi	I prefer to study other subjects than to study English	221	3.05	1.169	Accepted
vii	I prefer listening to music than listening to news	225	4.32	.775	Accepted

Table 2 presents respondents' level of agreement regarding the occurrence of various English Language learning behaviors in their personal lives. The findings reveal varying levels of agreement among the respondents concerning these behaviors. The results suggest that many students exhibit behaviors that may hinder the development of English Language proficiency, particularly in the areas of reading, speaking, listening, and regular practice. The findings further imply that students tend to engage more in recreational activities such as listening to music than in activities that enhance language competence. The standard deviation values indicate some variation in responses, but generally reflect a moderate level of agreement among respondents.

Research question 3: How can Artificial Intelligence as a learning tool improve students' performance in English Language

Table 3: AI-based learning systems that help to improve student's performance in English Language

		N	MEAN	STD. DEV.	DECISION
3	Do you think that the following can help to improve your performance in English Language				
I	A system that will motivate you to practice spoken English with Artificial Intelligent tutor	226	4.45	.783	Accepted
Ii	A system that will persuade you to practice Essay written and probably correct you after.	228	4.51	.667	Accepted
Iii	A system that will educate you on common mistake you need to avoid in English	225	4.50	.599	Accepted
Iv	A system that will use your weakness and peculiarity to plan timetable for you	225	4.50	.689	Accepted
V	A system that will correct your spelling and grammar mistake privately	225	4.44	.749	Accepted
Vi	A system that will persuade you to practice past questions	225	4.52	.620	Accepted
Vii	A system that will keep your learning history and use the same to evaluate you	225	4.56	.596	Accepted

Table 3 presents respondents' opinions on whether various Artificial Intelligence (AI)-based features can help to improve their performance in English Language. The results show that all the proposed features were accepted by the respondents, indicating strong support for the use of AI-driven learning systems in enhancing English Language learning. The findings reveal a strong positive attitude toward the adoption of Artificial Intelligence-based learning systems for English Language improvement. The consistently high mean scores, ranging from 4.44 to 4.56, indicate that respondents believe AI-powered tools can provide effective motivation, personalized learning experiences, timely feedback, and continuous assessment that could significantly enhance their performance in English Language. The relatively low standard deviation values further suggest a high level of agreement among the respondents regarding the usefulness of these proposed features.

Discussions of the Findings

The findings revealed that respondents perceived several behavioural factors as contributing to poor performance in English Language. Specifically, being too busy at home without creating adequate time for reading, fear of speaking English because of making grammatical mistakes, excessive play, lack of motivation for personal study, and spending more time on entertainment than reading literature were identified as major contributing factors. The finding that inadequate study time contributes significantly to poor performance agrees with previous studies that have identified poor study habits as strong predictors of academic achievement. Students who devote insufficient time to reading have fewer opportunities to improve vocabulary, grammar, comprehension, and writing skills, resulting in weaker

academic performance (Abubakar, 2024; Adeyemi, 2018)). Similarly, the respondents agreed that fear of speaking English due to grammatical errors contributes to poor performance. This finding supports the recent studies which show that learners with lower speaking confidence participate less in classroom interactions and consequently demonstrate slower language development (Huang et al., 2023). The findings indicate that behavioural and motivational factors continue to influence students' achievement in English Language. These findings suggest that interventions aimed at improving students' study habits and learning motivation are essential for enhancing English Language performance.

The findings further revealed that respondents commonly exhibit behaviours that may hinder effective English Language learning. Many respondents indicated that they read novels mainly during holidays, dislike studying Oral English, prefer studying other subjects to English Language, and spend more time listening to music than listening to news. This means that independent reading culture among students remains weak. Continuous reading has consistently been associated with improved vocabulary, comprehension, writing ability, and academic performance. Therefore, students who read only occasionally are likely to experience slower language development. The respondents also acknowledged challenges associated with Oral English. Difficulty with pronunciation and phonetics has long been recognised as one of the major obstacles facing learners of English as a second language. Brown (2014) observed that speaking skills generally require greater confidence and more frequent practice than reading or writing skills. The preference for entertainment over educational listening activities observed in this study further suggests that many students are not sufficiently exposed to authentic English communication. According to recent studies on English language learning, regular interaction with authentic language materials improves listening comprehension, pronunciation, vocabulary acquisition, and communicative competence (Ahmed et al., 2025). The findings therefore imply that students' learning habits significantly influence their English Language achievement. Improving students' study routines, reading culture, and exposure to authentic English communication may substantially improve learning outcomes.

The findings revealed overwhelming support for the use of Artificial Intelligence (AI) in improving students' performance in English Language. Respondents strongly agreed that AI systems capable of providing personalized spoken English practice, automated essay correction, grammar and spelling feedback, individualized study timetables, learning history, and continuous evaluation would motivate them to improve their performance. The highest-rated feature was an AI system capable of keeping students' learning history and using it for continuous evaluation. This finding suggests that students value personalized monitoring and adaptive learning. Recent studies have shown that AI-supported learning analytics improve learners' self-regulation by providing continuous feedback and personalized recommendations that help learners monitor their academic progress (Huang et al., 2023).

The finding that respondents supported AI-assisted essay writing and automated feedback is also consistent with recent literature. AI-powered writing assistants have been found to improve learners' grammar, vocabulary, writing accuracy, and revision skills by providing immediate, individualized feedback that traditional classroom instruction cannot always provide (Ahmed et al., 2025). Similarly, respondents expressed strong support for AI tutors that encourage spoken English practice. Recent systematic reviews have concluded that conversational AI creates low-anxiety learning environments where learners practice speaking more confidently without fear of embarrassment or negative evaluation. Such environments improve learners' speaking proficiency, confidence, and self-regulated learning (Prayogo et al., 2025). The positive perception of AI observed in this study is consistent with recent meta-analyses, which concluded that AI-supported English language learning significantly improves learners' English proficiency, self-regulated learning, and engagement when used alongside teacher guidance (Computers and Education: Artificial Intelligence, 2024). The findings suggest that students are highly receptive to integrating Artificial Intelligence into English Language learning. AI-based educational systems appear capable of addressing many of the behavioural and motivational challenges identified in this study by providing personalized learning experiences, timely feedback, adaptive instruction, and continuous learner support.

Conclusion

Based on the findings of the study, it can be concluded that students' poor performance in English Language is influenced by a combination of behavioral, motivational, and learning-related factors. Poor reading habits, inadequate self-study, fear of making mistakes while speaking English, and excessive focus on recreational activities contribute significantly to low achievement in the subject. The study further concludes that Artificial Intelligence provides a viable solution for addressing these challenges. AI-powered learning systems can create personalized learning experiences, identify students' weaknesses, provide instant feedback, encourage regular practice, and monitor learning progress over time. These capabilities make AI an effective tool for enhancing students' motivation and performance in English Language. The positive responses obtained from the participants indicate a strong willingness among students to embrace AI-based educational technologies. Therefore, integrating Artificial Intelligence into English Language instruction can significantly improve students' engagement, confidence, learning outcomes, and overall academic performance.

Recommendations

Based on the findings and conclusions of this study, the following recommendations are made:

- Schools should adopt AI-powered English Language learning platforms to support classroom instruction and provide students with personalized learning experiences.

- Students should be encouraged to use AI applications for self-directed learning, especially for practicing spoken English, correcting grammatical errors, and improving writing skills.
- AI systems should be designed to provide personalized feedback and adaptive learning schedules based on individual students' strengths, weaknesses, and learning patterns.
- Schools should organize training programmes and workshops for teachers and students on the effective use of Artificial Intelligence tools for teaching and learning.
- Parents should support and monitor their children's use of educational AI applications to ensure that technology is used productively for academic improvement.
- Further research should be conducted on the long-term effects of Artificial Intelligence on students' academic achievement, language proficiency, and learning motivation across different educational levels.

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